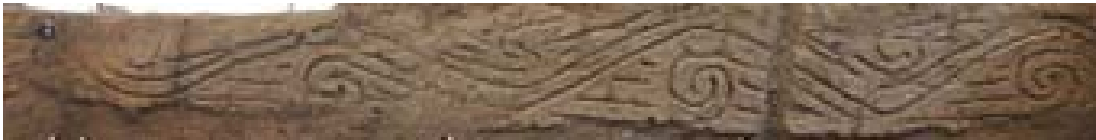




**ÇATALHÖYÜK 2007 ARCHIVE REPORT**  
***Çatalhöyük Research Project***



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*Cover – Incised mud plaster on wall in TP Area*

## 2007 SEASON REVIEW / 2007 SEZONU DEĞERLENDİRMESİ –

Ian Hodder

### Some intriguing new finds

Returning to Çatalhöyük towards the end of the season, after a trip to Ankara, I had been told that the team had found something very exciting during my absence. They wanted to surprise, or rather test, me and so had not told me what the find was. All the possibilities went through my head as I walked up the long flanks of the mound – this 9000 year old Neolithic ‘town’ in central Turkey, near Çumra and Konya. It could be a painting, of the

type that Mellaart had found in his excavations at the site in the 1960s. It could be a figurine, but we had found several of the better examples of those and so not so much fuss would have been made. Or maybe it was just a rich burial – someone buried as usual beneath the floors of the houses but with rich artifacts associated. Or perhaps it was a leopard relief sculpture on a wall, as again had been found by Mellaart.

When I got into the trench at the top of the mound I initially felt disappointed as I looked at the rather messy and difficult to discern plaster mouldings in the corner of a room (Figure 1). There was certainly something there but it was difficult to make anything out at all. But gradually, with a little coaxing, I saw what the team wanted me to see – what is almost certainly the base of one of the so-called splayed figures of which Mellaart had found several examples at the site. There remains some doubt about the identification of the relief sculpture, but I am more convinced now than I was then. These reliefs (eg Figure 2) had originally been thought by Mellaart to represent a splayed animal, but it was always difficult to see what they were as the heads and feet had always been removed. Later Mellaart favoured an interpretation as Mother Goddesses. But in recent



Figure 1: The base of a probable bear relief in the corner of a room in the 4040 Area.



Figure 2: Similar splayed reliefs had been found by Mellaart, as in this case.



Figure 3: This clay stamp with a splayed form, suggests the depiction of a bear.



years we had found a clay stamp of a splayed figure which still had its head and some of its feet. This was certainly an animal and probably a bear (Figure 3).

So it seems most likely that the relief the team had found was the lower part of one of these splayed bear figures. It sits crammed into the southeast corner of a side room in a very elaborate building which had been re-plastered very many times. In the middle of the surviving portion is a possible belly with traces of the navel – navels are key features of all the splayed figures. I had to agree in the end, the team had probably been right in their interpretation – and in their excitement!

We had again a large team at Çatalhöyük this summer – 150 researchers and students as well as 30 local workforce. As well as the usual Stanford-UK team, and the existing team from Poland (led by Arek Marciniak and Lech Czerniak), a team from Selcuk University (led by Ahmet Tırpan and Asuman Baldiran) worked on the Byzantine and early Islamic burials on the West Mound. On the Chalcolithic West Mound itself, there were two teams – one from Cambridge and SUNY Buffalo (led by Peter Biehl) and the other from the University of Thrace at Edirne (led by Burçin Erdoğan).

Indeed, it was one of these teams that made another intriguing and unusual discovery this year. In the TP Area excavated by the Polish team from Poznan University, a remarkable frieze was found (Front cover & Figure 4). In a small room that was part of a large building complex, the walls were first plastered and then, while the plaster was still wet, incised with spiral-meander designs. This is a new type of decoration and symbolism found at the site. It occurs in one of the very uppermost levels at the site. So we can say that although painting of walls may have decreased in the upper levels of the site, the symbolic elaboration of the house continued, in a new medium.



Figure 4: Incised decoration on a wall in the TP Area

Another fascinating find occurred in the lab as much as in the excavation trenches. Over several years we had found bits of a remarkable pot. This year and last, Nurcan Yalman and her team of specialists in the pottery lab sifted again through all the material coming from the same very large midden. They gradually found more and more bits. At first the oval pot seemed just to have a human face at one end. Then a human

face, identical to the first, was found at the other end of the pot (Figure 5). Then, right at the end of the season, they managed to find some bits of the side of the pot. Looking at the side one suddenly saw something remarkable – there was also the face of a bull! The ears and horns were clear to see. So this is a very unusual pot with two human, and probably two bull heads shown. In my view, since the human faces have no eyes in the

same way that a plastered human skull we found had no eyes, this pot probably represents human skulls and faces and bucrania (plastered bull skulls).



*Figure 5: Pot found in midden in the 4040 Area and showing a human face. Bull horns and ears can be seen on the side of the pot.*

Another intriguing set of data came again from finds in the lab, and as a result of excavation in the South shelter. In the eastern part of the shelter we had earlier excavated a series of exactly repeating buildings, from Building 10 at the top to Buildings 44 (Level IV), 56 (Level V), and 65 (Level VIA). We wanted to see if this building sequence continued from earlier buildings. So in 2007 we excavated through Building 65 and found below it a break in the sequence (Figure 6). Beneath Building 65 the area had been used for ovens and other open area activities. There were small buildings or ‘sheds’ but no coherent building plan, and much evidence of outdoor industrial activity. We can see in section that an earlier building existed before this break. This earlier building is on much the same alignment as Building 65. It will be excavated next year. We will in this way be able to explore the extent to which memories continued in buildings even across substantial breaks in use.



*Figure 6: A break in the sequence below Building 65 in the South Area shelter.*

As a result of a seminar at the site, attended by anthropologists, theologians, philosophers, and funded by the Templeton Foundation, we have started to call the buildings which are rebuilt many times, are elaborate architecturally, and have very many burials beneath the floors, 'history houses'. Through their lives, these buildings, replaced and replaced over 100s of years, seem to amass objects such as skulls and ritual paraphernalia. The 10-44-56-65 sequence is an example of one of these 'history houses' and it was work in the lab, this time the human remains lab, that gave us a new indication of how these buildings functioned. Başak Boz, a member of the human remains team, found teeth in a burial pit in one house that had come from a jaw in a burial pit in the house beneath. We had already come to suspect that human and animal skulls, sometimes plastered, were handed down within houses as heirlooms or objects of importance. The evidence found by Başak Boz seems to support this idea.

In the 4040 Area, excavation continued on Building 59 (Figure 7). This building has proved of great interest. It is extremely large (one of the largest buildings yet found at the site) and yet it was lived in for a fairly short period of time (as seen in the small numbers of plaster layers on the walls and floors). It has some examples of symbolic and ritual elaboration such as pillars and platforms and a red painted wall. The building thus allows us to explore the relationships between ritual and symbolic elaboration and size and status. In fact, the building has only one burial (in a side room) and was used over a short period of time. There is no evidence that it had special status. Special status, as seen in other buildings, seems mainly associated with large numbers of burials and long-term use – that is with 'history houses'. Such houses do not have more storage, and they are not necessarily the largest buildings. But they do seem to have built up a long history of use, burial and ritual and symbolic elaboration.

As if to make the point still clearer, we excavated parts of a new building this year that merits the 'history house' designation. This building appeared in the construction trench for a new shelter that is to be erected over the 4040 Area in 2007-8. It had at least two levels of rebuild, including with red painted walls and benches (Figure 8) and had over 30 burials beneath just the northeast and east platforms of one phase of building. Since most buildings have only 5-10 burials, and several have none, this minimum number of 30 indicates use as a special burial building.

### **Çatalhöyük'te Merak Uyandıran Buluntular**

Geçtiğimiz kazı sezonunun sonunda, Ankara'ya yapmış olduğum gezimin dönüşünde, Çatalhöyük'te benim yokluğumda çok önemli buluntular çıktığı söylendi. Ekip üyeleri beni şaşırmak için, belki de bir nevi test etmek için buluntunun ne olduğunu söylemediler. Tepenin, bu 9000 senelik Neolitik şehrin, yamacından yukarıya doğru çıkılan uzun yol boyunca aklımdan bütün olasılıklar geçti. Bu bir duvar resmi olabilirdi-Mellart'ın 1960'lı yıllarda yaptığı kazılarda bulunduğu tarzda bir duvar resmi. Bu bir figürin olabilirdi-ancak daha önce birçok değişik figürin çeşidi bulmuş idik dolayısıyla yeni bir tanesi bu kadar heyecan yaratmamalıydı. Belki de daha önce bulduklarımıza göre daha zengin mezar hediyeleri ile dolu, yine bir evin tabanının altına gömülmüş bir gömüt idi. Ya da belki, Mellart'ın bulduğu türden leopar betimli bir duvar kabartması olabilirdi.

Höyüğün tepesindeki açmaya ulaştığımda, odanın köşesinde düzensiz bir şekilde duran ve zar zor farkedilen sıva kabartmayı gördüğümde hayal kırıklığına uğradım (Figür 1). Baktığım köşede bir şey olduğu kesindi ama ne olduğunu anlamak zor görünüyordu. Fakat biraz daha konuşunca ikna oldum ve ekibin benim de görmemi istediği şeyi farkettiler- bu, Mellart zamanında birçok örneğinin bulunduğu bir hayvan betimli duvar kabartması idi. Bu kabartmanın tanımlanmasında bir takım şüpheler yaşandı ancak şu anda o zaman olduğumdan daha emin yaklaşıyorum. Bu kabartmalar ( Figür 2), Mellart tarafından hayvan betimini temsil ettiği düşünülmüş fakat kabartmanın baş ve ayak kısımları çıkarıldığından tanımlanmaları her zaman zor olmuştur. Daha sonra Mellart bu kabartmalar için ‘Ana Tanrıça’ tanımını uygun görmüştür. Fakat son yıllar içerisinde yapılan kazılar sırasında, bu kabartmaların betimine benzer şekilde yapılmış bir kil mühür, başı ve ayakları tüm şekilde kazılar sırasında çıkarılmıştır. Tüm şekliyle, bu mühürün bir hayvanı ve muhtemelen de bir ayıyı betimlediğine karar verilmiştir (Figür 3).



Figure 7: Building 59, 4040 Area, looking E.

Dolayısıyla ekibin bulduğu bu kabartma muhtemelen bir ayı betiminin alt kısmına aittir. Oldukça karmaşık bir yapıya sahip ve duvarları defalarca sıvanmış olan bir binanın güneydoğu köşesine sıkıştırılmıştır. Bu tüm kabartmadan geriye kalmış bölümde göbek deliği daha belirgin olup korunmuştur-göbek delikleri bu tip kabartmaların en belirgin

özelliklerindedir. Günün sonunda ekibin yorumlarında ve heyecanlarında haklı olduklarına karar verdim!

Bu sene de Çatalhöyük'te büyük bir ekibimiz vardı – 150 bilimsel araştırmacı ve öğrenci ve 30 kişiden oluşan yerel çalışanlarımız. Stanford-İngiltere ekibi, Polonyalı ekip (Alek Marciniak ve Lech Czerniak başkanlığında), Selçuk Üniversitesi'nden Bizans ve erken İslam dönemlerine ait Batı Höyük'teki gömütleri çalışan bir ekip (Ahmet Tırpan ve Asuman Baldıran başkanlığında) bu sezonun ekiplerini oluşturdular. Batı Höyük'te iki ayrı ekip çalıştı-birincisi Cambridge'den ve SUNY Buffalo'dan (Peter Biehl başkanlığında) ve bir diğeri de Edirne'deki Trakya Üniversitesi'nden bir ekip (Burçin Erdoğan başkanlığında).

Bu ekiplerden bir diğeri de yine bu sene Çatalhöyük'teki en heyecan verici buluntulardan birini keşfetmişlerdir. TP Alanında çalışan Poznan Üniversitesi ekibi, kayda değer bir friz bulmuştur (Figür 4). Büyük bir bina kompleksinin bir parçası olan bu küçük odanın duvarı önce sıvanmış, daha sonra, henüz sıva yaş iken üzerine spiral bir motif

kazınmıştır. Bu, kazı alanında yeni rastlanılan bir tip sembolizm ve süsleme biçimidir. Bu kazı bezeğin bulunduğu bina ve oda kazı alanının en üst tabakalarına denk düşmektedir. Buna bağlı olarak, her ne kadar üst tabakalarda duvar resimlerinin betimlenmesi alt tabakalara oranla daha az olsa da evin sembolik olarak değerlendirilmesi yeni bir düzeyde devam etmektedir.



Figure 8: Red paneled wall in FT 2, 4040 Area

Bir diğer ilgi çekici buluntu da laboratuardan gelmiştir. Son birkaç yıl boyunca yaptığımız kazılarda kayda değer bir çömleğin farklı parçalarını bulduk. Bu sene, geçen senede olduğu gibi, Nurcan Yalman ve ekibi çanak çömleklerin incelendiği laboratuarda, aynı çöplük alanından gelen malzemeyi incelemeye devam etmişlerdir. Bu inceleme devam ettikçe bu çömleğin farklı parçalarını bulmaya

devam etmişlerdir. İlk başta bulunan bu oval kabın yalnızca bir tarafında insan yüzü betimlenmiş olduğu düşünülüyordu. Daha sonra bu kabın bir tarafında bulunan bu insan yüzlü betim, kabın diğer tarafında da aynı şekilde betimlenmiş olarak bulunmuştur (Figür 5). Daha sonra, kazının sonunda bu kabın yan taraflarına ait olan parçaları da bulmuşlardır. Kabın yan taraflarına bakarken birdenbire çok ilginç bir şey farkedildi-kabın yan tarafındaki yüzünde de aynı zamanda bir boğa başı betimlenmişti! Kulaklar ve boynuz çok net bir şekilde seçilebiliyordu. Benim görüşüme göre, buradaki insan yüzü betimlerinin gözleri tıpkı sıvalı kafatasında olduğu gibi belirtilmediğine göre, bu kilden yapılmış kap insan kafataslarını ve yüzlerini ve sıvanmış boğa başlarını temsil etmektedir.

Bu senenin bir diğer kayda ilginç buluntu grubu da Güney alanında yapılan kazılar sonucunda ortaya çıkmıştır. Daha önce bu alanın doğu kısmında yaptığımız kazılarda Bina 10'dan Bina 44 (Tabaka IV), 56 (Tabaka V), ve 65 (Tabaka VIA)'in en üst noktasına kadar birbiri ile benzerlik gösteren bir dizi binayı kazmış idik. Bu bina dizininin erken binalardan itibaren devam edip etmediğini görmek istedik. Böylelikle 2007'de Bina 65'i ve altındaki binayı kazmaya devam ettik ve bu bina dizinin Bina 65'in altında değiştiğini gördük (Figür 6). Bunlar daha çok ayrıntılı bir bina planı yapılmamış ya küçük boyutlu binalar veya koronak alanları olarak şekillenmiş yapılar olup çok çeşitli ev dışı işlevsel (endüstriyel) aktivitelerin izine rastlanmıştır. Profilden gördüğümüz üzere bu kesintiden önce erken bir bina bulunmaktadır. Bu erken binanın ise aşağı yukarı Bina 65 ile aynı hizada olduğu gözlemlenmiştir. Bu binanın seneye kazılması planlanmaktadır. Böylelikle gözlemlenebilir kesintilere rağmen bu bina dizisinde ortak hafızanın nereye kadar devam ettiğini ortaya çıkarabiliriz.



Kazı alanında, çeşitli antropolog, teolog ve felsefecilerin katılımı ile, Templeton Fonu tarafından finanse edilen seminerler serisinde, aynı şekilde birçok kez inşa edilmiş, mimari olarak karmaşık ve tabanlarının altında birçok gömüt bulunan bu binaların ‘tarih evleri’ olarak nitelendirilmesine karar verilmiştir. Yaşam süreleri boyunca bu evlere yüzlerce yıl boyunca tekrar tekrar yerleşilmiş ve kafatasları ve ritüel niteliğindeki kişisel eşyalar biriktirilmiştir. 10-44-56-65 dizini bu ‘tarih evleri’ dizinine bir örnek olup, insan kalıntıları laboratuvarındaki incelemeler bize bu binaların nasıl işlediği ile ilgili bilgileri vermektedir. İnsan kalıntıları laboratuvarı çalışanlarından Başak Boz, bir evde rastlanan gönü çukurundan çıkardığı dişlerinö bir alt evdeki gömütün çene kemiğinden gelen dişler olduğunu tespit etmiştir. Bundan önce de insan ve hayvan kafataslarının, evden eve geçen miras veya önemli eşya statüsünde önem görmüş olabileceğini düşünmekteydik. Başak Boz’un bulduğu bu kanıt düşüncemizi desteklemektedir.

Kuzey Alanında, Bina 59’da kazılar devam etmiştir. Bu bina verdiğimiz önemi kalı çıkarmıştır. Bina çok geniş bir alanı kapsamakta olup (kazı alanında bulunan en geniş binadır) çok kısa bir süre (duvar sıva katlarının azlığından anlamaktayız) için kullanılmıştır. Bununla beraber bina içinde sütunlar, platformlar ve kırmızı boyanmış duvar gibi sembolik anlamlar taşıyan unsurlar bulunmaktadır. Binada yalnızca bir tane gömüt bulunmuş (bir yan odanın içinde) bu da az zaman için kullanıldığına dair kanıt teşkil etmiştir. Özel bir statü taşıdığı ile ilgili hiçbir gösterge yoktur. Burada özel statü durumu, ‘tarih evleri’ nde olduğu gibi çok sayıda gömüt ve uzun süre kullanımı temsil eder (Figür 7). Bu tip evler daha fazla depo yerine sahip olup ve de yerleşim içindeki en geniş evler değillerdir. Ancak, çok uzun bir tarih kesidi için işgal edilmişler ve de gömütler, ritüel ve embolik çeşitlilik açısından zengin yapılarıdır.

Durumu daha açık bir hale getirmek açısından şöyle diyebiliriz; be sene, ‘tarih evleri’ hipotezimizi destekleyen yeni bir binanın bir kısmını kazmış bulunmaktayız. Bu bina 2007-8 yılları arasında 4040 açmasına dikilecek olan yeni korunga örtüsünün temellerinin açılacağı yerlerde yapılan arkeolojik kazılar sonucunda ortaya çıkmıştır. İki seviyesi olan bu binada çok sayıda kırmızı boyalı duvar ve payanda bulunmuş ve yalnızca bir tabakanın kuzeybatı ve batı platformlarının altından 30 un üzerinde gömüt çıkmıştır (Figür 8). Birçok binada yalnızca en fazla 5-10 tane gömüt ve bazılarında hiç olmadığı göz önüne alınırsa 30 gömütün birden bulunması burasının gömütler için özel ayrılmış bir bina olduğu düşünülebilir.

## **Other Activities – Ian Hodder & Shahina Farid**

### **Office move to London**

By mid April the project relocation from the University of Cambridge to the Institute of Archaeology, University College London was successfully completed. This involved down sizing and relocating the office which had been based at the University of Cambridge since the current project began in 1993, first administered by the Faculty of Archaeology and Anthropology and since 2000, the McDonald Institute for Archaeological Research coinciding with Ian’s move to Stanford.

The logistics of moving proved to be interesting as every aspect of the project was scrutinised by both parties, Cambridge and UCL. On the practical side the project

archive, computers and project servers had to be moved. Downsizing meant that a lot of project material had to be sorted and archived between Stanford and London. However, this was a good opportunity to discard years of redundant trappings we had acquired over the past decade, and finally our pared down records and computers were transported to London.

The project office is now based on the third floor (with windows!) of the Institute of Archaeology and we are very grateful to Institute of Archaeology for housing us. We are also very grateful to the many individuals from the University of Cambridge, the McDonald Institute, University College London and the Institute of Archaeology who helped with the bureaucracy of transferring the project and the logistics of our move.

### **Boeing Sponsored Display Cabinet at Ankara Museum of Anatolian Civilization**



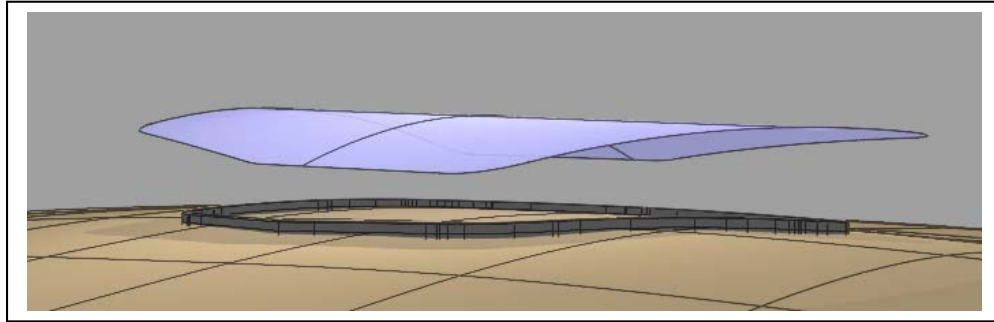
*Figure 9: Boeing Sponsored Display Cabinet at Ankara Museum of Anatolian Civilization*

With the support of the Ministry of Culture and Tourism and the Konya Museum, and with the sponsorship of Boeing, a new exhibit was opened in the Ankara Museum of Anatolian Civilization. With the encouragement of the Museum Director a new case was built and filled with recent finds from the site (Figure 9). This temporary exhibit will be renewed on an annual basis and will allow the finds from the site to be shown in the capital city before returning to Konya. A video about the site is also on permanent loop near the display case.

### **Permanent display of 4040 Area**

Much of this season's excavation work on the East mound was concentrated around the excavation of foundation trenches for the construction of our second permanent shelter. This shelter, which will be located on the northern eminence of the East Mound, has been in planning for the last three years and work finally began this summer. Similar to the shelter construction over the South Area constructed in 2003, the aim is to display a large expanse of the current excavations on a permanent basis, a place where excavations continue in the summer seasons but which can be visited and toured throughout the year. Whilst the South shelter affords display of excavations through time in depth, the North shelter will display contemporary neighbourhoods on the same horizon.

The new shelter has again been designed and constructed by Atölye Mimarlık, our architects for the South Shelter. Their remit this time was to design a shelter that would be aesthetic and fit in with the shape of the mound (Figure 10). The construction is therefore domed and employs new techniques and materials. (see conservation report).



*Figure 10: New shelter design by Atölye Mimarlık*

The shelter covers an area 43m n-s x 26m e-w. A number of locations were discussed before the present position of the shelter was decided (see Figure 14). The deciding factors were financial, long term stability, access, view of the buildings to be displayed and long term aims of continued excavation. We also wanted to incorporate Building 5 under the new structure as the life-span of that shelter, which was constructed in 1999, was only 5 years and had begun to show signs of disrepair.

26 foundation trenches with connecting beam slots were excavated around the footprint of the shelter. Each trench was 1.8m x 1.6m and varied in depth according to formation horizon relating to the contour of the mound. Overall the depths varied from 0.12m to nearly 2m through differing soil types and stratigraphic sequences. The connecting beam slots were 0.5m wide and the depths also varied according to the local topography. The northern and southern foundations were excavated as continuous slot trenches, 0.6m wide with varying formation depths. These sides will form the access point of the shelter.

Handover to the architects was due on the 1st August but of course we overran due to complex stratigraphy and the number of human burials we encountered. The usual frustrations of keyhole excavation were faced but overall a great sequence was excavated which has given us a window to areas on the mound which we would not otherwise have excavated.

As the FT's were handed over to the construction team they were lined with geotextile before construction of the supporting steel framework was assembled (Figure 11).

Final handover was 17th August and the first stage concrete pouring took place on 21st August. Eight cement mixers and two pourers, one stationed at the base of the mound and the other half way up were synchronized for the pouring (see Figure 11).

The second stage of concrete pouring took place on the 29th August and after an adequate drying period the surrounds were contoured with sandbags.



The final stage of roof construction will take place in the Spring of 2008.



*Figure 11: The Foundation Trenches were lined with geotextile with a basal layer of gravel before the steel reinforcement was fashioned in situ.*

### **Storage Depots**

One of the problems of long-term excavation is planning for storage of the excavated material archive when no storage facility in museums is available. At Çatalhöyük we have been long suffering from a lack of storage facilities at the site. At the beginning and end of each season hundreds of crates of material have to be moved out of laboratories where they are securely stored in the off-season to make room for teams to set up their work stations.

Finally after a few years of planning we received permission to construct four modular storage depots. Funds permitting, the first will be constructed by the spring of 2008. In preparation for construction we spent a week excavating evaluation trenches over the footprint of the depots to establish that no deposits of archaeological significance would be destroyed.

### **Çatalhöyük Museum Project**

It has long been a project objective to build a museum on or near the site as part of the visitor experience to Çatalhöyük. In 2005 we reported that a design had been submitted by Cengiz Bektaş (see Archive Report 2005) that fulfilled the ethos and practice of the project vision. It is by no means a traditional museum design but rather a Neolithic experience of reconstruction houses, interactive facilities and not necessarily a primary receptacle for original objects.

Whilst funds are being sought a location for this new museum was under discussion this summer between the project and a number of local interest groups.

### **Site Management Plan workshop**

A follow-on from the Site Management Plan for Çatalhöyük that was written as part of the TEMPER project (see Archive reports 2002 – 2005) was that a workshop was held on site this season. The meeting, led by Aylin Orbaşı of Oxford Brookes University, which involved members of the Chamber of Architects, delegates from the Ministry of Culture and Tourism and local government representatives, was held to discuss how the management plan works and legislation concerning the implementation of management plans in Turkey.

### **Templeton seminar**

This was the second year of a 3 research project entitled “Spirituality and religious ritual in the emergence of civilization. Çatalhöyük as a case study”, which involves a group of eminent archaeologists, anthropologists, theologians and philosophers from around the world to help us interpret the ancient, prehistoric symbolism at Çatalhöyük.

The four questions being asked by the Templeton funded project are: (1) How can archaeologists recognize the spiritual, religious and transcendent in early time periods? (2) Are changes in spiritual life and religious ritual a necessary prelude to the social and economic changes that lead to civilization?? (3) Do human forms take on a central role in the spirit world in the early Holocene, and does this centrality lead to new conceptions of human agency that themselves provide the possibility for the domestication of plants and animals? (4) Do violence and death act as the foci of transcendent religious experience during the transitions of the early Holocene in the Near East, and are such themes central to the creation of social life in the first large agglomerations of people?

### **Burials**

As a result of the analyses on a corpus of late burials excavated from across the east and west mounds a number of Islamic and possible Islamic burials have been identified on the basis of position and grave typology. As a result, a number of discussions took place on site and it has been agreed by both the local community and the General Directorate that the clearly Islamic burials will be reburied in the village cemetery in 2008.

### **Diğer Aktiviteler – Ian Hodder & Shahina Farid**

#### **Projenin Londra’ya Taşınması**

Nisan ortasında proje, Cambridge Üniversitesi’nden, Londra Üniversite’sindeki Arkeoloji Enstitüsü’ne taşınmıştır. Bu, 1993 yılından beri Cambridge Üniversitesi’ne bağlı olan ve 2000 yılına kadar Arkeoloji ve Antropoloji Fakültesi’nin altında çalışıp 2000 yılından itibaren de Mc Donald Enstitüsü’ne bağlı çalışan projenin hem küçültülmesi hem de yer değiştirmesi anlamına gelmiştir.

Projenin taşınma aşamasındaki lojistik kısmı, hem Cambridge hem UCL tarafından çok ince elenip sık dokunmuş ve bizim için çok ilginç bir deneyim teşkil etmiştir. Pratik kısmına bakıldığında projeye ait hem arşivin, hem bilgisayarların hem de bilgisayar server larının taşınması söz konusu olmuştur. Yukarıda belirttiğim küçültme işleminden kasıt da, projeye ait birçok unsurun hem Londra’da hem de Stanford’da düzenlenmesi

anlamına gelmesidir. Böylelikle, yıllarca birikmiş olan gereksiz kısımlardan kurtulunmuş ve de düzenleme sonucu küçülen bilgisayar ve genel arşivimiz Londra ya taşınmıştır.

Şu anda proje ofisi Arkeoloji Enstitüsü'nün 3. katında yer almaktadır (pencereli bir oda!). Arkeoloji Enstitüsü'ne bize yer sağladığı için teşekkür ediyoruz. Aynı zamanda Cambridge Üniversitesi'ne, McDonald Enstitüsü'ne, Londra Üniversitesi'ne ve Arkeoloji Enstitüsü'ne projenin taşınması esnasında yaptıkları bürokratik ve lojistik yardımlardan dolayı teşekkürlerimizi sunmaktayız.

### **Ankara Müzesi'nde bulunan, Boeing'in sponsorluğunu yaptığı, Çatalhöyük eserlerine ayrılan vitrin.**

Kültür ve Turizm Bakanlığı'nın ve Konya Müzesi'nin katkıları ile ve Boeing'in sponsorluğuyla, Ankara Müzesi'nde yeni bir sergi alanı açılmıştır. Müze Müdürlüğü'nün teşvikleri ile yeni bir sergi vitrini düzenlenmiş ve kazıdan çıkan son buluntular yerleştirilmiştir (Figür 9). Bu geçici sergi yıllık olarak yenilenecek ve buluntuların her sene tekrar Konya Müzesi'ne geri dönemeden önce başkentte sergiye sunulmaları sağlanabilecektir. Kazı ile ilgili bir tanıtım videosu da vitrinin yanında sürekli olarak gösterilmektedir.

### **4040 Alanının Sergilenmesi**

Bu sezon kazılarının büyük bir kısmı, yapılacak olan ikinci kalıcı korunga örtünün inşası sırasında açılacak olan temellerde yapılan arkeolojik kazılar üzerine yoğunlaştı. Doğu Höyük'ün kuzey kısmında yer alacak olan bu örtü son üç yıl boyunca planlanan bir proje olup, nihayet bu yaz çalışmalara başlanmıştır. Güney Alanında 2003 yılında yapılan korunga örtünün yapımına benzerlik gösteren bu yeni yapı, yaz ayları boyunca örtü altında yapılacak kazıların devamına imkan sağladığı gibi, kış aylarında da gelen ziyaretçilere açık bir alan olarak kalacaktır. Güney Alanındaki örtü, yapılan kazıların dikey olarak tabakalanmasının sergilenmesine yol açtığı gibi, Kuzey Alanındaki örtü de aynı yatay alandaki birbirine komşu evlerin bir arada sergilenmesini sağlayacaktır.

Yeni korunga örtü, Güney Alanındaki örtü de olduğu gibi, Atölye Mimarlık tarafından tasarlanmış ve inşa edilmiştir. Bu yeni tasarım için göz önünde bulundurulmuş en önemli unsur, korunga örtünün, tepenin şekli ile estetik olarak bir uyum göstermesidir (Figür 10). Bu anlamda yapı kubbe şeklinde dizayn edilmiş ve yeni yapım teknikleri ve malzemeleri kullanılmıştır (bakınız konservasyon raporu).

Korunga örtü 43m kuzey-güney x 26m doğu-batı büyüklüğünde bir alanı kaplamaktadır. Korunga örtünün şu andaki yerini belirlemeden önce bir kaç farklı yer olasılığı tartışılmıştır (Figür 14). Yerin karar verilmesinde etken olan unsurlar; finansal, uzun vadeli dayanıklılık, ulaşım, kazılan binaların ne şekilde sergileneceği ve devam eden kazıların uzun vadedeki amaçları şeklinde olmuştur. Aynı zamanda bu örtünün altına Bina 5'in dahil edilmesi, Bina 5'in üzerine 1999'da yapılan ve ömrünü 5 sene olacağı söylenen örtünün yıpranma belirtileri göstermesi üzerine, söz konusu olmuştur.

Bu korunga örtünün ayaklarının geleceği 26 temel açması, bu açmaların aralarını birleştiren ince uzun açmalarla birlikte kazılmıştır. Herbir açma 1.8m x 1.6m

büyükliğinde olup, höyüğün şekline göre belirlenen farklı formasyon düzlemi hesaplamalarına göre farklı derinliklerde kazılmıştır. Genel olarak kazılan derinlikler 0.12m ile 2m arasında farklı toprak çeşitleri ve tabakalanma dizinleri ile değişmektedir. Araları birleştiren ince uzun açmalar ise 0.5 m genişliğinde olup derinlikler de yerel topografiye göre değişmektedir.

Alanın mimarlara devredilmesi 1 Ağustosunda bulmuş olmasına rağmen karmaşık tabakalanma ve çok sayıda çıkan insan iskeletleri dolayısıyla bizim müdahalemiz devam etmiştir. Bu tip küçük açmalarda her zaman olduğu gibi gerek tabakalanmayla ilgili bağlantıların aralarda kilitlenmesi gerekse genel resmi görememe açısından rahatsızlıklar yaratsa da çok geniş bir yelpazede farklı tabakalar kazılmış ve farklı koşullarda daha uzun dönem kazılmayacak olan bu tabakalara bir pencere açılmasını sağlamıştır.

Temel açmalar inşaat ekibine teslim edildikten sonra açmalar, demir çubuklarla desteklenmeden önce jeotekstil ile örtülmüştür (Figür 11).

En son devir 17 Ağustos'ta olmuş ve ilk beton dökümü ise 21'inde gerçekleşmiştir (Figür 11). Sekiz harç karıştırma makinası ve iki dökücü, biri tepenin yamacında ve diğeri tepenin ortasında yer almak kaydıyla yerleştirilmiş ve birbirleri ile eş değerli zamanlarda çalışmışlardır.

Harç dökme işleminin ikinci aşaması 29 Ağustos'ta yer almış ve kuruması için gerekli zaman bırakıldıktan sonra kum torbaları ile çevrelenmişlerdir.

Örtünün çatısının yerleştirilmesi işlemi de en son aşama olarak 2008 yılının baharında gerçekleşecektir.

### **Depolar**

Uzun vadeli kazı planının problemlerinden biri de, müzede yeterli derecede depo alanı olmadığından, çıkan malzemenin nerde saklanacağı sorunu olmuştur. Çatalhöyük'te bir süreden beri çıkan malzemenin artması ile yer sorunu ile karşı karşıyayız. Her kazı sezonunun başında, gelen ekiplere çalışma alanı sağlamak için yüzlerce sandık arkeolojik malzeme laboratuvarlardan çıkarılıp, alan dışında güvenli bir yere taşınmak durumunda kalmaktadır.

En sonunda yıllar süren bir süreçten sonra depolarımızı inşa etmek için gerekli olan iznimizi almış bulunuyoruz. Alınacak fon doğrultusunda bu depolardan ilkinin 2008 yılının baharında inşa etmeyi planlamaktayız. Bu yapıların inşa edilmesi sürecinde depoların temellerinin geleceği yerlerde, herhangi bir arkeolojik malzemenin bu alanlara girmedikini kesinleştirmek için değerlendirme kazıları yapılmış ve bu kazıların raporu yazılmıştır.

### **Çatalhöyük Müzesi Projesi**

Projenin uzun dönemli planlarından bir diğeri de, Çatalhöyük ziyaretçileri için kazı alanının yakınlarına bir müze inşa edilmesi fikri idi. 2005 yılında Cengiz Bektaş'ın bu projenin amaçları ve pratiğine uygun bir tasarım yaptığını raporumuzda bildirmiştik. Bu,

klasik anlamıyla bir müzeden çok bir Neolitik ev rekonstrüksiyonu bağlamında bir yapı ve deneyim olduğu gibi etkileşimli olanakları olan ve mutlaka çıkan kazı malzemesinin orijinallerini içermesi gerekmeyen bir tasarımdır.

Gerekli fonların sağlanması planları ile birlikte bu müzenin lokasyonu ile ilgili tartışmalar farklı ilgili makamlarla tartışılmıştır.

### **Kazı Yönetimi Planı Atölyesi**

TEMPER Projesi tarafından yazılan Çatalhöyük Yönetim Planı'nın (bakınız Arşiv Raporu 2002-2005) devamı niteliğinde bu sezonda bir atölye çalışması düzenlenmiştir. Oxford Brookes Üniversitesi'nde bulunan Aylin Orbaşlı tarafından başı çekilen bu toplantıda aynı zamanda Mimarlar Odası, Kültür ve Turizm Bakanlığı'ndan delegeler ve yerel yönetim temsilcileri de katılmışlar ve kazı alanı yönetim planının nasıl işlediği ve Türkiye'deki kazı yönetim planı ile ilgili yasa ve uygulamalar tartışılmıştır.

### **Templeton Fonu Araştırma Projesi**

Bu, "Uygarlığın Doğuşunda Spiritüel ve Dinsel Ritüel'de Çatalhöyük örnek incelemesi" başlıklı 3 yıl olarak planlanan araştırma projesinin ikinci yılı idi. Bu çalışmaya dünyanın birçok tarafından seçkin arkeolog, antropolog, teolog ve felsefeci, Çatalhöyük'teki prehistorik sembolizmi incelemek üzere katılmışlardır.

Templeton tarafından fonu sağlanan bu projede dört ana soru sorulmuştur: (1) Arkeologlar, geçmiş zamanlara ait spiritüel, dinsel ve transandal olguları ne şekilde tanımlayabilirler? (2) Spiritüel ve dinsel yaşamda gözlemlenen değişimler, uygarlığın ortaya çıkmasına yol açan ekonomik ve sosyal değişimlere bir zemin mi olmuştur? (3) Erken Holosen'deki ruhsal dünyada insan formları merkezi bir rol mü oynamıştır ve bu merkezilik insanın bitki ve hayvanları evcilleştirme sürecinde yeni kavramlara yol açmış mıdır? (4) Sıddet ve ölüm olguları, Yakındoğu'da, Holosen'e geçişte transandal dini deneyimlerin ana fokusu mu olmuştur ve bu temalar, ilk büyük insan yığınlarının oluşturduğu sosyal hayatın oluşmasında merkezi bir rol mü oynamıştır?

### **Gömütler**

Doğu ve Batı höyüklerinden çıkan geç döneme ait gömütler üzerinde yapılan araştırmalar sonucunda, yatış pozisyonları ve mezar tipolojileri de göz önünde bulundurulduğunda, bu gömütlerin muhtemel İslam mezarlıkları oldukları ortaya çıkarılmıştır. Yerel halk ve Kültür Bakanlığı ile yapılan görüşmeler sonucunda kesin olarak İslam mezarlığı olarak belirlenmiş gömütlerin 2008 yılında köy mezarlığına gömülmesi uygun görülmüştür.

### **Post-Season**

We had the pleasure of showing HRH Prince Charles around the site in November (Figure12).

The tour proved to be a great success with many guests joining us including from the Çumra and Konya Municipalities and Security and Army Offices, the Principal, Vice Principals and guests from Selçuk University, architect Cengiz Bektaş, the headman and visitors from the village of Küçükköy and many others including the British Ambassador to Turkey.

As well as a tour of the site and Visitor Centre The Prince had the opportunity to see a group of school children from Çumra and Küçükköy doing the activities that they do in the summer organized specially by Gulay Sert (see Summer School report). We also invited a local women's cooperative to present their work in felt using traditional methods to suit a modern fashion, organized by Mehmet and Sylvia Giriç ([www.thefeltmaker@.thefeltmaker.com](http://www.thefeltmaker@.thefeltmaker.com)).



*Figure 12: HRH visits the South Area*

### **Kazı Sezonu Sonrası**

Kasım ayı içerisinde İngiltere Veliht Prensi Charles'a Çatalhöyük'teki çalışmalarını sunma şerefine nail olduk.

Bu ziyaret çok başarılı olmuş ve Çumra'dan ve Konya Belediye Başkanları, Ordu ve Polis Kuvvetleri'nden yüksek rutbeli asker ve memurlar, Selçuk Üniversitesi'nden ziyaretçiler, mimar Sayın Cengiz Bektaş, Küçükköy muhtarı ve köyden diğer ziyaretçiler ve Türkiye'deki İngiltere büyükelçisi de ziyaretçiler arasında yer almıştır.

Prens Charles Ziyaretçi Merkezi'nin yanı sıra, Gülay Sert'in organize ettiği Çumra ve Küçükköy'den çocukların katıldığı, yaz sezonlarında Çatalhöyük'te (bakınız Yaz Okulu raporu) okul çocukları ile yapılan aktivitelerin yapıldığı bu projeyi görme şansı elde etmiştir. Ayrıca bağlı buldukları kooperatif içinde geleneksel yöntemlerle keçe sanatını devam ettiren yerel kadınlar, Mehmet ve Sylvia Giriç'in organizasyonu ile kazı alanına davet edilmiş ve yaptıkları işler sunulmuştur. ([www.thefeltmaker@.thefeltmaker.com](mailto:www.thefeltmaker@.thefeltmaker.com)).

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The main sponsors are Yapı Kredi and Boeing. Our long term sponsors are Shell and Merko, and other sponsor is Thames

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Other institutional partners are Poznan University, Poland, Istanbul University and the University of Thrace at Edirne, Turkey and SUNY Buffalo in the US.

I also wish to thank Gülay Sert for her running of the educational programmes at the site.

We are grateful as ever to Jimmy and Arlette Mellaart. Special thanks are extended to Ömer Koç for his continued support of the project. And finally we were pleased to host the British Ambassador Nick Baird and his wife Caroline.



## **Teşekkürler**

Proje, Kültür ve Turizm Bakanlığı'nın izniyle, Ankara İngiliz Arkeoloji Enstitüsü'nün denetiminde yapılmaktadır. Projemiz, Anıtlar ve Müzeler Müdürlüğü Başkanı Sayın Orhan Düzgün'e ve Bakanlığın temsilcisi Sayın Ömer Özden'e teşekkürü borç bilir.

Ana sponsorlarımız Yapı Kredi ve Boeing'dir. Uzun vadeli sponsorlarımız ise Shell ve Merko olup, bir diğer sponsorumuz da Thames Water'dır.

Ankara İngiliz Arkeoloji Enstitüsü'ne, John Templeton Fonu'na, Küresel Kültür Mirası Fonu'na, Kress Fonu'na ve Amerika'daki Martha Joukowsky Fonu'na ve Polonya'daki Poznan Üniversitesi'ne ve Polonya Milli Piyango Konseyi'ne desteklerinden dolayı teşekkür ederiz.

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## TEAM 2007

<b>Project Director:</b>	Ian Hodder.
<b>Field Director &amp; Project Coordinator:</b>	Shahina Farid.
<b>Project Administration:</b>	Katerina Lee.
<b>Project Assistant:</b>	Banu Aydinođlugil.
<b>Computing:</b>	Sarah Jones & Neil Davies
<b>Database Development:</b>	Sarah Jones & Mia Ridge.
<b>4040 excavations:</b>	Dan Eddisford, Mike House, Simon McCann, Charlie Newman, Freya Sadarangani, James Taylor, Lisa Yeomans.
<b>South Area excavations:</b>	Roddy Regan, Anies Hassan.
<b>TP excavations:</b>	Arkadiusz Marciniak, Arkadiusz Klimowicz, Adriana Badtke, Marek Baranski, Agata Czeszewska, Patrycja Filipowicz, Andrzej Leszczewicz, Katarzyna Regulska, Klaudia Sibilska, Maja Marciniak, Zuzanna Marciniak.
<b>West Mound, Cambridge Team:</b>	Peter Biehl, Eva Rosenstock, Tom Birch, Helen Lomas, Ingmar Franz, Kathryn Hall, Alex Pryor, Rosalind Wallduck, Ben Kamphaus, Raymond Whitlow, Naomi Christie, Frank Stremke, Maxime Brami, Genevieve Holdridge, Katie Kamphaus.
<b>West Mound, Thrace Team</b>	Burcin Erdođu, Nejat Yücel, Gülgün Gürcan, Gülay Yilankaya, Heval Bozbay, Sedef Polatcan, Melek Kus.
<b>West Mound, SEL Team:</b>	Asuman Baldiran, Zafer Korkmaz, Faris Demir, Osman Dođanay, Zeliha Gider, Gorkem Ilarslan, Utku Yalcin, Ferda Zorlu.
<b>Stanford Field Team:</b>	Rachel Becker, Eleri Cousins, Rachel Danford, Madeleine Douglas, Jun Jiang, Kristen Nado, Andrew Wicklund.
<b>Student Field Teams:</b>	Kirsten Forseth, Angus Hodder, Marina Lizarralde, Colleen Morgan, Kelsey Traher.
<b>Illustration:</b>	Katy Killackey.
<b>Survey and Digitising:</b>	Dave Mackie, Cordelia Hall in consultation with Duncan Lees Plowman Craven).
<b>Finds:</b>	Lisa Guerre, Insia Farid, Demet Gural, Zeynep Cetrez.
<b>Heavy Residue:</b>	Slobodan Mitrović & Milena Vasic.
<b>Conservation:</b>	Liz Pye, Duygu Camurcuođlu-Cleere, Philip Kevin, Casey Macksey, Nyssa Mildwaters, Alaina Schmisser.
<b>Image and Media:</b>	Jason Quinlan.
<b>Faunal Team:</b>	Louise Martin, Nerissa Russell, Kathryn Twiss, Sheelagh Frame, Kamilla Pawlowska, David Orton, Claire Christensen, Arzu Demirergi, Liz Henton and Joe.
<b>Human Remains:</b>	Simon Hillson, Clark Larsen, Lori Hager, Bařak Boz, Scot Haddow, Marin Pilloud, Bonnie Glencross, Lesley Gregoricka, Patrick Beauchesne, Christopher Ruff, Tomasz Kozłowska, Michaela Binder.
<b>Palaeoethnobotany:</b>	Glynis Jones, Amy Bogaard, Michael Charles, Fusun Ertuđ, Kim NG, Ellen Simmons, Dragana Filipovic, Müge Ergun, Ryan Allen, Catherine Longford, Michael Wallace.
<b>Phytoliths:</b>	Philippa Ryan.
<b>Starch:</b>	Karen Hardy Chase.
<b>Chipped Stone:</b>	Tristan Carter, Marina Milić.
<b>Ground Stone &amp; bead technology:</b>	Karen Wright, Roseleen Bains, Jennifer Booth, Sarah Luddy, Bahram Ajorloo.
<b>Ceramics:</b>	Nurcan Yalman, Hilal Gültekin, Duygu Tarkan, Joanna Pyzel, Jonathan Last, Shannon Stewart.
<b>Figurines &amp; Miniature Clay Objects:</b>	Lynn Meskell & Carolyn Nakamura.
<b>Clay materiality &amp; sourcing:</b>	Chris Doherty.

**Architectural Analysis:**

**Summer School:**

**Translations:**

**Research Projects:**

**Remediated Places:**

**Artist in Residence:**

**Camp Manager:**

**Site Custodians:**

**House Staff:**

**Site Workers:**

**Residue Sorters:**

Serena Love.

Gülay Sert, Nuray Kaygaz, Heval Bozbay, Lerzan Akkaplan,

Dide Sağlam.

Sharon Moses.

Ruth Tringham, Steve Mills.

Eva Bosch.

Levent Özer.

Mustafa Tokyağsun, Hasan Tokyağsun, Ibrahim Eken.

İsmail Salıncı, Nevriye Şener, Mavili Gemiz, Saliha Eken.

Arif Arslan, Mevlut Sivas, Hülüsi Yaşlı, Hüseyin Yaşlı, Osman Yaşlı,

Mustafa Yaşlı, İsmail Buluç, Mustafa Zeytin, Ali Zeytin, Mustafa

Sivas, Yüsuf Tokyağsun, Mehmet Ali Motuk, Hasan Yaşlı, Metin Eken,

Mevlut Ferakaya.

Saliha Sivas, Fadimana Yaşlı, Fatima Yaşlı, Rabia Yaşlı, Elmas Motuk,  
Esra Şener, Emine Yaşlı.



## **EXCAVATIONS**

### **Areas of Excavation 2007 – Shahina Farid**

Excavation took place in three areas on the East mound and in three trenches on the West mound (Figure 13). The three areas on the East mound were the 4040 Area, the TP Area and the South Area where objectives set from previous years' continued (see Archive Report 2006).

On the West Mound a 5-year plan developed from the 2006 season and involves a three-fold research approach with three teams.

Continuing from Tr. 5 and 6 opened last season a new, Trench 7, was opened on the same alignment but a machine cut trench in the side of a ditch that runs along the eastern edge of the West Mound. This was opened to afford a quick view into the depth and nature of the stratigraphy.

Trenches 5, 6 and 7 are located to the SE of the West Mound and under the leadership of Peter Biehl from SUNI Buffalo and Cambridge University the aim is to excavate a series of step trenches down to natural in order to reach the earliest levels of occupation on the West Chalcolithic mound. The results combined with those from the TP Area on the East mound will inform on the nature of transition from Late Neolithic on the East Mound to Early Chalcolithic on the West Mound or, illustrate that the two sites were at some stage occupied concurrently.

Trench 8 is located to the SW of the mound. The team here led by Burçin Erdoğu, University of Thrace have targeted this area to investigate the EC II occupation at Çatalhöyük West, to explore how EC II occupation developed after the end of EC I and how to contextualize the transition from EC I (c.a. 6000-5700 cal BC) to EC II (c.a. 5700-5500 cal BC).

The third team led by Ahmet Tırpan and Asuman Baldıran from Selçuk University are conducting excavations of the later activity. It is known that the West Mound was used as a burial ground in the historic periods but so far little by way of occupation or other activity has been found. The Selçuk University team will concentrate on excavating late burials and any other activity in Trenches 5, 6, 7 and 8. This will enable the team to view a much wider and meaningful late burial assemblage in a holistic manner.

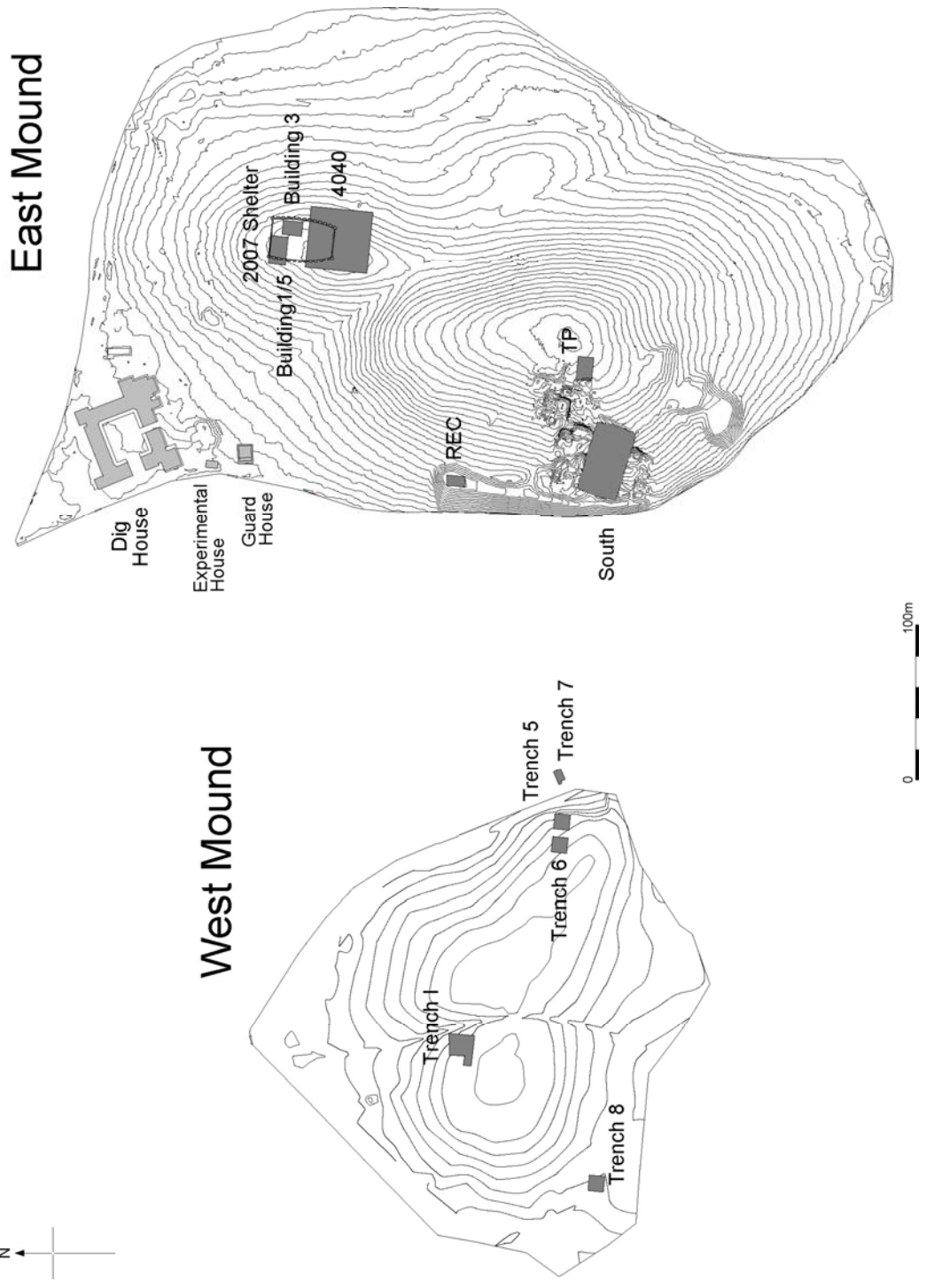


Figure 13: Excavation Areas 2007

## 2007 Excavations of the 4040 Area – Shahina Farid

**Excavation Team:** Daniel Eddisford, Anies Hassan, Michael House, Simon McCann, Charles Newman, Roddy Regan, Freya Sadarangani, James Taylor, Lisa Yeomans.  
**Students:** Rachel Becket, Madeleine Douglas, Kelsey Traher, Jun Jiang, Colleen Morgan, Andrew Wicklund, Kirsten Forseth, Marina Lizaralde.

Much of this seasons excavation work on the East mound in the 4040 Area was concentrated around the excavation of foundation trenches for the construction of our second permanent shelter on the East mound (see Other Activities).

In addition 3 other areas were targeted for excavation in the 4040 Area.

- Building 59, excavated to its latest occupation horizon in 2006 (see Archive Report 2006) was targeted for complete excavation in 2007 as part of the shelter footprint was planned along its eastern wall thus making any future work in this building impossible. The occupation sequence of Building 59 was therefore excavated to the top of the infill of the underlying building.
- Space 279, the area of large pits which were excavated up to the 2006 L.O.E (see Archive Report 2006) were completed which resolved some stratigraphic relationships outstanding from last year.
- Space 267 was also targeted to resolve some stratigraphic relationships between structures and associated middens. Whilst certain relationships were clarified time constraints imposed by the excavations of the FT's curtailed the amount of that we had originally planned.

## 4040 Açmasındaki 2007 Kazıları

Doğu Höyük'teki 4040 açmasındaki bu sezonun kazıları daha çok, bu alanda yapılacak olan Çatalhöyük'teki ikinci sabit korunga örtünün temel açmalarındaki kazılara yoğunlaşmıştır (bakınız Diğer Aktiviteler)

Buna ek olarak 4040 Alanında 3 ayrı bölgedeki kazılar hedef alınmıştır.

- 2006 sezonu kazılarında son yerleşim tabakası kazılmış olan Bina 59'un (bakınız Arşiv raporu 2006), korunga örtünün ayaklarından birinin binanın doğu duvarına denk gelecek olması dolayısıyla gelecekte bu alandaki kazılar imkansız olacağından bu binanın 2007 sezonunda kazılarının bitirilmesi hedeflenmiştir. Bu sebeple, Bina 59 altında yer alan binanın dolgu toprağına kadar kazılmıştır.
- Geniş çöp çukurların yer aldığı Alan 279, 2006 sezonunda açma sınırına kadar kazılmış olup (bakınız Arşiv Raporu 2006), 2007 yılında kazıları tamamlanmış ve bir önceki seneden kalan tabakalanma ilişkileri de çözüme ulaştırılmıştır.
- Ayrıca Alan 267 içerisindeki yapılar ve çöp çukurları arasındaki tabakalanma ilişkilerinin çözümlenmesi hedef alınmıştır. Birçok tabakalanmayla ilgili ilişki açıklığa kavuşmasına rağmen, zaman faktörü göz önünde bulundurulduğundan temel açmalarının kazılarına yoğunlaşmıştır.

## Foundation Trenches, 4040 Area

26 foundation trenches with connecting beam slots were excavated around the footprint of the proposed shelter (Figure 14). Each trench measured c. 1.8m x 1.6m

and varied in depth according to formation horizon relating to the contour of the mound, from a minimum of 0.12m to nearly 2m in depth through differing soil matrices and sequences (Figure 15). The connecting beam slots were 0.5m wide and the depths also varied according to the local topography.

The sequence of stratigraphy excavated is reported on by Trench by Trench (Figure 16). FT's 1-13, starting from the NE corner, are located along the eastern side and FT's 14-26 to the west. The northern and southern foundations were excavated as a continuous slot trench, 0.6m wide with varying formation depths. Where possible relations are made between one FT and another but further analyses of the stratigraphy is required to report on the phasing and sequence that is represented in all the trenches.

### **Temel Açmaları**

26 adet temel açması, temel açmalarını birleştiren aralarındaki ince uzun açmalarla birlikte, korunga örtünün ayaklarının geleceği kısımlarda yapılmıştır (Figur 14). Her bir açma 1.8m x 1.6m ölçeklerinde açılmış olup, derinlikleri ise, höyüğün eğimine bağlı bulunan yatay formasyona göre, minimum 0.12m ile yaklaşık 2m'ye kadar toprak çeşitliliğine ve tabakalanmaya göre farklılık göstermiştir (Figur 15). Açmaları birleştiren ince uzun açmalar ise 0.5 m genişliğinde olup yine derinlikleri topoğrafyaya göre değişmiştir.

Tabakalanma dizini, kazılan herbir Temel Açması içerisinde tartışılacaktır. Kuzeydoğu köşesinden başlayıp doğu tarafı boyunca Temel Açmaları 1-13 ve batı tarafı boyunca ve Temel Açmaları 14-26 yer almaktadır (Figur 16). Kuzeyde ve güneyde yer alan temel açmaları devam eden tek açma halinde kazılmış olup, 0.6 m genişliğindedir ve formasyon derinlikleri yine değişmektedir. Bu temel açmaları arasında muhtemel tabakalanma ilişkileri belirlenmiş olmasına rağmen, kesin tabakalanma dizinleri açmalar genişletildiğinde ve diğer alanlarla birleştiğinde belirlenebilecektir.

Bazı Temel Açmaları, 1993-1994 yılları arasında, 2003 yüzey sıyırma yöntemi sırasında ve 2003 yılındaki kazılarda belirlenmiş olan binaların üzerinde yer almaktadır (Figur ). Gelecek yıllarda, tabakalanma dizinini belirleyecek, korunga örtünün altındaki binaların kazısı yapılacak fakat bu tabakalanma ilişkilerinin bir kısmı belirlenen kazı alanının dışında kalacaktır.

Genel olarak bu sezon çok ilgi çekici tabakalanma dizinleri kazılmıştır. Bunlar, kuzeydoğudaki Temel Açmaları 1 ve 2'de görülen binalar ve kuzeybatıdaki Temel Açmaları 22-26 daki dizinlerdir. Bu açmalar, kazılan çok sayıda gömüt ve kırmızı boyanmış duvarlar ve yeni adlandırılmış olan 'tarih evleri' belirlemesine uyan tabakalanmaların bulunduğu geniş binaları kesmektedirler.

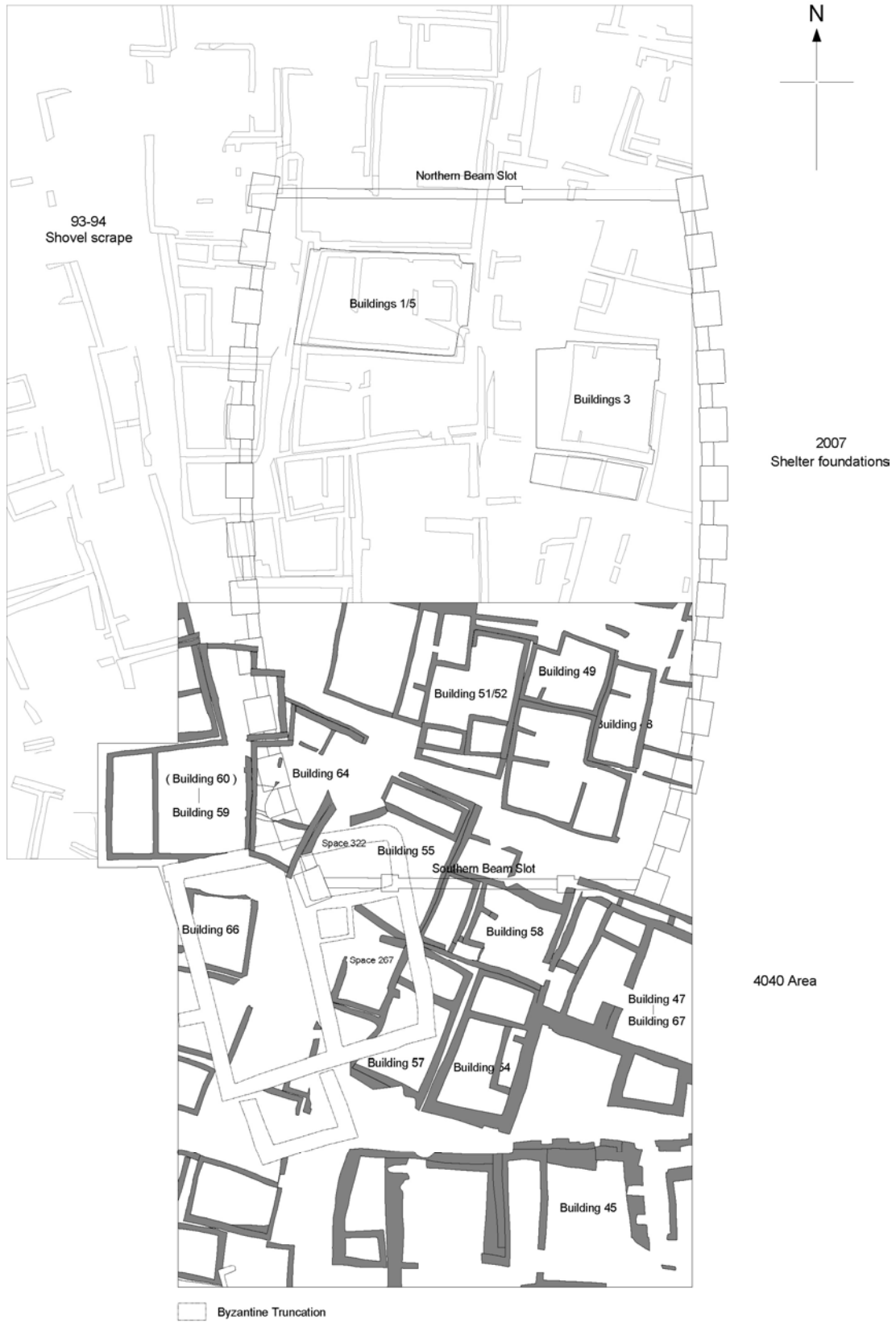


Figure 14: Location of Foundation Trenches over the 1993-4 and 2003 scrape plan



A number of FT's were located over buildings that had been defined in the 1993-4 and 2003 scrape plans (see Figure 14), and some over buildings excavated since 2003. Whilst some of the sequences may be elaborated on in future years with further excavations under the new shelter, others lie beyond the limits of our investigations.

Overall some very interesting sequences were excavated. Of particular note are parts of buildings represented in FT's 1 and 2 to the NE and FT's 22 – 26 to the NW. These FT's cut through some large and elaborate buildings with a number of burials, red panelled walls and sequences that fit with the newly defined 'history house' definition.

#### **Trench 1 – Daniel Eddisford**

2.00m NS x 1.80m EW. Total depth excavated - c.1.55m

SW Coordinate – 1059.33 / 1197.81. Formation Level – 1010.15m AD

The most northeasterly of the foundation trenches, Trench 1 was located beyond the limits of the 40mx40m surface scrape carried out in 2003 ().

The earliest deposit in Trench 1 was mid-brown crushed mudbrick room fill (15067). This layer was over 0.8m thick and the base of the deposit was not reached, however it is assumed to represent room fill within an underlying building. The unit contained occasional animal bone, very occasional pottery and clay ball fragments, a single piece of human bone and an obsidian core 15067.X1.

This layer was cut by a series of crouched Neolithic burials, some of which were inter-cutting. The grave cuts of all these burials were very difficult to define, as they were filled by crushed mudbrick, identical to that which they cut through. As a result the extent and relationship of the burials often had to be discerned from the skeletons themselves. Most of the burials were close to the surface, and as a result most were in a poor state of preservation.

Burial F.2908 was within grave cut (15902) and consisted of the skeleton of a crouched juvenile (15901). The grave was filled by mid-brown room fill (15900). The skull of burial F.2908 had been disturbed by a later interment F.2910.

Burial F.3012, within cut (16099), contained the poorly preserved crouched skeleton of an adult female (16100). The feature was filled by mid-brown room fill (15900), the upper part of the skeleton, including the head, had been disturbed by F.2910.



*Figure 15: FT's under excavation, looking S from FT 1*

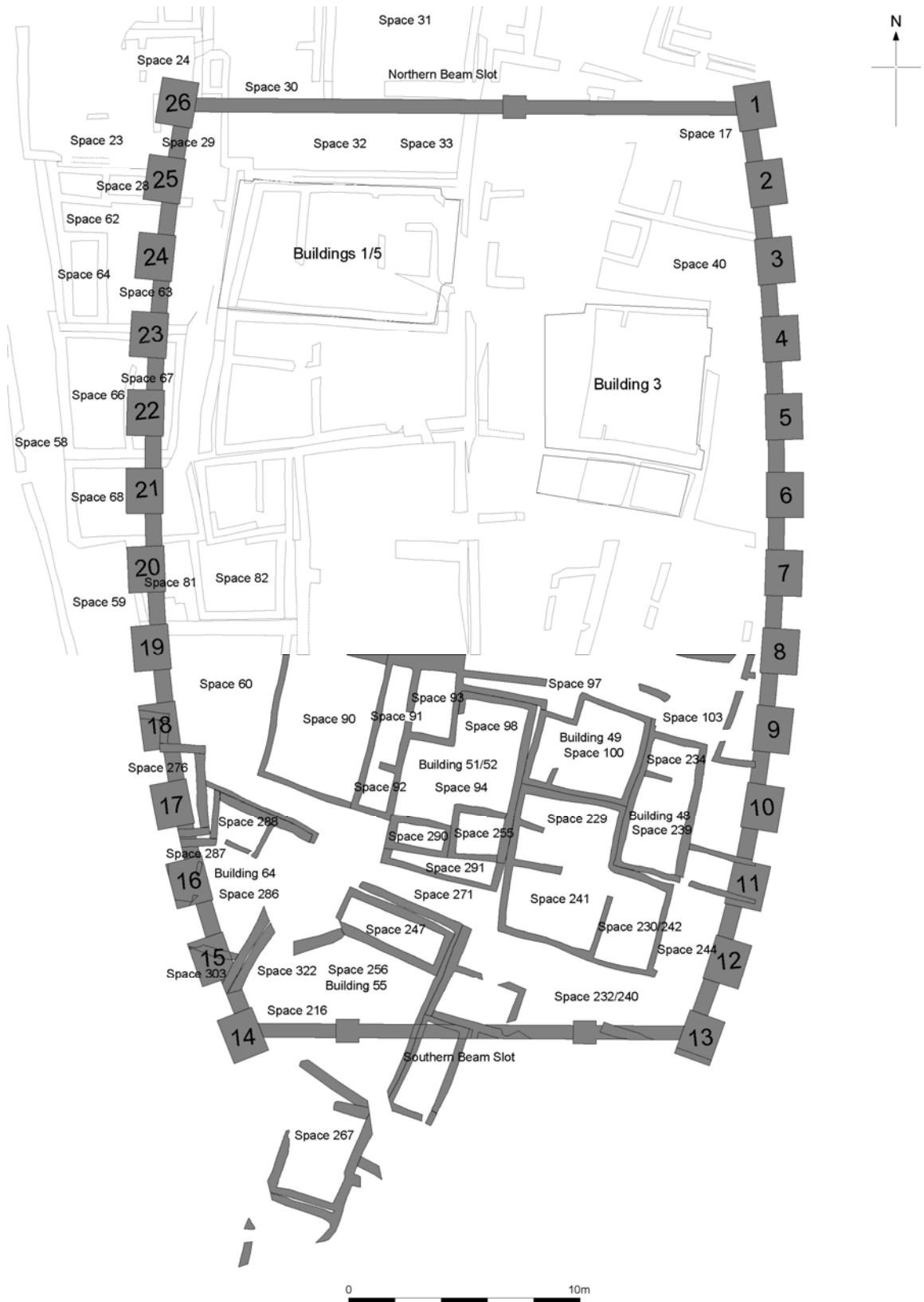


Figure 16: Location of Foundation Trenches in relation to buildings excavated

A third burial F.2839 consisted of the partially articulated torso of a juvenile (15499), as well as a number of disarticulated bones. The remains were within cut (15498) and filled by (15497).

Burial F.2910 truncated the three burials described above. This later interment was within a sub-circular cut (15925). The grave contained a large quantity of semi-articulated and disarticulated human bone recorded as: (16064), (16065), (16066), (16067), (16068), (16069) and (16079), which were probably associated with the early burials through



Figure 17: Inter-locking bone beads

which this grave cuts. Some of the disarticulated long bones had been placed neatly alongside the later burial. The grave contained a single crouched articulated adult female (15924). This burial is of particular interest due to the grave goods present. A necklace of small black beads and larger blue beads was placed around the individual's neck 15924.X1, 15924.X5). A second necklace, constructed of interlocking bone beads carved into an hourglass shape (Figure 17), appears to have placed on the upper body 15924.X2, 15924.X3, 15924.X4). The grave was filled by a deposit rich in crushed mudbrick (15923).

Burial F.3848, which also truncated F.2839, consisted of a tightly flexed adult skeleton (15649). The left leg and right tibia were missing, possibly removed prior to burial or, given how close to the surface the burial was, disturbed by later activity or erosion. The burial was within a sub-circular cut (15648), which contained fill (15647). Directly over this burial, a second burial F.2846 contained the disturbed ribcage and lower limbs of skeleton (15640). This was recorded as a later burial within grave cut (15639), however it is not obvious what caused this degree of truncation to the skeleton. It is possible that skeleton (15640) was in fact an early interment, disturbed by F.3848, and the re-deposited on top of the latest burial.

Burial F.2823 was within cut (15071) and consisted of a primary tightly flexed skeleton (15435). The re-deposited remains of earlier burials sealed the primary interment; the semi articulated remains of an older adult (15405) and the skull, cervical vertebrae and scapula of a juvenile (15070). The grave was filled by mid-brown crushed mudbrick (15069).

A final burial F.2834 consisted of juvenile skeleton (15467) within a better defined cut (15468). The grave was filled by (15466) and truncated to the north by a later

grave cut. This later grave was beyond the limit of the trench and was not excavated, however iron nails were present within its fill.

A small area of badly degraded floors (15065) survived in the southwest corner of the Trench 1. The deposit measured 1.80m by 1.60m and may have represented the remains of a platform, to the north and east the deposit was completely eroded. This was sealed by further very patchy floor deposits (15056). These were too badly degraded to fully interpret their function, however they clearly represent internal surfaces within a Neolithic house, recorded in the scrape as Space 17. This building would have been associated with the burials described above.

## **Foundation Trench 2**

2.00m NS x 1.80m EW. Total depth excavated – 1.33m  
SW Coordinate – 1059.82 / 1194.48. Formation Level – 1010.27m AD

The earliest feature recorded in Trench 2 was a N-S aligned mud brick wall F.3008 (see Figure 8). This extended below the foundation level required in the trench and so was not fully exposed. To the east of the wall a small section of crushed mudbrick fill (16315) was excavated. This appeared to be associated with a second mudbrick wall F.3032 that ran parallel to F.3008, and may represent a contemporary building. Interpretation was difficult however as this feature extended beyond the limit of the trench.

On the western, internal, face of feature F.3008 the removal of a vertical post had left a scar, revealing the underlying brick and mortar. Added to the mudbrick, (16085), and mortar, (16086), core of the wall an addition moulded feature F.3035 was added on the internal, western face of the wall. This involved building up the lower part of the wall with packing material and also the creation of two niches.

To the south of the post scar a rectangular niche was plastered on the inside with white clay (16084). The niche was abandoned at some point and filled by firm brown clay silt (16083), which contained occasional plaster fragments and charcoal. The feature was finally plastered over with numerous layers of white plaster (16082). The top of the surviving plaster was painted with a band of red paint up to 50mm wide.

To the north of the post scar the upper part of F.3035 was covered with multiple layers of white plaster (16081). A small amount of red paint was visible in section and this may suggest a red band, similar to that seen to the south, was present on some layers of plaster. Below this white area of wall was a second recessed niche, the inside of which was painted red. This was again abandoned at some point, filled by (16080), and repeatedly covered with red painted plaster (16079).

Wall F.3008 was stratigraphically below a thick layer of friable brown crushed mudbrick room fill (15455)/16314), associated with the abandonment of this building, and presumably intended to provide a level building platform. Built over wall F.3008, but set 0.10m to the east, a second mudbrick wall F.2824 representing a later building which used the earlier wall as a foundation. This wall defines the eastern extent of Space 17 and was constructed of silty brown mudbrick (15439) and mid grey mortar (15438).

A post retrieval pit had left a scar on the wall, to the south of which the wall was covered with white plaster (15440) and to the north with red painted plaster (15424). Abutting both wall and post a bench F.2825 was constructed with a plaster core and at least one major alteration, when it was enlarged using mid brown clay (15430) as a packing material. The bench and the vertical post acted as a divide, in both wall decoration described above and floor construction and use. To the south of the bench, associated with a white wall, were a series of thin brown clay floors with grey ashy occupation deposits and occasional white plaster floors (15409). To the north, associated with the red painted wall, the floors consisted of more substantial white plaster and mid brown make up (15408).



*Figure 18: F.3010, disarticulated and semi-articulated human bone*

Cutting the northern area of ‘cleaner’ floors were a number of burials, these represented a continuation of the burial sequence recorded in Trench 1. In the beam slot between Trenches 1 and 2 a substantial multiple burial, F.3010, contained a large quantity of disarticulated and semi-articulated human bone (Figure 18). The grave was filled by (16129), and several layers of disarticulated bone sealed the primary internments. A number of disarticulated skulls recorded were as (16130), (16300), (16301), (16302), (16303), (16305), (16308) and partially truncated torsos as (16196) and (16304).

The primary burials, in the base of the grave cut consisted of a crouched adult burial (16132). This skeleton was lying on its left side with black bead bracelets on both wrists 16132.X1, 16132.X2, 16132.X4) and a single piece of obsidian 16132.X3. A second skeleton (16131) was an infant burial, again with bracelets on both wrists 16131.X1, 16131.X2, 16131.X3, 16131.X4. The skeleton was on its back with the left hand placed on the pelvis and both legs bent at the knee. A third articulated skeleton (16308) was tightly flexed and placed in the grave on its back. Several plaster beads (16308.X1) were recovered from around the left proximal tibia and a bone spatula

with blue pigment 16308.X2 was found directly to the north of the skeleton (see Conservation, This report).

It was unclear whether F.3025 represented an early burial or was in fact part of the multiple burial F.3010. This interment consisted of flexed adult skeleton (16309) with a cluster of grave goods (16133) associated with the burial. The grave goods consisted of black beads 16309.X1), a bone button or buckle? 16309.X2 (see Worked Bone, This Report), a bone object 16309.X3, a bone point 16309.X4 and yellow ochre 16309.X5 (Figure 19). Directly to the north, skeleton (16137) may have been in the same grave cut. The tightly flexed adult skeleton was missing its skull, it was not obvious if this had been deliberately removed or truncated by a later grave.



Burial F.2836 was within cut (15483) and contained a primary burial flexed (15482) and was filled by (15481). Burial F.2836 was sealed by a double burial F.2843. This contained disarticulated bone (15672), which included a skull and flexed skeletons (15671) and (15621). This final grave was filled by friable sandy silt (15613).



*Figure 19: Skeleton (16309) with yellow pigment (?) and cluster of artefacts at neck*

The abandonment phase of Space 17 was represented by an oval post retrieval pit F.2822. The pit (15051) contained a primary soft brown fill (15082), a secondary dark grey fill (15072), and a final fill loose ashy fill (15050). All three fills contained significant quantities of charcoal, animal bone and fire-cracked rocks. There was however, no evidence of in-situ burning and this material was re-deposited, possibly from a cooking installation. The bone did not consist of the large, high yield limbs normally associated with 'feasting' deposits, but this feature does appear to have been deliberately deposited. This impression is reinforced by the presence of a large horn core, 15036.X1, directly on top of the tertiary fill.

The post retrieval pit was sealed by firm mid brown clay silt (15036) with frequent crushed mud brick inclusions, which possibly represents the backfilling of Space 17. This was in turn sealed by the same loose excavation spoil (15015), which was recorded in Trench 1.

The sequence in the beam slot linking FT 1 and 2 was a continuation of deposits recorded in the FT's to either side.

#### **Discussion of Trenches 1 and 2:**

The deposits encountered in Foundation Trenches 1 and 2, and in the beam slot excavated between them, are of considerable interest. The eastern extent of a heavily



eroded building, Space 17, was defined by wall F.2824. A vertical post and bench would have divided an unpainted section of wall from one with evidence of frequent application of layers of red paint. This division was reflected by a division of floors with clean plaster floors to the north and dirtier ashy floors to the south. The pit left when the post was removed was filled with fire cracked stone and animal bones and charcoal, clearly the results of a cooking event. Although not thought to represent a 'feasting deposit' the deliberate deposition of this material is clearly significant in some way.

The large number of individuals buried under, and therefore presumed to be associated with, this building are also of interest. The thickness of plaster surviving on the base of wall F.2824 indicated the building was relatively long lived and the number of inter-cutting graves supports this assumption. Not only were the burials numerous, but several contained grave goods. Grave goods are not commonly associated with adult burials, and the presence of obsidian tools in a grave context is particularly unusual. The burials also contained numerous items of personal adornment, including jewellery and pigment of various colours. No doubt further analysis of the burials will produce very interesting results.

Despite these anomalies the building followed a typical layout. A bench divided 'cleaner' white floors from 'dirtier' floors to the south, these southern floors also showed evidence of more intense use and repair. The northern area of the building appears to have been much more elaborately decorated with evidence of red paint on the surviving wall in this area. Trench 1 would have been located in the NE corner of Space 17; the ephemeral hints of eroded platforms were recorded in this area. The occurrence of burials, below platforms in this NE area of the building is a common feature of the site.

The earlier wall F.3008 provided a tantalising hint of what lay below Space 17. This appeared to conform to a similar floor plan as the overlying Space 17 and but was even more elaborate, with moulded niches and multiple applications of red paint.

### **Beam Slot 2/3**

The sequence in the beam slot linking FT's 2 and 3 confirmed the relationship of wall F.3008 and room fill (15455)/16314) associated with the abandonment of this building, and the construction of the later wall F.2824.

### **Foundation Trench 3 – Lisa Yeomans**

2.00m NS x 1.80m EW. Total depth excavated 1.81m  
SW Coordinate - 1060.14 / 1191.13. Formation Level 1010.39

Only one phase of architecture was found in Trench 3 that had to be excavated. A large wall (F.2827) measuring 0.58m in width was aligned N-S and abutted an E-W wall (F.2829), only just visible in the NW corner of the foundation trench, which is probably the same as walls F.3008/2824 in beam slot 2/3. The western and southern sides of these walls respectively were coated with less than 10mm of plaster (15441). The walls formed the NE corner of Space 40. Formation level for the foundation is above the floor level of Space 40 and was, therefore, not reached. A small area of room-fill (15449) was excavated against the western limit of excavation. To the east of the building was a series of external demolition dumps (15406/15415/15419) with

a large cattle horncore (15406.x1) recovered from the uppermost of these layers. Just within the foundation trench was the corner of an E-W aligned wall running beyond eastern limit of the foundation trench. It is impossible to relate this feature to any other walls in the area as it extends beyond the scraped and planned part of the mound.

#### **Beam Slot 3/4**

The N-S wall (F.2827) recorded in Trench 3 continued into beam slot 3/4 joining E-W wall (F.2902), which was excavated in Trench 4. Floor level was not reached in the beam slot excavated down to 1010.99m AD. To the east of the N-S wall room-fill (14999) was excavated to the formation level.

#### **Foundation Trench 4 – Daniel Eddisford**

2.00m NS x 1.80m EW. Total depth excavated – c.1.29m  
SW Coordinate – 1060.35 / 1187.77. Formation Level – 1010.51m

This trench is located in the 4040 Area, but was outside the limits of the 1994 scrape. Initially excavated to remove the topsoil, there were no features apparent in the initial pre-excitation stage.

The limit of excavation of this trench prevented the identification of the earliest phases of the N-S F.2909; (15906), (15907) and E-W F.2902; (15667), (15668) walls, which met in the NW corner of the trench and were built contemporaneously. These two walls were without plaster, which may imply that they are foundation walls, below the level of occupation. They were consequently filled with a blocky, orange construction fill (15927), then midden (15675). This midden was cut (15926) into the adjoining E-W running wall, but this was only revealed upon examination of the east-facing section. The cut was filled (15927), but the shape of the cut and fill were not observed at the time of excavation.

Adjoining the E-W F.2902 wall were two overlapping construction-related episodes. An orange, sandy fill (15667) was sloping up to meet the wall at 1010.93m AD, which was overlaid at the western extent by a plaster platform (15665), which rose 50mm above the fill (15667) and abutted the E-W F.2902 wall. This rectangular slab was sealed by mudbrick wall F.2901; (15663), (15664) and was apparently constructed to stabilize the wall over the underlying soft midden material.

Also overlying midden layer (15675) were a series of very truncated floors (15660) which appeared at the western extent of the trench. There were 6 surface layers; grey make-up, red-brown make-up, red-brown, black occupation surface, red-brown make-up, then a white plaster layer at the depth of 1011.04. These floors were covered by another layer of construction fill (15651), which was heavily intruded by animal burrows, root action, and general erosion. Overlying this fill was a single course of mudbrick F.2849; (15651), (15655) which was also heavily eroded and ambiguous in turn sealed by a construction-type fill (15651) and midden layers (15675) which were cut by the late burial F.2826.

This foundation trench occurred within two construction phases; one, earlier phase with foundation walls F.2902 and F.2909, filled in with construction materials and



midden, then truncated floors (15660), then a severely truncated later construction phase associated with the single course of bricks F.2849.

#### **Beam Slot 4/5**

Joining FT's 4 and 5 the sequence in the beam slot consisted of the upper two courses of a wall F.3009 (brick (16078), mortar (16087)), abutted by plaster floors (16061) which lie over midden (16062) and which extend to FT 4 as (15660).

#### **Foundation Trench 5 – Anies Hassan**

2.00m NS x 1.80m EW. Total depth excavated – 1.58m  
SW Coordinate – 1060.46 / 1184.38. Formation Level – 1010.62m

The sequence starts at formation level with two walls: F.2835 and F.2837. It is likely that F.2837 pre-dates wall F.2835 for reasons that will be described later. It appears that F.2835, an east-west aligned mudbrick wall, comprising of units (15484) (mudbricks) and (15485) (mortar), is somewhat anomalous to this area of the site in that the mortar, having a light cream, marl rich consistency, has mainly only been observed in buildings in the South Area (but also noted in FT 7). The full dimensions of the mudbricks remains unknown as they were only partially exposed and excavated and extending into the west of the foundation trench (about 0.25m) but appeared to be composed of a light yellowish brown, fine sandy silt matrix with little or no inclusions. F.2835 whilst not being exposed to its foundations was exposed to a greater extent than F.2837, aligned in a rough North-South orientation for the length of the trench and had slumped heavily to the east. The mudbricks (15475) consisted of a firm light yellowish brown fine sandy silt measuring 0.6m x 0.4m x 60mm) and the mortar (15476) a firm dark greyish brown clayey silt.

Banked up against the east facing side of wall F.2832 was what appeared to be a midden deposit (15602). This was only just exposed within the L.O.E but consisted of firm dark brownish grey fine sandy/ashy silt. It is not known what overlay this deposit as the steep incline of the F.2832 continued in to the eastern L.O.E of the foundation trench. Banked up against F.2835 and completely sealing wall F.2837 was another midden deposit (15437) sloping down from the west to east. This was very similar to (15602), consisting of a firm to friable dark brownish grey sandy/ashy silt. This deposit was fairly rich in artefacts: moderate bone, stone and clay ball fragments and occasional obsidian as well as two small clay figurines. One of these was almost complete and appeared to be some kind of phallus.

Cut in to the top of wall F.2835 was wall F.2832, to the very east of the trench and continuing in to the eastern L.O.E, consisting of foundation cut (15474), back-fill (15473) and the wall itself, consisting of mudbricks (15457) and mortar (15458) and, as with F.2835, F.2832 was aligned in a rough north-south orientation. The foundation cut (15474) had a sharp to rounded top break of slope with vertical to undercut sides, sharp base break of slope and a flat base. The fill of cut (15473) was a firm dark greyish brown fine sandy silt. Mudbricks (15457) consisted of a firm mid yellowish red clayey silt measuring up to 0.60m long and up to c.0.10m thick with an unknown width (due to the L.O.E). The mortar (15458) consisted of a firm mid greyish brown clayey silt, up to c.20mm thick.

To the west of wall F.2832 wall F.2831, aligned in a north-south orientation, was set on to the inclined west facing wall of F.2835 but also cut in to midden (15437). So,

whilst being physically above wall F.2835 was stratigraphically above midden (15437). F.2831 consisted of foundation cut (15601). The lowest 3 courses of bricks (15450) and corresponding mortar (15451) were very different in consistency to the top four courses, which comprised of mudbricks (15486) and mortar (15487). It seems that the wall was trench built and so there was no backfill observed in the cut (which was identified in section, not in plan). It is likely that the top four courses represent a rebuild but until larger scale excavation is undertaken in this area one feature number was allocated to the wall as a whole, for the sake of simplicity. The lowest mudbricks (15450) measured 0.6m x 0.40m x 60mm, consisting of firm light yellowish brown sandy silt and the corresponding mortar (15451) measured up to 2mm thick and consisted of firm dark greyish brown clayey silt. It is important to note here that (15450) and (15451) were the same as the mudbrick and mortar in slumped wall F.2835. The mudbricks in the top four course of wall F.2831 were very different to the lower ones and were made from firm mid brownish grey sandy silt and although their length and width were the same as (15050) they were thicker at up to c.0.10m. As with the brick, the mortar used in the top four courses differed from that used at the bottom consisting of a firm, light greyish white clayey silt.

Filling the gap between walls F.2832 and F.2831 was back-fill (15472), a firm mid greyish brown fine sandy silt containing moderate bone and ceramic/clay artefacts. The gap between wall F.2831 to the western L.O.E was room-fill/back-fill (15026), consisting of a firm light greyish brown fine sandy silt containing occasional bone and stone as well as a fine obsidian point. Sealing all these deposits was a thick layer of top-soil (15017) sloping down to the northeast.

Cutting into (15017) was burial F.2804 (see above).

### **Beam Slot 5/6**

A sequence of three walls were represented in the beam slot linking FT's 5 and 6. A N-S wall F.3013 lay to the east with an associated fill between wall (16104) against the face of a parallel wall F.3016 in the eastern section To the north was wall F.3014, which was not traced in FT 5 and may be part of a later structure. At the southern edge was wall F3015 same as F.2809 from FT 6. Fills and midden deposits lay within the walls from bottom to top (16103), (16098), (16093). Sealing the Neolithic horizon was mixed late overburden (16053) which was cut by a late infant burial F.3007.

### **Foundation Trench 6 – Lisa Yeomans**

2.00m NS x 1.80m EW. Total depth excavated 1.57m  
SW Coordinate – 1060.48/1180.99. Formation Level - 1010.73

Trench 6 was located just to the east of the area scraped and planned in the initial investigations of the area in the early 90's. The lowest structural evidence in the sequence was the SE corner of an E-W aligned wall (F.2810). No internal associated deposits were identified within the trench and therefore this wall must relate to a building extending to the north. Midden surrounding the wall to the east and south provides some indication of the use of the surrounding area.

A change in the layout of the buildings occurred after the abandonment of the building represented in Foundation Trench 6 by wall F.2810. An E-W wall (F.2811) and a N-S wall (F.2812) were constructed over the midden to form the NE corner of

a building. A compact orange brown clay (15068) formed the internal surface to this building. The walls of the building were relatively narrow (0.21-0.22m) and unplastered. These walls survived up to 0.98m in height. Outside the eastern wall a midden (15064) deposit built up. This midden deposit was sealed by a layer of building debris (15053). Inside the building layers of room-fill covered the floor (15038/15052).

The uppermost surviving phase of architectural remains was an E-W aligned wall (F.2809) running along the northern limit of the foundation trench which was cut by the later grave (F.2208).

**Beam Slot 6/7**

The north-south wall (F.2812) excavated in Foundation Trench 6 continued in beam slot 6/7 with a southern return (F.2773). This southern return ran into the western limit of excavation and was built adjacent to wall F.2828 (see Foundation Trench 7). The floors associated with the walls were not reached in beam slot 6/7 which was excavated down to a level of 1011.27m AD.

**Foundation Trench 7 – Simon McCann**

2.00m NS x 1.80m EW. Total depth excavated – c.1.37m  
SW Coordinate – 1060.40 / 1177.60. Formation Level – 1010.83m

Removal of overburden and topsoil revealed archaeological deposits which were excavated to formation level revealing three walls and associated fills. The sequence from earliest to latest is as follows.

**Wall F.2840**



*Figure 20: Wall F.2840 after excavation.*

This wall is the earliest and runs N-S for approximately 1.8m before turning at its northern end to the east where it continues for 1.2m (Figure 20). It consists of 8 courses of mud brick incorporating 3 brick types and 2 mortar types, both brick and mortar types overlap indicating a single build utilising differing materials.

The lower 4 courses are of grey brick (15611), very familiar in the South Area, Levels VIII or IX. These have not been encountered in the 4040 Area before which is generally considered to consist of later Levels.

The east, south and north faces of this 'L-shaped' wall are plastered and part of the NW corner, however the western face is un-plastered. This suggests an internal wall. Any associated floors are below formation level.

As the building to which F.2840 belongs goes out of use, F.2841 a N-S wall is built to the west side of F.2840. This appears to be constructed prior to any infilling, at least of the area to the northern side of F.2840, where the infill (15641) abuts F.2841. Room fills (15456) and (15459) fill the space to the southeast of F.2840.

#### **Discussion of wall F.2840**

The variety of materials used in the construction of this wall, particularly the grey bricks are of interest. Perhaps this is just a practical reuse of leftover materials or

maybe it represents something more deliberate or symbolic. Is this a sourcing of specific materials in order to reference specific places, buildings, people, ancestors, and times or indeed to appropriate or manipulate these meanings? Are these bricks really from a Level VIII/IX building or are they replicas? Is it possible that there was an extremely long lived structure still extant to some degree which was used as a source or even incorporated into the building which F.2840 is part of?

#### **Wall F.2841**

This is a N-S wall of seven courses of 2 mud brick types running along the western Limit of Excavation (L.O.E). The bricks are bonded by a single mortar type up to 70mm thick in places, which is unusual for this level. The northern end of the wall becomes poorly defined at the L.O.E and it would appear that it turns west here into the section.

Wall F.2841 is built close and parallel to F.2840 and there is only a narrow gap between them. It appears that as F.2840 goes out of use, F.2841 is constructed. Room fill (15641) is then dumped into the space north of F.2840 and butts up against F.2841. This illustrates that construction of the new wall F.2841 was prior to any infilling of the unoccupied building. This is reinforced by the plaster on the north face of F.2840, (15646), which lips around the corner into the gap between the walls and presumably originally down the western face. So it is clear that F.2840 is earlier than F.2841. Any associated fills or floors of F.2841 remain unexcavated beyond the western L.O.E.

#### **Wall F.2828**

An E-W wall of 4 courses lies within foundation cut (15433) and runs along the northern L.O.E of the trench. The foundation cut for the wall is a shallow concave sided, flat bottomed trench 0.17m deep and with a measurable width of 0.73m. The base of the cut incorporates a single mud brick within the fill to firm up the only part of the cut which is not cut into or resting on mud brick.

The cut truncates the northern part of F.2841 and overlies the E-W portion of F.2840. It is therefore the latest feature within the trench.

Several weathered fills with no clear surfaces abutted the wall to the south, potentially therefore this is the southern wall of a building extending to the north.

**Discussion**

FT 7 consists of a sequence of walls, representing potentially 3 buildings or 2 if F.2841 is a remodelling of F.2840. This is difficult to say due to the limited nature of the archaeology exposed in the foundation trenches. No obvious surfaces/ floors or internal features were encountered. The most notable aspect from this trench is the grey bricks (15611) within wall F.2840, which appear to be out of place and time.

**Beam Slot 7/8**

Linking Trench 7 to Trench 8 to the south in Beam slot 7/8 the removal of overburden and topsoil revealed the continuation of archaeological deposits from Foundation Trenches 7 and 8. Weathered fills (16063) and (16070) were removed revealing walls F.2840 and F.2806 with room fill (16075) separating them. These were excavated to formation.

The continuation of N-S wall F.2840 ran from the north (FT 7) for 0.7m into the western L.O.E. Wall F.2806, another N-S wall continued from the south (FT 8) along the eastern L.O.E for 0.9m where it ended. There was no relationship evident between these walls.

FT8	BS7/8	FT7
	15015 (overburden)	
	15410 (topsoil)	
15039	16063	15425
15041	16070	15459
15060	16075	15465
15061		
15062		
F.2806		F.2840

*Table 1: showing units from Beam slot Tr7/8 and their corresponding units from Trenches 7 and 8.*

**Foundation Trench 8 – Anies Hassan**

2.00m NS x 1.80m EW. Total depth excavated – c.1.27m  
 SW Coordinate – 1060.20 / 1174.21. Formation Level – 1010.93m

The earliest identifiable unit in this trench was roomfill (15414), a firm mid greyish fine sandy silt containing very occasional bone, pot, obsidian and stone. This continued beyond the formation horizon. Roomfill (15414) was cut by foundation trench (15448). This was not observed in plan but observed in the south facing section. Set in to (15448) were walls F.2820 and F.2821, which formed a ‘double wall’ like those defining the boundaries between buildings. They were both laid in a north-south orientation and extended from the northern L.O.E continuing into the eastern L.O.E with the butt ending roughly 1.0m south from this. The bricks in the western wall F.2820 measured 1.0m x 0.32m x 80mm and were formed from firm light greyish brown fine sandy silt. The mortar was up to 20mm thick and consisted of firm, mid brownish grey sandy silt. There was only one brick visible within the L.O.E and no mortar. This brick (15097) was made from firm, light yellowish brown sandy silt. Another ‘double wall’ directly overlaid F.2820 and F.2821 but extended across

the length of the trench in a N-S direction and as with F.2820 was only one course high with the eastern extent of the wall continuing into the eastern L.O.E. The western wall, F.2813, was constructed with very firm, light yellowish brown, sandy silt mudbricks (15077) (measuring 1.0m x 0.40m x 80mm) and firm, light brownish grey, sandy silt mortar (15078) (measuring 20mm thick). The eastern wall, F.2814, was constructed using very firm, light yellowish brown, sandy silt mudbricks (15079) (measuring up to c.80mm thick but undeterminable length and width) and firm, light brownish grey, sandy silt mortar (15080) (measuring up to c.20mm thick). To account for the different lengths of the wall – one extending across the length of the trench and the other only extending 1.0m from the northern L.O.E I ‘created’ a second construction cut, (15449), with the assumption that this cut/truncated the lower wall for the construction of the upper. It is also possible, and I feel now more likely, that the upper and lower courses represent only one ‘double wall’, not two, where the foundation was stepped.

Founded directly on the walls described above was another ‘double wall’, again aligned in a N-S orientation but slightly more to the west, running through the centre of the trench. The western wall F.2806 stood six courses high where its western face was slightly battered. The bricks (15042) used to construct F.2806 measured 1.8m x 0.30m x 90mm and were made from very firm, light yellowish brown sandy silt. The corresponding mortar (15043) was a very firm/compact, light brownish grey, sandy silt up to 30mm thick. The bricks (15044) used in the eastern wall F.2807 were of the same fabric as (15042) but were slightly smaller. Again, the mortar (15045) used in this wall was the same as that used in the western wall F.2806. The eastern wall F.2807 did not stand as high with only four and a half courses surviving.

Banked up against wall F.2807 were two deposits, the lowest of which was (15063), a firm mid greyish sandy silt measuring up to 0.40m thick and extending the length of the trench (N-S). Overlying this was (15046), a firm mid brownish grey fine sandy silt measuring up to c0.60m thick. I can only assume that these were general make-up/room-fill deposits as no floor surfaces were observed.

To the west of the trench, banked up against wall F.2806 was a slightly more complex series of deposits with a possible floor surface. The lowest of these was (15413), a firm mid brownish grey sandy silt containing very occasional pot, stone and bone and measuring up to 0.40m thick sloping down slightly to the south. Overlying this was (15062), a firm mid greyish brown sandy silt make-up deposit, up to c.0.50m thick and sloping down slightly to the south. Overlying this was what may have been a preparation/levelling deposit (15061), a firm mid greyish brown sandy silt, containing occasional stone, pot and bone, up to c.0.24m thick and sloping down slightly to the south. Overlying (15061) was what may have been a rough trample/floor surface (15060), a light yellowish brown silty clay measuring up to 60mm thick. As with the underlying deposits (15060) sloped down slightly to the south. Sealing (15060) was a room-fill type deposit (15041), a firm mid greyish brown sandy silt containing occasional bone and pot fragments, measuring up to c.0.30m thick and was cut by what appeared to be a linear cut (15040) within the L.O.E. The sides of the cut seemed to be irregular and the base flat and fairly level running for the length of the trench (from N – S) although the western extent of the cut was out of the L.O.E. The function of this unit remains unclear due to the limited exposure although it is possible that it is a foundation cut where the wall had been robbed or where the fill

(15039) is the backfill. (15039) was a light yellowish brown sandy silt containing very occasional bone and pot.

Sealing all these deposits was (15029) which was top soil/eroded deposits. This measured up to c.0.25m thick, sloping down to the east and consisted of a firm to friable light greyish brown fine sandy silt. The sequence finished with the modern back-fill (15015) created during the excavation of the 4040 Area

### **Beam Slot 8/9 – Marina Lizarralde**

The earliest roomfill deposit excavated in beam slot joining FT 8 to north and FT 9 to the south was (15496) with a wall F.2806 constructed over this room fill (15496). The wall was excavated in both Trench 8 and 9, the bricks (15463) were red and silty, while the mortar (15464) was grey. Sealing the wall was room fill (16122) which is the same as ((15478) FT 9)), and was a 22cm deep mid-brown silty clay with rare bone over which lay Room fill layer (16055) is the same as (15469) in Trench 9, and was 20cm deep. This was a friable silty clay that contained occasional stone and bone, and rare obsidian. Finally cut by Late burial F.3006 and sealed by (16052), which is the same as (15407) in Trench 9.

### **Foundation Trench 9**

2.00m NS x 1.80m EW. Total depth excavated – 0.82m  
SW Coordinate – 1059.86 / 1170.83. Formation Level – 1011.03m

At formation horizon in FT 9 was infill layer (15666) through which the top of an oven F.2907 was seen. The oven consisting of wall (15681). seems to have been heavily truncated as only a bit of the oven wall was found in the south eastern part of the trench. Sealing the oven was room fill (15666), which had lots of particularly burnt patches and lots of burnt construction materials and contained frequent animal bone; occasional clay balls, stone; very occasional obsidian, human bone. Sealing (15666), was fill (15496). Fill (15496) was a dark and ashy, though still clayey like most room fills. The layer also had human bones of an individual between 5-7 spread throughout the entirety of the trench, completely disarticulated and not even on the same elevation. It also contained frequent animal bone, human bone, burnt building material; occasional stone, pottery obsidian, clayball. Constructed over this roomfill was double wall F.2806 and F. 2807, which was visible in the section of FT 8. The walls ended at the same level, thus, with the small view of them in the trench, the stratigraphic relation was hard to tell. The western wall F.2806 turned to the east, while it is hard to tell what happened with the eastern wall F.2807. The bricks (15463) of wall F.2806 were a similar shade (orange-brown) and texture (firm clay) as the bricks (15461) in wall F.2807. The mortar (15464) of wall F.2806 was a similar shade (a light grayish brown) and texture (clayey) as the mortar (15462) in wall F.2807. Both walls were 0.35m in height, and had 4 coursings of brick. The fill on the other side of wall F.2807 was not given a unit number as that there was only a sliver of it exposed in the foundation trench. There was no fill between walls.

Sealing the walls a 0.14m thick layer of room fill (15478) contained occasional animal bone, and human bone. Above was a red clayey layer noted in section, 60mm thick, which did not spread throughout the entirety of the trench and room fill (15469) was probably mud brick crush, very sterile containing very occasional shell, stone, and bone. This was in turn sealed by midden (15407) which was very eroded and

dried out due to being so close to the surface, sloping downward to the east. This midden was 20mm thick, containing very frequent bone; occasional stone, obsidian, clay ball; very occasional figurine, and pottery. It was cut by the late burial F.2845

### **Beam Slot 9/10**

Located in the centre of beam slot between FT 9/10 was an E-W aligned wall F.3002 which represents the south wall of a structure to which oven F.2097 in FT 9 belongs. . To the north the of the wall the sequence was the same as represented in FT 9 with room fill at the base (16045) overlain by amorphous layers of degraded and eroded mudbrick (from bottom to top (16044), (16043) and (16042). To the south of the wall at formation horizon was the top of a parallel wall F.3003. An between wall fill (16047) was rich in stone artefacts but hardly excavated due to the formation horizon being reached and to the south was midden (16046), the same as (15950) in FT 10. Sealing the earlier midden and wall F.3003 was a later midden (16039) recorded in FT 10 as (15400).

### **Foundation Trench 10 - Marina Lizarralde**

2.00m NS x 1.80m EW. Total depth excavated – 0.87m  
SW Coordinate – 1059.36 / 1167.48. Formation Level – 1011.13m

The basal layer (15950) at formation horizon sloped to the south. The fill was very dark and ashy, but more firm, clayey, and not lensed like midden and contained frequent animal bones; occasional stone; very occasional obsidian, shell, worked bone, human bone, clay ball, and iron. The human bone is likely to have been from late skeleton (15607) (see late burials) brought though by the animal burrows, the same is likely for the iron pieces. The basal boundary of fill (15950) was never reached due reaching the formation level of FT10.

Sealing this fill was midden (15400) comprised of several lenses, and was 0.40m thick. The midden was silty, loose, and very ashy. There were lots of burned and unburned construction materials throughout the midden, as well as lots of large, unburned pieces of animal bone. The midden contained very frequent animal bones; occasional stone, obsidian, clay ball, figurines; very occasional shell, mini-clay balls, pottery, and beads.

Defined at the horizon of (15400) was late burial F.2844 which may also have cut through overlying midden (15407), and perhaps (15066) a 0.25m thick layer of what may have been topsoil, or very eroded midden, as it was rich in finds and had a mini-clay ball cluster (15099) in the south eastern corner of the trench. This layer thus may be the same as the midden (15407).

### **Beam Slot 10/11**

Joining FT 10 and 11, the sequence in the beam slot was midden (15914), same as (15400) in FT 10 and (15446) in FT 11. Towards the south was the heavily eroded remains of a wall, two courses in depth, and to the north the midden sequence was clipped by the eastern end of a late burial which was not excavated.

### **Foundation Trench 11 – James Taylor**

2.00m NS x 1.80m EW. Total depth excavated – 0.77m  
SW Coordinate – 1058.67 / 1164.16. Formation Level – 1011.23m



This trench is situated in a part of the 4040 Area where little has been done in terms of deep excavation, the area was shovel scraped in the 2003 season, before excavation continued to focus on the area to the immediate west in 2004. As such there is little available data for any of the visible features in the area, at the time of excavation. No obvious Unit, Feature, Space or Building numbers could be attributed to any of the visible archaeology, which was present in the trench. Situated a short distance east of Building 48, and to the north, external midden Space 244. The trench appeared to have three walls spanning its width in an alignment a little off east-west. One of these was located at the very north of the trench, the other two formed a double wall at the south. Cleaning revealed that only the southern two would appear to have any significant impact on this trench.

The earliest identifiable features in the trench were three walls, F.2818, F.2816 and F.2815/F.2819 respectively (Figure 21). Unfortunately formation level was reached before any of these walls could be associated with their appropriate floor surfaces or internal architecture. For the same reason it was impossible to phase these three walls properly because their foundation level was not reached. Nevertheless, several implied relationships could be established, based on the information that was available.



*Figure 21: Walls in FT 11*

Firstly the northernmost of these walls, F.2815/F.2819, comprised brick units (15083) and (15093) as well as mortar units (15084) and (15094), and was double numbered because when initially seen it was thought to be two walls, however excavation proved otherwise. The bricks were evenly coursed blocks of dense, pale yellow-brown slightly sandy silt (0.40m x 0.30m x 40mm), bonded with a very hard, dark grey brown, slightly silt clay bond (averaging 35-40mm thick). Despite being heavily truncated (only 40mm survived in the trench above formation level) by a later Late Roman/Byzantine burial F.2802, wall F.2815/F.2819 did have a clear, continuous, albeit very thin (c.5mm thick) white plaster skim on its northern face. Assuming that the plaster would have been on the internal face of the wall, one might suggest that it formed the southern boundary of a building situated mainly to the north of the trench.

This hypothesis is more or less correlated by the overlays of the area, which show an ill-defined structure to the north.

The other walls, F.2816 and F.2818 were both situated in the southern half of the trench. The northernmost of these, F.2816, close to the centre of the trench, survived to a height of c.0.72m above formation level and was c.0.40m wide. Surviving to 7 clear courses, including bricks units (15085) and (15091) and mortar units (15086) and (15092), this wall was also initially thought to be two, but excavation revealed that to be the result of differential drying of the top two courses. Most of the bricks in this wall were quite long (up to 0.74m x 0.30m x 0.10m), and were made from and bonded with similar materials to those in F.2815/F.2819, with a few notable 'greyer', sandier exceptions. This wall clearly formed a narrow external space with the aforementioned F.2815/F.2819.

Parallel to wall F.2816, some 0.30m south, was the third wall, F.2818, whose exact width was unclear because its centre ran along the southern limit of excavation. However it did survive to 10 courses, some 0.9m high and was actually visible in plan prior to any excavation. The coursing of this wall was very regular and brick (15089) and mortar (15090) morphology was very similar to F.2816, although the bricks were slightly darker and greyer.

Given the assumption that the northernmost wall F.2815 was the southern wall of a larger structure, it seemed fair to assume that these two walls were probably related to a building situated to the south, one or both of which must have formed the northern wall. Indeed it seems likely that one of these walls superseded the other and, although the phasing was ambiguous because of the limitations of having an imposed formation level, it seemed more likely that wall F.2816 may have been the earlier for two reasons. Firstly wall F.2816 had a lower height above formation level, being clearly sealed by external deposits after it went out of use, whilst wall F.2818 appeared to remain in use. Secondly, when the trench was finally reduced to formation level a very obvious well preserved Neolithic crouched burial (not numbered as it remains in situ just below formation level) was identified (skull and femur only) in a collapsed rodent hole in between the two walls. Although this burial was not excavated it was cleaned for in situ consolidation and conservation. This cleaning appeared to suggest that the burial cut respected the northern wall, F.2816, and may have extended underneath the southern wall, F.2818. This would suggest that the northern wall predated the southern one long enough for people to be buried adjacent to it, before the southern wall was built. This relationship IS NOT conclusive and is simply based upon observation, and would require further excavation to prove.

The void between these two walls was in-filled by a homogenous mid orange-brown sandy-silt deposit (crushed brick?)(15422), which contained frequent lumps of redeposited white 'marl' plaster, occasional bone and moderate-frequent charcoal flecks. This in-fill was clearly deliberate as it served at the foundation for a third wall F.2817. This wall, founded 0.39m above formation between the two aforementioned walls. There were four surviving courses in this wall, made of pale yellow brown silt bricks bonded with a clay mortar, which stood up to 0.40m high. This was the only other wall to be visible on the surface prior to excavation. This wall was clearly meant to supersede wall F.2816, and it was possible that this wall may have superseded the adjacent F.2818, hinting at three phases of structure, although only further excavation

could answer this question properly. The narrow gap, (c.80mm wide by c.0.55m deep) was filled with a bland, grey sandy silt, (15423).

At about the same stratigraphic level, as F.2817 is constructed, the space between walls F.2816 and F.2815/F.2819 was backfilled to the height of both walls with deliberate backfill (15059). However it is possible that this 'external' space actually remained open for a while after the construction of F.2817, since the earlier wall F.2816, shows clear evidence of bowing into this space, possibly as a direct result of having a new wall built effectively on top of it. This in-filling event may therefore have occurred to prevent subsidence. The fill, (15059) itself was effectively a composite layer consisting of pockets of brick debris, interspersed with frequent loose lenses of dark brown and black ash. Interestingly, the deposit contained a small cluster of larger animal bone debris (15081), concentrated against the face of wall F.2816. The in-fill of this space was not fully excavated as it extended below formation level. Sealing this deposit and lipping over the top of the northernmost wall, F.2815/F.2819, (c.0.60m N-S) was a black ash lens (15058), which, although thin in the west, sloped down from west to east, and got thicker (up to 0.12m thick) at its eastern side.

To the north of the northernmost wall, F.2815/F.2819, a very narrow strip of the fill of the room to the north of the limit of excavation protruded into the trench. It was only possible to excavate a little of this deposit because most of the 0.25m strip that was visible in plan in the trench was truncated, almost down to formation, by the later Late Roman/Byzantine burial F.2802. This room fill was a composite layer, which mostly consisted of dark lensed 'midden-like' deposit, characterized by ash containing charcoal and animal bone. It also contained clear lenses of building debris. If a more extensive sample of the deposit were available for excavation it seems likely that it would have actually comprised several more discreet layers. It seems likely that the deposit will reflect the sequence being excavated in the adjacent FT 10, which seems to be in the same space.

Sealing all of these deposits was a bland mid grey brown, very sandy, slightly clay silt, (15057) which was dried out and compacted c.1.00m wide (N-S) and 0.15m thick. This contained occasional marl plaster fragments and was presumably degraded building in-fill, possibly badly affected by bioturbation, due to its proximity to the surface of the mound. Above this was the highest Neolithic deposit identified in the trench, (15013), which was about 0.20m thick. This was almost identical to (15057) in composition but with a more orange hue (brick?). Again this might be interpreted as degraded and bioturbated room/space fill.

As already mentioned, visible even prior to excavation and truncating most of the deposits in this trench was a Late Roman/Byzantine burial, F.2802.

### **Beam Slot 11/12**

No excavations were necessary in the beam slot joining FT 11/12 as formation horizon had already been reached by the work conducted in the scrape of 2003.

### **Foundation Trench 12 – Daniel Eddisford**

2.00m NS x 1.80m EW. Total depth excavated – 0.31m

SW Coordinate – 1057.73 / 1160.88. Formation Level – 1011.34m

This trench is located in the 4040 Area. The 1994 scrape recorded FT12 as being within Space 244, identified as an area of midden.

A layer of firm mid-brown crushed mudbrick (15006) probably represents room fill and was sealed by loose ashy midden (15002). Both deposits extended beyond the limits of the trench, no X-finds were recovered from the trench.

This area may have been occupied by a building, which fell out of use, was backfilled and then reverted to a midden area.

### **Beam Slot 12/13**

No excavations were necessary in the beam slot joining FT 12/13 as formation horizon had already been reached by the work conducted in the scrape of 2003.

### **Foundation Trench 13 – Freya Sadarangani**

2.00m NS x 1.80m EW. Total depth excavated – 0.34m

SW Coordinate – 1056.51 / 1157.63. Formation Level – 1011.46m

A 0.20m thick room fill, composed of sandy clay silt was identified sloping downwards to the north-east, (15000), respecting the north face of east-west wall F.2800. Room fill (15000) sealed a 50mm thick spread of red burnt mudbrick crush, which sloped downward to the south-west, (15003). This unit was not completely bottomed since it continued down, exceeding the required formation level. This sealed a charcoal rich clay silt, also sloping downward to the southwest and also not completely excavated since formation level was reached, (15005).

Charcoal rich deposit (15005) was not completely revealed within the trench, so its relationship with wall F.2800 was not exposed. Unit (15003) however, respected the northern face of the wall, which was composed of light brown silty clay mudbricks, (15001) and mid grey silty clay mortar, (15004).

### **Foundation Trench 14 and further investigation of Building 55 – Lisa Yeomans**

1.80 NS x 1.60m EW. Total depth excavated – 0.21m

SW Coordinate – 1037.53 / 1157.30. Formation Level – 1012.64m AD

In order to excavate Trench 14 the block of stratigraphy left by the foundations for Space 216 in the late building (Building 41-see Archive Report 2006) had to be investigated since limited time in 2006 meant that this area had never been excavated to the west of the 2005 limit of excavation. It was suspected that underlying the midden in this block would be the remains of the western side of Building 55 which was never located in 2005 whilst double walls to the east of Building 64 recorded in 2006 were presumed to divide the two buildings (see Archive Reports 2005 & 2006).

Foundation Trench 14 is located between the southern ends of Buildings 64 and 55. The earliest phase of occupation excavated in the foundation trench was the upper parts of a N-S and an E-W wall forming the NE corner of a building continuing to the south and west. The walls of this building were plastered (14939) and may relate to evidence for buildings under the midden excavated in 2006 to the west (Space 280

Archive Report 2006). The floor level of the building was not reached as it was below the formation level for the foundation trench.

In the NE corner of the trench the southern wall of Building 55 was located and needed excavation. This removed a 1.95m stretch of the wall and its thick internal plaster on the north side. The corner of the foundation trench also cut a small segment of the dirty floor sequence within Building 55. These were excavated as one block (14930) with a micromorphology sample taken through the sequence. Below the dirty floors limited excavation of the room fill for a building under B.55 was also necessary.

Beyond the foundation trench the remaining part of Building 55 was excavated down to the phase of its abandonment. This showed that the double wall along the eastern side of Building 64 did divide the two buildings and that the western side of building 55 was a side room (Space 322). The north part of this side room had been truncated by one of the large midden pits excavated in 2006 and continued in 2007. In the southern preserved part of the side room a number of features were recorded but not excavated. Abutting the western wall (F.2754) is a bin (F.2755). A large post-retrieval pit is visible in the centre of the space and would have formed part of the divide between Spaces 256 and 322. Against the southern wall an additional post-retrieval pit is visible. The wall plaster on the southern wall (F.2045) lips around the scar in the wall but it seems that the post may have been removed before the end of the use of the building since a thick, non-laminated plaster had been applied to the wall where the post would have abutted the wall. There are also traces of a dismantled partition wall projecting from the post-retrieval pit at a right angle to the southern wall. All that remains of this wall, at the last phase of use of the building, is a series of floor layers clearly terminating around the wall scar. Interestingly, given the similar stratigraphic position of Building 55 and Building 59, the overall layout of the two buildings is very similar with the large main space and side room divided by a central post.

Presumably during or immediately after the occupation of Building 55 a midden deposit (14924) built up around the southwest corner of the building. Three figurines (14924.x3-5) and a worked piece of rib (14924.x1) were recovered from this unit.

After the abandonment of Building 55, the western Space 322 was infilled (14926) but a number of finds associated with the final use of the building were left on the floors. A couple of bone points (14926.x1 and 14926.x2) lay in different areas of the space. Against the southern wall was a concentration of fruit stones that do not need to be charred for preservation. These were found in association with a large pounding stone (14926.x3).

After the infilling of the Space 322, the area was used as a midden dump (14922) overlain with (14901) slumping into the area to the southwest of the building and midden layers (14900) sealing the infilling deposits. This deposit was only 5mm thick and directly below the topsoil.

#### **Beam Slot 14/15**

Formation horizon between FT 14 / 15 had already been exceeded from previous seasons excavations.

### **Foundation Trench 15 - James Taylor**

1.80 NS x 1.60m EW. Total depth excavated – 0.35m

SW Coordinate – 1036.16 / 1160.63. Formation Level – 1012.56m

This trench was situated in a part of the 4040 Area, which has been looked at pretty extensively in past seasons. In fact the trench sat aligned almost NW-SE across Spaces 287 and 303, in Building 64 (see Archive Report 2006) which had been excavated down to the last phase of occupation. Space 303 was the southernmost space identified in Building 64, which was a wedge shaped house, apparently squeezed in the gap left by the adjacent, more standard shaped structures. The floor levels reached in Space 303 were actually located some 0.15-0.20m below formation in the trench which meant that very little need to be done in terms of continued excavation here. The tiny corner of floor and room fill identified in the southeastern corner of Space 287 in the northern part of the trench, was the only bit of stratigraphy which required attention in this trench, apart from the dividing walls and eastern walls, outlined below (Figure 22).



*Figure 22: FT 15 situated over Spaces 287 and 303, in Building 64*

The earliest excavated feature in this trench in 2007 was a small patch of floor in the northeast corner, (15618). Although this floor had been exposed previously and was the first (or latest) identified floor surface in Space 287, defined by F.2242 to the east and F.2241 to the south, and truncated by a midden pit, (13128) to the north and west. The full recorded extents of this deposit was approximately 1.8m by 1.8m, however the area which was excavated inside our trench was a simple triangle, c.0.56m E-W by 0.74m N-S. The floor itself was really a compound deposit representing a short sequence of thinly laminated floors and active surfaces, although the complete sequence was little more than 10mm thick in places.

The removal of these floors revealed mid orange brown slightly sandy silt, containing occasional charcoal flecks at around formation level. Since this deposit was reach at

formation, more or less, little more can be said about it, except that it appeared (from the section of the pit which truncated it, (13128)), to be room fill of the building below. When this area was levelled off at formation level, it became clear that the floors, identified as unit (15618) actually sloped down on their southern side towards the southern boundary wall of Space 287, since they were still visible here at formation.

The only other archaeological deposits, which required reduction in this area, were two walls. The easternmost wall of Building 64, F.2242, and the aforementioned partition between Space 303 and Space 287, E-W orientated wall, F2241. The latter, was comprised of brick unit (15633), which were a fairly uniform 0.4m by 0.35m by 80mm average, made from mid yellow-brown slightly sandy silt and bonded with a mid brown slightly silty clay mortar (15634). The wall itself extended into the trench some 1.40m and was c.0.60m wide at its widest point. However the northwestern limit of the wall was truncated by midden pit (13218).

The other wall F.2242, served as the eastern boundary of Building 64, although only a triangular segment (0.5m by 0.4m by 0.6m) had to be reduced where the trench hit it obliquely. The bricks (15630) and mortar (15631) in this wall were identical to those described in F.2241 above.

### **Beam Slot 15/16**

Formation horizon between FT 15 / 16 had had already been exceeded from previous seasons excavations.

### **Foundation Trench 16**

1.80 NS x 1.60m EW. Total depth excavated – 0.31m  
SW Coordinate – 1035.08 / 1164.04. Formation Level – 1012.44m

This trench was situated in a part of the 4040 Area which has been looked at pretty extensively in past seasons. In fact the trench sat aligned almost NW-SE across Spaces 286 and 287, in Building 64 (Figure 23, see also Archive Report 2006). Space 286 was the westernmost space identified in Building 64, which was a wedge shaped house, apparently squeezed in the gap left by the adjacent, more standard shaped structures

The earliest deposits identified in the trench were associated with the top of the backfill sequence of (presumably) the building which almost certainly lies under Building 64. The lower of these, (15998), was a dark and humic slightly clay silt deposit, with frequent charcoal. This was sealed by a compact light orange brown silt deposit, (15972), of the more conventional ‘crushed brick’ type. Neither of these deposits were excavated in their entirety as they fell below formation level.

Sealing these room fills sloping from north to south, was a dirty floor sequence, (15973) apparently laminated, which appeared to represent the first formal surfaces in the room and therefore is associated with a number of what appear to be contiguous construction events.

These include walls F.2922 and F.2923 which appear to be the earliest internal features in this part of Building 64. These are two walls, F.2922 in the north is a straight north south partition wall, whilst F.2923 to the south returns west (as (15955)), presumably to form another, as yet undefined space or feature to the south, outside of the trench area. All of the wall component in these partitions ((15948) to the north and (15853/15955) to the south) were indistinguishable as individual bricks, but were all made of 'brick-like' yellow brown slightly sandy silt. Both had a primary plaster layer, (15972) in the north and (15972) on the eastern face of (15653). The walls were then re-plastered higher up the floor sequence (with (15946) and (15947) being on wall (15948) in the north and (15953) and (15954) being on the southern elements (15653/15955)).



*Figure 23: FT 16 situated over Spaces 286 and 287 in Building 64*

This re-plastering represents the relatively arbitrary division in the rooms highly laminated floor sequence (which could use some further work in the future), into those below or associated with the construction of this architecture, (see (15973) above) and those above the re-plastering (14969), (14940) and (15919) (see below).

The next feature which was associated with the earlier dirty floors was the bin complex F.2903. This like the walls was a multi-phase structure with at least two (and upon examination in section post-excavation) possibly up to four more remodelling events. Although it should be noted that the key remodelling fits precisely in with the re-plastering and division of the walls already noted. The cut is cut out on the northern side and in the base (15997) (mostly respecting F.2923 on its southern side). This resulting square cut was then also plastered (like F.2923), with (15954), which serves as the first surface of the bin. After some use and repair, the bin appears to be re-cut (14942) and re-plastered (14957). Like the walls this final phase of use also appears to be associated with the later floors (14969), (14940) and (15919) (see below).

The final 'original' feature was an ambiguous possible hearth structure which showed some traces of burning (15845). However the backfill of the feature was impossible to distinguish from the superstructure making it very hard to distinguish in plan. However all the later floor sequence respected this on the northern side and the later phase of the bin also appears to incorporate its southern side into its construction.



The later floors themselves seem to respect all of the features outlined so far and build up steadily until they go out of use. In fact it seems like all of these features remain in use for the same time then the room is actively remodelled all the features are backfilled before the area is resurfaced as an apparently open space with surface (14946). Prior to resurfacing something (a post?!) is retrieved from the centre of the area in line with the partition walls leaving a large retrieval pit (14956), filled with an ashy fill with an abundance of animal bone (14955).

At about that time the space to the south of F.2923 is backfilled with homogenous orange brown silt (15911) and another wall or partition is built, (15670). The space to the south of this is thinly plastered (15699) before finally going out of use and being backfilled with a loose ashy fill (15699) , and being re-plastered (15695) for use as a bench, F.2240.

### **Beam Slot 16/17**

The beam slot joining FT's 16 and 17 cut through two abutting walls; wall F.2208, the southern wall of Space 276, Building 59 and wall F.2229, the northern wall of Space 286, Building 64.

The occupation sequence associated with wall F.2208 to the north had been excavated (see Building 59, this report), whilst to the south the floors reported in FT 16 sloped up to the plastered wall face. The between wall fill (16170) appeared to be a primary differential deposition with relatively 'fresh' bone and stone artefacts.

### **Foundation Trench 17 – Anies Hassan**

1.80 NS x 1.60m EW. Total depth excavated – 0.55m  
SW Coordinate – 1034.26 / 1167.46. Formation Level – 1012.30m

The earliest deposit in this sequence at formation level was a compact, mid orangey brown silty clay room fill or make-up deposit (15979) within Space 276, Building 59. This deposit was traced across the whole of the trench underlying what appeared to be a rough platform or raised 'step' (15976) of which only a portion was exposed in the north west corner of the trench, measuring c.1.0m east-west by c.0.90m north-south and formed from the same material as (15979). Dumped over this deposit and sloping down to the south-east was a laminated midden deposit (15969) containing moderate bone and occasional clay ball fragments. The midden was sealed by levelling deposit/room-fill (15963), a mid greyish brown sandy silt containing very occasional bone, stone and obsidian. This room fill had been sealed by floor surface (14641) (see Building 59, this Report).

### **Beam Slot 17/18**

The beam slot between FT's 17 / 18 cut through wall F.2919 Space 276, Building 59. To the south was a layer of midden (15969) sealed by crushed mudbrick room fill (15963). These deposits are probably equivalent to (16025) and (15075). Both these units were also recorded in FT 17.

### **Foundation Trench 18 – Daniel Eddisford**

1.80 NS x 1.60m EW. Total depth excavated – 0.76m  
SW Coordinate – 1033.67 / 1170.90. Formation Level – 1012.14m

This trench is located in the 4040 Area in the NE corner of Building 59, within Space 276. The trench was excavated through the northern walls of Building 59, after all internal surfaces and wall plaster had been removed.

The earliest feature identified in FT 18 was a N-S aligned wall F.3005 comprising of orange brown sandy silt bricks (16058) and firm dark grey mortar (16029). This wall is associated with a building that pre-dated B.59 and followed a similar floor plan in the NE corner.

To the east and north of wall F.3005, external to the building, a series of laminated deposits (16038) was sealed by a dark ashy midden layer (16037) and a further deposit of thinly laminated ash and clay silt layers (15970). This sequence of deposits relates to activity or dumping within external Space 60 and is equivalent to the sequence of external deposits recorded in FT 19 directly to the north.

To the west of wall F.3005 the inside of the building, were layers of crushed mudbrick room fill (16025) and (15975) associated with the demolition of the upper courses of wall F.3005 and the backfilling of the abandoned building.

After the earlier building was abandoned it appears that this area was briefly abandoned and the walls covered by dumped material (15970). A construction cut (16105) was then excavated over wall F.3005 and the NE wall of Space 276 constructed on top of, but off set slightly to the north of the earlier wall. This later wall F.2919 consisted of mid yellow brown sandy silt bricks (15986) and firm dark orange brown clay silt mortar (15987). The construction cut was filled with a mixture of room fill and midden (16106). It is of interest that the underlying bricks of F.3005 are strikingly different than the superseding bricks of F.2919 and F.2204.

Two E-W walls were associated with F.2919, and together defined the northern extent of Space 276. To the east F.2206 consisted of brick (15977) and mortar (15978), and to the west F.2204 consisted of brick (15988) and mortar (15989). Both walls were constructed of similar sandy silt bricks and dark orange brown mortar to F.2919.

Above wall F.2919 a doorway appeared to have been blocked in with a mixture of reused mudbricks (14774) and mid brown mortar (14775), recorded as F.2205. Several of the re-used bricks had wall plaster still attached. No evidence of an early phase of building with access to external Space 60 was identified. It is possible that this blocking event is associated with the construction phase of Building 59 and allowed access to the inside of the building during construction.

### **Beam Slot 18/19**

Joining FT's 18 / 19 the beam slot cut through the continuation of external type deposits excavated in FT 18 to the north of wall F.2919.

### **Foundation Trench 19 – Daniel Eddisford**

1.80 NS x 1.60m EW. Total depth excavated – 1.14m

SW Coordinate – 1033.25 / 1174.36. Formation Level – 1011.97m

Trench 19 was located in an external space directly to the north of Building 59, originally referred to as a ‘street’. To the east this external area was extensively excavated during the 2004 season as Space 60. The area between buildings was used to dump midden material however it was concluded that there was no evidence of people working, or walking in this area. A similar sequence of external laminated ashy midden like deposits were present in Trench 19. However, the compact nature of these deposits and the presence of external architecture may suggest more direct human activity in this area.

The earliest deposit recorded in FT 19 was a coarsely laminated midden rich deposit (15645). This deposit was less finely laminated and contained more building material than similar overlying deposits, possibly indicating differential use in this, the earliest phase exposed. Constructed on top of this layer mudbrick wall F.2847 represented the southwest corner of a Neolithic building. The wall consisted of mudbrick (15642), mortar (15643) and internal white plaster (15644). This building was filled by a demolition layer of crushed mudbrick (15617).

Deposited against the external face of wall F.2847 a 0.16m thick deposit of laminated ashy deposits (15637) represents repeated dumping of ash and midden material, possibly from the roofs of the surrounding buildings. The compact nature of some of these laminations, and the presence of at least one large circular heavily burnt area, strongly suggests specific activities were being undertaken in this area. The burning was sealed by a similar highly laminated ashy layer (15627), which contained occasional plaster fragments, animal bone, obsidian and a single bead.



*Figure 24: F.2842 with finely laminated midden showing in E section.*

Constructed on this layer was an enigmatic external rectangular feature F.2842 which measured 0.95m by 0.90m (Figure 24). This feature abutted wall F.2847 to the east and extended beyond the limits of the trench to the north. A level base for construction was created by cutting into the underlying layer slightly and dumping a layer of firm sandy clay, (15626), which contained occasional fragments of mudbrick. On top of this a mudbrick (15619) and mortar (15623) wall defined the extent of the feature. The interior of the feature was filled by orange brown clay silt (15615). This contained mudbrick and plaster destruction debris as well as clay ball fragments and animal bone. The fill showed no sign of lamination and appears to have been a homogenous construction event intended to create a solid platform. The top of the feature was sealed by orange brown silty clay material (15600) which contained charcoal, and evidence of burning. This layer had no clear structure to it and may have been dumped over F.2842, rather than being associated with its construction.

The exterior of the feature was covered in white plaster, (15620), which lipped over wall F.2847 to the east. Against the exterior of F.2843 compact ashy layer (15614) consisted of a mid brown layer containing mudbrick, sealed by mid grey charcoal rich laminations. This accumulation may be associated with activities on or around F.2843.

Feature F.2842 was sealed by a dump of orange brown silty clay material (15600) which contained charcoal, and evidence of burning. This layer had no clear structure to it and may have been dumped over F.2842 after it fell out of use. This was sealed by burnt mudbrick like material (15493)/15494), possibly representing two burnt mudbricks.

Further external ashy midden deposits were recorded as (15489). These were truncated by an irregular shallow cut (15488), which was filled by light brown silty clay (15488). The function of this was feature was unclear, its ephemeral nature and proximity to the surface of the mound suggests it could be the result of natural erosion. It was sealed by a layers of eroded mudbrick (15479), (15471), (15470) all of which may have been naturally deposited. These layers were cut by a small sub-circular pit of unknown function (15492), which was filled by (15491).

At the southern side of FT 19 fill (15488) was sealed by a layer of ashy midden material, (15477). At its western extent this layer was cut by a sub-circular pit (15454) that measured 1.20m in diameter and was filled by (15453). To the east a pit (15463) was dug along the external face of wall F.2847. This was filled by crushed mudbrick (15460). The function of the pit was unclear, it may have been required to repair the wall, although this was not immediately obvious, or for a more esoteric function. These final pit cuts was sealed by a layer of loose topsoil (15426).

### **Beam Slot 19/20- Lisa Yeomans**

Covering the area of the beam slot 19/20 at formation level of 1012.12m AD was a layer of midden (16187) (continues in Foundation Trench 20 as (14952)). A N-S wall F.2761 was built overlying this midden continuing into the foundation trenches to the north and south. To the west, midden deposit (16164) built up next to the wall and was sealed by a layer of mudbrick demolition material (16163). On the eastern side of the wall a thin section of room-fill (16185) was removed. Above the room-fill were

the remains of a heavily eroded E-W wall (F.2778) running into the eastern limit of excavation.

### **Foundation Trench 20**

1.80 NS x 1.60m EW. Total depth excavated – 1.18m  
SW Coordinate – 1033.01 / 1177.81. Formation Level – 1011.79m

The earliest architecture revealed in Trench 20 was a NW-SE aligned wall (F.2762) running diagonally through the trench and an associated plastered floor (14958) to the NE of the wall. Although no plaster survived on the wall itself the floor plaster lipped up again the wall suggesting that wall had originally been plastered. The wall continued below the formation level of the trench at 1011.79m AD. It was an external wall despite the relative thinness of the structure (0.25m) and against the SE face of the wall midden (14952) built up. This compact midden is the same as the midden excavated in Trench 19 to the south. There was also some indication of activities taking place in situ in the midden area as scorching (14954) of the midden deposits was visible next to the wall.

Above the plastered floor, room-fill from the abandonment of the building accumulated. Following the buildings disuse the alignment of the later structure completely changed. A N-S wall (F.2761) excavated within the foundation trench had been cut into the underlying NW-SE and the associated room-fill. F.2761 is the western wall of Space 81, which is a building that continues to the east. A limited area of the room-fill of Space 81 (14950) was excavated and a possible dirty floor (14961) seen in section. To the west of Space 81 the area was used as a midden (14945). This midden deposit had only built up to 0.38m before a further wall (F.2760) was constructed on the midden. This was also a N-S wall just within the western side of the foundation trench and shows that a building to the west was constructed at a slightly later date than the building incorporating Space 81.

Stratigraphically above the wall F.2760 was a layer of eroded material from which two stone axes were recovered. One of these (14942.x1) was complete whilst the other appeared to be unfinished (14942.x2).

### **Beam Slot 20/21**

The earliest stratigraphic feature in the beam slot linking FT 20 and 21 was an E-W wall (F.2772) forming the southern limit to Space 68. The northern face of the wall had been plastered (16145) with the plaster only building up to less than 10mm. To the north of wall F.2772, room-fill (16146) was excavated down to a level 1012.12m AD without reaching the floor level of Space 68. Space 68 appears to form the entirety of a building surrounded on north, east and southern sides by double walls and single wall on the western side to a possible external area (Space 58).

In the southern part of the beam slot, N-S wall F.2761 continued from Trench 20 and was bonded into E-W wall F.2771. These two walls formed the NW corner of Space 81 with double walls on both the northern and western sides indicating that beam slot 20/21 covers the NW corner of a building. The base of walls F.2761 and F.2771 was reached at 1012.26m AD where they had been constructed over a probable room-fill layer (16150) (same as 14953 in Foundation Trench 20). The relationship between Spaces 68 and 81 was clearly visible in the beam slot indicating that Space 68

predated Space 81 whose northern wall was built abutting the southern wall of Space 68.

### **Foundation Trench 21 – Anies Hassan**

1.80 NS x 1.60m EW. Total depth excavated – 1.08m

SW Coordinate – 1032.90 / 1181.26. Formation Level – 1011.62m

The earliest deposit in this sequence was wall F.3022 in the very south-west corner of the trench and was seen only in section. Laid in a rough north-south orientation it was constructed with compact, mid orangey brown, clayey silt mudbricks (16191) whose full dimensions could not be observed but were up to c.0.12m thick. The mortar (16192) bonding the mudbricks was a compact, light brownish grey clayey silt, up to 40mm thick. The wall had then been plastered with a light creamish white plaster (16193) on its east facing side only, as far as could be seen in section. Room-fill (15039) was banked up against the east facing side of wall F.3022, filling the entire trench and sloping down to the north. This unit consisted of a mid greyish brown clayey silt containing occasional bone, clay ball fragments and obsidian and very occasional stone. This was only excavated to formation level and the next unit to overlie it stratigraphically was the wall (15029) of hearth F.2911. This hearth wall had been partially demolished in preparation for the subsequent occupation phase leaving only a ‘crescent’ shaped wall standing 50mm high, 0.53m east-west and 0.30m north-south and was constructed from a firm mid brownish grey sandy silt. This was filled with unit (15928), a firm mid brownish grey sandy silt measuring 0.50m east-west by 0.40m north-south and 50mm thick. There was evidence of scorching on the surface of this deposit as well as a spread of plaster in a crescent shape. Built up against the north of the hearth and continuing north, east and west in to the L.O.E was a laid floor surface (15930) made of compact light brownish cream fine sandy silt, up to 10mm thick.

Three units overlaid floor surface (15930) stratigraphically. The earliest may have been related to spatial differentiation within Space 68, that spread from east to west across the southern part of the trench forming a kind of ridge measuring 0.92m north-south at the western L.O.E and tapering down to 0.24m north-south at the eastern L.O.E. and made from a clean, firm mid yellowish brown sandy silt.

In the north-west of the trench, set on to floor surface (15930), was a partially exposed oven F.2912, consisting of three units (Figure 25): The oven wall (15917), measuring 0.85m east-west by 0.78m north-south and c.0.11m high within the L.O.E where the wall were c.0.10m thick, was constructed with firm mid brownish grey sandy silt. The primary fill (15922), concreted, dark brownish black, laminated sandy silt, measured 0.66m E-W by 0.72m N-S by c.30mm thick (within the L.O.E). (15922) was directly underlying the secondary fill (15905), a compact, mid to dark brownish grey, laminated sandy silt, measuring 0.80m east-west by 0.70m N-S and c.30mm thick (within the L.O.E). The oven had been partially demolished in preparation the subsequent occupation phase. It is likely that the replacement oven and/or hearth is located to the south or south-west of the foundation trench (see below).

Cutting in to floor surface (15930) in the north-east corner of the trench, just to the east of the oven was a small pit cut (15916) measuring 0.54m east-west by 0.36m

north-south (oval in shape) and up to 60mm deep. With a sharp top break of slope and rounded sides and base this pit was filled by a single fill (15015), a firm mid brownish grey sandy silt. It is possible that this pit had something to do with food preparation and/or processing judging by its proximity to the oven but had been backfilled and rendered redundant as it was sealed by (15910) which also banked up against the eastern side to the oven F.2912. It is probable that (15910) is a 'rake-out' deposit from the oven as it was fairly charcoal rich, measuring 0.48m east-west by 0.64m north-south and c.20mm thick (within the L.O.E).

Sealing both charcoal rich deposit (15910) and anomalous deposit (15908) was a rough floor surface (15909), extending 1.56m south and 1.19m west from the north-east corner of the trench and banked up against the east and south of the oven and sloping down to the north and made using a compact mid greyish sandy silt. Cutting this floor



*Figure 25: Features associated with occupation in FT 21.*

surface, just to the south of the oven was a small post-hole cut (15904) measuring 0.20m east-west, 0.28m north-south and 0.22m deep, with a sharp break of slope (1011.83), steeply inclined sided and a rounded base. This cut contained only one fill (15903), a firm mid brownish grey sandy/clayey silt containing occasional bone fragments).

Sealing both the oven and post-hole was yet another anomalous unit (15696) comprising essentially of firm to compact mid to light yellowish brown sandy silt and two visible mud-bricks (possibly fragments of) measuring 0.40m by 0.26m by 0.15m thick. The unit measured 0.88m from the south-west corner of the trench and continued in to the western L.O.E 1.66m from the south-western L.O.E. It appeared to be some sort of raised platform with its highest point in the south-western corner which inclined steeply down to a more level surface at about which was up to 0.15m thick. It is entirely possible that due to the limitations of working in such a small space/exposure I had excavated more than one feature and missed the true nature of the unit(s). The section revealed a kind of bin or oven-type profile in the north facing section. The north facing section also seemed to show that units (15680), (15679) and possibly (15673) were all part of a larger feature (including (15696)) forming a construction that must have been related to activities involving high temperatures/fire/fire installation (oven or hearth). (15680) was located in the south-east corner of the trench, measuring 0.50m east-west by 0.20m north-south and up to 50mm thick, and continued in to the southern and eastern L.O.E. In retrospect, this was actually part of (15696), being formed from a mud-brick-type material: firm mid orangey brown fine sandy silt. Set in to (15680) was a laminated burnt deposit (15679) in the very south-east corner, measuring 0.30m E-W by 0.20m N-S by up to



20mm thick and consisting of a black and light brownish grey silty ash and sandy silt. Sealing this group of deposits was a firm to compact light brownish grey fine sandy silt, measuring 0.90m east-west by 0.56m north south by up to 0.15m thick. I was unsure how to interpret this deposit although I feel that it must have been related to the underlying deposits.

Also over lying (15696) stratigraphically was a laminated dirty floor surface (15682) roughly in the middle of the trench although it appeared to have been truncated at its northern end. Measuring 1.25m north-south by 1.40m east-west by up to 30mm thick, sloping down from south to north and made from firm to compact mid brownish grey to dark blackish grey fine sandy silt and ashy silt. Resting on the floor surface and but within the overlying room fill (15662) was a scapular which was photographed and bagged separately from other bone. Room fill (15662) filled most of the trench except at the very north and sloped down from south to north and consisting of light yellowish brown fine sandy silt and containing occasional bone and stone. Finally, this was sealed by a different room fill (15650) that filled the whole trench and consisting of mid to light greyish brown fine sandy silt containing occasional bone, stone, very occasional obsidian and shell.

#### **Beam slot FT 21 / 22 – Shahina Farid**

The beam slot trench joining FT's 21 and 22 cut through two walls, F.2935 to the south and F.2934 to the north with associated room fills on either side.

To the south, wall F.2935 represented the northern wall of Space 68 reported on in FT 21. The bricks (16197) were firm mid to pale yellow brown, fine sandy silt and the mortar (16198) was mid grey brown, fine clay silt. The mortar was thickish and irregular towards the bottom where a slippage appears to have occurred resulting in the bricks and mortar slanting from S-N. This was apparent in the bottom five courses but which was corrected in the upper courses by levelling with a thicker mortar layer.

The building infill (16014) against the wall was a single/continuous deposition of relatively sterile and homogenous mid grey brown sandy silt, the equivalent to (15650) excavated in FT 21. There was no evidence of plaster on the south facing wall face.

Wall F.2934 represented the southern wall of Space 67 through which FT 22 cut and is discussed in relation with FT 22.

The between wall fill (16199) was c.0.3m thick and consisted of mixed and burnt building rubble and debris fragments apparently in a single deposition event in mottled colours of mid grey and mid yellow brown with relatively few artefacts.

The stratigraphic relation of the structures that these two walls formed could not be ascertained, as the full sequence of the buildings was not excavated.

#### **Introduction to FT's 22 and 23**

FT's 22 and 23 straddle two structures.

FT 22 is located over Space 67, which in the 1993-4 scrape plan appears as a linear eastern side room on a N-S axis with a larger room, Space 66 to the west, possibly

inter-accessed by an opening in the party wall to the north and thereby forming a building. As the complete plan of the building has not been adequately defined and with no future likelihood of further work in this area (due to its location in relation to the foundations of the shelter structure), the two spaces were not conjoined with a building number.

FT 23 was located over double walls; wall F.2905 to the north and wall F.2913 to the south. When the trench was first excavated it appeared that the walls represented a single structure with F.2913 forming a bench abutting a north wall F.2905. However, by the end of the excavation of both trenches it became clear that in fact the walls represented two structures, which confirmed and was confirmed by the plans produced in the 1993-4 scrape.

The northern half of FT 23 (and FT 24) cut through Space 63. In plan Space 63 appears to be an eastern large room of a building with an adjoining room, Space 62 to the north and a N-S aligned smaller linear room, Space 64 to the SW. Whilst these three spaces appear to form a single structure a building number was not allocated due to the limited work carried out and with no future likelihood of further investigations.

### Space 67

Space 67, as defined in the southern half of FT 23, FT 22 and the beam slots, is located along the eastern limits of Space 67. To the north is wall F.3035 which incorporates a heavily plastered niche F.2913. The east wall is F.3030 and the southern wall is F.2934.



Figure 26: East wall and features of Space 67.

All wall faces were heavily plastered through multiple applications, perhaps suggesting the longevity of the building's use, with many pronounced undulations or mouldings?

Almost the entire length of the exposed north wall housed a niche, such that when originally exposed it was interpreted as a bench. The niche F.2913 was 1.6m E-W in length from the wall to the west to the NE corner and stood 0.8m high from the top of the associated platform surface (see below). In the NE corner a pedestal or plaster post feature F.2038 had been constructed on top of the bench (Figure 26). This was clearly a later feature as indicated by the differing phases of plaster rendering and may have been added as a supportive element to the building. The neighbouring wall of Space 63 formed the back of the niche thereby illustrating that Space 63 was at least constructed prior to the formation of this niche if not the whole building of Space 67. The niche was heavily plastered with multiple applications contiguous with the walls on either side (15688)/(15932), the plaster sealed the between wall infill of Spaces 67 and 63, traced across its upper surface and front face, extending below the associated platform at its base but behind the pedestal F.3028. There was a pronounced linear protuberance at the back of the niche towards the east and the primary plastering of the front face was painted a plain red panel (15968) (Figure 27).



*Figure 27: Niche F.2913 with lower red panel and plaster protuberance.*

The entire length of the east wall F.3030 was exposed 4.9m in length. The face of this wall lay some 0.2m beyond the L.O.E of the FT's but given the extraordinary moulded features exposed on the N and S walls it seemed prudent to cut back the FT sections to examine the E wall face. Here too the wall face was heavily plastered with multiple applications of plaster, heavily marked with curious undulations, protrusions and irregularities or, mouldings? (see Figures 26 & 28). In the NE corner was the pedestal or plaster post feature F.2038 (see above). Set 3.5m from the NE corner was an 'engaged pilaster' F.3027. This was a white plastered 0.5 m wide mud core feature (the front having been truncated). On its N side a small plastered niche F.3024 was incorporated, 0.2m deep, it held an obsidian cluster (16307) the first example of in situ items in such a context. (Figure 28). South of this pilaster the wall was again

heavily and intriguingly plastered, continuing on to the south wall (F.2934), plaster (15996).

The southern wall incorporated a small niche F.3026, it was 0.5m high and 0.4m wide but continued beyond the western L.O.E. As with the north wall niche the depth was that of the wall but it was unplastered and therefore unclear whether at some stage it was an opening to the south. At some stage through the occupation of the house, this southern wall was rebuilt as revealed in section, it is possible that this was a repair or remodelling that took place after a fire that occurred in this part of the house (see below). This possible rebuild then places the most notable plastered feature F.3023, wedged into the SE corner of the house, as a post fire feature. F.3023 was set some 1.2m above the ground surface. Formed from a grey mud core which appeared to have been applied layer by layer to mould and create the form and a final white plaster finish this relief has been interpreted as the base

of a splayed figure (Figure 29 and see Figure 1) (of which Mellaart had found several examples at the site and interpreted as Mother Goddesses (see Figure 2). Recent finds of similar forms have been interpreted as bears (see Figure 3), unfortunately only the lower portion survived surface erosion.

The relief was conserved and lifted (see Conservation. This report).

### Foundation Trench 22

1.80 NS x 1.60m EW. Formation Level – 1011.44m  
SW Coordinate – 1032.91 / 1184.69. Total depth excavated – 1.06m

The horizon at formation level in FT 22 was a heavily burnt and blackened. An E-W aligned internal wall or kerb, F.3037, lay in the centre of the trench on the same alignment as the buttress or ‘engaged pilaster’ F.3027 which was modelled on the west wall. The structure was 0.4m wide and stood two bricks high (as excavated), made of bricks used both on edge and laid flat 0.2m wide along the southern side.



Figure 28: In situ obsidian cluster (16307) in niche F.3024 fashioned into pilaster F.3027. Below, detail of obsidian cluster.



This appears to be the original construction forming a low partition wall or kerb with very faint traces of plaster on the north face. Sometime later in its use it appears that the 'partition' was widened with a packing material along the northern side. In this form both sides, including its western butt lying just 0.2m in from the western L.O.E of the trench, were heavily plastered. To the south of the wall was a thick accumulation of finely laminated floors, all heavily fire blackened too. In its final form the partition wall/kerb was modified into a platform F.3037, and the whole of the SE corner therefore raised. It was above this platform that the 'bear' relief F.3023 was located, unusually in the part of the house that is normally considered the oven/hearth location.



*Figure 29: SE corner of Space 67 with moulded 'splayed figure' and heavily plastered east wall.*

Located in the NW corner of the FT was a raised ledge F.3038, either part of a bench or platform. The core consisted of brick fragments and solid amorphous packing material. This was plastered on its east side and traced around to the southern face where it continued into the west L.O.E of the trench. Later, when partition wall F.3037 was widened the east face of platform/bench F.3038 was plastered contiguously with that of the north face of F.3037.

The last occupation sequence evident in this area was that the fire-damaged horizon was re plastered with white surfaces. Thus there was a platform F.3037 in the SE corner with the 'bear' relief F.3023 above it, traces of a circular hearth in the SW corner of the trench and feature/platform F.3038 in the NW corner.

The area of burning appears to have been restricted to the south of the building, as the fire damage did not appear at the equivalent horizon in FT 23. The sequence relating to Space 67 in FT 23 consisted of a platform F.2914 that took up the entire area exposed. Thus the kerbs of three platforms (F.3037 to the south, platform/bench F.3038 to the west and platform F.2914 to the north), created a sunken area (NE

corner of FT 22). This area comprised accumulated thin plaster floors and packing. At formation level a depression was visible where later floors had sunk into a possible cut, this may indicate the location of a burial, but which was not further investigated.

### **Foundation Trench 23 (southern sequence in Space 67) & Beam slot 22/23**

1.80 NS x 1.60m EW. Total depth excavated – 1.13m  
SW Coordinate – 1033.03 / 1188.12. Formation Level – 1011.27m

Platform F.2914 (Figure 30) abutted bench F.2913 to the north and wall F.3030 to the east and on both wall and bench the plaster was contiguous with that on top of the platform. To the south the platform extended into the beam slot joining FT's 22 and 23 and to the west the top edge was just inside the FT trench, angling into the western L.O.E. The platform therefore measured c.1.4m N-S x 1.6m E-W.



*Figure 30: Platform F.2914 in Space 67 with in situ burial F.3021 and cut for disarticulated bones in burial F.2915 (facing N).*

At formation horizon the platform was excavated down to the platform make up (16194) a compact layer of homogeneously mottled mid yellow brown sandy silt with inclusions of disarticulated human bone, indicating more burials below formation horizon. This was sealed by a similar, but paler and less mottled make up layer (16190) over which was a primary grey white plaster make up (16184), then a thin mottled reddish brown makeup layer (16183) for an off-white plaster surface (16182). This plaster surface was cut by burial F.3021, cut (16169) for skeleton (16168) that of a completely articulated child of approximately 7 years buried in a tightly flexed position. The grave cut was backfilled by (16167). Plaster (16166) sealed F.3021 over which was mottled mid orange red brown make up (16165) with a levelling deposit (16160) that filled a depression formed over the burial cut (16169). This was sealed by white plaster surface (16155), which sealed burial F.2915. This feature consisted of a large mass of disarticulated human bone (skeleton numbers (15938), (16124), (16125), (16140) and (16139)) in cut (15936) with some articulating elements. Whilst the bone was found within a large cut the concentration was pushed



to the north-east corner and comprised elements of at least two adults and one child. These were clearly disturbed by the interment of a later burial but which was not reached due to having reached formation horizon of the trench. The fill of the burial cut was (15937) sealed by patchy plaster surface (16029) followed by the upper most surviving plaster surface (15933).

The occupation sequence of Space 67 was sealed by room infill (15687) in FT 23. A firm homogenous mid grey brown silty clay with large to medium sized fragments of brick, mortar and wall plaster building debris (s/a (15678) in FT 22 and (15992) beam slot 22/21).

Two burials F.2900 and F.2904 (see Late burials) were found close to the surface cutting through infill (15687). Burial F.2900 represented the very poorly preserved remains of a burial (15657) in an apparently flexed position, lying on its side and face down. Being so close to the surface it was impossible to tell whether it is Neolithic or Late, but as it was sealed by a layer of plaster (15659) and was in an apparently flexed position it may represent a Neolithic burial from an eroded building above.

#### **Foundation Trench 23 (Northern sequence in Space 63) & Beam slot 23 / 24**

The northern half of FT 23 cut through Space 63 (see Intro to FT's 22 and 23), the SE corner of a building and thus where an oven was located.

The south wall F.2905 was made of three very distinct mudbrick and mortar types. This sequence was also represented in the west section and represented a single wall with three 'builds' as evidenced by the continuous plaster applications (15690) from the base of the wall to the top (in the field two feature numbers were allocated on the interpretation that there were two walls here but in post-excavation it was reinterpreted as a single wall with three 'builds').

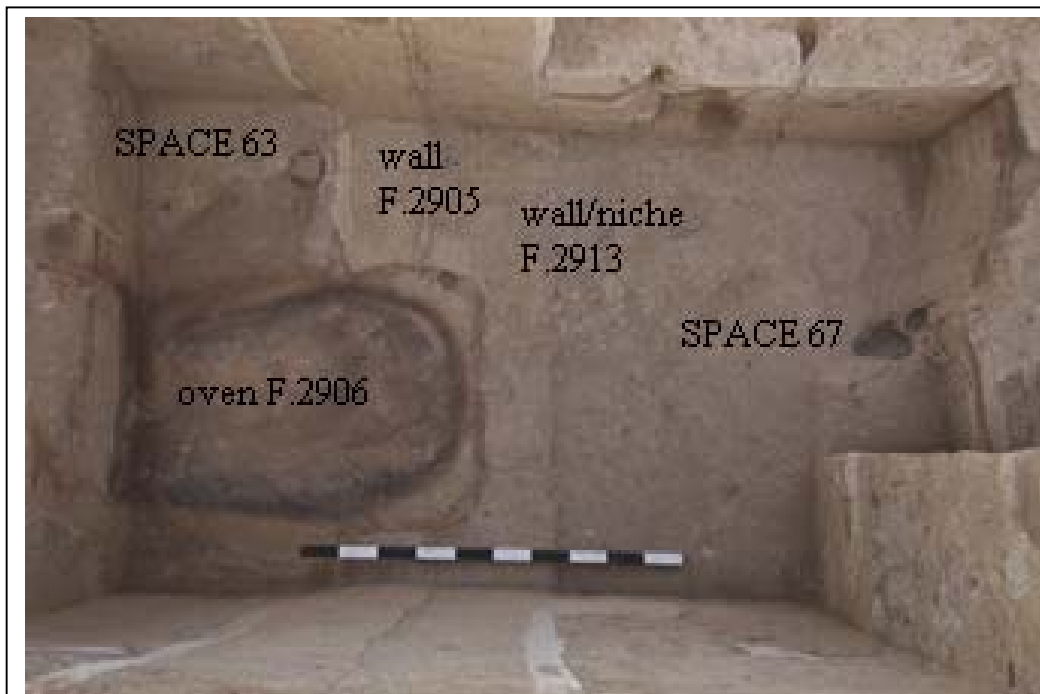


Figure 31: Late oven F.2906 cut through south wall F.2905 in Space 63.



At some stage through the life-span of the building a cut was made in to the south wall to house oven F.2906 (Figure 31). This was clearly a late feature, probably the relocation of the oven from elsewhere in the building at an earlier phase (as evidenced in other buildings excavated across the site). The 'new' oven cut through multiple wall plaster layers (15690), through the depth of the wall, the between wall infill and clipped the back of the north wall F.3035 of the neighbouring building.

The oven cut was horse-shoe shape in plan. It was 1.0m wide at the base where it the cut through the wall, tapering to 0.6m at the opening which protruded the wall face by c.0.7m and stood c.1.0m high with a slightly domed roof. The basal makeup was continuous with the oven wall superstructure walls (15983) which were c. 0.1m thick and externally plastered (15691). There were at least three episodes of fire hardened oven bases excavated as one unit (15985), with an in situ burnt residue (15984) over the last.

Through the subsequent wall re plastering episodes there were clear traces of trapped soot after the earlier wall plaster (15690) and subsequent plaster layers (15691). Above the oven the plaster was multiply applied with parallel undulations and a circular protuberance almost centrally located c. 0.25m above the oven roof.

The oven was deliberately infilled at closure phase of the building. A cow mandible 15982.X1 was placed within the oven and then the oven carefully infilled with a homogenous silty clay mixed with fragmented grey and red brown brick and mortar and white plaster fragments.

At the end of the building-life it was backfilled with a relatively sterile infill (15693) of moderately compact orange grey-brown clay silt, same as (15697) in FT 24.

Cutting the room fill and mostly represented in FT 24, was a large pit (15677) filled with burnt rubble debris (15656) and (15676) with midden components. This pit clipped the NE corner of FT 23 where the fill was recorded as fill (15692).

### **End comments on Spaces 63 and 67**

The ground plans of the 1993-4 scrape show that Spaces 63 and 67 were rooms of two large well aligned and proportioned houses and from the brief key hole excavations it is clear that these two buildings were complex and elaborate and thus possibly fit into the newly defined 'history house' status.

The stratigraphic sequence as excavated suggests that the structure to the north (Spaces 62, 63 and 64) predates the building (Spaces 66, 67) to the south. This relationship is based on the fact that niche F.3035 within wall F.2913 in Space 67 could only have been formed when the south wall F.2905 of Space 63 was extant. Later, oven F.2906 in Space 63 could only have been relocated after the construction of the building (Space 67) to the south.

However, the above relationships are the result of multiple episodes of remodelling and represent the final configuration of these two buildings only, and due to the limited investigations a definitive order of construction cannot be ascertained. What it

quite clear however, is that the two buildings coexisted for some period of their occupation.

During its lifespan the southern area of Space 67 suffered from fire. The damage was repaired, some remodelling took place and the house continued in use. The renovations would have necessitated the removal of the burnt debris. Is it therefore possible that the burnt debris buried in the pit (15677) represented in FT 24 originated from Space 67? This would indicate that the northern building (Space 63) was closed off before the one to the south and also, that it was not immediately redeveloped as a new house? (this is highly conjectured as the pit may be cut much later and from much higher; a closer analyses of the material assemblage is required).

Nonetheless, the pit (15677) contained an unusual fill in comparison to other large pits excavated across the site to date (see Space 279, this report & Archive Report 2006 & Space 261, Archive Report 2006) This is the first instance of disposal of burnt debris in a pit. Other occurrences of bulk burnt debris and its 'management' have all been contained within the burnt walled structures (South Area section east of VII.32 [see Fire & Burning, Archive Report 2004], 4040 Area Building 52 [Archive Report 2005-6], Building 45 [Archive Report 2004], Building 1 [Volume 3]).

#### **Foundation Trench 24 (Space 63) – Simon McCann**

1.80 NS x 1.60m EW. Total depth excavated – 1.10m  
SW Coordinate – 1033.27 / 1191.54. Formation Level – 1011.10m

This trench contained a rubble/ midden deposit, which sealed a pit containing midden material. This pit was cut into the room fill, which lay below.

The upper 0.6m of the trench consisted of a midden and rubble rich deposit (15656), containing large quantities of burnt mud brick, charcoal and ash as well as quantities of animal bone, stone, obsidian, clay balls, pottery and figurines. It also contained an unfinished obsidian spearhead, 15656.x1.

Removal of this deposit revealed the cut of a sub circular pit (15677) with steep undercut sides and flat base, approximately 1.4m in diameter and 0.44m deep (Figure 32). It contained (15676) an ashy/ midden type fill with some burnt brick rubble and charcoal, similar to (15656) above but not as coarse; again containing quantities of animal bone, stone and obsidian. This deposit was prioritised.

This pit appeared to be cut through a thin (0.1m) dump of rubble material (15694) into room fill below. (15694) was almost indistinguishable from (15656) above and it was only due to the identification of the cut that it was visible. The pit was therefore dug shortly after the space had begun to be used as an area of dumping.

Room fill (15697) extended below these deposits to formation level. Any associated floors/ features belonging to the building were not encountered.

#### *Highlights of priority*

The on site priority report for pit fill (15676) suggests that although the deposit is broadly similar to what would be encountered in other midden contexts there were

some notable variations. It was a rapidly deposited fill with a comparatively narrower range of lithics and faunal taxa, although bird appears to be overrepresented.

The fauna suggests a post consumption signature but interestingly it differs from what would be considered a 'feasting' deposit in other middens as the range of taxa appears too diverse. It does, however, bear similarities to pits containing feasting remains from other European Neolithic sites.

The archaeobotany analysis points to a high density midden type deposit with dung present, with the potential for this to be derived from dung fuel. The deposit has large amounts of ash and charcoal, the phytoliths showing that some is wood derived, but the mix of wood and dung fuels is of interest.



Figure 32: Pit (15677) filled with burnt rubble with midden components.

### *Discussion*

The excavation of the beam slots to the north and south of FT 24 revealed the full extent of this area of middening within Space 63. It appears that the building in Sp.63 has been partially filled with room fill, but not to the height of the walls. The area was then used as an area for dumping burnt rubble/midden material. The pit (15677) was dug early on in this phase, almost central to the space.

It is more likely that this pit was dug in order to deposit the material recovered from within it rather than to quarry material for brick manufacturing. Perhaps there was a 'feast' of some description whose remains were deposited in the pit to mark the infilling of the building in Sp 63. Does sealing with burnt rubble therefore also suggest a special/ prestigious building in some way rather than the space becoming just a convenient dumping ground?

Beam slot 24/25	FT24	Beam slot 23/24	
16113	15656	15692	Midden/ Rubble
-	15676 pit fill	-	Pit
-	15677 pit cut	-	
-	15694 rubble	-	
16123	15697	15693	Room fill
16136 wall plaster	-	-	-
F2764 wall	-	-	-

Table 2: showing corresponding unit numbers between FT 24 and Beam slots to North and South.

### Beam slot FT 24/25

The rubble/ midden deposit (16113) overlying room fill (16123) were removed to formation on the southern side of EW wall F.2764. This wall forms the northern limit of Space 63 and was bisected by the boundary between Foundation Trench 25 and Beam slot 24/25.

The rubble/ midden deposit proved to be equally as rich as its continuation in FT 24, (15656), and included worked bone, a figurine fragment and three beads. Notable within both midden and room fill deposits were quantities of large plaster and mud brick debris close to the wall. This suggests that the wall was not only being demolished or damaged during the infilling of Space 63 but that the wall was still collapsing and may have stood to some height as the area was being used to dump further rubble/ midden.

### Wall F.2764



Figure 33: Heavily fashioned plastered south wall F.2764

This wall was heavily plastered on its southern face (Figure 33). The plaster, (16136) was a maximum of 100mm thick and was elaborately moulded with a recessed groove in the lower western part leading to a short vertical column, which gave way to a recess/ niche on the eastern

side.

Excavation of this plaster revealed over 72 layers visible to the naked eye in places and also several episodes of red pigment. This was limited to the recessed groove, suggesting that it was highlighted at particular times during the life of the building. The northern side of this EW wall extended into FT 25 and the side within FT 24/25 was excavated using unit numbers allocated then.

### Foundation Trench 25 – Lisa Yeomans

1.80 NS x 1.60m EW. Total depth excavated – 1.15m  
SW Coordinate – 1033.64 / 1194.95. Formation Level – 1010.93m

The earliest phase of building in the area excavated for Foundation Trench 25 are two parallel E-W walls (F.2764 and F. 2765). During this early phase the walls must have formed the southern and northern walls of two separate buildings with the area between the two forming a between building area. This is evident from the plaster on the northern face of the northern wall. At the disuse of the buildings in this original form, the walls were reused but in a completely different layout. Additional walls constructed the southeast and southwest corners of Spaces 29 and 23 respectively. Pre-existing wall F.2764 was used as a southern wall of a small storage space with wall F.2765 cut back to form a bench type feature within the small storage space. Numerous floor layers lipped up against this wall and around its eastern end where it had been cut back. The northern limit of the storage area (Space 28) was the abutting southern walls of Spaces 23 and 29 as the floor layers ran up to these walls. This is unusual since Space 28 is associated with Space 63 to the south with both spaces having evidence of long-term occupation in the form of floor build-up. Perhaps limited space forced the storage area to extend Space 28 to the north although much of the room was separated from Space 23 by a double wall at the western side.

After wall F.2765 had been cut back, a levelling deposit typical of room-fill formed a basis for the dirty floor surfaces that were then laid in Space 28. A thick (0.35m) deposit (14985) comprising numerous dirty floor surfaces subsequently accumulated in Space 28 presumably as Space 63 accrued a similarly extensive series

of floor layers.

Towards the end of the life of the building a storage bin (F.2763) comprising of three separate divisions was built against the southern wall of Space 28 (Figure 34). At approximately the same time a single adult interment (14978) was buried in a crouched position against wall F.2767 (Figure 35). This burial evidently disturbed an earlier infant burial whose bones became scattered throughout the fill of the later grave.



Figure 34: Storage bins F.2763 against south wall of Space 28.



Figure 35: adult (14978) buried in a crouched position against wall F.2767

Upon the abandonment of the building the bin was emptied and a cattle horncore (14966.x1) was laid across the boundary between the central and western segments of the bin. The lower fills (14966, 14967, 14668) of bins were typical of general room-fill. The central bin had an upper fill (14965) comprising of a burnt brick like deposit. This must have been burnt in situ as it scorched the sides of the bin and the southern wall (F.2764) of the space. The room was then infilled (14964) with the room-fill sealed by a layer of topsoil (14963).

### **Foundation Trench 26 (Spaces 24/29) – Simon McCann**

1.80 NS x 1.60m EW. Total depth excavated – 1.13m

SW Coordinate – 1034.17 / 1198.30. Formation Level – 1010.77m

The archaeological deposits within this trench consisted of some patchy and eroded floors overlying a series of four walls and associated fills. The sequence from earliest to latest is as follows.

#### *Walls F.3000 and F.3001*

The earliest walls were two parallel N-S walls; F.3000 running along the western L.O.E and F.3001 running along the northern part of the eastern L.O.E. Any floors associated with these walls are presumably below formation.

F.3001 consisted of 6 courses 0.73m long by 0.57m high and 0.2m wide. It contained 4 different types of brick and 3 different mortar types. The wall turns east at its southern end into the section and was plastered on its west and south faces.

This short stretch of wall is notable for its use of different materials although it appears that it was constructed as a whole with different materials rather than repaired.

Were these materials all that were available or were they deliberately selected from different sources/ buildings in order to reference or modify any meanings they may have signified?

F.3000 consists of 3 courses of mud brick and shares a similar brick type with one of those in F3001. These two walls are in all likelihood contemporary. They would appear to form a narrow N-S space which is later divided into a northern and southern space by an E-W partition.

The partition consists of a make up core of brick type material (16030), which links the southern end of F.3001 to the middle of F.3000. This partition is truncated just above formation by the construction of later wall F.2917. It is plastered on its southern face with (16027). This plaster continues onto the eastern face of the southern part of wall F.3000.

The plaster is 30mm thick on the E-W part and up to 70mm on the N-S part with numerous layers visible suggesting the space to the south was long lived. It may also suggest an elaboration of this space in contrast to the space to the north.

#### *Wall F.2917*

This feature is a 'zigzag' wall with a maximum of 11 courses which runs from the S-W corner of the Foundation Trench north along the top of F.3000, turning east at its midpoint where it overlies the partition and then turning north to run along the top of F.3001.

The lower 3 courses were built as an east west link between F.3000 and F.3001 and it appears that some backfilling to this level may have occurred prior to the building of the remainder of the courses.

The upper courses were built above this and F.3000 and F.3001, with the E-W part slightly overhanging those lower courses on the north side. This left part of those lower courses exposed on the south side of the wall and it was on top of these that the remaining wall F.2916 was constructed.

So, F.2917 can be seen as a well thought out and constructed wall reinforcing the division set in place by the earlier partition into a north and south space.

#### *Wall F.2916*

Eight courses of mud brick wall running N-S from the southern L.O.E and turning east to form the N-W corner of a space (Sp.29).

The top courses of the wall step in approximately 60mm for an unknown reason. The wall abuts F.2917 along its western and northern faces and appears to have used some of the lower courses of F.2917 which were jutting out as a foundation.

It appears that after the initial courses of F.2917 were constructed that its upper part and F.2916 were probably built at broadly the same time. F.2916 again reinforces the division into a northern space (Sp24) and a southern space (Sp29).

#### *Spaces 24 and 29*

After the construction of these two walls, F.2916 and F.2917, the spaces to the north and south were filled.

Space 29 to the south comprised room fills to the surface whereas Space 24 to the north comprised room fills overlain by a series of dirty and plaster floors.

#### *Floors in Space 24*

Above the room fills, 3 to 4 patchy dirty floors (15935) extended across Space 24, on top of which was a small fire spot and area of scorching (15934). Sealing these was make up layer (15931) above which were sequences of plaster floors.

Unit (15921) consists of two layers of make up and plaster in fairly good condition onto which three further layers of make up and plaster (15920) were laid, these were much eroded and patchy.

Both sets of floors sloped to the south and southeast where they lipped up against wall F.2917. They also lipped up in the NW corner to form a semicircle, suggesting that an eroded or truncated feature may have once existed here.

### *Summary*

FT 26 contains a sequence of walls, the earliest of which shows reuse of various building materials, similar to that in FT 7. Additionally in the earlier phase of construction it is evident that a division of space is made. The remaining walls constructed above then reinforce this division making it more solid and permanent. The only floors encountered were limited to the north and were patchy but hinted at internal features.

### **Northern Beam Slot – Lisa Yeomans**

The northern beam slot (0.60m wide), forming a link between Trenches 1 and 26, cut across the northern side of the area where the shelter is to be built. Formation level on the western side is 1011.45m AD, with the formation levelling dropping on the eastern side to 1010.95m AD. To the west the trench cut through the western wall of Space 29 that was divided from Space 30 by a double N-S aligned wall (F.3011 and F.3017). The northern wall of Space 29 extended into the beam slot before terminating just to the west of the double wall. A room-fill deposit (16051) was excavated between the walls without encountering the floor surfaces down to the formation level. Two E-W aligned walls (F.2768 and F.2769) that extended into the foundation beam slot at a slight angle from the northern side of the trench. These appear to be part of a doglegged southern wall dividing Spaces 31 from 33. To the south of the walls was a continuous room-fill deposit (14975). Both the room-fill and the walls continued below the formation level of the foundation trench. The latest deposit on the western side, extending over Spaces 30, 32 and 33 was a midden deposit (14974).

To the east the external eastern and western walls of a separate building were excavated in the beam slot (F.2920 and F.2776). Based on the distance between these external walls, the internal space of this building was approximately 6.20m from west to east. Between the walls was a homogeneous room-fill (14980) above a charcoal-rich fill (16040) and a further relatively sterile room-fill deposit (16026). These deposits were excavated down to the formations level of 1010.95m AD on the eastern side without encountering the associated floor deposits.

In the eastern side of the northern beam slot the western wall of Space 18 (F.2775) was excavated adjacent to N-S wall F.2776. An internal division of the building (F.2774) divided the building into a larger eastern area (Space 17) and a narrower western storage room (Space 18). Below the room-fill (16171), a series of dirty floors (16173) were encountered at formation level and therefore not excavated. Abutting the western wall was a northern part of a storage bin (F.2777). In Space 17 a series of dirty floor layers (16175) overlay a room-fill or floor make-up layer (16176). At the eastern end of the trench the remains of a very eroded platform were excavated (F.3019). This would have been part of the same northwestern platform excavated in Foundation Trench 1 under which multiple burials had been interred.

### **Southern Beam Slot**

Previous excavation through Building 55 (see Archive Report 2005) had reduced the archaeological deposits in the area of the southern beam slot to below the formation level on the eastern side. On the western side, the archaeological deposits within the beam slot only needed to be reduced minimally. The trench did, however, cut a stratigraphically complicated series of deposits at the floor level of Building 55 as



well as the southern and western walls of the building. Due to the logistics of excavating finely laminated floors and given our time restraints the deposits were excavated as discreet groups and recorded in section drawings and post-excavation plans. At the western side the trench only truncated a section through the southern wall of Building 55 down the formation level of 1013.25m AD. The central part of the beam slot had to be excavated down to a level of 1012.75m AD. The western part of the beam slot sectioned the hearth (F.2103) in Space 256 indicating that the feature had been repeatedly used with a series of re-plastering events. Further to the east the beam slot cut through the eastern platform of Building 55, a bench feature adjacent to the eastern wall. To the east of Building 55, the foundation beam slot cut the northern wall of Space 228 as well as the northern wall to Building 57 with archaeological deposits to the east lower than formation level and therefore unaffected by the foundation trench.

### **Post Neolithic Burials**

A number of post-Neolithic burials were encountered whilst excavating the FT's. In many cases the burials extended beyond the limits of the FT's and it was therefore necessary to expand the trenches to excavate the complete burials. Overall, the burials appeared to lie in rows.

#### **FT 1**

These latest Neolithic deposits were truncated by burial F.2803. This consisted of a juvenile (15031) in an extended supine position. The presence of nails around the edge of the cut indicates the individual was buried in a wooden coffin. The burial was within rectangular cut (15032) and filled by dark grey clay silt (15030). The skeleton was close to the surface and poorly preserved. The lack of grave goods make dating the burial difficult, however the position of the body and presence of a wooden coffin indicate a Byzantine or later date. This burial was sealed by firm mid-brown topsoil (15025) and a layer of dumped spoil (15015) from previous excavations in Building 5 and the 4040 area.

#### **FT 4**

There was a large, late grave cut F.2826; (15418) which contained the skeleton (15417) of a late, older male with small 5mm holes in his cranium. This was filled in (15416) and then covered with top soil which contained eroded construction materials (15404).

#### **FT 5**

Cutting into (15017) was burial F.2804. The burial cut (15035) was rectangular in shape, sharp break of slope at top, vertical to steeply inclined sides, sharp break of slope at base and a flat base. Orientated east-west it measured 1.70m E-W x up to 0.7m N-S and 0.8m deep. The skeleton (15034) was dorsally extended with the head to the west and feet to the east, on its right side (facing south). Both left and right arms lay alongside the body although the lower long bones were absent. Both legs were fully extended. The fact that the body lay on the right side, facing south indicates that this may have been an Islamic burial although vague indications of a coffin (two coffin nails) may contradict this. Further to this, the body was identified as a late juvenile with no associated grave goods and was disturbed by burrowing animal activity around the cranium and may have been responsible for the missing lower long bones of the arms.

In order to excavate the burial the foundation trench had to be extended west roughly 1.6m (E-W) and 0.8m wide (N-S). Whilst extending the trench to excavate the complete burial a further Late burial (F.2848) was identified to the west. Due to time considerations this burial was left with no further exposure, the few disturbed bones were collected and it awaits future excavation. Several beads were associated with this burial suggesting that it had been adorned with either a necklace or bracelets.

Sealing the burial was a layer of spoil (15015), deposited during excavations in this general area of the site.

### **FT 6**

This wall was truncated by a later grave (F.2208). To fully excavate the entirety of the later burial the upper part of the foundation trench had to be extended to the west. The grave was that of an adult (15021) interred in a tile lined grave aligned E-W with the body laid dorsally extended with the head to the west. A fine glass vessel (15020.x1) was placed in the grave with the body. A bone point was found near the feet of the skeleton but this was probably a disturbed Neolithic artefact. The tile lining (15022) of the grave consisted of 6 tiles (280x290x40mm) with a finger incised crossed decoration (or keying marks) laid as the base of the grave. A further 16 tiles vertically laid on edge formed the sides of grave with a broken half tile inserted to ensure that no gap was left. A further two tiles were laid on edge outside the main lining of the grave and these would have been opposite the position of the head inside the grave. The body was enclosed in the grave with three larger finger incised marked tiles at the western end and tile of different fabric type reused (indicated by a raised lip around three sides, roof tile?) lay across the feet. The upper part of the grave cut, above the tile capping, had been infilled with a light grey plaster layer that may have functioned as a grave marker. Sealing this feature was a layer of topsoil (15016) and spoil from the 4040 excavations of previous seasons (15015).

### **Beam Slot 9 / 8**

Cutting Neolithic room fills (16055) and (16122) in beam slot between FT's 8 and 9 was grave cut (16056) of late burial F.3006 which extended west beyond the L.O.E and therefore the trench was extended to excavate the complete burial. The grave cut (16056) was east-west oriented, and contained skeleton (16060), which was an extended late burial, the head facing south-east. The burial was of an older female, with incredibly worn teeth, and a bit of osteoarthritis.



*Figure 36: Bone hair pin 16060.X1 by the feet of an older female Late burial F.3006.*

The bones were in fair condition, but a bit crumbly. The grave contained a carved bone hair pin (16060.X1) near the left foot (Figures 36 & 37). At the top of the hair pin was a carved woman in a toga. Defining the grave fill was the staining of a wood coffin (16088) and a total of 14 iron nails, around some of the nails, the wood was a bit better preserved, but in general it had decayed leaving a dark brown and silty loose

layer. The grave fill (16057) was a firm greyish clay loam with lots of chunks of white material, the grave fill was most likely re-deposited room fill. It contained frequent animal bone, occasional stone and pottery, and rare obsidian and shell. The grave fill (16057) of 0.50m depth. Sealing the grave was (16052), which is the same as (15407) in FT 9. It was very fine and silty, dark and ashy, and 0.10m thick, this could be topsoil, but more likely a thin layer of very eroded and exposed midden, however there weren't very many finds in the layer.

#### FT 9

Immediately after brushing off 0.02m – 0.05m of topsoil, several features and fills were already visible. The double wall F.2806, F.2807, which was visible in the section of Foundation Trench 8, midden (15407) on the western side of wall F.2806, and a late burial grave cut [15436].

The fill (15605) of the late grave F.2845 was re-deposited room fill, and thus quite hard and clayey. The fill was 0.32m deep, and the skeleton (15608) was very close to the surface. The skeleton appears to have been an elderly male, tentatively Roman due to the grave goods (X2 clay pot, X3 glass vial) found deposited at his feet. The skeleton had no teeth, and was bowlegged. There was one small piece of a coffin (15652) and two nails, indicating he was buried in a wooden coffin. The grave cut [15436] was in the western section of Foundation Trench 9, and cut through layers midden (15407), room fill (15469), and ending in room fill (15478).

#### FT 10

Although the late burial F.2844 cut (15421) must have through midden (15407), and perhaps through (15066) as well, the grave was not noted until the wood coffin (15420) was exposed. The fill (15412) of the grave was re-deposited midden, and thus rich with Neolithic finds, however there were a few pieces of later pottery (Roman or Byzantine most likely). Because the fill was loose and silty, the skeleton (15607) was easy to expose. However, it appears that the grave was heavily disturbed by animal burrows as much was articulated but much of the skeleton was missing entirely. The wooden coffin (15420) was incredibly well preserved and outlined the entirety of the grave cut. The burial cut also ended in the midden (15400) layer.



Figure 37: Front & back detail of bone pin 16060.X1

## FT 11



*Figure 38: Late female burial F.2802 displayed some interesting pathology, including possible scoliosis. She also had several grave goods including a pair of hoop Cu alloy earrings, Cu alloy pin, near the head and a further pair of Cu alloy pins or sewing needles near the feet. Some small fragments of glass were found near the feet as well.*

Visible prior to excavation and truncating most of the deposits in this FT 11 was a Late Roman/Byzantine burial, F.2802, orientated approximately east-west. The cut, (15012) was at least 0.8m deep, and truncated many of the units in the northern part of the trench to a little above formation level. The skeleton, (15028), was buried in a wooden coffin, (15027) which was remarkably well preserved, measuring 1.7m long by 0.44m wide and 0.35m deep. The skeleton, female, displayed some interesting pathology, including possible scoliosis (see appropriate record for details). She also had several grave goods associated with her, including a pair of hoop Cu alloy earrings, Cu alloy pin, near the head and a further pair of Cu alloy pins or sewing needles near the feet. Some small fragments of glass were found near the feet as well, but no complete vessel was found. The fills of the grave cut were unremarkable firm but crumbly mid grey-brown clay silts, (15011) and (15014). The uppermost of these, (15011) was slightly greyer and may have been a compression fill, since the wooden cross braces of the of the coffin were angled in such a way as to suggest that the lid gave way, presumably causing the fill to subside.

## FT 23

Burial F.2904 cut infill (15687) in FT 23. This adult skeleton (15658) was found just below the surface of the mound in an extremely poor condition. However, enough of the sciatic notch on the hipbone was present to suggest this was likely a male.

## Space 279 / Alan 279 - Simon McCann

### Abstract

2006 saw the excavation of a large area of inter-cutting pits (13148) which had been filled with midden material and was notable for the discovery of the face pot (see Figure 40). In 2007 the eastern extent of these pits were excavated. They revealed deep, straight sided, flat bottomed pits containing much rich midden material. Included among the many x-finds were two goddess figurines. Moreover, further sherds of pottery belonging to the face pot were retrieved; the reconstructed pot now resembles a small oval basket with a human face on the shorter sides and a bucrania on the longer sides. The inter-cutting pits all vary in size and it is suggested they were open for some time and functioned solely as a quarry for brick material. Once this period of use was over the whole area was used to dump rubbish.

### Özet

2006 kazılarında çokça sayıda birbirini kesen, çöplük ile dolu ve yüz motifli çömleğin de çıktığı (bakınız 2006 Archive Report) büyük çukurlara (13148) rastlanmıştır. 2007'de bu çukurların doğu kısmı kazılmıştır. Kazılar sonunda bu çukurların derin, düz profilli, düz tabanlı çöplükle ve zengin malzemeye dolu olduğu ortaya çıkmıştır. Bununla beraber birçok küçük buluntu ve iki tanrıça figürini de bu çukurlardan ortaya çıkarılmıştır. Bununla birlikte, yüz motifli çömleğin diğer parçaları da bulunmuş ve parçalar birleştirilmiş sonunda oval biçimli bir tarafında insan yüzü olan ve diğer tarafında bukranyum şekli bezenmiş olan sepet şeklinde bir kap ortaya çıkmıştır. Birbirini kesen bu çukurlar çeşitli boyutlardadır ve çukurlar bir süre açık kalmış ve yalnızca kerpiç tuğla için malzeme çıkarılmak için kullanıldığını düşünülmektedir. Bu kullanım dönemi tamamlandığında bu alan çöplük olarak kullanılmıştır.

### Introduction

The large area of inter-cutting pits (13148) extended beyond the eastern limit of excavation when first excavated in 2006 (Figure 39). In 2007 the aim was to excavate the eastern extent of these pits which could be seen in plan truncating Building 55.

### Excavation Results

Cutting the upper midden fill of the pits was a shallow pit (14181), containing brick crush which was excavated first. Thereafter the midden layers within the pit (13148) were excavated following the broad bands dug in 2006; these were identified from the section left at the end of the 2006 season and were assigned new unit numbers for this season (Table3).

2007 units	2006 units
14179	12980
14182	
14183	13103 (same as 12971)
14186	13140 (same as 13129, 12972)
14187	-

Table 3: Pit (13148)) New units used in 2007 and corresponding units from 2006.



Figure 39: Section through pits as excavated in 2006.

These midden units all proved rich in animal bone, stone, obsidian and pottery as well as large quantities of X-Finds: units (14183) and (14186) were notable for large numbers of bone points and figurine fragments as well as some beads and complete figurines. 14183.x11 and 14183.x17 are both fine examples of goddess figures.

Deposit (14187) extended throughout the base of the lowest pit of the complex, a large circular pit in the SE. This fill had evidence of slumping/ weathering on the N side of the feature suggesting it may have been open for some time.

### Face pot

Amongst the pottery recovered, several additional sherds have been identified as belonging to the face pot. The reconstructed pot now resembles a small oval basket with a human face on the shorter sides and bucrania on the longer sides (Figure 40). The sherds which make up this unique find appear to have been distributed throughout these pits and not limited to a single unit. Whether this was intentional or merely part of the taphonomic processes is not immediately clear.



Figure 40: Pot found in midden in the 4040 Area and showing a human face. Bull horns and ears can be seen on the side of the pot.



### **Pit Morphology and Function**

The completed excavation revealed the eastern pits to be steep sided circular pits with the southern part the deepest at approximately two metres.

These pits are all circular or oval in plan with steep sides and flat bases but vary in size and depth (Figure 41). Erosion/ collapse of the pits sides are evident in several locations suggesting they remained open for some time.

As these pits are dug straight through Buildings 55 and 64 into building infill and lower buildings it would appear they were originally dug to recover material for brick manufacture and thus acted as quarries. The weathering of some pits suggests that this space was probably used for this activity for some time prior to its abandonment.



*Figure 41: Excavated pit cuts (looking E).*

During the second phase of activity in Space 279 the whole area of pits was used for the disposal of rubbish. The midden material used to backfill these pits extends over several pit profiles with no sign of inter-cutting. This again illustrates there was a hiatus between the pit digging and the middening activities.

### **Discussion**

Here we have two buildings, B55 and B64. After their abandonment the space is then used for some time as a quarry for the extraction of brick making material. Once the need for extracting brick material had ceased, the area became a convenient place for dumping midden.

This activity is within the central 'neighbourhood' area of the 4040 and while some of the midden may be derived from a single household it is likely that it is the accumulated rubbish of several households. This space has been transformed from

one of private or residential use containing two households, represented by Buildings 55 and 64, into one of communal exploitation.

This change of use of spaces is something that has been noted before in other excavation areas at Çatalhöyük. Building 53 in the South Area is built within an area of midden. External areas are still used for dumping midden during the life of the house. After abandonment the whole area is once again used for dumping midden. Some time later Building 42 is constructed and the space again shared between house and midden. Notably Building 42 is not built directly above Building 53.

What is interesting in Space 279 is that these two households, Buildings 55 and 64, which are roughly contemporary, appear to have been abandoned without the intention of rebuilding. This suggests a certain amount of agreement between the two households over the subsequent use of the area. Perhaps the households were already related or decided to amalgamate and used this area as a resource for constructing a new house or houses elsewhere on the mound.

Conversely there could be an element of compulsion involved with the abandonment and subsequent communal use of this space. Perhaps the households were evicted and the area requisitioned or appropriated by the neighbourhood for the production of bricks. The space would now be seen as common ground and fair game for the dumping of rubbish.

Nevertheless this space illustrates some themes frequently explored at Çatalhöyük, such as; neighbourhoods, communities and households and the perceived tensions between them, ownership and exploitation of land/ resources, and how these played out over time.

### **Space 267 / Alan 267 – Lisa Yeomans**

#### **Introduction**

The 2005 excavation identified the remains of a very eroded building (Space 267) of which all that remained was a few basal courses of the eastern, southern and northern sides. During 2007 the area to the west of the 2005 limit of excavation was briefly revisited to establish some of the stratigraphic relationships in the area.

The continuation of Space 267 was built upon a midden deposit (14916). This midden was less finely laminated than the midden below onto which Building 71, immediately to the south of Building 70 had been constructed. Building 71 is defined as the heavily truncated and eroded building built over the area to the west of Building 57. Building 71 only has one internal area surviving (Space 317). Other areas of the building to the east have eroded away. Space 317 is truncated by the intersection of the foundation trenches for the late building (Building 41) truncating the Neolithic stratigraphy in this part of the site. Of the sequence excavated in 2007, Building 71 is the earliest. It must have only been a relatively short period of time before Building 70 was constructed separated from Building 71 by an E-W aligned double wall. During the time between the constructions of the two buildings, midden deposit (14916) accumulated.



## **Giriş**

2005 kazıları sırasında, yalnızca doğu, güney ve kuzey duvarlarının en alt tuğlaları kalmış olan büyük ölçüde erozyona uğramış bir bina (Alan 267) ile karşılaştık. 2007 yılında, bu alandaki tabakalanma ilişkilerini belirlemek üzere 2005 yılı kazılarındaki kazılan alanının batı sınırı tekrar gözden geçirilmiştir.

Alan 267'nin devamı, bir çöplük alanı (14916) üzerine inşa edilmiştir. Bu çöplük alanı, Bina 70'in güney kısmında, Bina 71'in altında bulunan çöplük alanından daha ayrıntılı biçimde tabakalara ayrılmıştır. Bina 71, Bina 57'nin batısında bulunan ve büyük ölçüde erozyona ve tahribata uğramış bina olarak tanımlanır. Bina 71'de yalnızca, iç kısımdaki bir alan korunmuştur (Alan 317).

Binanın doğu kısmındaki bütün alanlar tahribata uğramıştır. Alan 317, daha geç bir bina (Bina 41) için açılmış temel açmaları tarafından kesilmiş ve buradaki Neolitik tabakalanmayı da kesintiye uğratmıştır. 2007 yılında kazılan en erken bina Bina 71'dir. Akabinde Bina 70'in inşa edilmesi ise çok kısa bir süre sonra olmuş olmalıdır. Her iki binanın inşa edilme süresi arasında ise bir çöplük alanı birikmiştir (14916).

The floor surface of Building 71, within the small area exposed in 2007, was plastered with an axe head found on the surface. These floor layers were not excavated in 2007.

The dirty floor (14904) within Building 70 was built over a makeup layer (14907). Above the lowest floor (14904) was the remains of a hearth comprising of layer of silty ash capped by replastering (14906) and sealed by a further layer of silty ash (14905). The hearth was located adjacent to the western wall with a later fragmentary plaster floor to the north (14908). After the abandonment of the building the space was infilled (14903).

A laminated deposit of midden (14902) built up next to the western wall of Building 70. Although these are stratigraphically separated from the midden deposits sealing Building 55 by the foundation trench to the late building (Building 41), examination of the section suggests that (14902) is equivalent to (14901/14900) and (14922) is equivalent to (14916) indicating that Building 70 is later than Building 55.

The latest stratigraphic feature excavated was a late infant skeleton (14919). The work in this part of the site was limited to clarifying the stratigraphic relationships and, although further work would have been desirable, the excavation of foundation trenches for the permanent structure took priority.

## **Building 59, Spaces 276, 311, 313 & 316 / Bina 59 – Michael House**

### **Abstract**

The aim of this season was to excavate Building 59 in its entirety and gain an idea of the ground plan of the building below without excavating its infill.

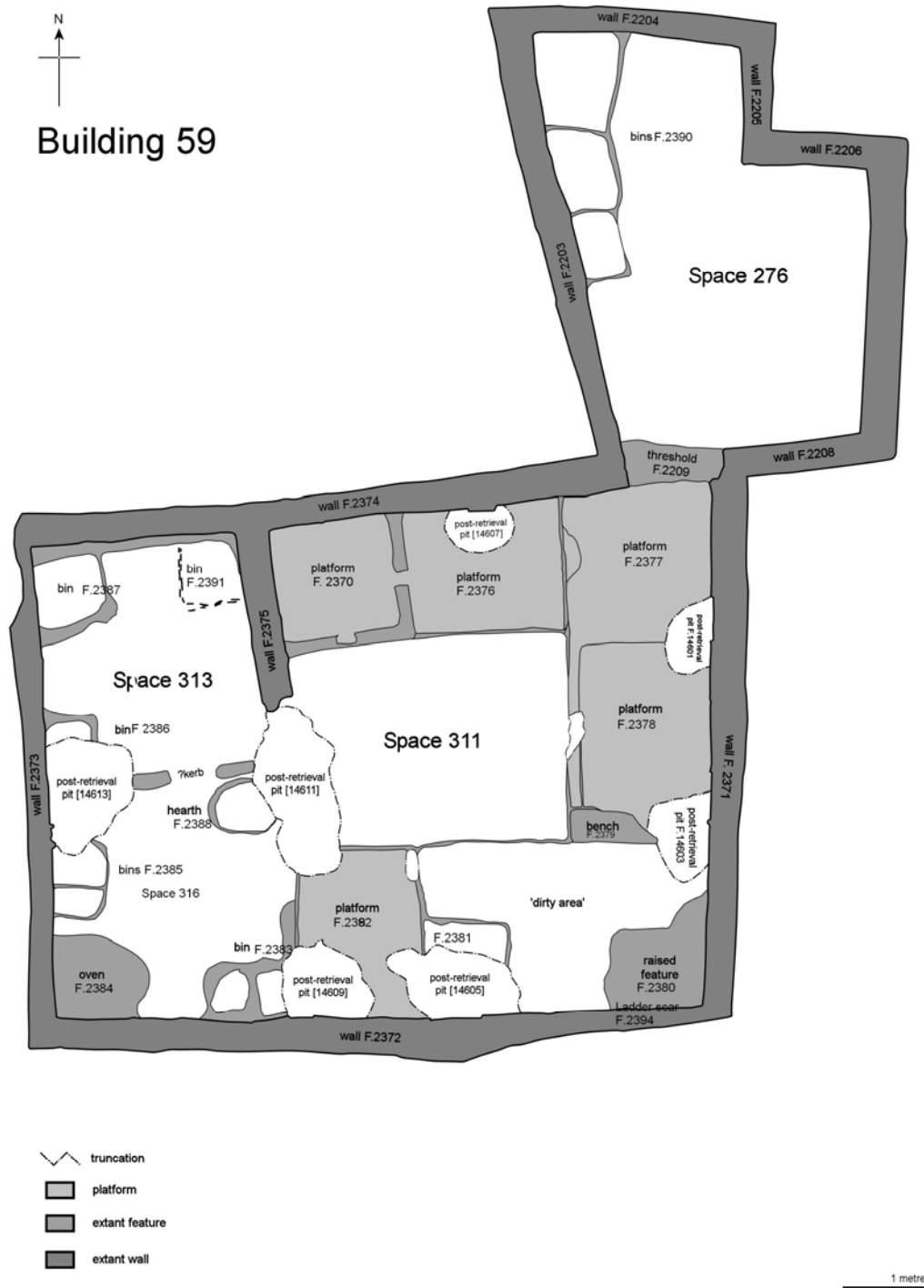


Figure 42: Latest phase plan of Building 59.

Exposed in the 2006 season beneath the heavily eroded Building 60, Building 59 was by Çatalhöyük standards a very large structure consisting of four distinct rooms or spaces their function being determined by the features contained within.

The main body of the structure measured 8m E-W by 7m N-S and consisted of three spaces a large living/domestic Space 311 made up of five large platforms, some that clearly showed evidence of moulded decoration speculatively there to support a bucranium or similar feature. Two benches and a very clear ladder scar cut into a smaller platform in the SE corner and visible on the southern wall in its plaster render F.2372. The central portion of the western wall above a lipped or curbed platform F.2378 (the largest of the platforms) bore a red painted panel.

To the west of this large room were two smaller spaces separated from Space 311 by an internal wall F.2375 and what may have been a thin mud brick screen constructed around one or more large timber roof supports represented by the post retrieval scar (14611). The removal of these posts prior to demolition is probably the reason for the limited survival of the internal partition the remnants of which can clearly be seen on the southern end of the internal partition wall. The southern room Space 316 appears to be a space for food preparation containing two fire installations a large oven in the SW corner and an open hearth in the NE corner, the other two corners were occupied by storage bins, both with similar morphology. As can be expected the floors within this space had been subject to many minor repairs and resurfacing events, with several clearly demonstrating evidence of fire or heat damage as well as many of the make up layers containing ash and charcoal deposits from rake out events or fire spots. This room was most likely accessed from Space 311 but no clear entrance is visible due to the removal of the two central posts.

The two western rooms were divided by a thin internal wall or curb, with what looks like a crawl space at the centre. Space 313 to the north appears to have been a storage room containing two very remnant bins against the western wall and a third lower in the sequence in the NE corner.

In the NE corner of the living Space 311, was a threshold step into another larger storage room Space 276. Unlike the regular form of the main body of the building the space to the NE was irregular with very limited wall plaster and course and uneven floors and appears to be utilizing an existing space dictating its form. It contained three large bins against the western wall, all in a poor state of preservation due to their proximity to the surface. It was initially believed to be a knock through from the main building later in its life, however the removal of the floor sequences in both Spaces 311 and 276 show that if this was so it occurred very close to if not at the inception of the main body of the building.

## **Özet**

Bu yıl Bina 59'un kazılmasındaki ana amaç, dolgu toprağın tamamen boşaltılıp alttaki erken devreye ait binanın dolgusunun seviyesine gelmekti.

2006 yılında büyük ölçüde erozyana uğramış Bina 60'ın altından görünen Bina 59, Çatalhöyük standartlarına göre çok geniş bir bina olup dört odadan veya içinde yapılan işlere göre fonksiyonları belirlenmiş olan dört farklı alandan oluşur.

Bu binanın ana yapısını oluşturan Alan 311, 8m Doğu-Batı ve 7m Kuzey-Güney boyutlarında olup 5 ayrı platformu içerir ve bunlardan bazıları çok açık bir şekilde sıva ile biçimlendirilmiş dekoratif unsurların (muhtemelen bukranyum veya benzer süslemeler için) kalıntılarını gösterirler. İki adet benç ve güneydoğu köşesinde çok açık bir şekilde görünen bir merdivenin daha ufak bir platforma kesilmiş izi ve güney duvarına çekilmiş kalın sıva F.2372. Kıvrılan platform F.2378'nin (alandaki en geniş platform) üzerinde yükselen batı duvarının merkezinde şerit halinde bir kırmızı boya ortaya çıkmıştır.

Bu geniş odanın batısına doğru, Alan 311'den bir iç duvar (F.2375) ile ayrılmış olan iki alan bulunur ve ayrıca burada muhtemelen çamur ile sıvanmış olan, çatıyı desteklediği düşünülen geniş ağaç kirişlerin izleri duvarda yer almaktadır (14611). Bu geniş kirişlerin bina terk edilmeden önce çıkarılmış olması iç duvarın güney kısmının yıkılmasına yol açmıştır. Güneydeki oda olan Alan 316'da bulunan iki ocak ve güneybatı köşesindeki geniş ocak ve kuzeydoğu köşesindeki açık fırın, burasının mutfak alanı olduğunu göstermekte olup diğer iki köşede de aynı morfolojik özellikleri gösteren depolar bulunmaktadır. Bu alandaki tabanlar üzerinde, beklendiği üzere birçok küçük ölçekte yeniden inşa ve tabanların yeniden bölgesel olarak sıvanması gibi işlemler görülmüş ve yine yüksek ısıya maruz kalan bölgelerde bozulmalar ve tabanlar arasında fırınlardan ve ocaklardan kül çekme işlemi sonucunda kalmış olan kül tabakaları bulunmuştur. Bu odaya giriş büyük bir ihtimalle Alan 311'den olmuş ancak iki büyük ana girişin kaldırılması üzerine çok net bir giriş izi bulunamamıştır.

Batıdaki iki oda ince bir iç duvar ile ayrılmıştır olup, merkezinde sürünme ile geçişin yapılabileceği bir alanı merkezinde bırakır. Alan 313'ün kuzeyinde alan, batı duvarına bitişik iki adet depo kalıntısının bulunduğu ve üçüncüsünün de Kuzeydoğu köşesinde tabakalanmanın daha alt seviyesinde yer aldığı, depo alanı olarak belirlenmiştir.

Yaşama alanı olarak belirlenen Alan 311'in Kuzeydoğu köşesinde yer alan eşikteki basamak farklı bu alanı farklı bir depo alanı olan Alan 276'ya bağlar. Binanın geneldeki düzgün şeklini göz önünde bulundurduğumuzda, Kuzeydoğu'daki bu alanın genel şekli düzgün diildir ve ayrıca burada çok kısıtlı duvar sıvası ve tuğla kullanılmış olup tabanı da özenli yapılmamıştır. Bu alanın binanın farklı odalara ayrılmasından geri kalan alanın değerlendirilmesi sonucunda kullanıldığı düşünülmektedir. Burada batı duvarına bitişik üç adet geniş depo bulunmuş ve bu depoların çok iyi korunmadıkları. Bu iki alandaki taban seviyelerine gelindiğinde iki alanın da (311 ve 276) eş zamanlı işlerlik gösterdiği kesinleşmiştir.



*Figure 43: View of Building 59 as excavated in 2006 (looking SE)*

The pristine platform surfaces (Figure 43) from the outset appeared to indicate the building was lacking something common to the rest of Çatalhöyük's structures, burials. Building 60 above had at least eight adults and an infant under a single platform. This could also be attributed to the structures limited life span, with only a single crouched adult buried in the NW storeroom.

As stated last season there appears to be correlation between many of the architectural elements in Building 60 such as the location of engaged pillars, a red wall painting, the location of both bench and platforms and the SE platform and ladder scar (see Archive Report 2006), with those below in Building 59, which may suggest that the size of Building 60 mirrored that of Building 59. This reuse of the space is also evident in the unexcavated building below 59. This is corroborated elsewhere on site, particularly in the South Area where sequences of superimposed buildings have been excavated. It may represent ownership of space by a particular family group with the successive rebuilds following an ancestral memory, with minor alterations.

### **Floors**

The flooring and wall plaster is discussed by units that often comprised of several floors and their make up layers. They were removed in layers of varying thickness based on their stratigraphic relationships to features within the spaces. Floors that only cover a feature (a distinct event applicable only to that feature) will not be discussed in this section only major resurfacing events, plaster layers restricted to individual features will be discussed in relation to this sequence in their own dialogue below.

The floor sequences can be roughly divided up into the four spaces that make up Building 59, although there are some crossovers particularly between Spaces 313, 316 & 311 in the main area. The floor sequence in Space 276 remained separate and

distinct throughout the buildings life, only being linked by minor re-plastering events on the threshold step F.2209 and platform F.2377 (see below).

The floors in Spaces 311, 313 & 316 were all founded at the same time on the mud brick crush in fill of the structure below & clay founding surface (14739). It was at this point the only burial found in Building 59, F.2393 was cut and a single individual interred (see below). This was followed by the addition of two 'patchy' surfaces and their make up layers (14747) that also extended into all three spaces. Subsequently came (14724) a white plaster surface on platform F.2382 although only covering the platform this surface marks a distinct change with the floor sequences at this junction being split into those in the western Spaces 313 & 316 and those in Space 311.



*Figure 44: Post excavation empty shell of Building 59 showing top of earlier building infill and beginnings of the house plan (looking W).*

In Space 311 the sequence ascends as follows, above (14724) was; (14719) a patchy white plaster surface on orange make up; (14684) in places a very thick white marl surface, cut by scoop (14716); (14713) 1.5cm of grey greasy floor surfaces and associated make up layers, (14682) reddish plaster on grey make up, (14710) another patchy surface with lenses of ash between it and the make up layer or occupation horizon. Also above (14724) in Space 311 was (14740) a 4cm thick layer of mud brick crush raising the height of the lower SE corner, this was partially covered by (14735) a plaster coat on platform F.2382 that also extended slightly into Space 316 to the west.

Above (14724) in Space 316 was (14729) which can be tentatively linked to floor unit (14730) to the north in Space 313 based on relative heights and colour banding in the two floor units. The relationship between the two becomes vague as a thin east-west aligned partition wall separates them with only a crawl space to link them, and at this intersection very little of the floors remained.

Sealing (14729) was floor unit (14794), this extended from Space 316 into the southern half of Space 311 and consisted of a remnant white plaster surface on orange make up, sealing several 'dirty' grey, greasy surfaces with lenses of ashy occupation debris. Above this in Space 316 extending north through the crawl space into Space 313 were floor units (14647). These showed evidence of localized burning and to the front of bin F.2385 in Space 316 a small scoop (14636) was cut, the fill of which (14635), contained an obsidian projectile point and a single bead. The final surfaces to be laid prior to abandonment in Spaces 313 & 316 were (14622) a sequence of 'dirty' grey occupation surfaces and pinkish red make up layers.

Above (14794) and finishing the sequence of major resurfacing events in Space 311 were floor units (14646) which covered the open central area as well as the open southeastern entrance area; (14625). 'Dirty' floors in the open central area extending up on to the north central platform F.2376; and (14618) a composite of 'dirty' floors and occupation layers in the southeast of the space

At a glance there would appear to be a greater depth of floors in Space 311 than in the subsidiary rooms Spaces 313 & 316 to the west based on the amount of units removed. This is however slightly misleading as the complexity of the floorings interaction with the architectural features in Space 311 led to the removal of thinner yet more frequent units, whereas the more simple stratigraphic relationships in Space 313 & 316 enabled us to remove a greater depth of flooring as a single unit. Unsurprisingly the greatest depth of flooring appears to be located towards the southern half of the building in Space 316, the cooking and food preparation area and the southern half of Space 311, an access area.

The sequence of floors and make up layers in Space 276 were extremely fragmentary and 'patchy' particularly when viewed alongside those seen in the main area to the south. However the lack of interaction with many complex structural elements make it a relatively simple sequence. The earliest floor being (14641) a patchy white marl surface on a grayish make up layer; above this was (14648) the first make up and floor layer to be laid after the instillation of the threshold step F.2209, this floor surface only survives in the south of the space, however a small fragment of make up (14629) and floor (14626) against the northern wall may be broadly equated to this phase of plastering.

Sealing (14648) was a dark grey make up layer which covered most of the area of floor (14633) but which was almost completely eroded/ scoured away, only surviving in fragments against the eastern wall. Above was another highly eroded floor (14623), of which less than 1.5m square survived. Next in the sequence was another highly eroded or scoured grey clay floor (14621) only surviving to the south and around the edges close to the wall. The final abandonment surface (14619) covered the entire space. As with the rest of Building 59 this surface had a greater depth to the south, probably attempting to compensate for local subsidence.

### **Post retrieval pits**

There are seven possibly eight large post retrieval pits. Six are located around the edges of the main structure and one slightly off centre separating Space 311 from the two smaller rooms to the west (Spaces 313 & 316). These pits gave us a great deal of insight into the buildings construction and longevity prior to excavation, clearly



demonstrating in comparison with many other excavated structures, a greatly reduced sequence of plaster layers on both floors and walls. Space 276 to the north had no evidence of any structural support for a roof other than the walls.

These large pits were obviously the product of post retrieval; this differs greatly from the method of roof support demonstrated in Building 60 above, which utilized engaged pilasters made of mud brick, however the location of all these pilasters mirrored the pits in Building 59.

Against the eastern wall a later pit (14691) was cut which although shallower appears to be an additional roof support post and may have been inserted due to subsidence in the south.

### **Space 311 (“The Living room”)**

This large square space 5.30m x 5.20m consisted of an open central area surrounded on three sides (north, east & south) by five large platforms some decorated with curbs and plaster mouldings, two benches, although one may be a heavily truncated platform and a small entrance platform with ladder scar in the SE corner. Along the lower central portion of the east wall F.2371 between two post retrieval pits behind and above a large curbed platform was a red border panel. Most of the floors were what we refer to as ‘dirty’ or greasy particularly in the south east corner at the entrance point however, the northern and eastern platforms were well maintained with layers of thick white marl plaster. Unlike other dwellings at Çatalhöyük, none of the platforms had any burials cut into them.



*Figure 45: Mid-sequence of Building 59 showing main features (looking W).*



### **South East Entrance Platform F.2380 and Ladder scar F.2394**

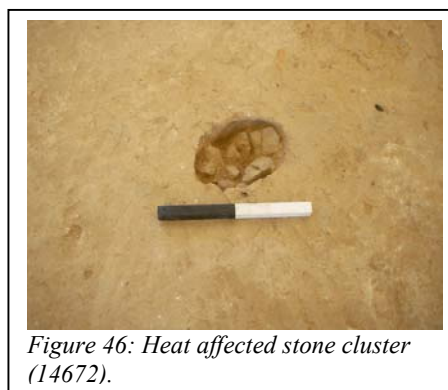
As with Building 60 above a small platform was located in the far SE corner of Building 59 at the entrance point, and was constructed around the entrance ladder visible as a negative scar F.2394, which is located on the western edge of the platform, the angle of the ladder being clearly demonstrated by scarring in the plaster of the southern wall F.2372. This platform was present throughout the buildings life and due to its status as the entrance step has more evidence of repair and re-plastering than any other feature, due to wear and tear from a constant stream of foot traffic. Several of the plastering events most likely relate to larger flooring and resurfacing phases within Space 311, however truncation from the removal of the ladder, two scoops (14696) & (14697) and a possible post retrieval pit (14691) made such relationships hard to deduce and so the higher floors remain higher up in the stratigraphic sequence.

The platform consisted of a mud brick crush core (14764) with a large chunk of re-deposited plaster (14687) reused as packing. The sequence of flooring on the top of the platform was as mentioned separated from the sequence of flooring within Space 311 by a series of truncations, these floors consisted of mainly dirty greasy surfaces and make up layers only the primary surface (14726) was white. The sequence was (14731) a make up, (14726) plaster surface, (14722), (14683) and (14681) a series of dirty floors and makeup layers (0.10m thick). The platform was extant at the conception of the building and was respected by the earliest floor (14739) and all subsequent floors in the SE corner up until abandonment and surface (14618).

### **North West Decorated Platform F.2370**

This platform was one of the latest features to be added to the space measuring 1.70m x 1.40m x 0.20m it was constructed above platform F.2376, which earlier in the buildings history continued up to the internal wall. Utilizing the existing platforms existing height F.2370 was quite an impressive structure and a focal point to the space. Curbed on the southern and eastern sides both of which contained the scars or remnants of a decorative plaster mouldings possibly for a bucrania mount. Damage to the central parts of two of the platforms against the eastern wall may also represent the removal of such decorative features prior to abandonment, although this is less compelling than the evidence on F.2370.

As with most of the platforms F.2370 had a mud brick core (14676), followed by a layer of finer mid reddish brown clay (14673) to define the structure prior to plastering. The platform then appears to have been cut into in the SE corner by a small pit (14671) 0.10m x 0.12m x 0.07m. The pit contained two fills, a loose brown silt (14674) and (14672) a cluster of seven small heat affected averaging about 5cm in diameter (Figure 46). The function of this small pit prior to plastering is unclear and may have had some form of ritual significance. A thick white plaster layer (14666) was then added to the platform forming the 75mm curb around the edge incorporating a decorative moulding at the centre of the eastern curb and most likely one at the centre of the southern curb now only a scar in the crisp perfect edges of the platform.



The platform remained in good condition until abandonment with no other alterations or repairs corresponding with later flooring events ((14663), (14646) & (14725)), which only lapped up to the structure.

#### **North central platform F.2376**

This structure was founded at the genesis of the building just after the outer walls were constructed. The rubble core was constructed from the same brick crush as the earlier buildings infill (14739). The core was also used to the west as a blocking/foundation event for the interior wall F.2375, which was partially founded on an earlier NS aligned wall. This earlier wall was left standing proud but only to the south with a gap where an earlier entrance was, a feature obviously not required by the builders of B.59.

The platform was subject to many re-plastering sequences only (14663) was limited to the platform itself, the rest appear to have been broader more general re-plastering events covering a larger area within Space 311. The construction sequence for the platform was the foundation of the core (14739), the application of a red clay make up or founding layer (14719) on the brick crush defining features within the space, then plaster and make up layers (14684); (14682); (14666) related to the founding of platform F.2370; (14663); (14646) & (14625) a majority of which were dirty off white floors with reddish marl clay make up layers/or surfaces.

The platform at the centre against the northern wall was heavily truncated in antiquity during removal of the roof support post. Once again this platform was devoid of burials.

#### **North East Platform F.2377**

Once again this large platform 1.90m x 1.80m in the NE corner appears to have been established very early in the buildings life and appears broadly contemporary with the platform to the west F.2376 and actually shares the same core as platform F.2378 to the south. The platform was raised most likely in keeping with height changes in Space 276 to the north and its development is tied into the morphology of the threshold step F.2209 between Spaces 311 and 276.

These three platforms are some of the earliest features within the building and remain in one form or another until abandonment. Damage to the western central part of the platform may be attributed to the removal of a decorative feature or moulding as is clearly the case on platform F.2370. The core was constructed with mud brick crush (14751) then covered with a greasy grey surface (14742) all forming & covering both platforms F.2377 & F.2378 with a slight step down from platform F.2377 to F.2378. The next plastering also covered both platforms and an additional bench F.2379 constructed at the southern limit of F.2378, this plaster was white and probably with the addition of the bench is indicative of a change in importance for the space elevated by platforms.

The next re-plastering event was throughout the entire space and included a reddish grey clay render (14719) and a thin off white plaster surface (14684) which although eroded out in the areas probably affected by frequent foot traffic, on the edge of the platform it survived to a thickness of 6cm.

Due to wear and tear both platforms F.2377 and F.2378 as well as bench F.2379 were all given a 3cm thick coat of plaster (14686) along all edges facing into the room, and in the case of F.2377, on the western face. The next alteration to the platform was the addition of a layer of mud brick crush levelling deposit which appears to be linked to the changing floor levels in Space 276, the adjusting height of the threshold step and major slumping of the building in the south east corner. This slumping to the south & east is the reason the thickness of the deposit ranged from 4cm to the west to 13cm to the east. After an addition to the threshold the platform, as well as the northern wall were finished in an off white plaster prior to abandonment.

#### **East central Platform F.2378 and Bench F.2379**

This platform as mention above shares the same core (14751) and original plaster surface (14742) with platform F.2377, being unremarkable other than its size measuring 2.40m x 1.80m aligned north to south along the eastern wall of Space 311. The next phase of development saw the platform being elevated slightly with a brick rubble core (14727) which also formed the core of an additional bench F.2379 at its southern limits, effectively reducing the size of the platform on its N-S axis by 30cm the width of the new bench.

Next in its development the bench alone seems to have been plastered by (14733) though this seems unlikely such that the plaster on the platform was either eroded or so fragmentary it was removed during excavation with the later surface. Prior to the next plastering of both bench and platform the benches height was elevated slightly by 2-4 cm with a thin layer of brick crush (14732) and an off white marl plaster (14733) applied to the bench alone. The two features then as with the platform to the north were covered with a sequence of make up layers and plaster surfaces (14721), (14719), (14684) & repair (14686), a very remnant floor (14646) lipped up to the platform and partially covered the bench and finally the whole bench and platform were covered by a thick layer (2-4 cm) of fine white plaster (14630).

The platform and bench combination against the eastern wall was mirrored exactly in Building 60 above excavated in 2006, with the exception of the nine burials contained within the later buildings platform.

Situated behind the platform and between the post retrieval pits (14601) & (14603) was a striking red panel (13481), this was revealed after the removal of several thin white plaster layers at the end of the 2006 season and although not actually visible at the buildings abandonment the red wall painting was present throughout a majority of the buildings life. With its inception shortly after the first plastering (14742) of platform F.2378, the panel was repainted at least six times before it was finally painted over in white.

#### **South central Bench/Platform F.2381**

This bench or more likely platform in the south of the space was heavily truncated during the removal of the roof support post in antiquity leaving the scar (14605) and measures 1.05m EW x 0.40m NS (truncated). The feature appears to be both contiguous and contemporary with several fire spots (14714) & (14680) on the surfaces to the north and may have operated as a seating area for an intermediate cooking space during the period with no formal hearth or oven in Space 316 to the west.

As with all the structures in this space the bench/platform was founded with a brick crush core (14711) on the floor surface, the bench was established at a time of major redecoration, as the first plaster layer to cover the feature was surface (14682), which covered the entirety of Space 311. Next in stratigraphic progression the surface (14710) respected the bench lapping up to but not covering the feature, followed by surface (14646) & (14618) both key surfacing events in the southern part of Space 311.

### **SE platform F.2382**

This final platform within Space 311 is what provided the link between Space 311 and the two adjacent rooms Spaces 316 and 313. However much of the information was lost by the damage caused by the post retrieval truncations to the south and north. The platforms originally served the function of a threshold step between Spaces 311 & 316 established in the buildings concept stage with brick crush core and surface (14739). This platform appears to have been formed initially as a step between areas. It was not until the addition of a curbed edge (14735) along its northern and eastern limits that it really became a platform. This curb was later removed by the deliberate infilling of the space, formed with an orange make up and floor unit (14720). The platform was then covered by a succession of formal floors and surfaces, some respecting the feature others covering from both Spaces 316 to the west and 311 to the east.

### **Space 316 (“The kitchen”)**



*Figure 47: Space 316, the oven, hearth and basin area in Building 59 (looking W).*

This small square space 3.00m x 2.70m functioned as a food preparation area was clearly defined by its features, at abandonment the space contained two fire installations, an open hearth F.2388 and oven F.2384, and two bin clusters with a very distinct morphology. The area also housed an earlier freestanding oven F.2392 constructed on the earliest floor surface. However, perplexingly there appears to have been a period in which the building operated with no formal hearth or oven, although

several fire spots in Spaces 316 & 311 may indicate open fires were used for cooking or out dated structures may have been removed in their entirety. The latter may also explain the poor condition and quantity of localized repair of the flooring in Space 316, which was primarily attributed to the amount of heat and physical activity taking place in the area.

#### **Oven F.2384**

This oven like most at Çatalhöyük was located against the southern wall, however in this case it was positioned to the west away from the roof entrance usually utilized as a flue or chimney to remove the smoke. This may indicate that this large house had another form of ventilation in the SW corner. The oven, hearth and bins were broadly contemporary, all being constructed on the upper floor of unit (14694) with the later floors and make up layers (14647) & (14622) within the space respecting them.

The structure was built in the SW corner abutting both walls extending along the southern wall the oven entrance opened to the east, the front of the oven was slightly curved built of a solid clay superstructure (14678). The inside of the superstructure appears to have been levelled with a floor/surface (14675) and then carefully lined throughout with (14669). A small patch of different lower grade clay (14679) was initially thought to be a localized repair, however, on reflection this seems unlikely as there is no sign of repair to the lining. The oven measured 1.16m x 0.80m walls of the oven only survived to a height of 0.25m an internal height of 0.16m.

#### **Hearth F.2388**

Located in the NE corner was a small freestanding open hearth 0.74m x 0.60m x 0.27m truncated slightly to the east by the post retrieval pit (14611). A small fragment of what may have been an earlier possible hearth (14685) survived directly below the superstructure built on the floors and make up layers represented by unit (14694) and a small patch of localized burning (14664). The superstructure was built in two stages a base (14662) and the curb (14661). The original burning surface (14616) - a silty ash deposit was later resurfaced with a new lining (14615). As with the oven both later floor & make up units (14647) & (14622) respected the structure. Many of the floor surfaces sealed by the hearth demonstrate localized burning, or fire damage indicating this areas continual use as either a formal or informal hearth throughout the life of the building.

#### **Combination Bins F.2383 & F.2385**

Both bins were as with the hearth and oven founded on the upper surface of floor unit (14694) and despite some localized re-plastering on the features themselves remain in use until abandonment, respected by the later flooring events in Space 316. Both were of similar dimensions 0.70m wide the length was on both truncated in antiquity by the removal of the roof support posts. F.2385 was the least damaged and measured 1.00m in length.

Bin F.2383 was located in the SE corner and consisted of two adjacent bins or a bin and trough combination. The one to the east was shallow with smooth sides and base (slightly concave) with a small sweep out channel or drain to the front, its partner to the west was once high sided and probably domed or covered, with a very coarse interior. They appear to have served a combined function of storage and food preparation. It was constructed using a mud core (14655), the shallow eastern bin or

trough was then covered with a greyish white plaster (14654). The high-sided bin to the west saw some minor repair and re-plastering. Later the whole feature was covered again with thick light greyish plaster (14649) raising the height of the eastern trough whose floor was subsequently raised with a layer of crushed mud brick and plaster (14651) and re-plastered (14650) on the interior alone.

Bin F.2385 located in the NW corner of Space 316 was far simpler in its development but followed the same morphological conception and probably served the same or similar function to F.2383 (above). The southern bin or trough was well finished with a concave base and sweep out channel or drain to the south against the wall, its partner to the north was high sided and at one time covered.

### **Oven or hearth F.2392**

This oval oven or hearth was unusually situated in the south central area of Space 316 away from the southern wall on a slightly different alignment. The superstructure (14750) was surrounded by ash rake out (14748). The lining had undergone at least two repair/resurfacing events (14736 & 14743), the oven was constructed on floor (14729) and continued in use whilst the floor layers (14747) were laid. This unit of flooring consisted of two greasy grey floor surfaces, and as would be expected lenses of ash local to the oven, they also contained occasional bone and charcoal fragments.

### **Space 313 (“The pantry & and mausoleum”)**

This small square room 2.60m x 2.60m in the northwest of Building 59 was accessed from Space 316 to the south through an access point through a thin internal mud brick wall, which was founded on an earlier wall below. The limited survival of this internal wall, which was almost flush with the later floors, may mean it was demolished late in the structures life creating one large space rather than two small rooms.

With the exception of floor surfaces (14739) & (14747), this space has always operated as a storage area. The poor condition of (14747) which only survives in the southern half of the room may indicate any earlier structures were entirely removed. The only other feature within in space was an early single crouched burial F.2393 cutting the original floor and make up unit (14739), this may also indicate an earlier feature was present as many of the burials at Çatalhöyük are cut through platforms. A narrow curb along the northern wall may once have extended out into the room forming a platform, which was subsequently cut back as it is quite possible to imagine projecting the core of platform F.2376 to the east in room Space 311 on which the north-south aligned internal wall is founded into Space 313.

### **Bins F. 2386, 2387 & 2391**

These three bins were located in three of four corners of Space 313, F.2386 in the SW F.2387 NW and F.2391 in the NE. All were established at the same time constructed on floor surface (14730) an early floor surface in Space 313. It is unclear what the function of the space was prior to the instillation of these three bins on the two previous surfaces.

All were very basic in comparison to those in Space 316 to the south, all being single cell constructions and heavily truncated leaving only a relic standing a few centimetres proud of the floor, all had a thin mud brick core and two had a limited survival of their original marl renders. All three operated with later resurfacing of the



space by (14694) however, the bin in the NE corner F.2391, for an unknown reason, goes out of use after this and was demolished and covered by floor (14647), whilst the other two continue in use operating with both this floor and with the final pre-abandonment floor (14622)

### **Burial F.2393**

The only burial in Building 59 was a single adult in a crouched position flexed on its left side. This individual was interred prior to the room taking on the function of a storage space.



*Figure 48: The single burial found in Building 59 was located in the centre of Space 313 very early in the sequence of occupation.*

### **Space 276 (“The store room & or animal pen”)**



*Figure 49: Storage area? Space 276.*

This roughly L-shaped room/space was accessed from the NE corner of Space 311 over the threshold step F.2209. The strange and irregular form of the room is probably indicative of reuse of a space or “dead” space between existing structures, and it is likely this space was once external. Unlike the main structure to the south, which was well proportioned with, smooth well-established floors and crisp clean features, Space 276 had thick dirty and generally uneven floors or surfaces, with very thin plaster on the walls.

As stated above floor (14633) was almost completely eroded/ scoured away, only surviving in fragments against the eastern wall where there was a concentration of stones wedged into the corner of the floor and wall(Figure 50). Found on top of floor (14641) was a cluster of coral or stalactite (Figure 51).

The pitted uneven flooring may indicate this space was, at least in its latter life, used as some form of animal enclosure adjacent to the living spaces to the south. Three bins F.2390 extended from the NW corner along the western wall down at least half of its length. These indicate the room was used as a storage area although they could have been used later as animal feed troughs.

### Bins F.2390

The storage bins were like the rest of the space in very poor condition this may also have something to do with the northern end of the spaces proximity to the surface. The bins were established on the earliest floors in the space (14641), with a reddish brown clay superstructure a (14653), this as with the plaster coats were in a poor condition, the northern bin was almost completely eroded away. The three bins each had multiple internal plaster

layers removed as single units (14702), (14703) & (14704) north to south and a single outer layer (14705).

### Threshold step F.2209

The threshold step was constructed on floor surface (14641) the primary floor surface within Space 276 with a mud brick crush core, this was then raised with the addition of two bricks (14660) and their plaster/mortar bonding (14725). The earliest plaster coat (14721) was only survived on the southern face of the threshold and also covered platforms F.2377 and F.2378, in Space 311. The threshold was subject to two more plastering events (14684) a major redecoration of the entirety of Space 311 and (14652) which was localized repair to the step its self.

### Building Morphology - Phasing sequence

As with many of the buildings excavated at Çatalhöyük, there is a very fluid sense to the development of the internal features in Building 59, piece meal, ad hock development driven by repair needs and internal restructuring. This means the building morphology can only be discussed in very broad phases, the relationships between individual features and floors being discussed in the body text above.

### Construction phase 3

The earlier building (which has not yet been excavated and as such has not been allocated a number) was demolished the roof support posts removed and the internal



Figure 50: Wedged into the corner of floors (14633) was stone cluster (14637).



Figure 51: Lumps of coral or stalactite? Found on floor (14641) (looking E).



Close up of Figure 51.



spaces filled with sterile brick crush (14739). The exterior walls were then erected, forming the superstructure built directly on relic of the earlier structure (see Figure 44).

These four walls F.2371-4 formed a large square space; more of the brick crush was then used to form the cores of several of the platforms F.2382, F.2380, F.2378, F.2377 & F.2376, prior to F.2376 being plaster rendered an internal dividing wall F.2375 was built. This wall was constructed directly above a north south aligned wall from the building below, however in the building design for B.59 an entrance was not required in the north west corner so the brick crush used to create the core of platform F.2376 was also used as a blocking event for this through space (1.10m wide). The wall below also had an east west return dividing the western space into two, which appears to have been mirrored in Building 59 although the truncations (14611) & (14613) caused during the removal of the posts in antiquity and the generally poor condition of the internal east west wall in Building 59 makes it hard to comprehend how the two interacted.

The northeastern entrance, initially believed to be a later knock through appears to have been conceived at the construction phase. The now formalized spaces were rendered and plastered

### **Development phase 2**

The building saw many changes to the internal structural elements as well as the addition of new ones. It also saw spaces becoming formalized with regard to function. Space 311 saw the addition of architectural detailing to several of the existing platforms such as the addition of curbs to both F.2382 the platform in the SW corner and also to F.2378 at the centre of the eastern wall. This platform also had a bench added at its southern end, something reflected in the development of Building 60 above. This space saw the late addition of the bench/platform F.2381 abutting platform F.2382 in the southwest corner an addition that appeared to be associated with several fire spots or open hearths in the southeast of the space. This change is probably linked with changes in Space 316 the cooking and food preparation area to the west. One of the latest additions to Space 311 was a large curbed platform being constructed at the western end of platform F.2376 in the northwest corner, being built on an existing platform gave this feature F.2370 an elevated position and it was clearly a focal point of the room with decorative detailing on the at the centre of both curbs.

The southeastern Space 316 appears to have always been associated with cooking and food preparation, however this became formalized towards the end of the buildings existence. It appears initially to have operated with open fires until a large oval oven or hearth was added, this went out of use and was demolished to the floor level, with only a small amount of the superstructure surviving protected by the build up of earlier floors. There then appears to have been a time with no formal hearth or oven, although one may have been completely removed. Finally a large oven was built in the southwest corner a small hearth in the northeast corner and two combination bins, this setup remained until the structure was abandoned.

It is unclear as to the original function of Space 313 when the inhumation was dug, however throughout most of its existence it appear to have functioned as a storage

room, with three storage bins operating at abandonment only two remained. The bins in Space 276 were established on the earliest floors and remained though to the end.

### **Abandonment Phase 1**

With the exception of the earlier oven in Space 316 and the northeastern bin in Space 313 all occupational elements of Building 59 were present when the building was finally abandoned and back filled, and Building 60 erected.

## **SOUTH AREA**

### **Building 53 & earlier pitting / Bina 53 ve Açılan Çukurlar ve Çöplük Alanları – Freya Sadarangani**

**Excavation Team:** Anies Hassan, Michael House, Freya Sadarangani, James Taylor, Lisa Yeomans.

#### **Abstract**

Continuation of excavations of Building 53 revealed its construction and early use. Of particular interest was that the building was founded upon accumulation of external type dumps of homogenous clays cut by pits. This appears to represent a hiatus phase between the sequence of buildings and middens above but also a continuity of changing use in this area of the site.

The earliest excavated units comprised midden deposits and pitting. The main bulk of midden continued east beyond the limit of excavation and was not excavated this season.

#### **Özet**

Bina 53'ün devam eden kazıları, binanın yapım sürecini ve erken kullanımını ortaya çıkarmıştır. Bu kısmın en ilgi çekici yanı, binanın çeşitli çukurlarla kesilmiş olan ve dışsal atık çeşidi tabir edilen homojen bir kil dolgu üzerine yapılmış olmasıdır. Bu dolgu binalar ve çöplük alanların arasında bir ara tabakalanmayı temsil eder.

#### **Pitting and Midden**

At the eastern end of the area a loose mid to light grey silty ash was excavated with frequent charcoal fragments and flecks and bone, sloping downward to the southeast, (14839). This ash dump appeared to represent the uppermost sequence of the midden proper. This in turn was truncated by roughly circular, heavily truncated pit (14838), which was filled by compact dark grey silty clay with moderated plaster flecks, moderate bone and occasional obsidian, (14833). To the west this was sealed by a mid grey slightly sandy silt deposit, (14834), which in turn was sealed by ashy silt containing frequent plaster lumps, (14830). Ashy silt dump (14830) was truncated by pit cut (14837), which continued south beyond the newly created southern limit of excavation (step). Only a small portion of pit cut (14837) was therefore exposed. This was filled by a light brown with orange mottling sandy silt that supported frequent clay lumps. This was sealed by a dark grey ash and a compound deposit of ashy silt with ash lenses, (14827). Pit fill (14833) was truncated by sub-circular pit (14832), which was filled by plaster rich clay silt (14831), containing moderate bone, moderate obsidian and occasional charcoal flecks. To the east this was truncated by circular pit



*Figure 52: Pitting and land fill deposits over which Building 53 was founded. Pit (14824) in the foreground (looking S).*

(14828). This was filled by clay silt (14826) containing moderate plaster fragments, occasional bone, ceramic and obsidian, which spread out of the pit to also seal midden-like deposit (14827). Pit fill (14826) was truncated by a further circular pit (14824), which in turn was filled by clay silt with burnt mud brick (14822) and silty clay ash (14821) respectively (Figure 52). This was sealed by a 0.2m thick spread of burnt mud brick crush (14817). This was truncated by a large shallow pit, which extended throughout most of the area, (14813), whose purpose may have been to remove the softer material to create a more stable foundation for Building 53. Its fill comprised a mix of demolition and midden material (14807)/(14809)

### **Building 53. Construction**

A 0.09m deep construction cut was identified for north-south and east-west walls, F.1523 and F.1524, with sharp breaks of slope and vertical sides, (14808). The eastern north-south wall, F.1523, which bounded Building 53's Space 257 to the east and Space 261 to the west, comprised light reddish brown sandy bricks (11368) and clayey silt mortar (11371). North-south wall F.1523 was tied into heavily truncated east-west wall F.1524, which bounded Space 257 to the north, and comprised mid greyish orange sandy silt brick (11381) and clayey silt mortar (11382). To the west Space 257 was bounded by north-south wall F.1527, which also created the eastern boundary to Space 272. Wall F.1527 was composed of light reddish yellow silty sand bricks, (14325) and clay silt mortar (14326). Wall F.1527 was tied in with heavily truncated and currently unexcavated east-west wall F.1534, which bounds Space 272 to the south.

To the east of north-south wall F.1527, a make-up deposit was identified, (14800), which was sealed by floors excavated in the 2006 season.

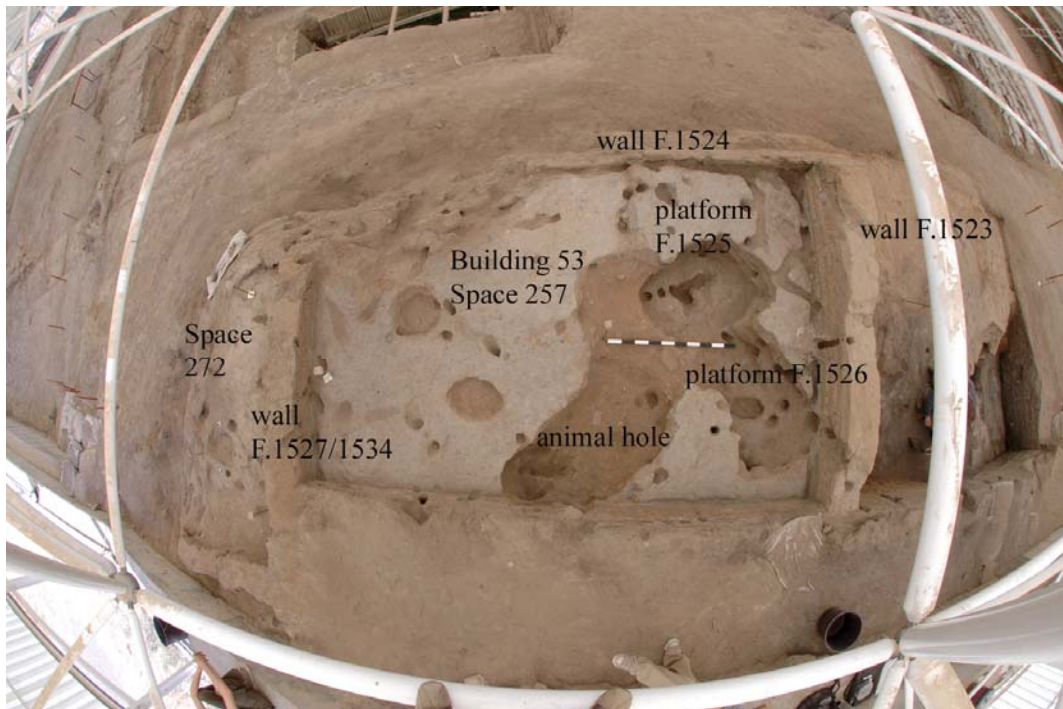


Figure 53: Plan of Building 53 and its features.

### Building 53. Early Occupation

At least two hearths/ovens were identified in the southeastern corner of Space 257. The earliest units possibly functioning with some hearth activity included a small patch of lensed fine silt, (14823), located under a later hearth structure, which was sealed by a small compound deposit of ash with moderate to occasional charcoal flecks, (14820). This was sealed by a sub-circular structure – hearth/oven, the top surface of which was slightly flattened with rounded corners (14815), F2702. The northeastern side was badly truncated and its southern limit was obscured by the southern limit of excavation. The eastern ‘wall’ was partially sealed by a remnant plaster floor, (14819), which likely represents this feature’s associated and functioning surface. The hearth was filled with a 35mm thick, laminated ashy unit, composed of thin bands of grey, white and black ash, (14816). This was sealed by a sub-linear ‘wall’ to the west, apparently representing a repair or rebuild to the oven, (14811), F.2701 (Figure 54). This bounded/contained a further laminated ash deposit, (14835), which in turn, were sealed by a sub-linear ‘wall’ to the east, (14810). As seen, superstructure (14810) measured 0.30m (E-W) by 0.34m (N-S) by 0.10m high. This was in turn sealed by the oven superstructure’s collapse/demolition, (14803). No floors were identified associated or functioning with these oven builds and their use. The oven F.2701 was remodelled into platform F.1526 in a later or mid period of the buildings life cycle (see Figure 53).



Figure 54: Early phase oven F.2701 against the south wall which was later modified as platform F.1526.

## **Building 65, Space 319, Space 305, Building 68, Space 314, Building 75 & Spaces 329, 332 & 333 – Roddy Regan**

**Excavation Team:** Roddy Regan, Anies Hassan, Charlie Newman, Angus Hodder, Eleri Cousins, Rachel Danford, Kristin Nado.

Building 65 sequence

### **Abstract**

Excavation of Building 65 continued this year with work concentrating on the removal of the remaining burials within the central east platform and the excavation of the early building sequence. The building was divided into 3 rooms or spaces. These were Space 297, the largest room, with Space 298 to the west and Space 299 to the southwest.

The removal of Buildings 65 and 68 to the north saw the excavated area divided up into new spaces as delineated by a series of walls. At the northwest is Building 75, Space 328, to the south of which lie Spaces 332, 333 and 329. Within these spaces there appears to be distinct changes of use across the excavated area but also a degree of continuity. Continuity is seen with Building 75 lying below Building 68, both buildings occupying a similar space. However, no building lies directly under Building 65, a pattern we have seen within the sequence of Buildings 10, 44, 56 and 65. As yet we only have indications as to what this space may become, but the unusually large size of the oven in Space 333 and hearth in Space 329, with apparent lack of other 'internal' features such platforms perhaps suggest a more open and communal space is emerging.

### **Özet**

Bina 65'de bu sene süren kazılar, doğu merkezinde yer alan platformdaki gömütlerin kazılmasının devam edilmesi ve erken bina dizininin kazısının yapılması doğrultusunda olmuştur. Bina 3 oda veya Alana bölünmüştür. Bunlar Alan 297, en geniş oda, batıda Alan 298 ve güneybatıda Alan 299.

Kuzeyde Bina 65 ve 68'in kaldırılması, yeni çıkan alanın çeşitli duvarlarla bölünmüş olduğunu göstermiştir. Bunlar; kuzeybatıda Alan 328'de Bina 75, güneyde Alan 332, 333 ve 329'dur. Bu alanlar içerisinde belirgin farklı kullanım alanları ile birlikte bir devamlılık da gözlemlenmektedir. Bu devamlılık, Bina 68'in altında yer alan Bina 75'te görülmektedir ve her iki binanın da kapladıkları alanın düzeni aynı şekildedir. Bununla birlikte, Bina 65'in tam altında bir bina bulunmamaktadır, bu tip bir devamlılığı daha önce Bina 10, 44, 56 ve 65 dizisinde görmüştük. Bu bina ile ilgili tam olarak ne göreceğimize dair henüz kesin bir şey söyleyemesekte, Alan 333'deki geniş fırın ve Alan 329'daki ocak ile bina içinde genelde görünen platformlar gibi mimari unsurların olmayışı burasının açık komünel bir alan olduğunu önerisini getirir.

### Space 319

To the extreme south of the excavation area work began on removing some of the upper deposits across this area. The objectives of this were two fold, firstly to reduce the area to make the upstanding sections safer, and secondly to investigate a 'Level IV' midden that was already exposed by in section by Mellaarts excavation. To reach the midden levels, two badly walls truncated walls, (14543) and (14531), and an associated oven, (14530), were excavated. These features probably represented the remains of a building lying south of and possibly contemporary with Building 10. Lying under the building was deposit (14533) which appeared as a mixed midden and building material dump and was likely a levelling deposit for the above building. Beneath this lay a series of midden deposits that were dumped against the southern face of the southern wall of Building 44, F.1341. The midden deposits were excavated as units (14559), (14572) and (14587).

### Building 65

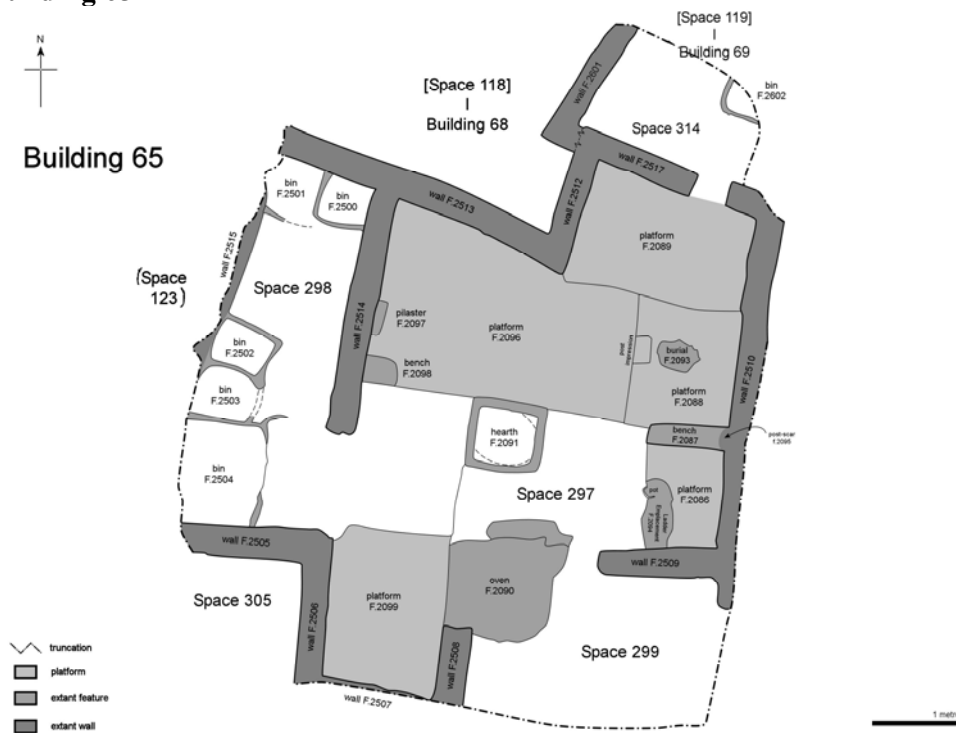


Figure 55: Plan of Building 65 as excavated in 2006



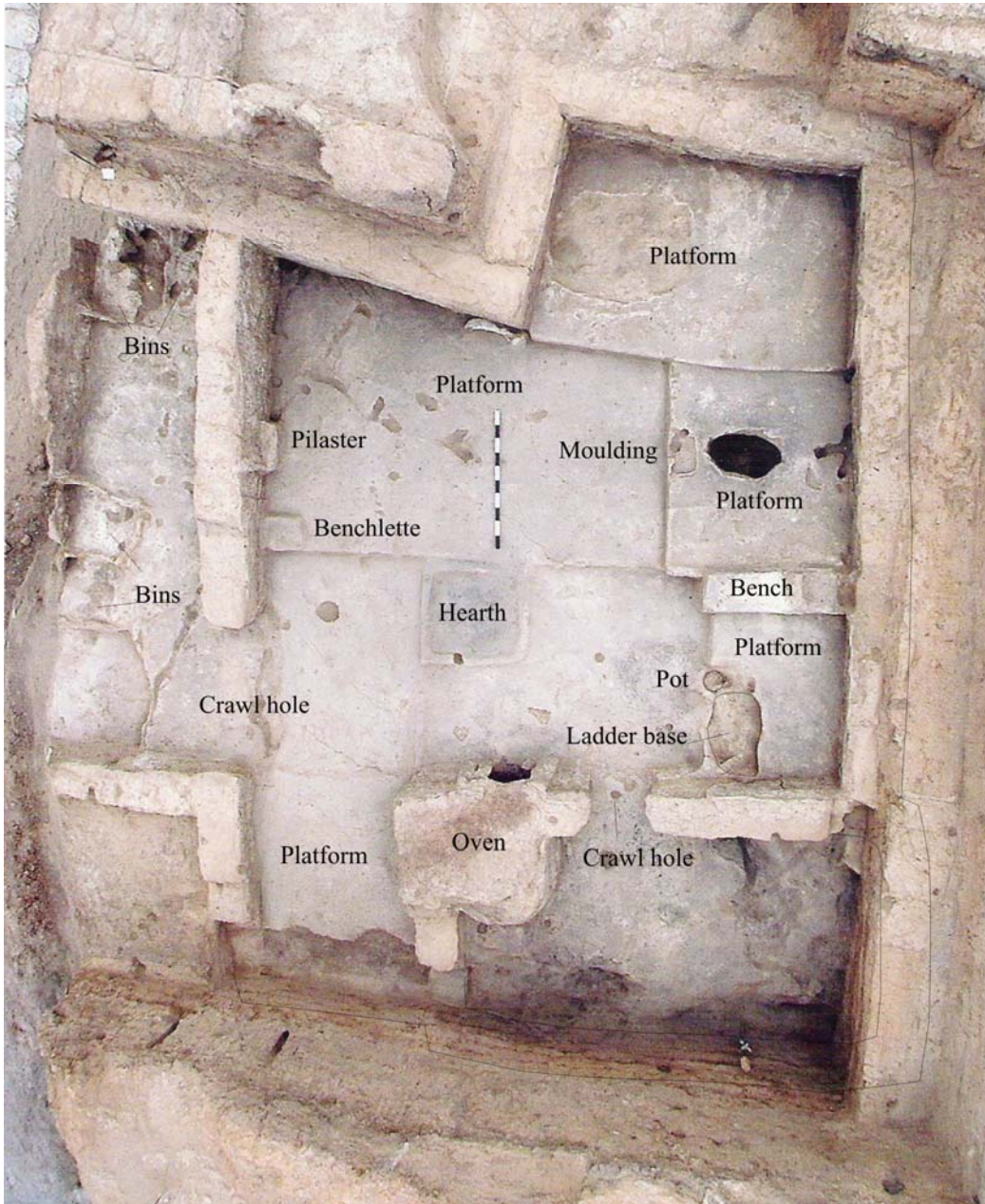


Figure 56: Building 65 as excavated in 2006.

The building was defined by walls F.2511, F.2512 and F.2513 at the north, with truncated wall F.2515 at the west and wall F. 2510 at the east. The walls defining the south west of the structure were F.2505 and F.2506, while the presumed southern and eastern walls of Space 299 lay beyond the edge of excavation. Internal walls F.2508, F.2509 and F.2514 divided the three spaces which are linked by entrance gaps or crawl holes.

### Space 297

As only the upper plaster surfaces were removed from the internal features last year the feature layout remained much the same this year. Along the eastern side were ranged; ladder base F.2094, platform F.2086, bench F.2087 with post scar F.2095 and platform F.2088. Platform F.2089 lay at the north of the space. Platform F.2089 and

F.2088 respectively stepped down to the south and west onto platform F.2096 which had a pilaster, F.2097 on the west wall. This platform in turn stepped down to the south onto a slightly raised plaster surface/floor. Platform F.2099 was located within a small rectangular bay to the south west of the room. The earlier oven F.2600 was located at the centre south of the building slightly cut into wall F.2509. Hearth F.2549 was located near the centre of the room just north of the oven.

### **Platform F.2086**

Removal of the room fill deposit from ladder base F.2094 revealed the rim of a complete pot (14516) set into the floor presumably at the foot of the ladder itself. It was suggested in last years report that the pot was set within a cut. However, the removal of plaster surface and make up, respectively (14520) and (14521), revealed this was not the case, as these deposits lipped up to the edge of the vessel. This indicated that the pot itself may have been placed at an early



*Figure 57: Pot (14516) set at the base of the ladder F.2094.*

stage of the buildings construction along with a cluster of other objects (see below), with subsequent make up and floor layers lain around it. The collapsed nature of this complete vessel suggested it may have been deliberately crushed, although at what juncture this happened was difficult to determine. What is clear is that if the vessel had stood to its full height, then its upper edges would have protruded above the plaster surfaces of the platform.

### **Bench F.2509**

A thick layer of white plaster, (14062), was removed from bench last year revealing a lower plaster render/surface (14565), which was removed this year. This lower plaster coating overlay the mudbrick and mortar construction material (14570)/(14594) which also constituted the construction material of Platforms F.2088 and F.2613 at the north.

### **Platform F.2088**

The removal of the upper plaster surface and make up of the platform last year revealed a series of inhumations. In all six burials were removed F.2521, F.2535, F.2548, F.2603, F.2604 and F.2615 (Figure 59). This group of burials included both sexes and contained individuals of different ages with both children and older adults present. A common feature of the burials was that the heads of the individuals were placed to the west, this practice also predominating within the burial sequences seen in Buildings 44 and 56. Excavation of the burials enabled the removal of primary plaster surface (14553), this in turn sealing the construction material of the platform (14570)/(14594). It would appear that all the burials were inserted between the two plastering events across the platform, the earliest and each successive burial cutting the primary plaster of the platform. Within some of the burials an attempt had been made at resealing the burial cuts with a 'plaster like' material, but these deposits



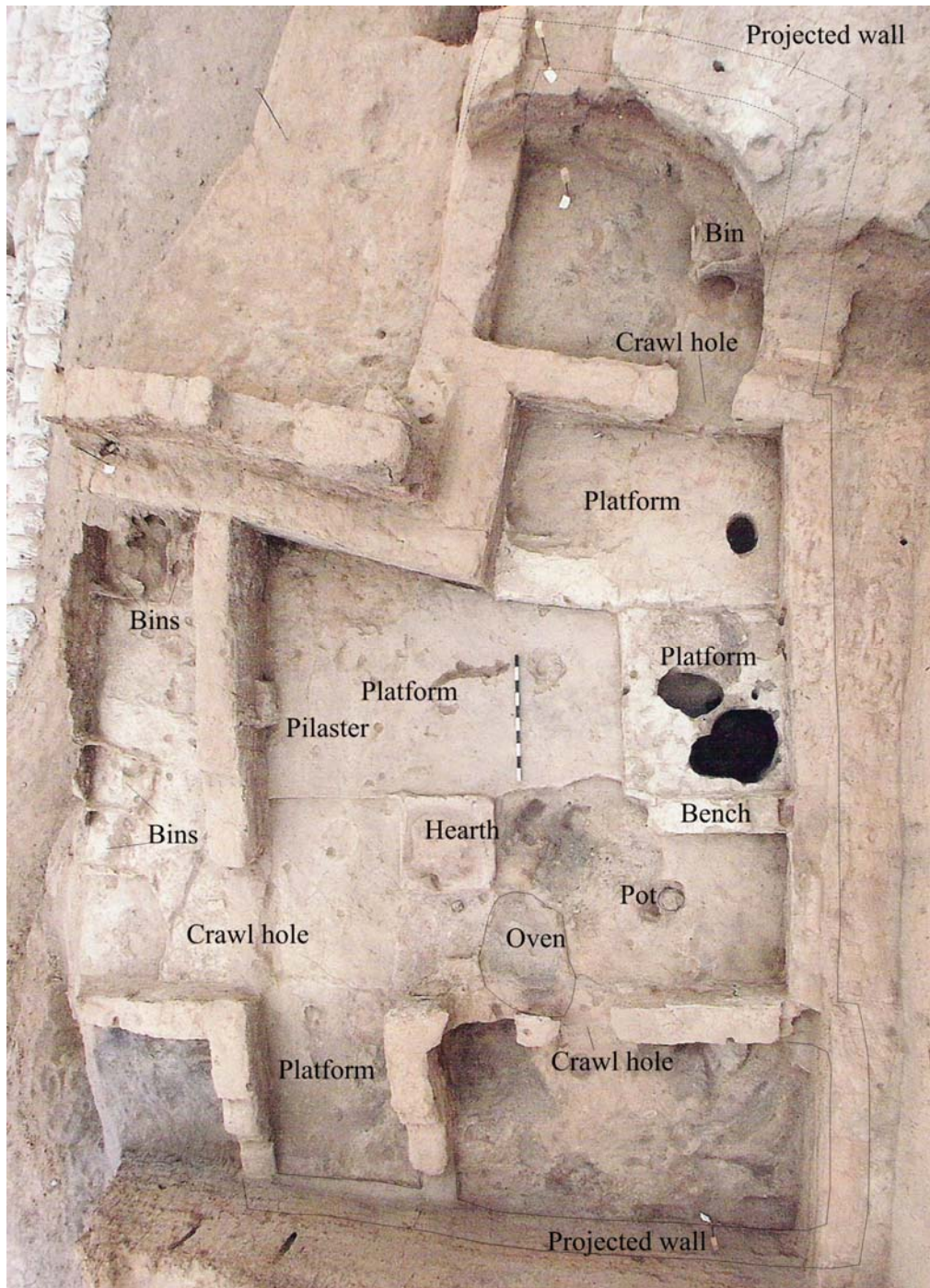


Figure 58: Early phase of Building 65 during excavations in 2007.

differed significantly enough for the ‘cuts’ to be seen by the occupants of the building, unless of course the platform was covered in some way. Later, however, all the burial cuts were sealed under the secondary and last plaster coating seen on the platform. Significantly perhaps, this plaster surface was in turn cut through by what has been interpreted as a burial retrieval pit.

### **Platform F.2089/F.2613**

Removal of the burial and upper plaster surfaces from the platform last year had revealed lower plaster surface (14554). This in turn was excavated this year to reveal that the platform had been altered at the south west with packing deposit (14568) effectively squaring off the southern edge of the lower platform, F.2613, with the northern wall of the building. Platform F.2613 had the remnants of an eroded plaster surface (14571) lying above construction material (14570)/(14594)



*Figure 59: Burial cuts in platform F.2088*

### **Platform F.2096**

Removal of the upper plaster surfaces and make up deposits had revealed lower plaster surface (14555)/(14580) which overlay primary levelling deposit (15718)

### **Pilaster F.2097**

This consisted of a grey mudbrick core (14043)/(14593) coated with a white plaster (14042) that it shared with wall F.2514.

### **Platform F.2099**

The upper plaster surface of platform, (13382) and cluster (14019) were removed last year, these overlying plaster surface (14558). The surface in turn overlay an ashy midden like deposit (14569). The removal of the ash deposit revealed the primary construction deposits of the platform which consisted of a row of mudbricks (14589) forming the northern edge of the platform and retaining a packing deposit (14588) at the south.

### **Floors**

Several plaster surfaces and make up/levelling deposits were removed from the lower floor areas and from around the oven and hearth areas, (14556), (14557), (14575), (14576), (14581), (14582), and (14583)

### **Hearths**

The upper central hearth F.2601 was removed last year to reveal a lower hearth F.2549 lying directly beneath. The mortar surface rendering of hearth F.2549 (14573) was removed to reveal a third hearth in the sequence F.2614 (14576)/(14577).

### **Oven**

The large oven F.2090 was removed to reveal an earlier oven F.2600, this partially cut into wall F.2509. The lower oven consisted of burnt floor (14567) and construction make up (14579).

### **Space 298**

This area would appear to have been utilised as a storage space as it contained the remains of 4 definite and a possible fifth bin. Bins F.2500 and F.2501 lay at the north of the room with bins F.2502, F.2503 and F.2504 located along the west wall of the room. Excavation of this space suggested this room changed little within the life of the building with all the features and the floor of the area having received one plaster coating/rendering. The distinctive red mudbrick like material used in the construction of all the bins also suggest a single phase of construction with the features integral to the space throughout. .

### **Space 299**

This room contained little in the way of features apart from the back of oven F.2090, while the southern and eastern walls of this space are presumed to lie beyond the edge of excavation. Probably contemporary with the use of the oven were brown plaster surfaces used on the floor and on south face of wall F.2509, respectively (13389) and (14584). This indicated just one rendering episode and perhaps indicated that this space only became part of the building at a late stage, likely associated with the construction of the oven and the knocking through of the crawl hole in Wall F.2509. The oven and floor surface sealed levelling dump (15720). Prior to this, the space may have lain outside of the building. This was indicated by a series of finely layered midden deposits and probable outside surfaces (15724)/(15743). These midden dumps indicate that this was unlikely to have been an internal space although the dumps might possibly be related to Building 65. A neonate skeleton, (15739) was located within the dumped midden material. As no grave cut could be discerned it has to be concluded that the body had been discarded within the midden build up.

### **Space 314**

Exploration of the area to the north of wall F.2511 revealed a blocked crawl hole into a northern room or area, Space 314, which was probably associated with the early phase of Building 65. This area was further explored this year with the removal of what would appear to be a laminated series of silt dumps excavated as deposits (14511) and (14512). These sealed the remnants of walls F.2609 and F.2610 which probably represented the north western limits to this northern area of Building 65, given the similarity in mudbricks used the walls. The nature of deposits (14511) and (14512) remains unconfirmed but were suggestive of a series of fine laminated layers of mud brick like silts. These dumped deposits may also have been utilised as surfaces and possibly derive from house sweepings being dumped onto an external area or yard and subsequently trampled. Whatever their origins a similar series of dumps were retained within the walls of the northern area, as seen with deposits (14534) and (14535) the later more midden like in appearance. Indeed the only feature that indicated this may have been utilised as an internal space was the presence of a possible bin F.2602. If this was a bin then it was placed within a very awkward position directly in front of the crawl hole linking the northern and southern areas of the building. Another explanation might be that F.2602 represents some form of screen or baffle to the entranceway, separating the 'clean' area of the northern platform area and the 'dirty' area to the north. That the northern area was utilised for processing was indicated by the presence of a number of fire spots: (14547), (14537), (14546), (14548), (14545), (14564) and (14566) these located on and between a sequence of surfaces: (14549), (14551) and (14552). The nature of the fire spots are now being studied, but some appear to contain the burnt waste from various types



plant processing. More elusive is the nature of the fire spots associated with what appears to be reduced white or yellow material that had been burnt in situ. Some of this northern activity, particularly the fire spots, appears to have been happening when the crawl hole in wall F.2511 was open, although this was blocked off and plastered over at a the later phase effectively closing of this access between the two spaces. The primary levelling dump/surface in the northern area was (15795) that abutted walls F.2511, F.2609 and F.2610, thereafter the walls of Building 65 lay above or cut into the underlying deposits.

### **The walls and construction of Building 65**

When removing the walls of the building it soon became apparent that the mudbricks forming the walls were tied in at the wall junctions suggesting the building layout had change little from its inception, i.e. no walls had been added in latter. It also became apparent that the walls at the south lay within a foundation trench. The foundation trench cut down through the underlying deposits, this possibly, as with the



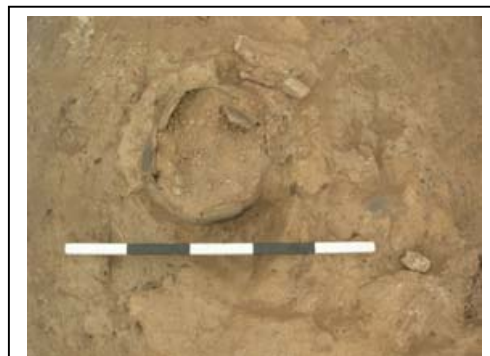
*Figure 60: Burial F.2621*

foundations in Buildings 56 and 44, to strengthen the southern end of the structure and to counteract against the slope of the ground.

As in Buildings 44 and 56 the construction of the walls of Building 65 appear to be associated with infant or child inhumation. In the south west corner of Space 297 (which eventually becomes platform F.2099 was a child burial F.2621 (Figure 60).

As the burial had not been cut by the foundation trench of wall F.2506 then the child must have been buried during or just after the walls had been built as the grave was sealed by the primary internal levelling deposit in this space. A second burial was of a pair of neonates (possibly twins?) that was placed under the south west corner of Space 298. These burials reflect a pattern of infant burials associated with the wall foundations within in the later building sequence, these also located at the south west extremities of the structures.

Set into the building at an early stage was pottery vessel (14516), this possibly associated a cluster of objects, (14522) (Figure 61), the cluster consisting of several animal scapula and stones including a well-moulded plaster figurine (Figure 62). Another group of placed objects, (15710), lying to the west of (14522) may also represent another foundation deposit.



*Figure 61: Cluster of objects (14522). The plaster figurine can be seen bottom right.*

Removal of the primary levelling deposits

within Space 297 and Space 298 revealed distinct phytolith deposits, (15703), (15704) and (15705), which appeared to indicate the storage or use of reed or grasses within the building during this early construction phase. As the phytoliths appeared to be confined within the walls of the building it is not beyond the realms of possibility that these deposits represent the detritus of the installation of the roof. Other indications of construction activity were post impression (15716) and posthole (15700)/(15701) respectively located within Spaces 297 and 298. Similarly placed post impressions/placements were seen at early stages of construction in both Buildings 44 and 56, and as has been suggested in previous reports might indicate a temporary roof structure or provided support to the roof during its construction.



### Space 305

Two more ashy or midden like deposits were removed from this space this year, these dumped against the south side of wall F.2505, (15712) and (15717).

### Building 68

As indicated in last years archive report this building was defined by walls F.2546 and F.2547 forming the surviving south east corner of this badly eroded/truncated structure. The walls were removed last year along with the remnants of the internal features of the building. At that point a widening of the underlying walls (15770) and the use of different mudbrick within the construction initially suggested that this represented a different structure. The removal, however, of what were considered 'roomfills', deposits (15740) and (15742), suggested that this was not a different building but substantial footings for the superstructure of Building 68. The footings not only cut down into the underlying deposits but also created a revetment for the above-mentioned dumped material (15740)/(15742), effectively creating a level terrace for the structure. The presence of quantities of freshly broken pottery, relatively large bones and a large number of stone artefacts, (cluster 15750), within deposit (15742) was indicative of curated objects deliberately scattered within the infill (Figure 63). Indeed the recovered artefacts of this deposit were suggestive of the collected objects seen within the south west foundation footings of Building 44, although in this case in a less discrete cluster. The relative 'freshness' of the pottery and the bones suggested that these were rapidly sealed within this deposit. While this perhaps indicates a degree of rapidity within the backfilling/levelling activity, a fire spot (15741) separating (15742) and (15740) suggested a slower rate of accumulation within the levelling process.

### Truncation/levelling activity

While we can generally distinguish levelling events, that is when material is dumped in order to level up an area, it is more difficult to address an event that may actually reduce an area, where deposits are removed in order to level the area. The later activity is suggested by the truncated nature of the buildings and deposits below the construction levels of Buildings 65 and 68. Firstly there is just not enough building material present to suggest that the underlying buildings had just been demolished and



*Figure 63: large number of stone artefacts (cluster 15750), within deposit (15742).*

levelled. As the walls of the underlying buildings stand only 5-10cm in some areas any demolition/collapsed material would surely have been present in large quantities, which it was not. It would then appear the area had been truncated by a general removal of material from across the area prior to the construction of the walls of Building 65, with similar activity is suggested within the construction of Building 68. If material is being removed then the question is what is happening to it? Is it possible that this is removed prepared/crushed to provide levelling material on other parts of the site? Within the excavated sequence we see many deposits that are interpreted as of 'levelling' deposits in the form of 'dumps' or 'make ups' usually prior to and during the construction of buildings and features within buildings. This material as everything else at Çatalhöyük has

to be brought into the area. 'Roomfill' for example is not always comprised of the same material as the walls of the room or building it fills, although certain 'demolished' elements of the underlying building may be present. Another type of levelling deposit are the large mud brick like dumps seen in early construction phases of a building and across 'open' areas of the site. These appear to consist of mixed material, which includes few large recognisable components such as mud bricks suggesting that if it had originally derived from building material it had been well sorted, mixed or crushed. We now also know that certain areas across the site are being quarried, and it is possible this quarried material is being acquired for use on other areas the site. A picture then is now building up of large movements of material into and out of areas of the site, how large scale and widespread these movements are is of course not yet fully understood, but suggests a more dynamic picture of site morphology and taphonomy than perhaps is traditionally presented.

### **Changing Spaces**

The removal of Buildings 65 and 68 saw the excavated area divided up into new spaces as delineated by a series of walls. At the north west is Building 75, Space 328, within walls F.2623, F.2643 and F.2624, these respectively forming the north, west and south walls. To the south of this is Space 332 within walls F.2644, F.2643 and F.2644. Space 333 lies south of wall F.2644 and west of wall F.2625 which also defines Space 329 to the east its southern extent delineated by wall F.2641. Within these spaces there appears to be distinct changes of use across the excavated area but also a degree of continuity. Continuity is seen with Building 75 lying below Building

68, both buildings occupying a similar space. However, no building lies directly under Building 65, a pattern we have seen within the sequence of Buildings 10, 44, 56 and 65. As yet we only have indications as to what this space may become, but the unusually large size of the oven in Space 333 and hearth in Space 329, with apparent lack of other 'internal' features such platforms perhaps suggest a more open and communal space is emerging.

### **Building 75, Space 328**



*Figure 64: Building 75*

Three deposits were removed from above the surface of the building (15781), (15783) and (15785). Lying on the floor of the building west of the oven was cluster (15751), containing at least three scapulae (one plastered) along with some stones and a fragment of pottery, these objects appearing to have been deliberately collected and left in the building. Also left within the building were the remains of a fragmented pottery vessel within an ash charcoal deposit in hearth F.2636, (16221). At present only the eastern part of this building survives, the western part truncated either during Mellaarts excavations or by subsequent erosion. Another room may have existed to the north as represented by wall F.2642, which is constructed from similar mudbricks and appears tied in to wall F.2623. This however is badly truncated with only patches of eroded/truncated floors surviving along its western edge. Building 75 contained three features, oven F.2637, hearth F.2636 and basin F.2638 with the possibility of a badly truncated bin at the north west of the surviving structure.

### **Space 329**

While Buildings 65 and 68 may have been occupied at the same time, a series of deposits temporally separate the construction of their foundations, with those of Building 65 built after those of Building 68. These deposits are located within Space 329 lying along the eastern side of the excavated area.



*Figure 65: Series of intercutting pits.*

large number of stone artefacts, (cluster 15750), within deposit (15742) The main events separating the two walls are a series of pits (15759)/(15760), (15753)/(15754), (15755)/(15756), (15757)/(15758), (15761)/(15762), (15763)/(15760) and pit F.2627 (Figure 65). The nature of these pits suggest they may have been dug as rubbish pits given their midden like fills and the fact that the pits intercut each other, indicating the quarrying of the surrounding mudbrick like levelling deposits was not their primary purpose. Other activities suggesting this was an open area or yard is indicated by the presence of numerous fire spots and small fire pits, which were most commonly associated with the burning or reduction of a white yellow deposit, which as yet has not been identified with any certainty. The fire spots in this sequence: (15715), (15749), (15783), (15772), (15764), (16218), (16219) and (16220). These events were separated by a series of levelling deposits (15745), (15752), (15733) and (16222). Prior to the construction of Building 68, Space 329 still appears to have been utilised and an open area and again a similar sequence of fire spots/pits and surfaces could be discerned. The fire spots were (16228), (16229), (16230) and (16236) and these were probably associated white burnt/ashy deposits (16226), (16227), (16233) and (16237). Separating these events was surface (16234) and a distinct layer of phytoliths interspersed with quantities of animal bone that appeared to have been rapidly sealed. The removal of the primary levelling dump in this space, (16238), that sealed a large hearth F.2640 and associated floor.





Figure 66: Mini clay ball cluster (16240) in Space 332.



Figure 67: 3 of seven neonates buried in Space 333.

### Space 332

Contained within the walls of this space was roomfill deposit (16239) this containing mini clay ball cluster (16240) from the south east corner of this space (Figure 66).

### Space 333

The excavation of this space revealed that the area had been utilised as a burial ground for a group of seven neonates, F.2628, F.2629, F.2630, F.2632, F.2633, F.2634 and F.2635 (Figure 67). These had all been buried within individual small sub circular grave cuts. Some degree of longevity within this burial sequence is suggested by the fact that some of the burials truncated each other or specially lay above/below others. The burials cut into a room fill or levelling dump (15791), which in turn sealed another levelling deposit (16201). Beneath these dumps lay fire spot (16231) and ash spread (16232). The ash spread sealed the walls of a large oven F.2639 located in the north east of the space.

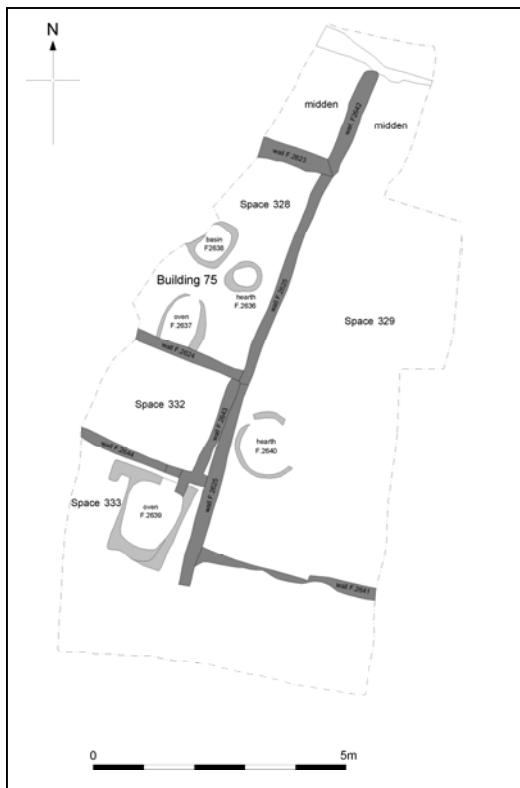


Figure 68: Hiatus phase, possibly representing 'communal' / 'industry' activities.

**The excavations of the TP (Team Poznań) Area in the 2007 season / 2007  
Kazi Mevsiminde TP (Team Poznań) Alanındaki Kazılar - Arkadiusz  
Marciniak, Lech Czerniak**

**Introduction**

Work in the TP Area commenced on June 21 and was completed on July 24. This year the team was made of fifteen archaeologists and students of the Institute of Prehistory, University of Poznań and Institute of Archaeology, University of Gdańsk. Initially sandbags were removed to expose the top of the archaeological horizon, which were planned during the 2006 season.

After trowelling the area clean it was decided to start by excavating the western part of an extension trench 5 by 10 meters in a strip between the main TP trench excavated in previous seasons, and the east trench dug by Mellaart in the 1960s. Additionally, excavation further started in the eastern part of the Mellaart trenches to record and plan the underlying archaeological deposits not excavated in the 1960s campaign.

The previous excavation seasons resulted in a complete recognition and excavation of the earliest phase of the Neolithic occupation of the mound dated back to Levels 0-II. Hence, the main aim of this year season was to investigate various structures placed underneath these latest Neolithic deposits and to bring these into phase with the main trench excavated in previous seasons. This would allow a better understanding of the architecture and use of space in the late Neolithic, and reveal similarities and differences from the earlier Levels.

Another objective of this year season was to correlate TP plans with those studied in the 1960s to be able to relate excavated Neolithic structures with the Mellaart chronological scheme. This goal was satisfactorily achieved by analysing a sequence of mudbrick walls at the western edge of the excavated area. These were further recognised on the Mellaart plans from his 'Anatolian Studies' report published in 1962. They were identified as originated from phase I and II.

In overall, this year season brought about incomplete excavation of a sequence of two Buildings 72 and & 74 and some kind of the occupation area placed to the north of this structures. The comprised also fragments of destroyed Building 73, itself placed directly underneath Buildings 61 and 62, excavated in the 2006 season. The major element of the sequence comprised midden deposits as well as elements of yet unspecified occupation episode represented by fire installations.

This sequence located in northern part of the extension trench and varied considerably from the stratigraphic situation in its southern section as represented by Spaces 318 and 321. Relations between these two sequences are to be further examined in the next season.

Plans for the next season will be to continue in the same zones of the TP trench and will focus on completing excavation of all building and spaces exposed this year. It will also aim at analysing and reconsidering the stratigraphic relationships between midden deposits and the roof excavated in the 2004 season and the architectural elements discovered this year in order to understand the complexity of the late Neolithic sequence in the part of the mound.

## **Giriş**

Bundan önceki kazı sezonları Neolitik höyüğe ait Tabaka 0-1 gibi en üst evreleri anlamaya yönelik olmuştur. Bu sezonun en önemli amacı ise bu üst evrelere ait Neolitik tabakaların altında yer alan yapıları araştırmak ve bu tabakayı bir önceki kazılan sezondaki seviyeye eşit duruma getirmektir. Bu geç Neolitik'e ait mimariyi ve alan kullanımını anlamamıza yardımcı olduğu gibi, daha geç dönemlere ait evrelerle olan benzerlikleri ve farklılıkları ortaya çıkarmamıza yardımcı olacaktır.

Bu yılın bir diğer amacı da 1960 larda Mellaart'ın kazılarında elde edilen Neolitik evlerin kronolojik olarak sıralanmış planları ile TP planlarını karşılaştırmak idi. Bu hedef kazı yapılan alanın batı kıyısındaki bir kerpiç tuğla serisinin analizini yaparak başarılı bir şekilde gerçekleştirildi. Bunlar daha sonra Mellaart'ın 1962 yılında 'Anatolian Studies' de yayınlanan makalesindeki planlarla da karşılaştırıldı. Bunların Tabaka I ve II den geldikleri belirlendi.

Genel olarak bu sezonda Bina 72 ve 74'ün kazılarının bir kısmı gerçekleştirilmiş ve bu yapıların kuzeyinde de bir yapı tespit edilmiştir. Burası ayrıca Bina 61 ve 62'nin hemen altında yer alan 2006 sezonunda kazılmış olan Bina 73'ten parçaları da kapsamaktadır. Bu dizinin ana unsurunu çöplük tabakaları ve daha tam tanımlanmamış olan ocak tipi üniteler oluşturmaktadır.

Bu dizinin genişletilmiş açmanın kuzey kısmında yer almakta ve açmanın güney profilini belirleyen Alan 318 ve 321'in tabakalanması ile ilgili olarak çeşitlilik göstermektedir. Bu iki dizinin arasındaki ilişki gelecek sezonda açığa çıkacaktır.

Bir dahaki sezonda da TP'nin aynı alanlarında çalışmalar devam edecek ve bu sene ortaya çıkarılan bütün Bina ve Alanlarda kazılar tamamlanmaya çalışılacaktır. Bununla birlikte, çöplük alanları, 2004 yılında kazılan çatı kalıntıları ile bu sene ortaya çıkarılan mimari yapıların arasındaki ilişki anlaşılmasına çalışılıp geç Neolitik'in karmaşık yapılması alanının bir kısmında ortaya çıkarılmaya çalışılacaktır.

### Building 72

Building 72 is placed in the central part of the excavated area. The internal size and the layout of the walls is different from buildings in earlier phases of the East mound occupation. It is composed of two rooms – the western recorded as Space 323 (Figure 69) and the eastern one as Space 324. The main internal part of the building consisted of an elongated rectangular shape measuring 1.8-2.0 m N-S and 5.9-6.0 m E-W. B.72 was built directly above B.74 reusing some of their walls.



Figure 69.: Building 72, Space 323. Infill layer

The walls of Building 72 consisted of walls (15225; 13579; and 13578, 13067 & 13581), respectively forming the northern, western and southern walls of the structure with probably re-used the younger wall (15214) comprising the arrangement of walls how to the north. Despite the confusion about the walls sequence, in particular its northern part, it is clear that the internal size and the layout of the walls of Building 72 was different than the earlier structures.

The internal layout of the building was very simple with no platforms, benches, bins or other kind of features. The floors comprised a thin greyish plaster surfaces (Figure 70) laid over make up deposits mixed up with a large number of pebbles and numerous fragments of earlier solid floor. It is worth noting that this make up differed considerably from the make up of B.62 and B.61 (see Archive Report of the 2006 season) as pebbles are of different colour and size as compared with a very standardised pebble material in the latter structures. Solid fragments of earlier floor with a well-preserved surface c. 5-7 cm thick were placed horizontally, vertically and diagonally in the make up layer (Figure 71). In any case, the floor of B.72 is very thin and poorly preserved, albeit clearly discernible, which implies its short use. Accordingly, B. 72 may have been used only temporarily.



Figure70: Building 72, Space 324. Floor

Two deep postholes (F.2857 & F.2858) were placed against the southern wall of the building. The posts may have been used to support some kind of a light roof of the building.

It is worth noting that a small fragment of wall from B.61/62, dated tentatively to Level I, was placed in NE corner of B.72. This unequivocally implies that B.72 is younger than B.61/62 and can be dated to Level II.



Figure 71: Building 72, Space 323. Fragments of older floor in the make up layer

### Building 74

Building 74 was located directly underneath B.72. Similarly as B.72, the internal size and the layout of the walls was different from earlier buildings. It was composed of two rooms – the western room recorded as Space 325 and the eastern one recorded as Space 326. The main internal part of the building consisted of an elongated rectangular shape measuring 1.8-2.0 m N-S and 5.9-6.0 m E-W. The walls of Building 74 consisted of walls (13579; 13586 & 13096; 15214; 15819, 15225 & 15527), respectively forming the western, southern, eastern, and northern walls of the structure.



Figure 72: Building 74, Space 325. Floor with cluster of stones

A partition wall (15298) divided the internal space into two rooms and it was probably built during later reconstruction of B.74. Space 325 (Figure 72) was probably the main part of the building and had a regular rectangular shape measuring 2.50 m E-W and 1.60-1.70 m N-S. Space 326 (Figure 73) located in eastern part of the building was a side room of a regular rectangular shape measuring 3.20 E-W and 1.60 m N-S.



The internal layout of the space was very simple with no platforms, benches, bins and other kind of features. The floor comprised a thin greyish plaster surfaces. Deliberately placed animal bones, forming some kind of installation, were found on the floor of Space 325. Altogether, five completely preserved cattle mandibles were deposited on the floor (Figure 74) - two of them in N part of the space, two more in its W part and one in NE section of the floor. Additionally, two completely preserved cattle scapulae in relation to one cattle rib was found in central-northern part of the floor. A cluster of small stones comprised also a part of the deposit. This deliberate deposit may have been associated with yet unspecified burial practice performed in the room. It seems as if all cattle bones were placed on the floor in relation to some kind of abandonment rituals/activities and possibly a burial. This deposit resembles similar installations found during earlier excavation seasons, e.g. scapularium in B.3 excavated in the BACH Area.



Figure 73: Building 74, Space 326. Floor

Both rooms were originally connected by some kind of a crawlhole in the northern part of the partition wall. This was later intentionally blocked as seen by blocking facing from Space 326. As yet, its purpose remains unclear. One may presume that this rendering applied over an obvious blocking in relation to sealing off all deposits in Space 325 when the room went out of use.



Figure 74: Building 74, Space 325. Cattle mandible

Space 326 comprised eastern room of B.74. Interestingly, there was an entrance to this space, and the building, at the floor level. This entrance was made by cutting off a solid southern double wall. The southern part of a double wall (13088) was probably older than the space itself and should be dated to the earlier phase of the mound occupation. Similarly to Space 325, the internal layout of Space 326 was very simple with no platforms, benches, bins and other kind of features. Its floor comprised a thin greyish plaster surfaces and it was almost completely devoid of any objects. Only one antler was found in its western part. It was considerably destroyed and deliberately truncated at the base. A relatively big lump of red pigment was also found on the floor. It may have been used for the wall painting.

Stratigraphic analysis of buildings and an intra-feature development across this part of the mound implies that B. 74 is to be dated to Level III.

While the excavation of the building is not yet complete, no further details of its use are available at this moment. The excavations of the building will be completed in the 2008 season.

### Space 320 & 327 Sequence



Figure 75.: Space 320. Floor

Space 320 was placed in NE part of the excavated area and belonged to yet unspecified occupation level (Figure 75). It may have been somehow related to B.62, however stratigraphic relations between them are not clear at this stage of analysis. It was occupied in two subsequent episodes as marked by two floor surfaces. Later (15271) and earlier (15268) floors comprised a thin plaster surfaces laid over make up deposits. Earlier floor was divided into the N and S parts by a small partition

wall (15270). Two yet unspecified fire installations were associated with this earlier floor, including probably a small domed oven (F.2854).

The space was badly truncated by later occupation episodes. Its northern part was truncated by a large Hellenistic pit, a result of which was that the later floor and fragments of the earlier floor were completely destroyed. The southern part of the space was completely truncated by a later burial cut, probably Byzantine in date. Hence, the size of the building cannot be specified.



Figure 76: Building 74, Space 327. Infill and human burial (15838)

Space 327 was placed directly underneath the southern part of Space 320, however the layout of both structures differs considerably (Figure 76). Hence, the former cannot certainly be regarded as a direct continuation of the latter. The main internal part of the space consisted of an elongated rectangular shape measuring 1.90 m N-S and 1.10 m E-W. The walls of Space 327 consisted of the walls (15270, 15830; 13524, 13592; 15863; and 15856), respectively forming the northern, western, southern, and eastern walls of the structure. The latter wall came originally from a yet unspecified earlier building. Human burial (15838) was found against the eastern wall in one of the infill deposits. It will be excavated in the next field season.

The western wall of the space along with western fragments of the northern and southern walls were decorated by incised geometric spiral motifs (Figure 77). The

entire decoration had a form of rectangular panel. The motifs have probably been carved out by a bone.



The southern wall (15863) of Space 327 bonded to the northern wall (15227) of Space 326, B.74 in its eastern part. Probably shortly after the wall (15863) was constructed, these two rooms got connected by making a kind of doorway in the wall (15227). A small step (15862) was constructed in the doorway from the Space 326 side (Figure 78). After some time, the doorway got blocked deliberately as seen by courses of bricks in upper part of the wall (15863). An obvious blocking into Space 327 is also well attested in the eastern part of the wall of Space 326 (15227). At the same time, a kind of wall construction was built up on top of the step (15861) originally leading to Space 327.

A doorway between Space 327 and Space 326 of B.74 implies that Space 327 comprised an integral part of this building, and its construction was probably associated with one of the latest episodes of its occupation. The area of wall blocking was not removed during this year's excavation and will be excavated in the 2008 season.

Doorway blocking implies also that Space 327 went out of use at some stage while the occupation of Space 326 probably continued. It is not at all clear whether Space 325, as described above, went out of use at the same time. Another important question remains whether Spaces 325 & 327 were originally built as dwelling structures and later used as burial chambers (assuming our initial interpretation will be confirmed later) or they served mortuary purposes from the moment of their construction. If the latter hypothesis is correct, the incised panel with spiral motifs was originally set to be a decoration of some kind of tomb. The other possibility may be that Space 327 was built to serve similar purpose to Space 325 when the latter went out of use.



The excavation of the space has not yet been completed, including infill deposits, burials and the floor. The excavations of the space will constitute one of the major objectives of the 2008 excavation season.

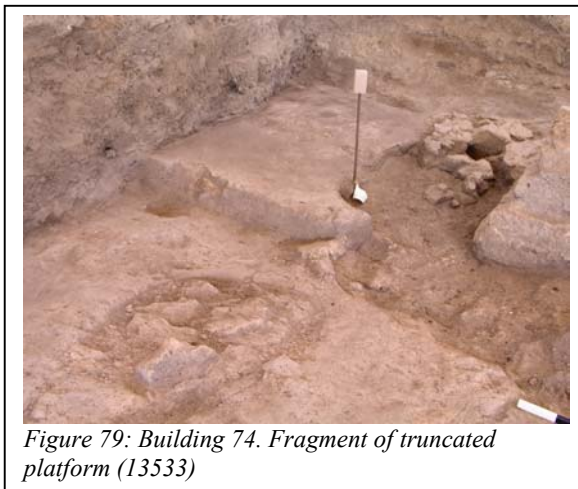
### **Building 73 and adjacent deposits**

This year season brought about also excavations of the sequence of occupation deposits discovered underneath Building 62 floor and partly excavated in 2006.



*Figure 78: Building 74, Space 326. Step (15862) in the doorway to Space 327.*

Building 73 was placed in the northern part of the excavated area in the place later used for the construction of B.62. The internal size and the layout of the walls was impossible to define due to a considerable destruction by a number of later occupation episodes. Additionally, the northern wall of the building is placed outside excavated area. Due to this destruction, it is also not at all clear whether the north wall of B.74 may have been at the same the south wall of B.73. The only preserved elements of the building comprised a fragment of floor (13532) and platform (13533) (Figure 79). The platform was arranged along the eastern wall of the building. The only feature associated with the floor (13532) was a small oven (?) (F.2867) or some kind of fire installation placed in its eastern part in a close proximity to the platform (13533).



*Figure 79: Building 74. Fragment of truncated platform (13533)*

Stratigraphic relations to other structures remain unclear. However, B.73 may have been somehow contemporary with B.72, or alternatively it may have been a part of this building. Another possibility is that B.73 may have been a kind of external space, possibly a courtyard between rooms of B.74 from the south (Spaces 325 & 326) and from the east (Space 327). Interestingly, no fire installation was found in any of the Spaces of B.74 (325, 326 & 327). However, this scenario is not

corroborated by the placement of the doorway in the opposite side of the wall to the supposed courtyard. Whatever the real arrangement was, it seems as if B.73 & B.74 were contemporary.

B.73 was later deliberately destroyed. The floor was truncated in its southern and eastern parts to the level well below the floor and later filled in by a sequence of later deposits. These comprised pretty homogenous midden layers rich with organic material and numerous inclusions. The most uppermost sequence of deposits

excavated this year comprised rubble of constructional elements (13531) that was dumped on a midden. Subsequent units were distinguished by differentiated concentration of constructional material (15234, 15236, 15281, 15282, 15279, 15275, 15289 & 15821). In particular, a row of single mudbricks, some of them completely preserved, were dumped along the northern wall of Space 323 (15225). It may have been associated with destruction of the wall of B.74, which means this layer post-dated occupation of the building. As in the upper levels of the sequence, its lower segments were composed of infill, destructional and midden-like deposits, which degree of homogeneity varied considerably. No floor remains were discovered.

A formation of this solid and thick midden deposits has not yet been specified. It may have been formed during occupation of B.72. In any case, it was certainly formed after a deliberate destruction of B.74 as seen e.g. by a considerable truncation of its northern and southern walls. In any case, this midden is a part of the large midden deposit placed underneath N-S walls (see below) between the TP and the Mellaart Areas. At the same time, the midden was also placed on preserved fragments of the floor (13532) of B.73, which means the building is older than the formation of the midden. Stratigraphic position of the midden implies that is to be dated to Level II, which means that B.73 can be dated to Level III or IV.



Figure 80: Space 318. Space & entrance to B. 74

The only features within the midden deposits that may have been associated with some form of occupation of this part of the mound were fire installations (15278) and (15845). Both were placed in central part of the midden. A complete pot was found under the midden (15282), which should post-date Level III and be close to Level II.

The floor (13532) and particularly the platform (13533) of B.73 were deliberately truncated in the

eastern part of the building. As I argued earlier, both floors of B.73 and B.74 were roughly contemporary, at least during initial period of their occupation. The platform went then out of use while B.74 continued to be occupied. Abandonment of B.73 may have been linked with construction of the walls of Space 327 (15270, 15830; 13524, 13592; 15863), which itself was placed in the southern part of previously existing platform of B.73 and comprised probably an integral part of B.74 (see above).

### Space 318

Space 318 was placed directly to the south of walls of B.72 and B.74 (Figure 80). Its internal part consisted of an elongated rectangular shape measuring 0.6 – 0.7 m N-S and 6,0 m E-W. The walls of Space 318 consisted of the walls (13059, 13088; 13089; and 13093, 13538) respectively forming from the northern, eastern, and southern walls of the structure. No wall was preserved from the western side.

The space was distinguished by two parallel walls, rather than its internal layout or features. Hence, the space may be some kind of artificial entity which function differed through time. The space was originally filled in by midden deposits. The lowest layers exposed this year comprised black and brown homogenous midden with a lot of organic material and a large number of ground stones. The uppermost part of the space comprised a kind of passage between the walls distinguished by fragments of a solid tramped surface/floor. It was clearly discontinuous, it means not all deposits were preserved. The passage was probably in use along with the doorway, originally belonging to B.74, now reused to link it with B.72. This floor/tramped surface laid over a make up layer, probably put up intentionally to level and consolidate the passage surface. Transversely placed bricks making some sort of a partition wall (13094) were aimed at dividing the space into two part and were clearly older than the passage itself. Three deep postholes (F.1946, F.1947 & F.1948) were placed against the southern and the northern walls of the building. The posts may have been used to support some kind of a light roof of the space. A large antler was placed deliberately in some sort of niche cut off in the eastern wall of the space. Relationship of this deposit to two long W-E walls of the space remains unrecognised and its significance unexplained at this stage.

Considering that both the N and S walls are probably dated to Level III – the midden deposit should probably be dated to Level II and the passage even later.

The excavation of the space has not yet been completed and it will be continued in the 2008 excavation season.

### Space 321



Figure 81: Space 321. Infill

Work this year season continued also to a limited degree in the southern part of the TP trench. The internal size and the layout of the walls were impossible to define due to a considerable destruction by later occupation episodes. Additionally, the entire southern part of the space is placed outside the excavated area. At least two phases of occupation can be distinguished as revealed by presence of partition walls (13597, 13598) (Figure 81).

While the excavation of the space has not yet been completed, no further details are available at this moment. The excavations in this part of the trench will be completed in the 2008 season.

### Some remarks on the stratigraphy between the TP and the Mellaart Areas

This year season brought about a careful examination of stratigraphy in the west section of the extension trench, directly between the TP Area and the Mellaart trenches from the 1960s. This refers to two parallel and N-S oriented walls placed in this area. Both of them comprised the western part of B.61 in different phases of its occupation. The outer wall (12229) dated by Mellaart to Level I while the inner one

(11583) to Level II. The former wall was made of dark brown mudbricks while the latter was constructed of brown & light brown bricks. A relative chronology of these walls was established as a result of re-analysis of the Mellaart's plans in 2005. These walls were not excavated in the 2007 season.

The wall (11583) was placed on a thick midden deposit mixed up with a number of constructional elements. The midden appears to be pretty substantive and deposited over a long period of time. Consequently, the wall was probably built after hiatus during which this area was not occupied and served as a dumping area, presumably of neighbouring houses.

Wall (12229) comprised probably the eastern wall of house II A3 (?) excavated by Mellaart in the 1960s. It appears that it was not exposed and excavated during this excavation campaign. Consequently, it does not appear on the plans published in Mellaart's article in 'Anatolian Studies'. This wall was also placed on the midden deposit made of thin and numerous striations and containing a huge amount of burnt soil, charcoal and organic material. Interestingly, this midden deposit was certainly later than the wall (11583) as it was sitting against it. Interestingly, the wall (11583) itself was located directly on yet another midden deposit. Hence, we are dealing with a sequence of two midden deposits placed one on top of the other. The midden underneath the wall (12229) can be dated to the pre-Level I, while the midden underneath the wall (11583) is to be dated to the pre-Level II. Furthermore, the midden underneath the wall (11583) was deposited on the floor (13532) of B.73 (see above). It means that this floor was older than the midden from the pre-Level II, which corroborates that the Building 73 is to be dated to Level III.

### **Summary**

Work for the next season will continue in the same zones of the TP trench and will mainly aim to the completion excavating B.74 along with its three parts (Space 325, 326 & 327) as well as excavation of the late Neolithic structures in the northern and the southern part of the TP Area. The 2008 season will also aim at analysing and reconsidering stratigraphic relationships between midden deposits and the 'roof' excavated in the 2004 season as well as architectural elements discovered in the last two years in order to understand a complexity of the late Neolithic occupation in the part of the mound. The works will also continue in the western part of the trench with the aim to better understand and relate excavated Neolithic structures with those excavated by Mellaart in the 1960s.

## WEST MOUND EXCAVATIONS

### West Trenches 5 & 7 / Batı Höyük, Açma 5 & 7

Cambridge/Buffalo Team Peter F. Biehl, University of Cambridge, Eva Rosenstock, Free University Berlin

#### Abstract

In this year's four-week field season we continued to work in trench 5 and opened a new trench (7) in an adjacent canal on the eastern fringe of the West Mound. In collaboration with the Selçuk team, we excavated and documented five late Roman/Byzantine burials in trench 5 and two in trench 7. In trench 5, we unearthed a number of EC spaces and walls, leading us to believe we have either several rooms of one large building or several buildings. In trench 7, we dug a deep sounding and reached natural. We also unearthed and partly excavated a plastered floor with four larger EC pots in situ and architectural remains of mud brick walls.

#### Özet

Dört hafta süren bu seneki çalışmalarımız Batı Çatalhöyük'te Açma 5'de devam etmiştir ve doğu eteklerinde yer alan kanal kesliğinde yeni bir Açma (7) açılmıştır. Selçuk ekibi ile beraber Açma 5'de beş ve Açma 7'de iki tane Geç Roma/Bizans dönemine ait mezar kazılmış ve belgelenmiştir. Açma 5'de Erken Kalkolitik döneme ait mimari öge ve duvar kalıntıları bulunduğu buradan ya bir binaya ait olan birkaç oda ya da birkaç farklı bina bulunduğumuzu düşünmekteyiz. Açma 7'de bir sondaj yapılmış ve doğal toprağa rastlanmıştır. Burada bir sıvalı taban ve dört adet Erken Kalkolitik dönemine ait çanak ile birtakım kerpiç duvara ait mimari kalıntılar bulunmuştur.

#### The Excavation

As a result of the 2006 field season, we expected to find a large number of late graves in both Trench 6 and in the W part of Trench 5 (see Figure 13). Therefore, in this year's four-week field season, we continued to work the E part of Trench 5 and to open a new trench (7) in an adjacent canal on the eastern fringe of the West Mound.

In Trench 5, we concentrated our work on the E part with its substantial Early Chalcolithic (EC) architecture. We also removed the profile baulk between Trench 5 and the so-called "Trench 5 extension" (Biehl et al. 2006), and extended the trench by a total of 5m towards the E. Whereas the objective for Trench 5 is to excavate and understand the spatial relationship of the EC architecture, the main objective for Trench 7 was to establish the stratigraphy of the West Mound with a deep sounding in order to better understand the transition from the East to the West Mound during the Late Neolithic and Early Chalcolithic and also the development and end of the Early Chalcolithic on the West Mound.

#### The Teams

Work on the prehistoric remains were carried out by a Cambridge team directed by Peter F. Biehl and Eva Rosenstock with students from the Universities of Cambridge, Buffalo, Freiburg, Halle and Bristol. The late burials were excavated and documented by the Selçuk team directed by Asuman Baldiran and supported by members of the



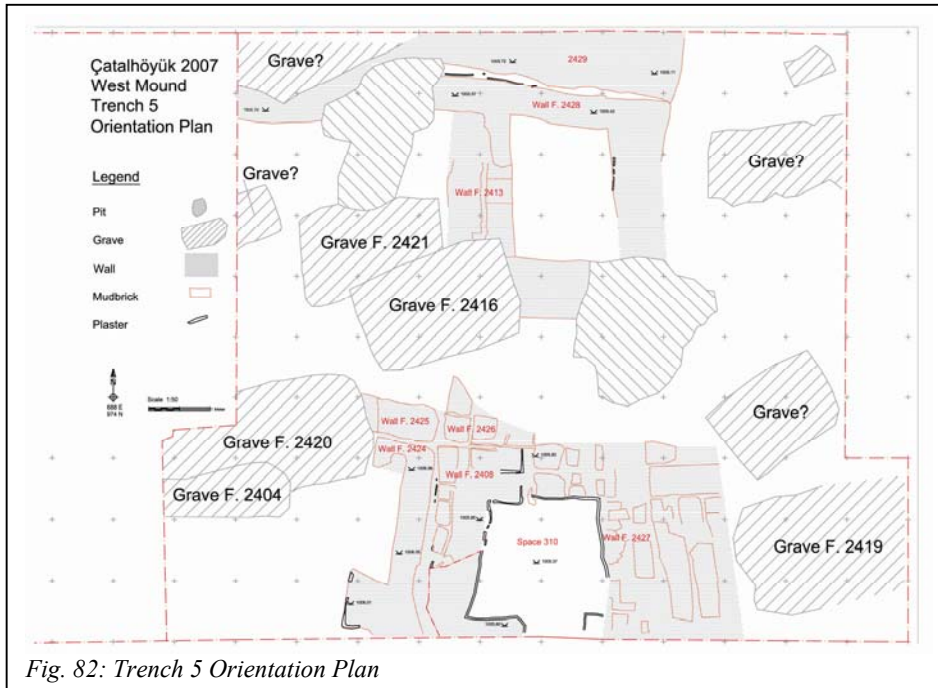
Human Remains team Başak Boz, Scott Haddow and Michaela Binder. Since the late graves are cut into the prehistoric layers, both teams cooperated closely in excavation and recording.

### Late Roman – Early Byzantine Cemetery

In Trench 5, in collaboration with the Selcuk team, we excavated and documented five late Roman/Byzantine burials and two in Trench 7 (see SEL archive report).

### Early Chalcolithic (EC) Settlement

#### Trench 5



Although the excavation was slowed down by the later disturbances and graves that make up almost one third of the trench area (Figure 82), this year's season revealed a number of EC spaces and walls showing that Trench 5 contains either several rooms of a large building or even several buildings.

The removal of the profile baulk between the 10 by 10m Trench 5 and its eastern extension enabled us to better understand Space 310 and the criss-cross pattern U. (13735), which was identified in the 2006 campaign (Biehl et al. 2006, 127f). Now it is clear that it is part of the N-S-running wall F.2427 and forms the E border of Space 310. The



Fig. 83: Space 310 with plastered walls.

criss-cross pattern is situated between layers of mud brick and can therefore not be a decorative element. Given the thickness of the plaster U. (13726) used to whitewash Space 310, a non-anthropogenic origin (insect burrows filled by eroding plaster) as discussed by Chris Doherty (2006) seems more plausible now. The N border of Space

310 (Figure 83) is Wall F.2430 - its W wall F.2408 was already recognized in 2006. Its S border is a wall, which sits partly under the S profile of the trench. The four walls enclose a roughly square room of ca. 2 m edge length, accessible from the S by an entrance of ca. 1 m width. What seemed to be a buttress jutting out from wall F.2408 in 2006 (Biehl et al. 2006), now seems to be a plastered niche in wall F.2430. Space 310 contained room fill (U. (13796) and (14282)) with large chunks of plastery white collapse and large EC potsherds; but we have neither reached yet the base level of the walls nor a floor.



Figure 84a: Miniature vessel (14287.X.1) and an undecorated EC bowl (15308).

To the W of wall F.2408, a very ashy deposit was identified as a midden area in 2006 (Biehl et al. 2006). After further excavation this year – including the cut for grave F.2420 – it has become clear that we are dealing with a wall F.2424. It runs N-S and is separated from F.2408 by a ca. 10 cm wide gap. The wall



Figure 84b

is made of very ashy and soft dark grey mud bricks and plastery white mortar. It differs from the other EC walls in the trench, which consist of more compact mud bricks and greyish mud mortar. In the area defined by Walls F.2424 as well as the S profile and the W section we excavated room fill which was under and on top of a somewhat hard surface (U. (14278), (14287) and (14295)). It is interesting to note that it contained large EC potsherds as well as a complete miniature vessel (14287.X.1: Figure 84b) and an EC bowl though without decoration ((15308): Figure 84a).

Two more walls (F.2425 and F.2426) are visible where walls F.2424 as well as F.2408 and F.2430 meet. They are also separated by a ca. 10 cm wide gap and seem to form a corner where four rooms with individual walls or even buildings meet. Wall F.2432 parallel to F.2427 indicates the presence of more rooms or buildings towards the E. Walls F.2413 and F.2431 running NS in the N of wall F.2426 will be of special interest in the next season, as they might provide the connection to the architectural remains in the N of the trench: two parallel walls F.2429 and F.2428 run EW, and the latter encloses a space of ca. 1,5 m width and 2 m length with walls F.2413, F.2431 and F.2432. The fill excavated here (15312) contained large EC potsherds. Once all



later graves are dug away, we will understand if these structures connect with those in the S of the trench or if we are dealing with different phases of EC architecture.

The spaces recognized so far thus are of small size, not unlike some of the spaces (e.g. Sp.191 or Sp.221) of Building 25 uncovered at the summit of the mound by the Last-Gibson team (Gibson/Last 2003). If our current assumption proves right that they are separated by double walls with 10-20 cm intervals, an interpretation of the settlement pattern as similar to roughly contemporary Can Hasan I layer 2B (French 1998) and Hacilar Iab (Mellaart 1970) seems possible, albeit internal buttresses could not yet be confirmed in our trench.

## Trench 7

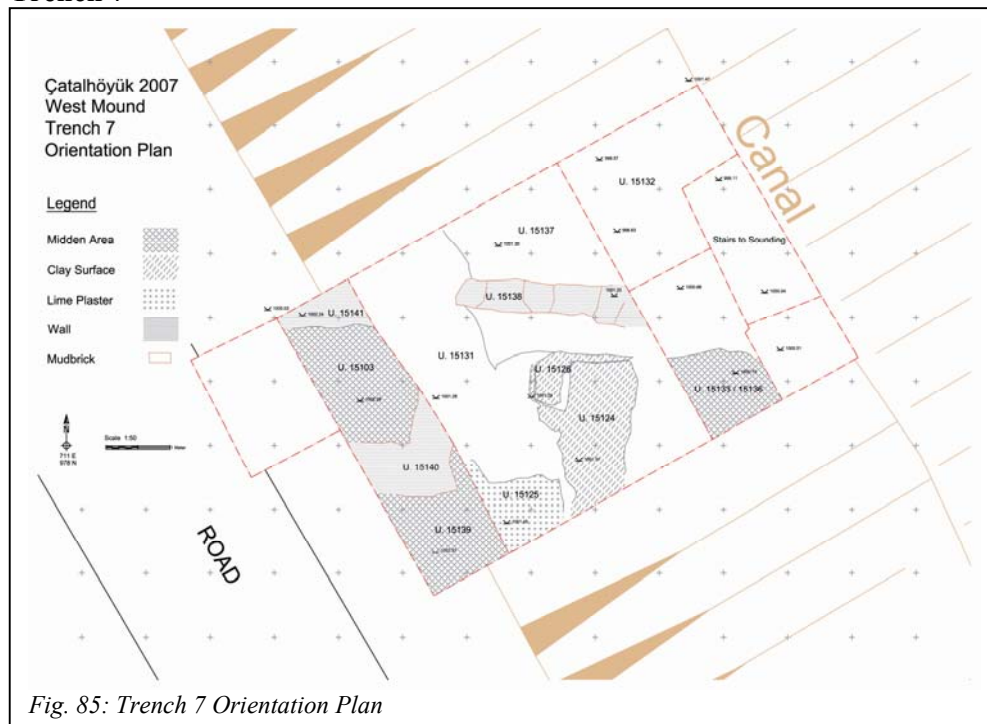


Fig. 85: Trench 7 Orientation Plan

Since we can expect a deep building stratigraphy in Tr 5, we decided to undertake a deep sounding of 5 x 5 m in a former irrigation canal, which is no longer in use and which had already destroyed the eastern fringe of the Mound. The main objective of this deep sounding was to test our hypothesis that a Late Neolithic settlement could be found at the bottom of the mound. In order to reach natural we had to dig down ca. 6.30 m (Figure 85), and therefore the deep sounding was partly done by machine and later by manual excavation.

In creating the deep sounding at the canal, it only required excavating about half the amount of soil to the bottom of the canal, which is about 3.5 m deep. The machine was used to remove the first 5 m (across) by 2.5 m (long) by 2.5 m (deep) of soil. The rest of the soil was excavated in roughly 1.50 wide and 1.50 deep steps, in order to make safe access in and out of the deep sounding and also to record and document material culture and features as accurately as possible. The plan was to continue deeper by 1.50 m deep steps in 1 m deep increments using big picks and shovels. In order to make recording easier, the 1 m deep increments were created by dividing the

deep sounding into one N unit (2.5 m) and one S unit (2.5 m). As each meter deep was completed, the Unit numbers for both the N and S areas were changed.

The first step was created at ca. 3.20 m depth and was extended with a width of ca. 1,30. On the this step were able to identify two mudbrick walls U. (15140) and (15141) as well as two midden areas U. (15139) and (15141). The orientation and stratigraphic relationship of the walls to mudbrick walls, which we were able to identify in the W profile, can only be established with further excavation (Figure 87).

Digging down for ca. 1 m we found a floor and began excavating at this level stratigraphically (Figure 85). On this plastered floor we excavated several completely preserved EC I storage vessels ((15116), (15117), (15118) and (15119)) grouped together on the floor U. (15124) (Figure 93) together with one clay (X1) and one stone ball (X2). Though the vessels and stone and clay balls seem to be associated with the mudbrick wall U. (15138) and the room fill U. (15137) (Figure 85), only further stratigraphic excavation can clarify their relationship, and eventually answer the question whether the storage vessels stood inside or outside a building. The same is true for the midden area U. (15127) and (15133) as well as (15136) with its sherd cluster and fragments of a potstand. Another interesting find, which also needs further excavation in order to understand its stratigraphic relationship to the floor with the storage vessels, is the lime plaster U. (15125). It is slightly tilted towards the E and shows partly a reddish colour and seems to lie on top of the plastered floor U. (15124). But its relationship to U. (15131) (most likely mudbrick rubble) is not yet clear.



*Fig. 86: Overview photo of Trench 7*

Since the NE corner of Tr 7 did not have any clusters of pottery or any other recognizable architectural features, we decided to limit the deep sounding to this area and dug down another ca. 2.70 and reached natural at 6.38 m. The W profile shows at least three other floors below floor U. (15124), which we intend to excavate stratigraphically in the next three years.



*Fig. 87: Photo of W section Trench 7*

Another interesting preliminary result provided by the deep sounding is that from about 1 m down to natural, the pottery was no longer painted and is comparable in form and fabric with the pottery from the latest levels from the East Mound.

In summary, we could confirm our hypothesis that there is a successive and probably even a settlement, which is contemporaneous with the one at the East Mound at the bottom of the West Mound. It is also important to note that the preservation of these undisturbed layers is exceptional and promises other in situ contexts.

### **Pottery - Ingmar Franz**

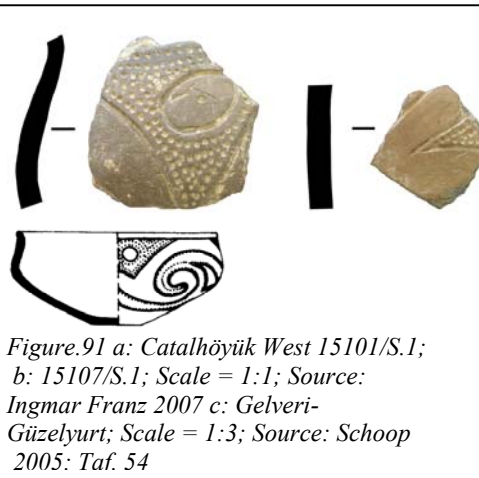
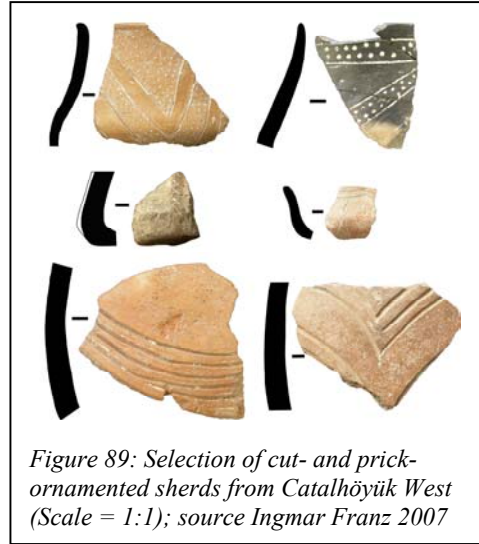
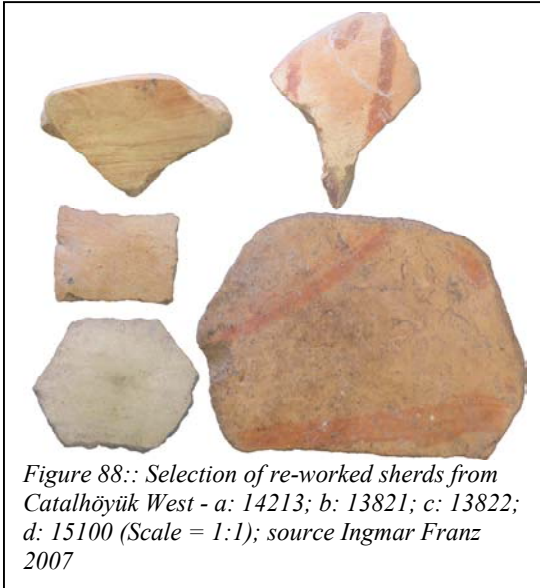
The major objective of the 2006 and 2007 field seasons was: to process, document and analyse the pottery from Trenches 5, 6 and 7 in Çatalhöyük West and to input the data in the Çatalhöyük pottery database. In addition to this, the search, documentation and analyses of the so-called “Exotic Ware” including the materials from the previous excavations on the West Mound was a second objective, one on which this report will focus. For all the work done this year, I am grateful to the Çatalhöyük pottery team leader Nurcan Yalman and also to Jonathan Last.

As expected, new incised sherds were found this season in Tr 5, Tr 7 and the TP Area. All together, I found over 100 incised sherds from Building 25, Tr 5, Tr 6, Tr 7 and TP as well as drawings of incised sherds from the 4040 and South Area. Over 75% of the incised sherds come from the West Mound.

The unearthened so-called “cut- and prick-ornamented” sherds from the West Mound can be roughly divided in three main groups: sherds with dot-filled zigzag-bands, sherds with spiraloid line-bands and sherds from miniature-vessels (Figure 89).

For the first group, the zigzag-ornamented sherds, a direct connection to the Çatalhöyük EC I-ware defined and described by Mellaart (1965: 135-56) is obvious (Figure 90). The “Neolithic” incised sherds from the East Mound show that this technique was known before vessel-painting started. Although this would imply that the incised zigzag-ornamented pottery was produced locally, only a comparative attribute analysis of the two wares (incised and painted) will provide a better understanding of this important research question. Up to now, sherds with seemingly spiraloid patterns have been labelled “Gelveri-like”. This mainly stems from stylistic similarities with wares from the site of Gelveri-Güzelyurt, which is about 160 km north-east of Çatalhöyük. The problem with this site and its pottery comes from a small rescue excavation and does not have any context. But future larger scale excavation at the site is planned for 2008. On this background, the discovery of the first comparable and stratified sherds from Tr 7 has to be highlighted (Figure 91). It is also important to note that two incised sherds, which show close similarities to the Neolithic ware from Catalhöyük East came from the deepest layers of Tr 7 (ca. 5-6,5 m depth). One of these sherds has a spiraloid ornament, which can be compared to the Gelveri-style-decoration (Figure 92). And finally, the identification of re-worked and tool-like sherds, which had already been mentioned by Mellaart, (1965: 136) can be highlighted as another result of the 2007 season (Figure 88).

Another important find of this season are the four in situ storage vessels in Trench 7: they stood in a depth of 4 m close together on a Chalcolithic floor (Figure 93). Two vessels could be partly reconstructed (Figure 94) and can all be classified as storage vessels. The smallest vessel (15118) is a so-called basket-handle vessel (Çatalhöyük archive report 2000: 95-99) and vessel 15116 a typical EC I lugged jar (Mellaart 1965: 138). But both vessel 15117 and 15119 are new vessel-types.





At the end of this chapter, the question of mass production of EC pottery should be briefly discussed. The enormous quantity of painted EC I and EC II pottery from the West Mound as well as their high quality (Figure 88) could indicate some sort of Chalcolithic “mass-production” of this kind of pottery. Though this is just speculation at this point, a pottery-slag-drop in Tr 5 (14212) and an impressively large and massive sherd from Tr 7 (15107) could indicate the use of kilns in the Chalcolithic.



Figure 94 Storage vessel (15117) in the Conservation Lab;  
Source: Naomi Christie 2007

The changes in pottery production can also be seen in the fact that in Tr 7 the quantity of painted sherds decreases considerably towards the lower levels of the stratigraphy. The opposite trend can be seen at the increasing number of obsidian towards the lower layers.

#### **Natural in Trench 7 - Chris Doherty**

Natural sediments are reached at a depth of 6.38 m in Trench 7. These are mainly light pinkish-grey silts, which show planar bedding structures indicative of low energy deposition. These are best seen in the W section of the deep sounding where they are separated from the cultural layers by a 5cm lens of gritty yellow-orange sand (Figure 95).

Both the silts and the sand are weakly cemented by calcite. The sand has iron oxide staining throughout, indicating that this layer has remained permeable. Iron staining occurs sporadically in the silts and is centred on cavities left by the loss of former plant fragments. For most of the W section of the deep sounding, the cultural layers appear to lie conformably on these natural sediments, but in the SW corner, the latter are cut into by the cultural deposits. This cut is at a high angle and does not appear natural. This relationship is less clear on the N section but again the cultural layers appear to cut into natural, in this case a gritty marl layer in the NE corner.



Fig. 95: Photo of W section of the deep sounding in Trench 7.

#### **Acknowledgements**

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## References

- Baldıran A. and Z. Korkmaz (2006). Batı Çatalhöyük Çalışmaları. Çatalhöyük Archive Report 2006. [http://www.catalhoyuk.com/downloads/Archive\\_Report\\_2006.pdf](http://www.catalhoyuk.com/downloads/Archive_Report_2006.pdf), last updated 2006, retrieved 05.08.2007, 137-138.
- Biehl P.F., B. Erdođu and E. Rosenstock (2006). West Mound. Çatalhöyük Archive Report 2006. [http://www.catalhoyuk.com/downloads/Archive\\_Report\\_2006.pdf](http://www.catalhoyuk.com/downloads/Archive_Report_2006.pdf), last updated 2006, retrieved 05.08.2007, 122-130.
- Çatalhöyük Archive Report (2000). West Mound Pottery: 95-99.
- Doherty, C. (2006). West Mound criss-cross “plaster” structure. Çatalhöyük Archive Report 2006. [http://www.catalhoyuk.com/downloads/Archive\\_Report\\_2006.pdf](http://www.catalhoyuk.com/downloads/Archive_Report_2006.pdf), last updated 2006, retrieved 05.08.2007, 131-132.
- French D. (1998). Can Hasan Sites 1. Can Hasan I: Stratigraphy and Structures. Hertford.
- Gibson C. and J. Last, West Mound Excavations. Çatalhöyük Archive Report 2003. [http://www.catalhoyuk.com/downloads/Archive\\_Report\\_2003.pdf](http://www.catalhoyuk.com/downloads/Archive_Report_2003.pdf), last updated 2003, retrieved 06.09.2006, 59-63.
- Mellaart, J. (1965). Çatal Hüyük West. Anatolian Studies XV: 135-56.
- Mellaart J. (1970). Excavations at Hacilar. Edinburgh.
- Schoop, U.-D. (2005). Das anatolische Chalkolithikum (= Urgeschichtliche Studien I). Remshalden: Greiner.

## West Mound: Trench 8 / Batı Höyük, Açma 8 – Burçin Erdođu

Site assistants: Nejat Yücel, Heval Bozbay, Gülay Yılankaya, Melek Kuş, Sedef Polatcan, Gülgün Gürcan, Nuray Kaygaz

### Summary:

In the summer of 2007, a team from the University of Thrace, Department of Archaeology started to excavate Trench 8 in the Southwestern part of the West Mound. During the excavation “The Red Building” was exposed. It has half circular buttresses, red plastered walls and floor. It is a special building and there are no comparable examples from any other Chalcolithic sites in Central Anatolia.

### Özet

2007 yaz sezonunda, Thrace Üniversitesi, Arkeoloji Bölümü’nden bir ekip Batı Höyük’ün güneybatı kısmındaki Açma 8 adı verilen açmada kazılara başlamıştır. Kazılar esnasında ‘Kırmızı Bina’ ortaya çıkarılmıştır. Bu binada yarım daire şeklindeki payandalar, kırmızı renkte sıvanmış duvarlar ve tabanlar ortaya çıkarılmıştır. Bu bina özel



bir mimari alan olup, Orta Anadolu Kalkolitik’inde benzer bir örneği bulunmamaktadır.

### **Araştırma Projesinin Arka Planı**

Çatalhöyük taşıdığı ününü sahip olduğu arkeolojik malzemenin özgünlüğüne ve birçok bilimsel arkeolojik sorunsalın araştırılması esnasında oynadığı anahtar role borçludur. Bu bilimsel arkeolojik sorunsallardan biri de Doğu Neolitik Höyük (M.Ö 7500-6000) ile Batı Kalkolitik Höyük (6000-5500) arasındaki materyal kültür arasındaki benzerliklerin ve farklılıkların ne olduğu sorusudur. Ana farklılıklardan biri domestik mimaridir. Kalkolitik Batı Höyük’ten elde edilen ilk sonuçlara göre buradaki evler Doğu Höyük’ten farklıdır: Geniş bir merkezi ocağın bulunduğu geniş bir merkezi odanın etrafında yapılanmış çok sayıda hücre biçimli odalar (Gibson ve Last 2003). Batı höyükteki evlerin birçoğunda ocak evin köşesinde konumlanmıştır. Kalkolitik Batı Höyük’teki bu değişiklik sosyal kuralları yaratan yeni mekanizmaların oluştuğuna dair bir gösterge olabilir. Muhtemelen ev içi üretimi ve yeniden üretimi Batı Höyük’te evin bir köşesinden, evin orta bölümüne geçmiştir (Hodder2006). Buna ek olarak, Doğu höyükteki TP alanındaki yapılan kazılarda gözlemlediğimiz gibi, Çatalhöyük’ün üst tabakalarındaki evlerin içindeki yapılanma, alt tabaklardaki yapılarla karşılaştığında değişmiştir. Kalkolitik Batı Höyük’ün evleri gibi, TP alanındaki Bina 61’de de ocağın binanın ortasına yapıldığı gözlenmektedir (Czerniak ve Marciniak 2006).

Aynı şekilde kullanılan kerpiç tuğlalarda renkleri ve yapıldıkları malzeme açısından Batı ve Doğu höyüklerde farklılık gösterir. Batı höyükteki binalar ve içeriye bakan duvar yüzleri Doğu höyükte olduğu gibi sıkça ve belli zaman aralıkları ile sıvanmamıştır.

Bir diğer ana farklılık da evin içindeki duvarlara uygulanan duvar resimleri ve kabartmaları gibi sembolik unsurların Batı Höyük’te kullanılmayışıdır. Hem Last (1998) hem de Hodder (2006:251) Kalkolitik Batı Höyük’te sembolizmle ve bezemeye ilgili ana odağın çanak çömleğe doğru yöneldiğini belirtmiştir. Kalkolitik Batı höyük yoğun olarak bezenmiş çanak çömlek ile karakterize edilmektedir. Last (1998a) a göre Batı Höyük’te rastlanılan çanak çömlek bezemeleri Neolitik Doğu Çatalhöyük’teki geometrik şekilli duvar resimlerinde görülen bezeklerle benzerlik gösterir. Sembolizmin ve bezemenin taşınabilir objelere kaymış olması topluluk içindeki sosyal alanda vee inanış sisteminde bir takım değişikliklere işaret eder. Taşınabilir objeler hem fonksiyonel olmaları açısından hem de fikirler ve semboller üzerinden üstlendikleri anlam açısından önem taşırlar. Bezemelerle süslenmiş bir çömlek taşıdığı değişmez sembolle, ritüel ve günlük aktiviteler yoluyla sosyal bağlılık ve bağımlılık yaratabilir. Bununla beraber, (M.Ö 5500), Çatalhöyük’teki avcılık ve dans sahnesinin betimlendiği duvar resmine benzer bir duvar resminin Köşk Höyük’te bulunmuş olması Kalkolitik’te de hala duvar resmi geleneğinin devam ettiğini gösterir (Öztan et al. 2006, Fig.12). Bunu

dışında, buna benzer başka resim bezekler Köşk Höyük'ün (Öztan 2002, Fig. 9-12, Öztan 2006, Fig.14) ve Tepecik-Çiftlik'in (Bıçakçı 2003) çanak-çömleğinde de görülmüştür.

Çatalhöyük Doğu Höyük'te birçok evde farklı bireylere ait gömütler bulunmaktadır. Batı Çatalhöyük kazılarının bu erken evresinde ise henüz bir gömüte rastlanmamıştır. Bununla beraber, Köşk Höyük ve Canhasan gibi aynı döneme ait diğer arkeolojik yerleşmelerde ise çocukların hala evlerin altına, gömü hediyesi olarak bırakılmış çömlerle birlikte gömüldüğü bilinmektedir. Hodder'a göre (2006:58) Kalkolitik dönemdeki ev içi düzeyinde soyla ilgili olan vurgu azalmaktadır. Bununla beraber Köşk Höyük'te ortaya çıkarılmış olan sıvalı kafatasları Orta Anadolu'nun Kalkolitik'inde soyun ve atanın ev içi düzeyinde hala önemli olabileceğini göstermektedir (Bonogofsky 2005).

Batı Çatalhöyük Konya Ovası'ndaki en büyük Kalkolitik höyüktür. Şu ana kadar yapılmış olan kazılar bize, bu alanla ilgili bütünlüklü resmi henüz vermemektedir. İlerde yapılacak kazılarla, yakın bir tarihte birlikte Batı höyükteki bu geniş ölçekteki topluluğun yapısını ve Doğu höyükten Batı höyüğe doğru değişen material kültürü anlamamız mümkün olacaktır.

### **Background of the research**

Çatalhöyük has acquired such fame because of the uniqueness of the archaeological material discovered there, and it also holds a key position in the investigation of several archaeological research questions. One of the research questions is about what are the similarities and differences in material culture between the Neolithic East Mound (7500-6000 cal. BC) and the Chalcolithic West mound (6000-5500 cal. BC)? Excavations suggest that a number of changes in material culture between the West and East mounds. The major change is about domestic architecture. The initial results of the Chalcolithic West mound excavation show that houses are different than the East mound: A large number of cell-like rooms around a large central room with a central hearth (Gibson and Last 2003). A hearth or oven was placed in the corner of most houses on the East Mound. Changes in hearth locations in Chalcolithic West mound may suggest changes in the main mechanism for creating social rules. Possibly house-based production and reproduction had shifted from corner to the centre of the houses on the West mound (see Hodder 2006). In addition, the excavation in the TP Area of Çatalhöyük East showed that in the uppermost levels of the Çatalhöyük East the arrangement of internal features in houses have already changed. As Chalcolithic West mound houses, an oven was placed in centre of the Building 61 in the TP area (Czerniak and Marciniak 2006).

Mud-bricks are also different in colour and composition between the East and West mound. Buildings and the internal walls of buildings were not plastered regularly in the West mound as in the East Mound.

Another major change is about the disappearance of internal symbolic features in the West mound houses such as wall paintings and figurative mouldings. Last (1998a) and Hodder (2006:251) have suggest that during the Chalcolithic West mound the

main focus of symbolism and decoration had shifted to portable objects, mainly pottery. The Chalcolithic West mound is characterized by rich decorated pottery. According to Last (1998a) pottery designs from West mound is similar to that found on geometric wall paintings of Neolithic East mound. Shifting the symbolism and decoration to portable objects can be explained by the change of social or belief system in the society. Portable objects had a significance, which is functional, and a meaning, which is concerned with the content of ideas and symbols. It is possible that decorated pottery provided a durable symbolic medium for creating and maintaining social ties and dependencies through ritual and everyday activities. On the other hand, a wall painting similar with East Çatalhöyük's hunting/dancing scene in Köşk Höyük (ca. 5500 cal. BC) suggests that walls were still being decorated in the Chalcolithic period (Öztan 2007, Fig.12). Many different scenes were also seen on relief-decorated pottery of Köşk Höyük (Öztan 2002, Fig. 9-12, Öztan 2007, Fig.15 - 17) and Tepecik-Çiftlik (Bıçakçı et al. 2007, Fig. 35).

In Çatalhöyük East mound, many houses contain the burials of ranges of individuals. No burials have been as yet found in the early excavations at Çatalhöyük West mound. However, contemporary sites such as Köşk Höyük and Canhasan I show that the children are still buried beneath houses in Chalcolithic period with grave goods including pottery. According to Hodder (2006:58) there is decreasing emphasis on ancestry at the house level in Chalcolithic period. However, the plastered skulls found in Köşk Höyük shows that ancestors may be still important at the house level in Chalcolithic period of Central Anatolia (Bonogofsky 2005).

Çatalhöyük West is the largest Chalcolithic mound in the Konya plain. Excavations still have not yielded a complete picture of the site. With additional work, it will in the near future be possible to understand large-scale community structure of the West mound, and changes in material culture between East and West mounds.

### **The Aim of Excavation**

When Çatalhöyük West mound was first excavated in two small trial trenches (I and II) by J. Mellaart (1965), on the basis of the pottery he divided the occupation into two phases - Early Chalcolithic I (EC I) and Early Chalcolithic II (ECII). EC II was represented in a series of pits in Trench II to the southwest part of the site and pottery similar to EC II was noted in Canhasan I, phase 2B. In the summer of 2007 a new research project was initiated by the University of Thrace, Department of Archaeology, with the principal aim of investigating the ECI and EC II occupations at Çatalhöyük West and understanding the transition from EC I (c.a. 6000-5700 cal BC) to EC II (c.a. 5700-5500 cal BC).

Only 4 ECII sites (it has been called Middle Chalcolithic by Baird) were found (e.g. Musluk) during the surface survey of D. Baird in the Konya Plain. This period (MÖ 5700-5500 cal. BC) is characterized by decrease in settlement numbers and reduction in site areas. It appears that Çatalhöyük West was the dominant site. On the other hand, imported ECII dark painted pottery was found in a large geographical area cf. Köşk Höyük level I in the Cappadocian region (Öztan 2003:72; 2002, Fig.15) and Keskaya in the Eskişehir region (Efe 2000, Fig. III; 20-21).

### 2007 Excavation Results

Four weeks of excavation took place in the southwestern part of West Mound during July and August 2007. The excavation concentrated in a 10x10 m trench close to the Mellaart's Trench II. The northwestern part of trench was extended 2 m to westwards later.

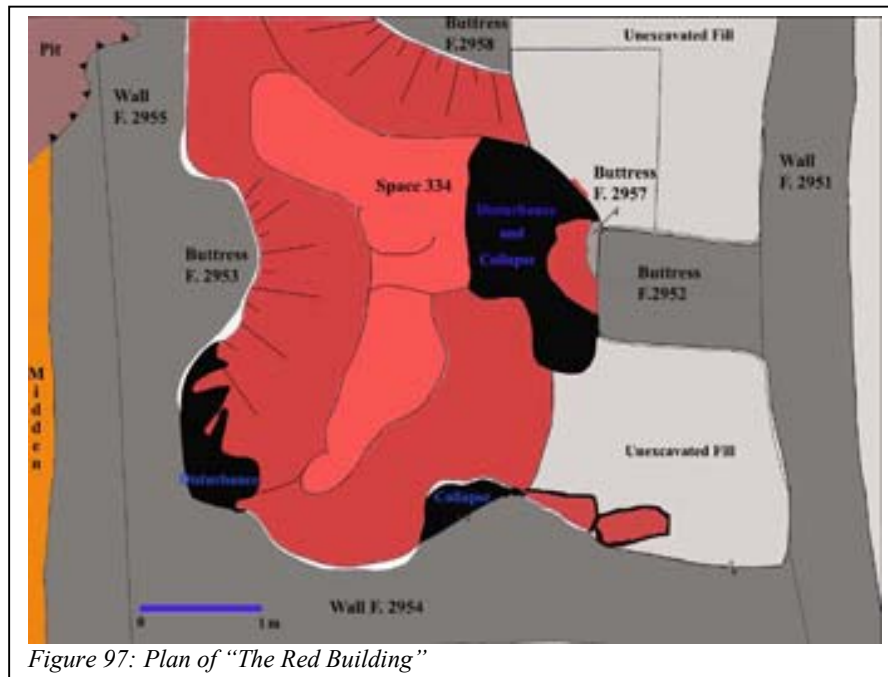
It is known that the West Mound was used heavily as a burial ground in the historic periods. The collaboration with the Selçuk University Team in the first week of excavation aimed to expose late burials in our new trench. However, no late burials were found. In the northwestern part of the trench, a structure with mud brick walls and buttresses appeared, and the excavation was concentrated on this part of trench.

### The Red Building –Burçin Erdoğan, Nejat Yücel and Heval Bozbay

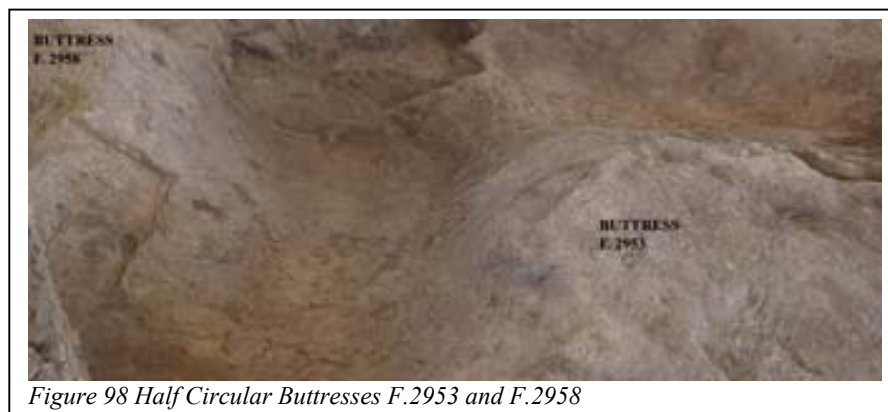


During the 2007 season of excavation, a special building with half circular buttresses, red coloured plastered walls and floor was exposed, and we called it "The Red Building" (Figure 96). The building is still under excavation. However, it has at least two construction phases and flanked by ranges of small cell-like spaces that we will excavate them next year.

The building as excavated was roughly square covering an area c 6.0 m to the north-south by c 6.0 m east-west. Internally the dimensions were very small, c 1.0 x 1.0 m. The building stands to a height of c 1.30 m. It was defined by double wall F.2954 at the south, double wall F.2955 and a half circular buttress F.2952 at the west, wall F.2951 and a rectangular buttress F.2952 at the east, and a half circular buttress F.2958 at the north (Figure 97). The walls were constructed of dark greyish brown silty clay mud bricks measuring c 0.40 x 0.40 m. The mortar was between 40 and 100 mm thick. Courses of bricks were hard to see in most of the time. The walls were slightly concave and the concave floor was finished with the same white plaster. The floor sequence was not excavated fully.



The building comprised internal buttresses - two large half circular buttresses to the west and north and a rectangular buttress to the east. There should be another half circular buttress to the south but until the building is fully excavated this is uncertain. Buttresses were probably supported a lightly-structured upper storey. The rectangular buttress F.2952 measures 1.30 x 0.90 m. and it was constructed of greyish mud bricks measuring c 0.40 x 0.40 m. It was built directly on top of another half circular (?) buttress F.2957. Half circular buttresses F.2952 and F.2958 were c 1.50 m wide. They are set at 180 degree angles (Figure 98). The walls, buttresses and the floor of the building were made of white plaster and painted in red. The red paint was bright at the first time that we excavated, but later it faded to pink colour (Figure 99). Many phases of replastering and painting were identified. A number of grinding stones with red paint were also found in the fill of the building.



The 'Red Building' has two construction phases. The early phase consists of a small space with well-developed large half circular buttresses. The early phase of the building was destroyed by fire, and the eastern part of the building was heavily damaged. A thick ashy layer was found on the floor of the building. The building was

deliberately refilled with hard sticky soil, forming a level. Then, the rectangular buttress was built to the east on the top of the damaged half circular buttress. A mud brick wall F.2950 has also been built on the top of the north buttress (not illustrated on the plan).



Figure 99.: Detail of Red Paint on Wall F. 2954

The ‘Red Building’ differs from a usual domestic architecture. It is interesting in plan and there are no exact comparable examples from any other

Chalcolithic sites in Central Anatolia. The walls and floor of the building were plastered and painted in red regularly. Due to the universality of colour symbolism, red used to be the significant colour for the prehistoric people from Palaeolithic times onwards. Arguments about the significant of colour in archaeology has increased recently (e.g. Jones and MacGregor 2002; Jones and Bradley 1999; Cleland et al. 2004), and it is often argued that use of different colours in architecture have a symbolic rather than an aesthetic role. In different societies red has become symbol of danger. It is also associated with violence and tension (Trevarthen 2000, table 1). Ethnographic evidence indicates different kinds of ceremonies associated with blood (Wreschner 1980; Knight et al. 1995; Gage 1999), where red was always the basic and the essential colour.

### Midden



Figure 100: Section through Midden

To the west of the ‘Red Building’ was an area of midden unit (15536).

It extended beyond the limit of excavation. Midden deposit is characterised as fine deposit of ash and charcoal, and containing animal bone, pottery and obsidian in high quantity. The midden had been truncated by pits where themselves backfilled with homogeneous dumps of waste (Figure 100).

### Pits

Four pits were excavated, and only one of them has EC II materials. The EC II pit unit (15537) is located in the far northwest corner of the trench, and it has been cut into west wall F.2955. A small oval shaped pit unit (15534) is also located near the west wall, measures 1.10 m in length and 0.30m in width. A complete potstand and a worked horn



Figure 101: Detail of a small pit Unit (15534)



were found in the pit (Figure 101).

### Pottery- Burçin Erdoğan and Gülay Yılankaya

A total of 7782 pottery sherds were studied in this season. Many features of the West Mound pottery have already been discussed in Mellaart's (1965) and Last's (1998b; 2000) publications. ECI pottery was characterised by red-on-cream/white/orange painted pottery with geometric designs while ECII pottery was characterized by darker paint colours and finer lines. A new pottery data base will be created in the future for full analysis of the West Mound pottery. However, we sorted out the pottery into several ware groups for studying as follows;

<u>Painted Wares</u>	<u>Slipped Wares</u>	<u>Other Wares</u>
Red on Cream	Cream Slipped	Brown/Buff Coloured
Red on White	White Slipped	Reddish Coloured
Red on Yellow	Yellow Slipped	Black/Gary Coloured
Red on Orange	Orange Slipped	Light Gray Burnished
Red on Pink	Pink Slipped	Red washed
Red on Greenish	Black/Gray Slipped	Imported wares (Gelveri etc.)
Red on Black	Brown/Buff Slipped	
Brown/Black painted (EC II)		
Poligrome (EC II)		

Some results for this season were the brown/black painted EC II pottery sherds were found only in Pit unit (15537) and on the surface (Figures 102 & 103). A total of 3163 sherds were found in the fill of the 'Red Building', and 1708 of them have painted decoration. The most frequent painted wares are red-on-orange and red-on-cream.



Figure 102: A EC II pot from the pit Unit (15537)

They represent 56.3 % and 34.5 % of the total assemblages. The most common motifs were zigzags and diamonds and the most frequent form is an S-profiled bowl. A small number of imported sherds with incised/grooved designs of various types were found. One was comparable with material from Gelveri (Figure 104).



Figure 103: Selected EC II sherds

Most exciting individual finds for this season were sherds with human figures. Three sherds with painted human figures were found by Last and Gibson

(personal communication) and among them a bowl with “dancing women” figures on its interior base is noteworthy (Last 1998, Fig.6). A total of four sherds with painted human figures were found in this season, and all figures have raised arms. Two figures were shown holding hands in probably a dance (Figure 105). A figure with raised arms, a long neck and open fingers is unique and we called it “The Alien of Çatal West” (Figure 106).

In the next excavation season the team will concentrate on the ‘Red Building’ and small cell-like spaces around it in order to understand a complexity of Çatalhöyük West occupation.



Figure 104: Selected sherds from “The Red Building”



Figure 105: “Dancing Women” Figures on Çatalhöyük West Pottery.



Figure 106: “The Alien of Çatal West”.

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## **References**

- Baird, D., (2005. "The History of settlements and Social Landscapes in the early Holocene in the Çatalhöyük Area". In Ian Hodder (ed), Çatalhöyük Perspectives reports from the 1995-99 seasons: 55-74. Çatalhöyük Research Project 6. British Institute at Ankara Monograph 40. Oxford.
- Bıçakçı, E., (2003). "Tepecik-Çiftlik: Un nouveau site en Anatolie centrale". *Dossiere d'Archeologie* 281: 42-47.
- Bıçakçı, E., Ç. Altınbilek-Algül, S. Balcı, M. Godon. (2007). "Tepecik-Çiftlik", M. Özdoğan ve N. Başgelen (eds), *Türkiyede Neolitik Dönem: 237-253*. İstanbul: Arkeoloji ve Sanat.
- Bonogofsky, M., (2005). "A Bioarchaeological Study of Plastered Skulls from Anatolia: New Discoveries and Interpretations", *International Journal of Osteoarchaeology* 15: 124-135.
- Cleland, L., K. Stears and G. Davies (eds). (2004). *Colour in the Ancient Mediterranean World*. BAR Int. Ser. 1267. Oxford.
- Czerniak, L. and A. Marciniak (2006). "TP-Area". Çatalhöyük 2006 Archive report: 104-115.  
[http://www.catalhoyuk.com/archive\\_reports/2006/ar06\\_10.html](http://www.catalhoyuk.com/archive_reports/2006/ar06_10.html)
- Efe, T., (2000). "Recent Investigation in Inland Northwestern Anatolia and Its Contribution to Early Balkan-Anatolia Connections", In S. Hiller and V. Nikolov (eds.), *Karanovo, Band III, Beitrage Zum Neolithikum in Südosteuropa*: 171-183. Wien: Phoibos Verlag.
- Gage, J., (1999). "Did colours signify? Symbolism in the red", *Cambridge Archaeological Journal* 9 (1): 110-112.
- Gibson, C. and J. Last (2003). "An Early Chalcolithic Building on the West Mound at Çatalhöyük". *Anatolian Archaeology* 9:12-14.
- Hodder, I., (2006). *Çatalhöyük: The leopard's Tale: Revealing the Mysteries of Turkey's Ancient 'Town'*. London: Thames and Hudson
- Jones and G. MacGregor (eds). (2002). *Colouring the Past: The Significance of Colour in Archaeological Research*. Oxford and New York: Berg.
- Jones, A and R. Bradley. (1999). "The Significance of Colour in European Archaeology". *Cambridge Archaeological Journal* 9 (1): 112-114.

Knight, C., C. Power and I. Watts. (1995). "The human symbolic revolution: a Darwinian account", Cambridge Archaeological Journal 5 (1): 75-114.

Last, C., (1998a). "A Design for Life. Interpreting the art of Çatalhöyük". Journal of Material Culture 3 (3): 355-378.

Last, J., (1998b). "Excavations on the West Mound at Çatalhöyük 1998". Çatalhöyük 1998 Archive Report. [http://www.catalhoyuk.com/archive\\_reports/1998/ar98\\_05.html](http://www.catalhoyuk.com/archive_reports/1998/ar98_05.html)

Last, J., (2000). "West Mound Pottery". Çatalhöyük 2000 Archive report. [http://www.catalhoyuk.com/archive\\_reports/2000/ar00\\_10.html](http://www.catalhoyuk.com/archive_reports/2000/ar00_10.html)

Mellaart, J. (1965). "Çatal Hüyük West". Anatolian Studies 15, 135-56.

Öztan, A. (2002). "Köşk Höyük: Anadolu Arkeolojisine Yeni Katkılar", TÜBA-AR 5: 57-69.

Öztan, A. (2003). "A Neolithic and Chalcolithic Settlement in Anatolia: Köşk Höyük", Colloquium Anatolicum II: 69-86.

Öztan, A., (2007). "Köşk Höyük", M. Özdoğan ve N. Başgelen (eds), Türkiyede Neolitik Dönem: 223-235. İstanbul: Arkeoloji ve Sanat.

Trevarthen, D., (2000). Illuminating the Monuments: Observation and Speculation on the Structure and Function of the Cairns at Balnuaran of Clava. Cambridge Archaeological Journal 10 (2):195-315.

Wreschner, E.E., (1980). "Red Ochre and Human Evolution: A Case for Discussion", Current Anthropology 21 (5): 631-644.

## **Sel Raporu - Asuman Baldiran**

2006 yılı içinde Batı Höyüğün güneydoğu yamacında bulunan 5 ve 6 numaralı açmalarda başladığımız büyük olasılıkla Bizans Dönemine ait gömütlerin kazı çalışmasına 22.06.2007-26.07.2007 tarihleri arasında Batı Höyük 5 ve 7 numaralı açmalarda devam edilmiş, on mezarın ve bir adet sınırı net olarak belli olmayan dağınık halde bulunan kemikler nedeni ile gömü olarak nitelendirdiğimiz alanın (feature 2417) (resim 107) kazı çalışmasında bulunulmuştur. Geçen yılki çalışmalarla beraber, ortaya çıkarılan mezar ve gömü sayısı 30'a yükselmiştir. Bu güne kadar elde edilen verilerden Batı Höyüğün Bizans döneminde daha doğru bir ifade ile Orta Çağda mezarlık alanı olarak kullanılmış olması olasıdır. Bu yıl yapılan çalışmalarda Orta Çağa ait olduğunu düşündüğümüz gömütlerin tümünün doğu-batı yönlü oldukları ve iskeletlerin sırt üstü yatırıldıkları ortaya çıkarılmıştır. Mezarlardan bir tanesi hariç hepsi yetişkin bireylere aittir. Bu veriler geçen yıldan elde edilen veriler ile aynıdır. Bu da bize Orta Çağda Batı Höyükte değişmeyen bir ölü gömme âdetinin uygulanmış olduğunu göstermektedir.

Bu güne kadar yapılan çalışmalarda Batı Çatalhöyük Orta Çağ mezarlarının üç ayrı teknikte yapıldıkları saptanmıştır. Bunlar Basit Toprak Mezar (feature 2419, 2421,2422, 2423) (resim 108-109-110-111), Tabanı Tuğla Döşeli Yan Duvarları Kerpiç Örgülü Sanduka Mezar (feature 2420) (resim 112) ve Kerpiç Tabanlı ve Yan Duvarları Kerpiç Örgülü Sanduka Mezar (feature 2416) (resim 113-114-115) olmak

üzere üç teknikte yapılmışlardır. Bu mezar tiplerinden en çok karşılaşılan tip olan Kerpiç Örgülü Sanduka Mezar iki alt tipte incelenebilir. İlk tipte mezar çukurunun zemini ve yan duvarları sıkıştırılmış kille kaplanarak oluşturulmuş, mezara defin yapıldıktan sonra mezarın üstü pişmiş ve pişmemiş kerpiç tuğlalarla döşenerek kapatılmıştır (feature 2421) (resim 116) . İkinci grup mezar ise birbirine tam dik açıyla yaklaşık 60-70 cm derinlikte kazılan mezar çukurunun zemin ve duvarları kerpiç tuğlalarla oluşturulmuştur (feature 2416) (resim 117). Bu mezarlarda yanık kerpiç tuğlaların genellikle mezarın üst örtüsünde veya mezar duvarının üst sırasında kullanılmış olduğu anlaşılmıştır. Mezarın bu şekilde yapılmış olması yanmış kerpicin sahip olduğu turuncu rengi ile mezar yerinin belirlenmesi amacıyla yapılmış olmalıdır. Bu mezar tipinde 2001 yılında TP (Team Poznan) alanında yapılan kazılarda dört adet örnek bulunmuştur. Bu tipteki mezarlar (feature 856, 874, 941, 942) hafirler tarafından en eski mezar tipi olarak nitelendirilmiştir.

Tek bir örnekle temsil edilen tuğla örgülü sanduka mezarda ise mezarın yan duvarları kerpiç tuğlalardan örülmüş, ancak mezar zemini pişmiş toprak tuğlalarla kaplanmıştır. Son mezar tipinde ise toprağa açılan çukura herhangi bir müdahalede bulunmadan gömü yapılan basit toprak mezardır. Bu mezar tipi 2001 yılında doğu höyükte TP alanında yapılan kazılarda da ortaya çıkarılmıştır (feature 851, 854, 855, 858, 865, 869, 870, 872, 909, 910, 913, and 945).

Bazı mezarlarda bulunan ahşap parçaları (feature 2416 unit 14268 feature 2419 unit 15316) ve demir çivi (unit 14259, 14273, 14298,15316) parçalarından ötürü gömünün tabutla yapıldığını düşünmekteyiz. Mezarların tarihlenmesinde bir tanesi hariç olmak üzere (feature 2421 unit 15307) net fikirler oluşturula bilecek gömü hediyesi veya herhangi bir buluntu ele geçmemiştir. Bu nedenle mezarlar arasında ne yazık ki stratigrafi oluşturmak mümkün değildir.



Figure 107



Figure 108





Figure 109



Figure 110



Figure 111



Figure 112



Figure 113



Figure 114





Figure 115



Figure 116



Figure 117

### **West Mound, Late Burials - Asuman Baldiran**

Late period, Byzantine burial excavations that we started in 2006 in Trenches 5 and 6, located at the southeast edge of the mound, continued in Trenches 5 and 7 in 2007 excavation season (from 22/06/2007 to 26/07/2007). 10 burials and 1 possible disturbed burial (F.2417-Figure 107) were excavated.

Including the last years work the total number of burials excavated reached up to 30. In the light of the information so far, we can say that the West Mound was used as a graveyard for the Byzantine period or we could say for the Middle Ages.

As a result of this year's excavations all the burials that were excavated are identified as Middle Age burials, which were lying on their backs and have east-west direction. All the skeletons except one are adults.

All the information retrieved this year is same as the last year. This possibly demonstrates an ongoing tradition at Middle Age West Mound in their burial rituals. From the analysis so far, it seems like there has been 3 different techniques used at West Çatalhöyük Middle Age period.

These three typologies are: Simple Earth Graves (F.2419, F.2421, F.2422, F.2423) (Figures 108, 109, 110, 111), Box Graves With Mudbrick Base and Brick Walls

(F.2420) (Figure 112) and Box Graves with Mudbrick Base and Mudbrick Walls (F.2416) (Figures 113, 114, 115).

The most common of those, Box Graves With Brick Base and Mudbrick Walls can be investigated in two sub-categories. In the first type grave holes base and walls were condensed and covered with mud, after the body was placed the grave was covered with both fired and unfired mud bricks (F.2421) (Figure 116).

The second type consist of a 60-70 cm deep grave hole that both base and the side sections are lined with mudbricks (F.2416) (Figure 117). In these types of graves the fired mudbricks are generally used while covering the grave or at the top of the grave wall.

The box graves with mudbrick base and brick balls was represented with only one example. The last type is the type where there has not been an extra effort then simply digging a large hole to place the body. These types of graves were often seen during the excavations at TP area (F.851, F.854, F.855, F.858, F.865, F.869, F.870, F.872, F.909, F.910, F.913, and F.945).

In some of these graves, we came across to wood pieces (F.2416 unit (14268), F.2419 unit (15316)) as well as iron nails (unit (14259), (14273), (14298), (15316)) therefore bodies were probably placed in a wooden coffin prior to the burying. Except one (F.2421 unit (15307)) there has not been any grave goods found in the graves with the body, therefore this makes it difficult to date the graves. Also that makes it impossible to find stratigraphic relationships between the graves.

## CULTURAL AND ENVIRONMENTAL MATERIALS REPORTS

### Çatalhöyük Animal Bones 2007 / Hayvan Kemikleri

**Team: Katheryn Twiss (1), Arzu Demirergi (2), Nerissa Russell (3), Louise Martin (4), Sheelagh Frame (5), Kamilla Pawłowska (6), Elizabeth Henton (7), David Orton (8), with Cecilia Anderung (9), Anders Götherström (10),**

*(1) Stony Brook University (2) Stony Brook University (3) Cornell University (4) University College London (5) Çatalhöyük Research Project (6) University of Poznań (7) University College London (8) University of Cambridge (9) The Natural History Museum (10) Department of Evolutionary Biology, Uppsala*

#### Abstract

The faunal team recorded 71,140 bones during the 2007 season, bringing the total recorded to over 800,000. This year's work involved completing analysis of in situ deposits from Building 52; studying middens from the 4040, TP and South areas; and beginning analysis of the bones from the new West excavations. Special studies conducted this year include isotopic investigation of sheep life histories and (collaboratively with the archaeobotanical team) research into economic integration and its implications for cultural survival. Off-site, preliminary work has been undertaken on cattle DNA and histological/ultrastructural analysis of sheep bones. Methodological revisions included institution of additional phase 1 assessment effort and revision of our recording system in order to accelerate analytic speed while maintaining data utility and comparability.

#### Özet

Zooarkeoloji ekibi 2007 sezonu boyunca 71,140 sayıda hayvan kemiğinin kaydını yapmış ve toplamda 800,000 in üzerinde hayvan kemiğinin verisini girmiştir. Bu yıl yapılan işler arasında; Bina 52'den çıkan in situ kalıntıların incelenmesi, 4040,TP ve Güney açmalarındaki çöplüklerden çıkan kalıntıların incelenmesi ve Batı alanından çıkan kemiklerin analizlerinin yapılması yer almaktadır. Bu yıl yapılan özel işlerden biri de, sürüdeki koyunların yaşam sürelerini belirlemek, ekonomik entegrasyonu ve bunun kültürel yaşamla ilgili etkilerini anlamak amacıyla yapılan hayvan kemikleri üzerindeki izotopik incelemelerdir (arkeobotani ekibi ile birlikte yapılan bir projedir). Alan dışından alınan örneklerle sığır üzerinde ön DNA incelemeleri ve koyun kemikleri üzerinde de histolojik analizler yapılmıştır. Metodolojiyi gözden geçirme işlemi olarak ise eklenen tabaka 1'in anlaşılmasına çalışılması ve aynı zamanda da veri tabanı giriş yapısının tekrar gözden geçirilerek, veri kullanımı ve karşılaştırmasını etkilemeden analitik bir hıza nasıl ulaşılabileceği konuları tartışılmıştır.

#### Introduction

During the 2007 field season, 71,140 new faunal specimens were analysed. They represent 2223 new diagnostic zones and 142,260 grams of bone. The newly analysed specimens come from 97 fully analyzed units and 68 assessed units, as well as the completion of units begun in previous years. The total number of Çatalhöyük

Research Project -analysed bones and bone fragments is now 829,594, and the total number of units fully recorded or assessed is 2089.

This report is divided into three sections. In Part I we report on the data collected this year from each of the excavation areas. In Part II we discuss some of our ongoing research themes: sheep life histories; house vs. midden deposits; middens through time; food sharing; and integration of the Neolithic faunal and botanical economies. Finally, in Part III we review the procedural modifications tested and instituted in 2007.

## **Part I: Area Reports**

### ***4040 Area***

The faunal team looked at material from 87 units from the 4040 area in 2007: 33 of these were fully recorded (long form), 13 were assessed, and 41 were partially recorded (tools or special finds only). Some of these units had been partially recorded in previous years, but eight of the assessed units, 22 of the long-form units, and 38 of the partially studied units were wholly new in 2007. In total, 17,203 specimens (980 diagnostic zones; 59,662 grams of bone) from the 4040 were analysed.

Much of the excavation work in the 4040 this season was dedicated to the excavation of the shelter foundation trenches (FTs). Most of the FT deposits were only partially excavated, as they could not be followed beyond the limits of the foundation trench. Such partial deposits were deemed low on the analysis priority list, because we could not know how big the complete deposits were, or the extent to which each one varied in internal composition—in other words, we could not be sure of the representativeness of the samples we had from each unit. For these reasons, FT deposits offer problematic comparisons with other deposits on site.

Therefore, only a few foundation trench units were studied in 2007, and most of these had only special finds such as cattle horns recorded (e.g. (15036), (15406)). Three layers from a pit in the centre of a building (units (15050), (15082), (15072) in FT 2, Space 17, were fully studied as potential feasting remains; while they proved to be miscellaneous fill material, the presence of a large avian (bustard?) mandible was intriguing.

With these limitations on the newly excavated material, we dedicated much of our 4040 effort this season to analysing previously excavated remains that we deemed highly interesting. We focused on two kinds of deposits: rich middens and in situ deposits within houses. In regards to the latter, we completed analysis of all primary deposits from Building 52, excavated in 2005 and 2006. We also studied units from Buildings 45, 59 and 60, but garnered relatively little data, as a) these buildings were largely cleaned out at abandonment, and b) Buildings 59 and 60 were still being excavated this year.

Ample data were produced analysing the middens. We explored variation in midden types, analysing bones from a 'typical' Çatalhöyük midden (10396), from pit layers in Space 279 (units (14179), (14182), (14183), (14186), and (14187)), and from a unique midden pit in FT 24 characterized by very rubbly fill, burnt layers and lenses and very large brick fragments (15676). Unfortunately, only part of this last midden (15676)

was excavated up to the boundaries of the foundation trench. This was unlucky, as the unit's faunal material was in good condition, and notably less processed than is the norm at Çatalhöyük. There was also a narrower range of taxa present than is usual for a midden: caprines dominated, but there was also plenty of large mammal and a highly atypical wealth of birds. Middens are discussed further below.

### ***South Area***

The focus of the South area excavations in 2007 was four-fold: completion of Building 65 and associated areas, and exploring its construction; exploration of the lower Building 75 and Building 68; the completion of middens in Space 261 near Building 53; and the beginning of exploration of a series of middens in the south of the area, Space 319, believed to belong to Level IV. A total of 261 units were excavated overall during the excavation season. The faunal team recorded in full 22 units from these various South areas, undertook phase 1 assessment of a further 15, and partial recording (of bone tools) of another 5 units. Since most excavation was either completing buildings/areas excavated in previous seasons, or beginning new ones, there is little reason to present quantified data on results from this season alone, so only noteworthy trends and finds will be mentioned here.

#### **Building 65**

A range of units were sampled for faunal recording to explore the various spaces and deposit types, such as the floors in Space 297 and fire spots and dumps in Space 314. Focus was on understanding depositional histories, with particular emphasis on whether any deposits represent undisturbed 'events' – although nearly all units showed a lack of integrity that would have indicated this. A cluster in a midden in Space 314, however, is noteworthy in that it has larger fragments and seems to represent a single 'event' (14578).

Unit (14522) is also of interest. It represents a likely 'placed' deposit in the SE corner of Building 65, in Space 297, beneath the make-up for platform F.2086. It includes 4 cattle scapulae and 1 red deer scapula; two of them worked, but are alongside a cattle astragalus used as a knucklebone, a figurine, and a human infant bone. This is clearly a special deposit, and reinforces previous evidence for the use of animal scapulae in such deposits.

#### **Building 68**

From this building, unit (15742) is noteworthy. It represents room fill that contains articulated sheep/goat vertebrae and a high number of sheep/goat-sized ribs, together suggestive of racks of ribs being deposited in the fill, and also indicates relatively little later disturbance.

#### **Building 75**

Certain units (15753, 15755) were sampled from the pit in Space 329 of this building. The freshness of the animal bone material and presence of some articulating pieces reflect swift deposition of what is interpreted as post-consumption refuse.

#### **Space 261**

A series of units were sampled from the fills of pit (14824). The character of the animal bone from these units suggested primary deposition, with little later disturbance and fresh-looking bone surfaces (e.g., 14817, 14821), although most were

interpreted as mixed-consumption debris. Unit (14822) differed in that fragments were much larger - and may be a special deposit?

### Space 319

The sequence of middens excavated in the extreme south of the area, believed to be from Level IV, are examined in more detail below, as part of a comparison between the middens and Building 44. Three of the units were examined in full by the faunal team (14587, 15702, 15728 – in sequence from higher to lower), and two were assessed (14559, 14572 – upper units that may have seen some mixing).

<b>Taxon</b>	<b>NISP</b>	<b>DZ</b>
Cattle size	433	
Pig size	83	
Sheep size	4509	
Hare size	72	
Microfauna	1	
Indeterminate	3663	
<b>TOTAL</b>	<b>8761</b>	
<i>Bos</i>	102	27
<i>Equus</i>	11	8
Red deer	1	0
Deer	4	0
Sheep/Goat/Roe deer	715	9.5
Sheep/Goat	1190	187
Sheep	185	106.5
Goat	35	13
Pig/Boar	8	3
Dog	8	2
Fox	6	2.5
Hare	1	0
Carnivore small- medium	2	0
Mustelid	2	0
Bird	8	
Human	5	0
<b>TOTAL</b>	<b>2283</b>	<b>358.5</b>

Table 4: Number of Identified Specimens (NISP) and Diagnostic Zones (DZ) for taxon size groups (above) and identified taxa (below) for midden levels in Space 319.

In terms of overall character, the middens seem to show larger fragment sizes overall than some earlier middens in the South area – an observation that needs future statistical exploration. Most animal bone seems to have been rapidly deposited with little post-depositional movement (supported by some articulations), and is interpreted as primary consumption refuse, from clearly multiple consumption events, with some earlier butchery discard. Unit (14587) showed large cranial chunks of sheep/goat, where parts of occipitals and parietals remained intact, and one example showed the brain case bashed open. The indication is of brain consumption, with little further rendering down of the skull. Another general observation of these middens is that there is relatively little cattle horn core. There is a wild goat horn core from unit



(15702) and a wild sheep horn core from (14587). A high proportion of pathological sheep/goat elements was noted from (15702), which may or may not derive from a single individual, and while some would tend to signify osteoarthritis, the severity of surface modification and exostoses and range of elements affected all suggest a different aetiology.

The section below comparing Space 319 and Building 44 presents taxonomic representation from the Space 319 middens in terms of %NISP. Here (Table 4), the raw NISP counts and DZ's are presented for the fully recorded units: (14587, 15702, 15728). Even with these small samples, caprines clearly dominate, making up 93% by NISP count and 88% by DZ (both counts including the sheep/goat/roe category). Since these middens were only partially excavated, results must remain tentative.

### ***TP Area***

The zooarchaeological laboratory work in Çatalhöyük led in the 2007 season to the study of 8609 animal bone specimens from the TP area. They come from pit infill (13545, 13543), infill layers (13571, 15216, 15261, 15803) and midden layers (13570, 15217, 15234, 15282, 15820). In addition, worked bone (bone points, worked equid metapodial, knucklebone, pendant, fragments of spoon) was also recorded from 10 various categories of units (see Russell, worked bone, this report). Animal bones came from Buildings 73 and 74 (Space 326) as well as Space 318.

In the south part of the trench was situated a very shallow cluster of bones with a north-south alignment (13545) in pit infill about dimensions 1.18 x 0.80 x 0.08 m and with a not very distinct basal boundary. Large fragments of cattle and cattle-sized bones were in this sample, although sheep/goat is also present. There is also a pig incisor, a large bird vertebra, a fish vertebra, and some amphibian and reptilian microfauna. Anatomically there are long bone fragments, rib, scapula and pelvis of large mammal and a cattle phalanx fragment and mandibular fragments. Some similar parts of sheep-size and sheep/goat are also present. Both sizes are heavy on the meaty parts, short on the feet. This element distribution suggests that the material is post-consumption; rather single-purpose but probably not a single meal. It was fairly rapidly buried, because the edges are generally sharp, although there is evidence of carnivore ravaging. From post-depositional contact there are traces of plaster on some of the bones. Sheep/goat specimens show pathological changes as well as a cattle tibia that may have signs of malnourishment. Surface condition is good; very little burning, not much digestion. Two quasi-complete sheep/goat mandibles (different ages) and two maxillae were included. Some integrity in multiple specimens of what may be the same two sheep (young and old) and a youngish cow (also less of a mature one). Fragments are larger than usual, but it looks more processed than a classic feasting deposit. But nevertheless the deposit may be feasting remains of some kind, given the high proportion of cattle, which is certainly unusual. It may be that some portions of feasting remains are deposited in real feasting deposits, others distributed to individual households for more or less ordinary consumption.

Next to the bone concentration (13545) lay bone deposit (13543) in a greyish and black layer of burnt soil aligned east-west, also situated in the south part of the trench. The area of burning provided animal remains that look like a fill deposit, because their surfaces have mostly rather worn and degraded surface conditions. The range of burnt bone is variable. Some of the bones are burnt, mostly the smaller ones in the

dry-sieved material and about 30% in flotation sample, mostly low temperature but some calcined. Either the burnt material is from the fill, burnt in situ, or there is a small burnt component mixed with the fill. Bones are highly fragmented with no coherence, some digestion. Body part distribution is fairly even, notably including vertebrae. The indeterminate bones predominate, which are mostly sheep-size, but with a certain amount of large mammal. Only few and scrappy diagnostics are preserved.

The western section (13570) of a midden(s) deposit between walls (13538) and (13059) in Space 318 was separated by a small wall from (15217). The deposit also contained worked bone (points 15217.X3, 15217.X6) charcoal, pottery, obsidian, shell, and crystal, and was rather homogeneous. None of the bone tools is useable in present form, although two have post depositional breaks (with the other part missing). Bone deposit of average size, contained the remnants of sheep/goat, cattle, equid, pig, canid, and hare-sized animals. The majority of bones come from sheep/goat but there is a good amount of cattle bones. The rest of the taxa are represented by just a few body parts (for example, a tibia and a tooth fragment for equid and a metapodial and a tooth for pig). Body-part distribution is fairly even, indicating heavy processing (i.e. very little vertebra and pelvis, lots of long bone fragments). A good amount of diagnostics, mostly sheep/goat; they include an almost complete femur and tibia, half of a radius, as well as long bone cylinders (maybe due to dog gnawing or marrow extraction). Additionally, there are many teeth, all sheep/goat except one equid, one pig tooth, and a few cattle tooth fragments. In this unit, there are big pieces compared to other TP units. Although most of the long bones are highly fragmented, diagnostics are much less fragmented, and some diagnostics are hardly processed at all. Not too much digestion or gnawing. A good amount of burning (about 10% of all bones), and some fragments are partially burnt on the tip(s) of the fragments, these must have been exposed to fire after they were fragmented. These are mostly sheep/goat shaft splinters. Medium homogeneous weathering. This unit does not have high coherence because the long bone fragments are highly processed, whereas many diagnostics are hardly processed at all. It is a mixed midden deposit, probably covered quickly.

In Space 318, between walls recorded as units (13059), (13088), (13089) and (13093) was located an infill layer (13571), about dimensions 0.23 x 1.540 x 1.22 m, which included bones, pottery, obsidian, shell and charcoal. During exploration two sub-layers of infill were identified: a bricky upper layer (with the highest density of construction elements such as mudbricks and plaster in its eastern part) and a relatively homogeneous dark brown layer underneath. A large piece of shed antler (13571.X1) was excavated in the eastern part of the unit. It has the look of an abandonment deposit, but must have lain exposed for a while as the surface condition is highly weathered. It was at one time part of a raw material store, with grooves for removing splinters. Odd that it was discarded. Under the layer recorded as unit (13571) there was an infill layer (15216), from which a knucklebone (15216.X5) was recovered. Directly underneath was found a midden layer (15217) located between walls recorded as units (15218, 13088, 13089, 13093). It was separated by a small wall from (13570). Deposit with a majority of sheep-size bone remains but present also a substantial amount of large mammal in both diagnostics and scrap. Diagnostics are all sheep/goat, spread through the body. One bird long bone shaft fragment was also recorded. Surface condition of remnants is somewhat variable, mostly a bit worn/ degraded and some water worn fragments. Ca. 10-15% bones are burnt, more

among the long bone shaft fragments. Mostly low temperature, but some calcined. Some gnawing and digestion also was found. Not much coherence apart from an articulating cattle metacarpal and one phalanx, which seem notably small. Fragmentation is moderate. Fairly even body part representation. Bone deposit looks perhaps more slowly accumulating than (13570), and seems to be less dense.

From the northern part of the trench comes a midden deposit (15234), which has a low density of bone. This deposit is incoherent but importantly it is well-preserved compared to many other TP assemblages. It is incoherent because the two predominant groups of bones (sheep and cow size) have divergent taphonomic features. Namely, the sheep-size bone remains appear to have a similar depositional history because there is more coherence in their weathering, fragmentation and body part representation. These all suggest quite rapid burial. However, cow-size remains do not appear to have been quickly buried as they are more weathered. Bones are mostly from sheep-size animals, but also cow-sized (in this category most of them are Bos, but there is also an equid scapula). In the caprine body-part distribution the whole animal is present, with a lot of meaty parts (scapulae; several pelvis fragments, both fore and hind limbs), but also some primary butchery parts (heads: a lot of teeth, some cranial, a nearly complete mandible; feet). There are many long bone fragments, but few rib fragments, very few vertebrae and a moderate amount of cranial fragments in sheep-size remnants. In the body-part distribution of cow-size pieces some long bones and vertebrae are present, a small amount of ribs, and a few other pieces. One tooth, a cuneiform and a phalanx fragment were derived from cattle. From very small mammals originated a long bone and a fox-size rib. Also one bird bone recorded. Animal bones generally are broken up but not heavily so. Fragment length spans a more or less continuous distribution between roughly 1 and 16 cm. Long bone fragments are 4 cm in average, but cow-size long bones 5 cm in average, and mostly 7-2 cm, except one fragment 16 cm, and a few of fragments of 1 cm. Surface condition is good. Roughly 10-15% of the bones are burned, mostly to a high temperature (mostly carbonized, some carbonized/calcined). Most of the burned bones are sheep-size long bone shaft fragments, also a Bos phalanx fragment. The same percentage of bone of both category size remains have heavy carnivore gnawing. These pieces were very weathered (exfoliating). Not many of bones fragments are digested, except caprine phalanges and some long bone fragments. The bones were not trampled.

From a second layer of arbitrarily divided midden (15282) in the western part of Building 73 animal bones come mostly from sheep/goat. There was also a little cattle, and an upper fragmentary female wild boar canine. This unit is arbitrarily separated from unit (15234). While it shares some characteristics with (15234), in terms of taxon and body part distribution, and the greater weathering of the cattle bones (not true of most of the large mammal long bone shaft fragments), it is generally somewhat more fragmented and worn, and there is considerably more digestion. Bones have no coherence. There are few diagnostics, and one fish bone. The most interesting items are two bear teeth, a canine with the crown broken off and a very worn molar. This is the first bear we have seen that does not seem to be getting any special treatment, although it is just isolated teeth and so conceivably ultimately from a disturbed special deposit. It certainly doesn't look like they were eating bear. Ca. 10% of remnants is burnt, at low temperature, postdepositionally. Several bone tools were recovered in this sample. One is particularly interesting. It was burnt in a

reducing atmosphere, i.e. after it was buried, then broken after that, and only one half recovered. Thus it was originally deposited and burnt somewhere else, redeposited here.

Directly on top of the floor (15809) in Space 326 of Building 74 was placed infill, which was relatively homogeneous and consisted of dark brown and greyish soil mixed up with fragments of mudbricks and other constructional elements. The infill contained pottery, obsidian, shell and charcoal and also animal bones (15261). Because of the location of the animal remains on top of the floor, these are interpreted by the excavators as an abandonment deposit. Bones originate mainly from cattle. From among four mandibles, two (15261.X9- more damaged, 15261.X12) are fairly nearly complete, one (15261.X11) lacks the heel and incisor areas. A large segment of rib (15261.X21) lay with one of the mandibles. Two scapulae (15261.X20- very fragmented and 15261.X22) have no traces of working or use. One skull fragment (15261.X10) was preserved with the stub of one or both horns. An especially crumbly sheep horn core (15261.X24) might be wild, certainly male, and quasi-complete. At least some of the bones (the rib and horn core) were placed in shallow holes in the floor. All of these finds are in very poor condition, not exfoliating, as in prolonged weather exposure, so much as the usual TP damage.

In the same part of Building 74, defined in the eastern part as Space 326 directly on the floor (15807) within an infill layer (15803) were found a large piece of antler (15803.X3), a young cattle maxilla (15803.X12) and worked bones - points (15803.X2, 15803.X4, 15803.X9, 15803.X10). From the western part of the excavated area comes an ashy midden deposit (15820). In this typically layered midden made up of numerous parallel layers made of burnt soil, charcoal and ash were 1224 bone remnants. This sample looks like a midden, however, it differs from the "classic" Çatalhöyük midden. That is, the sample appears to be fairly rapidly deposited but is almost entirely sheep/goat with few big animals, is almost entirely food waste, is moderately heavily processed (long bones broken up, but whole mandibles), and is not very dense (322 litres, but the dry sieve bone material is a small sample). There is mostly sheep-sized bone, with a little cow-sized material and one hare-sized bone. A fragment of human bone and a bird bone were also recorded. One fish specimen and one snake vertebra were recovered from the flotation sample. The body part distribution is uneven. Sheep-sized animals are represented by long bone shaft, rib, vertebral, scapula, and cranial fragments. Sheep-sized scrap is predominantly long bone shaft fragments, with some rib and a few vertebral fragments; there are almost no tooth splinters. Cow-sized animals are predominantly represented by long bone shaft fragments, with one vertebral fragment and two rib fragments. All sheep-sized diagnostics are caprine, and include skull, pelvis, forelimb, hindlimb, and feet. Among caprine diagnostics, hindlimb fragments outnumber forelimb fragments almost 2:1. Caprine phalanges are underrepresented: there are only two in the sample. There are only nine diagnostics from non-caprine animals: one or two fragments each from bovid forelimb, hindlimb, feet, and skull, and an equid tooth. Bovine body part distribution is difficult to discuss, as there are so few fragments. Some of the bone is burnt (ca. 5%), mostly carbonized or carbonized and burnt. Burnt material includes both size classes, and does not affect any body part or size class disproportionately. Burnt material includes long bone, rib, vertebral, and cranial fragments, tarsals, and some maxillary teeth as well as one of the bone tools. The material is moderately fragmented, with most fragments (>60%, excluding teeth)

around 4-6 cm. There are some larger fragments, including some 15 cm long bone cylinders and mandibles, and some smaller fragments of rib and long bone shaft. There is some carnivore gnawing (>5%), mostly heavy, that has removed the ends of long bones and marked long bone shaft fragments. There is also a little rodent gnawing (<2%). Very little of the bone is digested (<2%). The material is in moderately good condition. The cow-sized material appears to be in generally worse surface condition. A small number of long bone shaft fragments are marked by heavy gray and green concretions. There are two bone tools, a point and a possible pottery smoother.

### ***West Mound***

The 2007 season saw the continuation of West Mound Trench 5 as well as the excavation of a deep sounding, designated Trench 7.

Trench 5: excavation in this area was complicated by late-period burials, as in 2006. The majority of units were clearly of mixed period and only two were deemed worthy of faunal assessment. The first of these (14279) was the fill of Space 310, the only Chalcolithic space to be defined from the current West Mound project thus far. The second (15306) was a pit cut into Chalcolithic deposits. In both cases the fauna strongly suggests a mixed fill, with fragment size, surface condition, and colouration all indicating multiple taphonomic histories. Two clearly discrete taphonomic signatures in (15306) suggest a combination of reworked Chalcolithic material with that from a much later episode of pit digging and filling. In any case, a lack of sieving prohibited full recording of either unit.

Trench 7: units from the deep sounding were mostly arbitrary blocks of virtually no value for faunal analysis. Nonetheless, four such units (15101, 15102, 15105, 15108) were assessed from the first three hand-excavated spits. Probable intrusive material in the uppermost spits – presumably from the slope wash of the modern irrigation ditch – was less evident by the third, although all units are in any case subject to chronological mixing within the Chalcolithic. The overall impression is rather different to previous West Mound faunal units, with a surprising number of larger than sheep-sized specimens. However, this probably reflects a lack of sieving more than any genuine trend, and indeed the only flotation sample yet processed from Trench 7 (15108.s2) shows the expected predominance of caprines.

A few units were excavated stratigraphically in Trench 7, notably a surface on which several ceramic vessels were found in situ (15107). Hand-collection again undermines the potential for faunal analysis, but flotation samples may prove informative when processed.

## **Part II: Topical Discussion**

### ***Isotopic Investigation of Sheep Life Histories. Elizabeth Henton (Institute of Archaeology, UCL)***

2006/7 was the first year of my MPhil/PhD. The working title and a brief summary of my research follows:

Evolving herding practices in Neolithic Çatalhöyük, Central Anatolia: The use of oxygen isotopes and microwear in sheep teeth to establish innovations in breeding seasons, pasturing movement and foddering regimes.

Supported by AHRC full scholarship.

Theoretical approaches to prehistoric sheep/goat pastoralism in Western Asia have tended to focus on initial domestication rather than ensuing herding practice developments. Standard zooarchaeological methods test herd profile models, but lack the detail needed to investigate socio-cultural factors, hinted at by ethnographic examples. The challenge - and my key research interest - is to understand herding practices within highly contextual human decision making, where environmental limitations and socio-cultural factors interact.

My research aim is to provide this detail by mapping the individual life histories of a sample of Neolithic domestic sheep. I will use two techniques that have recently been applied to archaeological science, stable isotopes and dental microwear. Their evidence can test for sheep mobility and feeding, and taken in tandem with other zooarchaeological and palaeoenvironment detail, they combine to give an integrated picture of the herder's decision making.

My objective is to identify any diachronic change in the degree of herding mobility and specialisation. The results will have implications for the debate on pastoral practices relevant to Neolithic Western Asia.

At the request of the Çatalhöyük faunal team-leaders, I conducted a small pilot study this year, using nine teeth from two broad phases. The isotope work was undertaken in collaboration with Dr. Meier-Augenstein, Queen's University Belfast, supported by an IOA/UCL Graduate School grant; it is presently being prepared for publication. The whole study was outlined in my presentation to the Archaeology in Anatolia Conference on 25th May at the Institute of Archaeology, and will be published in the forthcoming proceedings.

The results of this pilot establish the feasibility of my research methods and so I have been given permission to export and sample a further 45 sheep teeth. The isotope work is to be funded in part by NERC for analysis at their Isotope Geoscience Laboratory. As I am exporting all the identified sheep mandibles with tooth rows, I will check that all records and measurements are complete in the database, and then take images of each mandible before analysis begins.

I am also establishing a modern baseline, taken from three traditionally managed local herds at different altitudes, which will provide locally relevant calibrations for both sets of evidence. This summer I conducted a small ethnographic survey of current



herding practice, focusing on the feeding, watering and herd movement regimes in each location. I began to collect food and water samples and I also made arrangements for the collection of monthly drinking water samples and seasonal mandibles from dead ewes over the coming year. I would like to thank all those who have helped make this possible - the farmers, the shepherds, the Turkish interpreters, and especially Dr. Füsün Ertuğ for her contacts and advice.

This summer also gave me the opportunity to have invaluable discussions with the faunal team, archaeobotanists, ge archaeologists, the tooth microwear analyst, and other relevant specialists. These discussions have raised questions, comments and suggestions for further work. I am grateful to everyone for their thoughtfulness, and appreciate their timely advice and support.

***NSF Project: 'Economic integration and cultural survival at Neolithic Çatalhöyük, Turkey'***

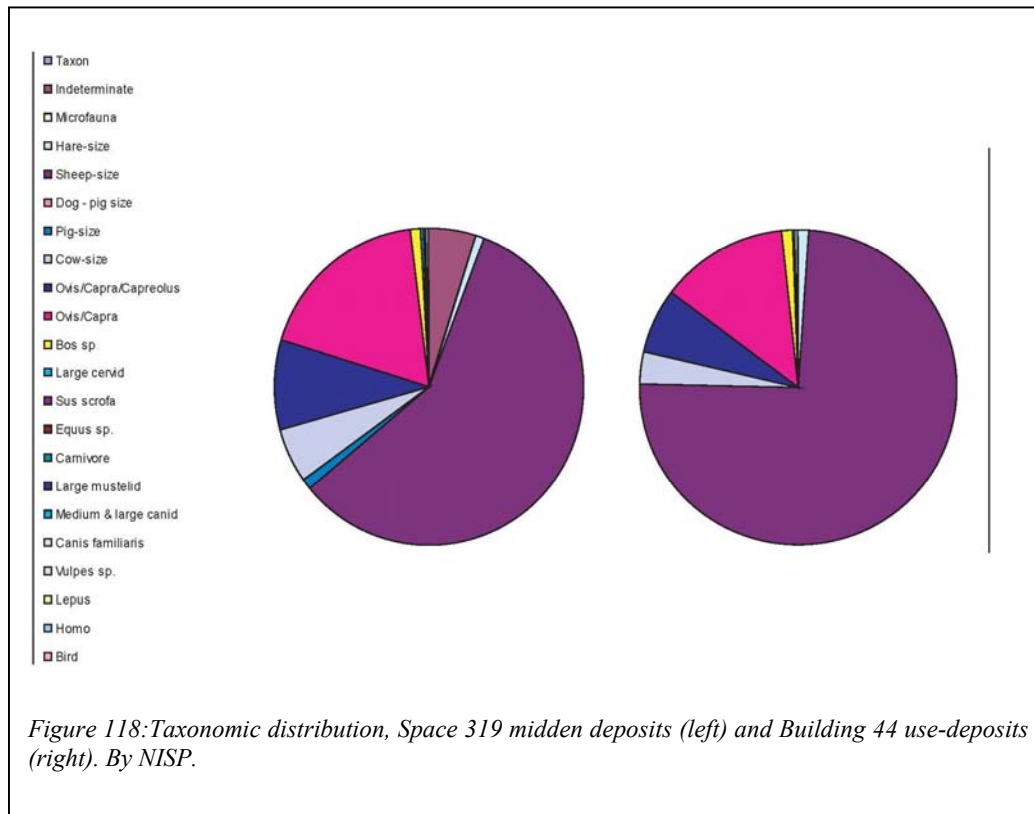
Drs. Amy Bogaard (archaeobotanical team) and Katheryn Twiss are co-PIs on a three-year, NSF-funded project investigating the nature of crop/livestock management and consumption at Çatalhöyük and its implications for long-term site stability. (See also Bogaard et al. "Macro Botanical Remains", this report.) In the faunal laboratory, Russell and Martin are Senior Scientists on this project, and Demirergi is a researcher on it. Our research emphasis is on subsistence strategies in the periods around and subsequent to the site's middle occupation levels (ca. Mellaart's Levels VI-IV). We are testing the hypothesis that spatial and organizational integration, rather than segregation, of the plant and animal economies contributed to site ecological and social stability, enabling the community to withstand pressures that led to the abandonment of other Neolithic Near Eastern 'megasites'.

In 2007, we selected promising excavation units for faunal and botanical analysis on the basis of chronological suitability, contextual interest and variability and ecofactual richness. We targeted primary, in situ deposits from several buildings as well as associated and/or contemporaneously deposited middens. First on the list was the burned Building 51/52 in the 4040 Area, which dates to ca. Level VI and contained a range of rich, high-integrity ecofactual deposits (Bogdan 2005; Bogdan & Eddisford 2006; Bogaard et al. 2005; Farid 2005; Twiss et al. 2005; Yeomans 2005). We completed analysis of all in situ faunal deposits from this building. We also fully analyzed the majority of the primary deposits from the Building 44, 56, 65 sequence in the South Area as well as midden deposits provisionally assigned to Levels IV, V, and VI in the South and 4040 Areas. In total, 53 units have been identified and fully analysed by the faunal team as "NSF priority units". Additional midden deposits from the 4040 Area have been assessed (see below); these and the in situ contents from other appropriately dated houses are among the units that have been identified as targets for further study.

Apart from those cited by Henton (above), no additional faunal samples were exported this year for isotopic analyses. Analyses of previously exported faunal samples are underway in collaboration with Dr. Jane Evans (NERC Isotope Geosciences Laboratory, Keyworth) and Dr. Jessica Pearson (University of Liverpool). Please see Bogaard et al. (this report) for an overview of botanical progress.

### *A House and a Midden*

There are relatively few secure spatial associations between houses and middens at Catalhöyük, and until this year none from Level IV. The 2007 excavations of a multilayered Level IV midden in the South area's Space 319 were therefore very exciting, as this midden abutted the southern wall of Building 44. Several spits were excavated separately: from top to bottom, these were units (14559), (14572), (14587), (15702), and (15728). These units represent only the western half of the midden; the eastern half was saved for next season, to be dug stratigraphically after consulting the profile.



Due to their clear spatial and chronological association, comparison of the faunal contents of the Space 319 midden deposits with those from Building 44 may provide insight into the spatial contexts of Neolithic butchery and cooking as well as discard practices. This preliminary survey of the data relies on comparative taxonomic ratios, body part representations, and taphonomic conditions.

The midden units under consideration are the lower ones: (14587), (15702), and (15728). (14572) and (14559) were excluded, since they were only assessed rather than fully studied. Building 44 use-life deposits include floor units ((8082), (8091), (10625), (10626), (11210), (11222), (11293), (11299)), fills in features ((11201), (11202), (11620)), clusters or rubbish around the base of a ladder ((10666), (10670), (10673), (10675)), a hearth deposit (11446), and placed deposits ((11481), (11617)). Despite this variety, the B.44 primary deposits are here grouped together as a block.

Taxon	Midden	B. 44
Indeterminate	4.96	0.00
Microfauna	0.01	0.00
Hare-size	0.93	1.15
Sheep-size	58.05	74.06
Medium dog - boar size	0.04	0.00
Boar-size	1.07	0.00
Cow-size	5.57	3.46
<i>Ovis/Capra/Capreolus</i>	9.21	6.63
<i>Ovis/Capra</i>	15.31	10.95
<i>Ovis</i>	2.38	2.02
<i>Capra</i>	0.45	0.00
<i>Bos</i> sp	1.31	1.15
Large cervid	0.05	0.00
<i>Cervus elaphus</i>	0.01	0.29
<i>Sus scrofa</i>	0.10	0.00
Small-medium equid	0.06	0.00
Large equid	0.04	0.00
<i>Equus</i> sp.	0.04	0.00
Small carnivore	0.01	0.00
Med. carnivore	0.01	0.00
Large mustelid	0.01	0.00
Medium canid	0.06	0.00
Large canid	0.01	0.00
<i>Canis familiaris</i>	0.03	0.00
<i>Vulpes</i> sp.	0.08	0.29
<i>Lepus</i>	0.01	0.00
<i>Homo</i>	0.06	0.00
Bird	0.10	0.00
<b>Total</b>	<b>100.00</b>	<b>100.00</b>

Table 5: Taxonomic distribution, Space 319 midden deposits and Building 44 use-deposits. By % NISP.

To begin with, it is clear that the midden is far, far richer in bone than is the building. Building 44 internal deposits total 368 specimens (12.5 DZs, 511 grams of bone), contrasted with 11430 specimens (360.5 DZs, 21,974 grams of bone) from the midden. This is unsurprising, given the well-documented Çatalhöyük practice of clearing houses out at the end of occupation (Hodder 2007). The size difference between the two samples should also be kept in mind when interpreting the other differences between them.

In terms of taphonomy, the midden bones are on average fresher, and the midden fragments longer, than are those from inside the house. Midden bone surface condition averages 3.14 (see Russell and Martin 2005), while the house bones' condition averages 3.22. Midden bone length averages 3.40 cm, while house bone length average is only 2.62 cm. It appears that the bones in the midden were less rolled and exposed than were those from the house.

Although the small size of the house sample limits the significance of its taxonomic and body part distributions,

comparison of the interior and exterior deposits remains interesting. Taxonomic ratios are similar (Figure 118; Table 5) between the two. The minor divergences are plausibly due to the differences in sample size and perhaps to the smaller average size and slightly poorer condition of the Building 44 specimens.

The caprines are the only taxonomic group large enough in the B.44 sample to allow comparisons of element representation. Caprine diagnostics in the house are almost all from feet and wrists/ankles; only two of the 10.5 caprine diagnostic zones are from limb bones (19.0%) and one from a mandible (9.5%), while the rest are all from feet/wrists/ankles (7.5 DZs, 71.4% of all caprine DZs). In the midden, caprines are represented by heads (31 DZs, 10.1% of the 306 caprine DZs); axial skeleton (37 DZs, 12.1%); limb bones (105 DZs, 34.3%); and feet (133 DZs, 43.5% of DZs). It is

clear that there is a far more even distribution of caprine remains in the midden than in the house; the extent to which this reflects either differential discard or taphonomic differences between the two samples as opposed to merely sampling error awaits further analysis.

Preliminary comparison of Building 44 and the adjoining midden thus indicates similar species proportions inside and outside of the building, but suggests possible differences between the two areas in body part representation. It is clear that bones from the outside midden deposits were less trampled and damaged than those from inside the building.

***Changes in food sharing practices in Neolithic Çatalhöyük. G. Arzu Demirergi (Stony Brook University)***

This year I began preliminary research for an intended Ph.D. on food sharing at Çatalhöyük. As background for this project I explored promising lines of information available in the Çatalhöyük database. This research extends the butchery and cooking discussion presented in (Russell and Martin 2005). That publication covers material excavated through 1999; my research is designed to include all material yet recovered.

The proposed research will investigate meat sharing practices in order to shed light on broader social experience in the past. Modes of food sharing differ between hunter-gatherer and agricultural societies. Investigations of sharing practices in early farming societies potentially inform about the pace and nature of a transition between foraging and farming (Kent 1993). Food sharing and hospitality in agricultural societies is commonly as much about social distinction as it is about social parity (Dietler and Hayden 2001). As a large and long-occupied Neolithic agricultural village, Çatalhöyük offers great insight into food sharing. My research will focus on Çatalhöyük's macrofaunal remains as I explore cooking and animal body part distributions as a window onto food sharing.

Here I report on two preliminary investigations, examining cutmarks and body-part distributions, intended to demonstrate the rich potential of the Çatalhöyük meat sharing data. Cutmarks on animal bones are signatures left by animal butchery for cooking and distribution. Different cooking styles have different implications for how meat was shared out, as they are related to the number of people one animal would feed, the ease of food transport, the timing of sharing (prior or subsequent to cooking), sharing of meat at a community level, and so forth. In other words, because one butchers an animal differently depending on which cooking and sharing method is intended, the number and placement of cutmarks on animal bones can be used to reconstruct ancient cooking practices (Gifford-Gonzalez 1993).

Analysis of cutmarks on bones recovered between 1995 and 1999 showed that consumption, filleting and dismemberment cuts were the three most frequent types of cuts on sheep-size and cow-size animals, and that consumption cuts had by far the highest frequency (Russell and Martin 2001). Adding in cutmarks recorded through the 2007 field season, I have found that consumption cuts continue to be the most frequent cut types on bones (Table 6). Consumption marks occur on bones that have been cooked. Therefore, the relatively high incidence of consumption cuts suggests that meat might have been often cooked with the bones. Consumption cuts may be

particularly indicative of baking, which requires the use of tools to cut the cooked meat off the bone (Russell and Martin 2001).

The new cut mark data reveal much higher proportions of filleting and dismemberment cuts than were previously identified. These higher proportions are apparent on both caprine and cattle-sized animals. Filleting suggests that meat was stripped off the bone for cooking or preservation. Dismemberment indicates that animals were butchered into smaller pieces rather than left whole for cooking. In combination, filleting and dismemberment marks suggest that meat may have been commonly presented in relatively small portions rather than in the large segments that might be expected for feasts, large gatherings or displays. This in turn suggests that a significant proportion of both medium-sized and large animals were probably prepared for and consumed by relatively small groups.

Cut Type	Indeterminate	Hare-size	Sheep-size	Pig-size	Cow-size	Total
0 Unknown	5	5	199	22	112	343
	71.40%	22.70%	18.00%	21.20%	25.70%	20.50%
1 Skinning	1	0	46	8	16	71
	14.30%		4.20%	7.70%	3.70%	4.20%
2 Dismemberment	0	4	172	33	99	308
		18.20%	15.60%	31.7	22.70%	18.40%
3 Filleting	0	7	245	15	52	319
		31.80%	22.20%	14.40%	11.90%	19.10%
4 Tendon Removal	0	0	5	1	5	11
		0.00%	0.50%	1.00%	1.10%	0.70%
5 Consumption	1	5	408	23	132	569
	14.30%	22.70%	36.90%	22.1	30.30%	34.00%
6 Marrow Fracture	0	1	24	2	16	43
		0.50%	2.20%	1.90%	3.70%	2.60%
7 Horn Removal	0	0	4	0	0	4
			0.4			0.20%
8 Opening Braincase	0	0	0	0	1	1
					0.20%	0.10%
9 Opening Muzzle	0	0	0	0	1	1
					0.20%	0.10%
10 Trample	0	0	2	0	2	4
			0.20%		0.50%	0.20%
Total	7	22	1105	104	436	1674
	100%	100%	100%	100%	100%	100%

Table 6. Cut Types by Animal Size (NISP and Percentage)

Cutmarks alone, however, provide an incomplete account of animal butchery. This is particularly true at Çatalhöyük, as the majority of the stone tools are obsidian, which leaves few traces on bone (Dewbury and Russell 2007). I therefore also examined the body-part distribution of sheep-size and cow-size animals to understand the extent to which the animals were being broken up and shared out.

The current faunal team has analyzed all in situ deposits from two recently excavated buildings (52 and 44). I decided to investigate cattle and caprine body part representation in Building 44 and in its associated midden (see above, “A House and a Midden”).

Taken together, faunal assemblages from Building 44 and its midden contain the full range of both sheep-size and cow-size body parts, suggesting the initial presence of the whole animal (Table 7). This may reflect either slaughter at the house, or transport of the complete carcass to the household after killing. The midden also contains a relatively even body-part distribution. This distribution suggests minimal sharing between households. We therefore have no evidence that animal parts were being distributed out to other households, or that Building 44 was receiving segments of animals from other areas.

<b>Body-parts*</b>	<b>Sheep-size</b>	<b>Cow-size</b>	<b>Total</b>
Head	347 %19.9	53 %27.0	400 %20.6
Torso	401 %23.0	63 %32.1	464 %23.9
Upper Limb	388 %22.2	22 %11.2	410 %21.1
Lower Limb	594 %34.1	56 %28.6	650 %33.5
Indeterminate	14 %0.8	2 %1.0	16 %0.8
<b>Total</b>	<b>1744</b> <b>%100</b>	<b>196</b> <b>%100</b>	<b>1940</b> <b>%100</b>

\*Indeterminate long-bones are not included because they do not change the relative proportions of the body parts.

*Table 7. Body-Part Distribution by Animal Size in Building 44 and its Associated Midden (NISP and Percentage)*

This analysis of body part representation in a building and its associated midden is of course an extremely rough assessment. Complicating factors abound, too: the midden is as yet only half excavated, Building 44 was cleaned out prior to abandonment, and I have not taken bone density and survival rates into account. Interpretation of cutmarks also needs further study, in terms of the location of cutmarks, differences between taxa, and more.

### ***Middens through time***

In the 2006 report, we presented a preliminary summary of the distribution of taxa by period from midden units. Middens contain the bulk of household discard, and it is generally possible to associate them with a period. They are thus perhaps the best indication of changes in taxa used on site. It seems worthwhile to update this analysis this year, with the notable addition of the first material from Level IV middens (from Space 319 in the South Area). We are also able to present some midden material



from Levels III-1 broken down into smaller units, although the sample size is rather small (see Table 8). It should also be remembered that all the level assignments from Level V on are tentative at this point, as post-excavation analysis is incomplete.

Level	Sheep/ goat	Cattle	Deer	Boar	Equid	Dog	Other	Total
III-I	164 84.6%	19.5 10.1%	0 0%	4 2.1%	4 2.1%	2 1.0%	.4 0.2%	193.9
III-II	32 95.8%	1 3.0%	0 0%	0 0%	0 0%	0 0%	.4 1.2%	33.4
III	45 90.0%	3 6.0%	0 0%	0 0%	0 0%	1 2%	1 2%	50
IV	313.5 90.6%	19 5.5%	0 0%	3 0.9%	6 1.7%	2 0.6%	2.5 0.7%	346
V	711.5 88.7%	31 3.9%	8.5 1.1%	2.5 0.3%	14 1.8%	15.6 2.0%	18.8 2.3%	801.9
VI	478 88.0%	19.5 3.6%	14 2.6%	4.5 0.8%	8 1.5%	3.2 0.6%	15.8 2.9%	543
VII	198.5 63.2%	44 14.0%	1.5 0.5%	8.5 2.7%	38 12.1%	14.8 4.7%	9 2.9%	314.3
VIII	355 56.5%	107.5 17.1%	2 0.3%	32.5 5.2%	99 15.8%	15 2.4%	17.6 2.8%	628.6
XI	49.5 82.2%	8 13.3%	0 0%	.5 0.8%	2 3.3%	0 0%	.2 0.3%	60.2
XII	19.0 56.9%	8 24.0%	0 0%	1 3.0%	3 9.0%	0 0%	2.4 7.2%	33.4
Pre-XII.A	142.5 76.7%	9.5 5.1%	.5 0.3%	3 1.6%	17 9.2%	4.2 2.3%	9 4.9%	185.7
Pre-XII.B	279.5 76.3%	24.5 6.7%	4.5 1.2%	15.5 4.2%	4 1.1%	12.8 3.5%	25.6 7.0%	366.4
Pre-XII.C	43.5 82.5%	0 0%	0 0%	3 5.7%	2 3.8%	1.2 2.3%	3 5.7%	52.7
Pre-XII.D	43 83.3%	2 3.9%	2 3.9%	1 1.9%	2 3.9%	1.4 2.7%	.2 0.4%	51.6

Table 8: Major Taxa by Diagnostic Zone (DZ)

We see that Levels IV and II appear to continue the trend to increased proportions of sheep/goat that begins in Level VI, with sheep/goat contributing 90% of the diagnostic zones in these levels. With the caveat that the picture may change as more is recorded, the big shift in taxa still seems to occur in Level VI, with proportions of sheep/goat approximating those from the Chalcolithic West Mound by Level IV. As sample sizes are relatively small for specimens identified as sheep or goat, the sheep:goat ratios (Table 9) are particularly subject to change. It now appears, however, that there may be a trend to higher ratios of sheep from Level IV on.

Level	Sheep:Goat Ratio
III-I	6:1
III-II	Sheep only
III	13:1
IV	8:1
V	5:1
VI	4:1
VII	8:1
VIII	5:1
XII	6:1
Pre-XII.A	11:1
Pre-XII.B	5:1
Pre-XII.C	4:1
Pre-XII.D	6:1

*Table 9: Sheep:Goat Ratios by Level*

### **Microscopic Study of Bone Structure: Preliminary Report**

This research project has been financed by the Polish National Committee of Scientific Research, project No. 2P04D07427, awarded in 2003 to Kamilla Pawłowska, of which the main purpose is the introduction of the late Neolithic history of tell (particularly Levels I-III).

Preliminary samples (sheep tibiae) were taken in 2006 for specialist microscopic examinations (including histological and ultrastructural analysis combined with Roentgen microanalysis and mapping - this is the topographical distribution of chemical elements contained in the bone tissue). The preliminary results are summarized here.

Ten distal sheep tibiae were taken for microanalyses. First, thin sections 0.18-0.24 mm thick were made for histological examination, prior to the microanalysis of levels of chemical elements in the bone tissue. The following chemical elements were detected in the analysed bone tissue: carbon, oxygen, sodium, magnesium, aluminium, phosphorus, sulfur, molybdenum, chlorine, potassium, calcium, iron, silicon, zinc, manganese.

The microstructural examinations show that the individuals from which the bones come were in good physical condition. Histological and mineralogical changes of bone tissue were not found. Simultaneously the proportion of calcium to phosphorus indicates that the bones had good biomechanical resistance; therefore they were not susceptible to injuries. This suggests the sheep were well-nourished. In addition an equilibrium was noted in examined bone samples, which means that osteogenesis and osteoresorption are equally advanced.

## **Cattle Ancient DNA pilot project**

Cecilia Anderung  
Department of Palaeontology  
The Natural History Museum  
Cromwell Road  
London SW7 5BD  
c.anderung@ucl.ac.uk

Anders Götherström  
Department of Evolutionary Biology  
Norbyvägen 18D  
Uppsala  
Sweden  
E-mail Anders.Gotherstrom@ebc.uu.se

This pilot study was undertaken in 2007 with the aim of developing a future collaborative proposal to explore regional and temporal variation in the ancient DNA of prehistoric cattle, and to compare any results from the aDNA with the morphometric results from standard zooarchaeological analyses.

Three cattle tooth samples from Çatalhöyük in Turkey were selected based on visual good preservation. The samples were all from the South Area, excavated in 1998, exported to London in 1998 for technical analyses, and the export sample number (below) refers to the original export listing. The DNA ID number has been added for use by Uppsala University laboratory.

### ***Çatalhöyük cattle samples***

DNA id. CH1.

Mellaart/South area of site, specimen number 1028.F218, export sample 17.  
A mandibular P4, worn.

DNA id. CH2.

Mellaart/South area of site, specimen number 1506.F444, export sample 37.  
A mandibular P3 and P4, worn.

DNA id. CH3.

Mellaart/South area of site, specimen number 1506.F445, export sample 34.  
A mandibular M3, LHS, unworn.

### ***Methods***

The specimens were sampled in a dedicated ancient DNA facility at Uppsala University in Sweden. Bone powder was removed from the specimens using a drill with dental technicians' drill bits, producing small holes with a diameter of 2-3 mm. The work surface was sterilized between each sampling procedure and a new drill bit was used for each sample.

About 70mg of bone powder is incubated at 55°C with 100µg ProteinaseK in 1ml of 0.5M EDTA buffer. Thereafter the DNA was extracted using previously published methods [1-3].

The mtDNA control region was amplified in three overlapping fragments, 157, 176 and 139 bp respectively. PCR was carried out using 2µl of extracted DAN, 2.5 units of HotStarTaq DNA polymerase (Qiagen), 1X Qiagen PCR buffer, 2.5mM MgCl<sub>2</sub>, 200µM of each dNTPs, and 0.2µM of each primer in a total volume of 25µl.

## **Results**

Two out of the three samples amplified in the PCR., CH1 and CH3. Only CH3 generated a readable sequence, and work is currently in progress in order to authenticate the result.

Considering the geographic origin of the samples [4], future work will also involve the designing of primers that will amplify shorter DNA fragments; this will probably increase the amplification success rate. As several samples produced a smell of collagen during sampling and collagen survival is correlated with DNA survival [5], it is suggested that further DNA analyses of specimens from this region should involve preservation analyses.

1. Yang DY, Eng B, Wayne JS, Dудар JC, Saunders SR (1998) Technical note: improved DNA extraction from ancient bones using silica-based spin columns. *Am J Phys Anthropol* 105: 539-543.
2. Bouwman A, Brown T (2002) Comparison between silica-based methods for the extraction of DNA from human bones from 18th-mid 19th century London. *Ancient Biomolecules* 4: 59-63.
3. Svensson EM, Anderung C, Baubliene J, Persson P, Malmstrom H, et al. (2007) Tracing genetic change over time using nuclear SNPs in ancient and modern cattle. *Anim Genet* 38: 378-383.
4. Smith CI, Chamberlain AT, Riley MS, Stringer C, Collins MJ (2003) The thermal history of human fossils and the likelihood of successful DNA amplification. *J Hum Evol* 45: 203-217.
5. Anderung C, Bouwman A, Persson P, Carretero JM, Ortega AI, et al. (2005) Prehistoric contacts over the Straits of Gibraltar indicated by genetic analysis of Iberian Bronze Age cattle. *Proc Natl Acad Sci USA* 102: 8431-8435.

## **Part III: Analytic Revisions**

### **Assessment**

A total of 55 units were assessed by Sheelagh Frame in 2007. All of the units were from the South and 4040 areas. Seven were redirected to full recording, and 5 of these were in fact fully recorded. Material excavated in both 2006 and 2007 was assessed.

The units to be assessed were chosen on an ad hoc basis. Initially the primary objective was to clear space in the laboratory, and units were chosen on the basis of the biggest that could be assessed in the available sorting space, among those from secure contexts of interest. Later conversation with excavators led to particular units being assessed, in particular a complete sequence of units from the large midden pit in 4040 Area and some interesting units in the South that had not been made priorities. When excavation began on the Level IV midden in the South, we decided to assess the upper, possibly disturbed layers in order to compare them to the lower, more secure layers, which will be fully analysed.

The random selection led to the discovery of pit (14824) in the south with some interesting deliberate deposits (14817, 14821, 14822). It also confirmed that other 'pit fills' are in fact house/space fill and not associated directly with the pits, but were identical to the surrounding fill. That is, the empty pit was filled in along with the rest

of the space, and the deposits are not related to the pit. There was another unusual deposit in the south area, (14071) made up largely of sheep/goat mandibles and radii.

Apart from identifying potentially in situ and/or unusual deposits, the assessment procedure this year has provided a general impression of several distinct kinds of fills and middens. The phase one assessment does not allow these differences to be objectively defined, and the following should be read as impressions only.

A number of 'levelling' and 'dump' deposits from spaces in the South area were assessed and several seem to be a distinct kind of fill. Two (14807, 15742) were fully recorded and several others were assessed. These units are strongly post-consumption. They appear to have a far higher percentage of meaty bones than is usual for fill or midden and often they have a large fragment size and a much greater than usual number of the rarer taxa. In (14807), there is a particular preponderance of cattle and red deer forelimbs. They are primary deposits, with a high degree of coherence, many articulations and were clearly rapidly buried. The fill apart from these large meaty deposits is usually very clean with only the ubiquitous background bone. It does appear to be rapidly filled, but the bones at least were not shovelled in from a nearby midden. (15742) contains what appears to be one or perhaps two complete pots, smashed and scattered throughout the deposit, supporting the idea of rapid burial and little reworking. The bones were apparently scattered throughout the fill, which is otherwise relatively clean.

The Level IV midden in the South has a very different character. The upper arbitrary levels were assessed to evaluate the effect of the observed animal burrows. The upper levels are slightly different taphonomically from the lower levels and seem to have been exposed prehistorically for longer periods of time, but all the deposits do share some characteristics. They are heavily processed prehistorically and appear to be dense accumulations of kitchen garbage, with few other activities visible. They are overwhelmingly dominated by sheep and goat (mainly sheep) and seem to be the result of many small butchery and consumption events.

The pit middens in 4040 are different again. They are dense units with large amounts of bone. Taphonomically they are very mixed, and they seem to have been filled in fits and starts, with different parts of the midden having different origins and histories. The mixing could also be explained as redeposition, but much of the bone in these middens is unabraded, and some bones were in articulation. Much of the material therefore is primary deposits rapidly buried, so the different material probably derives from several layers that were not separated in excavation, rather than material from elsewhere deposited here. The structure of the pit itself probably protected the bone from reworking. There is evidence for in situ burning at intervals in some of the pits, with layers of burnt material alternating with unburnt material. It is not clear if this was deliberate burning of the garbage, or if the pit middens were just the site of fires that had other primary purposes.

### ***Full Recording Procedure***

After discussion among the team leaders, some amendments were made to the recording protocol, as follows.

*Goals:* To streamline recording so that more units can be recorded, while retaining essential taphonomic and zoological information. These aims are inherently in conflict; we felt these to be acceptable compromises.

1. Changes to scrap policy
  - a. Indeterminates (117) to be treated like flint frags (119): count and weigh them, make any relevant observations in the Faunal Unit Description, but no further subdivisions
  - b. Ribs: on the postcranial, use only codes 1, 2, 3, 5, 10 in the Proximal/Distal field (do not distinguish proximal shaft and shaft, but retain the head vs. shaft distinction); exception: use proximal shaft as appropriate for cut marks
  - c. Long bone shaft fragments, currently coded as 2-5—4 on the Postcranial form: do not enter Postcranial record. Element 116 without a Postcranial record will be assumed to be shaft splinters. Other uses of Element 116 (has some articulation or greater than half circumference but can't actually figure out the element) should get Postcranial records.
  - d. Do not record length for scrap (so all lengths can be grouped); note in Faunal Unit Description general size range and distribution
2. Basic Faunal Data table
  - a. In the Location of Burning field, change 90 to entire fragment for postcranial as well as cranial (as some have been using it already); this helps to signal potential roasting patterns
  - b. Eliminate Color of Burning (largely redundant with Type of Burning); the main loss here is the distinction between gray and white calcined bone, so if there is a lot of bone that is remarkably highly calcined, note it in the Faunal Unit Description or the comments
  - c. Eliminate Number of Elements; rarely used in analysis, although we have made tables of taxa by Number of Elements; problematic in that a fragment as well as a whole bone is an element
3. Postcranial table
  - a. Eliminate the Portion Present fields (Proximal and Distal A/P and M/L); rarely used in analysis and confusing to record
4. Cranial table
  - a. Record only Payne tooth wear for sheep/goat; use only Grant for cattle and pig
5. Measurements table
  - a. Do not measure ruminant teeth and mandibles; the mandible measurements are rarely used and not very useful for these taxa; the tooth measurements for these taxa are all related to crown heights, which we are dropping
  - b. Retain present measurements for other taxa, where there is meaningful variation in tooth, tooth row, and mandible size



- c. Do not measure carpals and tarsals **except** astragalus and calcaneus

### **Acknowledgments**

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### **References**

Bogaard, Amy, Mike Charles, Müge Ergun, Glynis Jones, Kim Ng, Marek Polcyn and Nicola Stone. 2005 Macro botanical remains. Çatalhöyük 2005 Archive Report. [http://www.catalhoyuk.com/archive\\_reports/2005/ar05\\_26.html](http://www.catalhoyuk.com/archive_reports/2005/ar05_26.html)

Bogdan, Doru. 2005 Building 52. Çatalhöyük 2005 Archive Report. [http://www.catalhoyuk.com/archive\\_reports/2005/ar05\\_13.html](http://www.catalhoyuk.com/archive_reports/2005/ar05_13.html)

Bogdan, Doru and Daniel Eddisford. 2006 Buildings 51 & 52. Çatalhöyük 2006 Archive Report. [http://www.catalhoyuk.com/downloads/Archive\\_Report\\_2006.pdf](http://www.catalhoyuk.com/downloads/Archive_Report_2006.pdf)

Dewbury, Adam G., and Nerissa Russell. 2007 Relative frequency of butchering cutmarks produced by obsidian and flint: An experimental approach. *Journal of Archaeological Science* 34(3):354-357.

Dietler, M. and B. Hayden, Eds. 2001 *Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power*. Washington, D.C., Smithsonian Institution Press.

Farid, Shahina. 2005 Excavations of the South Area: concluding remarks. Çatalhöyük 2005 Archive Report. [http://www.catalhoyuk.com/archive\\_reports/2005/ar05\\_16.html](http://www.catalhoyuk.com/archive_reports/2005/ar05_16.html).

Gifford-Gonzalez, Diane. 1993 Gaps in zooarchaeological analyses of butchery. Is gender an issue? *Bones to Behavior: Ethnoarchaeological and Experimental Contributions to the Interpretation of Faunal Remains*. J. Hudson. Carbondale, Southern Illinois University Press: 181-199.

Hodder, Ian, ed. 2007 *Excavating Çatalhöyük: South, North and KOPAL Area Reports from the 1995-99 Seasons*. Cambridge: McDonald Institute for Archaeological Research.

Kent, Susan. 1993 Sharing in an egalitarian Kalahari community. *Man* 28(3): 481-514.

Russell, Nerissa and Louise Martin. 2005 The Çatalhöyük mammal remains. IN *Inhabiting Çatalhöyük: Reports from the 1995-1999 Seasons*, I. Hodder, ed. Pp. 33-98. Cambridge: McDonald Institute for Archaeological Research.

Twiss, Katheryn, Louise Martin, Kamilla Pawłowska, and Nerissa Russell. 2005 Animal bone. Çatalhöyük 2005 Archive Report. [http://www.catalhoyuk.com/archive\\_reports/2005/ar05\\_21.html](http://www.catalhoyuk.com/archive_reports/2005/ar05_21.html)

Yeomans, Lisa. 2005 Building 51. Çatalhöyük 2005 Archive Report.  
[http://www.catalhoyuk.com/archive\\_reports/2005/ar05\\_12.html](http://www.catalhoyuk.com/archive_reports/2005/ar05_12.html)

## **Çatalhöyük Worked Bone 2007 / İşlenmiş Kemikler** Nerissa Russell, Cornell University

### **Abstract**

An additional 445 bone artefacts were recorded in 2007, bringing the cumulative total to 2134. Many of these came from special deposits of knucklebones and a bone bead necklace in a burial. There are signs of subtle shifts in tool types in the later levels of the site, with changes starting ca. Level VI.

### **Introduction**

During the 2007 season I recorded 445 bone artifacts from backlog and this year's excavations, bringing the total recorded to 2134. This remarkable increase of more than 25% is attributable in large measure to two factors: a necklace with many bone beads, and the increased effort devoted to phase 1 assessment in the faunal lab, resulting in tools being pulled from units that would otherwise not have been studied. The cumulative distribution of tool types by excavation area is given in Table 10, not including 8 tools recorded from the on-site KOPAL step trench (KT), one stray tool from the surface scraping that appeared in 2004, and 13 unstratified artefacts. The text discusses the tools recorded in 2007.

### **Özet**

2007 sezonunda 445 tane daha kemik kayda geçirilmiş ve toplam sayı 2134'e yükselmiştir. Bu kayda geçen kemiklerin çoğu işlenmiş parmak kemikleridir ve diğer bir çoğunluğu da gömütlere mezar hediyesi olarak bırakılmış kemikten yapılmış boncuklar oluşturmuştur. Seviye VI dan itibaren yukarı tabakalara doğru kullanılan aletlerde ince bir fark gözlemlenmektedir.

### **Giriş**

2007 sezonunda geçmiş yıllara da ait 445 kemik buluntu kayda geçmiş olup bu sezonun kayıt sayısı 2134'e ulaşmıştır. Bu %25'lik artışın iki önemli sebebi vardır: çıkarılan bir kolyenin çok sayıda kemik boncukları ve laboratuarda tabaka 1'e yönelik çalışmaların artırılması, dolayısıyla daha uzun süre çalışılmayacak olan tabaka 1 ünitelerinden gelen buluntuların çıkarılıp çalışılmasıdır. Tablo 10'de, KOPAL (KT) basamaklı açamasından elde edilen 8 alet, 2004 yılında yüzeyde bulunan bir alet ve 13 tane tabakası belirlenmemiş aletin, alana göre alet dağılımı ve tipolojileri verilmiştir. Bu yazı 2007'de kayda geçirilmiş aletlerin bilimsel yorumlamasını yapmaktadır.

## **TOOL TYPES**

### **Points**

Points have generally formed about half the worked bone assemblage, but they form only 37% of the tools recorded in 2007. This is probably largely because of a large necklace of bone beads and a deposit of knucklebones, which together account for almost half of this year's worked bone. Points with abraded bases, rare in the earlier levels of the site, now account for 45% of points with preserved bases recorded this

year. This suggests a substantial shift in the techniques of point manufacture ca. Level VI.

### **Rounded Points**

The single rounded point recorded this year is a slender artifact made on split boar's tusk, 14186.X20 (Figure 119). The base end has small notches abraded on both sides that create a waisted effect. Beyond these, it is broke in excavation through a partial conical perforation. Since the perforation is incomplete and the tool looks very finished and highly polished, it is presumably decorative.



*Figure 119: Rounded point, perhaps to secure clothing or hair, made of boar's tusk: 14186.X20; two views*

The odd thing is that the perforation is on the inner (non-enamel) side. While it seems small for a hairpin, this is a possible use, or it may have been used to secure clothing.

### **Needles**

Needles are rare in this year's assemblage, forming only 2% of the artefacts recorded. All are of the predominant type at Çatalhöyük, broad flat needles with flat rounded tips made on split ribs. They could not be used for piercing and are probably weaving or netting tools. This kind of 'needle' seems to disappear in the latest levels (by ca. Level III) on the East Mound; none have been recovered from the TP area. Indeed, most of those recorded this year from the South and 4040 Areas (ca. Levels VI-IV) are narrower than most. This suggests changes in textile technology that first altered bone 'needles' and then rendered them obsolete. However, a broad, if rather crude 'needle' base was recovered from Trench 8 on the West Mound, suggesting that the technology was revived or persisted at a low level into the Chalcolithic.

### **Chisels/Gouges**

A single beveled tibia that may have been used as a gouge was recovered from Trench 5 on the West Mound. This is particularly interesting since, like the 'needles', this tool type largely disappears in the later levels of the East Mound. It is hard to be sure how this one was used, however, since the tip is broken off. The base, which is heavily modified, shows use wear but not damage from being struck, suggesting it was not used as a chisel, in any case.

### **Scrapers**

In the later levels, most beveled tibia tools are used as scrapers rather than chisels or gouges, based on tip wear that is rounded with no sign of impact scars. Fragments of three such tools were recorded this year from cal. Levels IV-III in the South and TP areas. An additional fragment was recorded from the IST area, of uncertain date but probably somewhat earlier.

### Pressure Flakers

The eight pressure flakers recorded this year more than double the total previously known from the site. All are made on antler, either tines or strips of beam. All come from the South and 4040 areas, hence ca. Levels VI-IV. They seem to be replacing the soft hammers found in earlier levels, perhaps reflecting a change in lithic technology.

### Pottery Polishers

The 15 pottery polishers recorded in 2007 substantially increase the total. Not surprisingly, they are rare in the earlier levels where pottery is sparse. Most appear to have been used on untempered pottery. Two from the South area (15702.F640 and 15773.F1), however, indicate tempered ceramics. The others come from the South, 4040, and TP areas, with four from Trench 7 and one from Trench 8 on the West Mound.

### Burnishers

Two bones seem to have been used rather expediently as burnishers of some kind. 12278.F347 is a distal cattle metatarsal that is heavily worn from some rather rough use that rounded and wore it evenly on all faces. 13022.F414 is a cattle incisor, its only modification a flat facet on the centre of the enamel surface created by abrasion on fine-grained stone. Most likely it was used to polish a small stone object.

### Plaster Tools

Of the six plaster tools recorded this year, three are part of a foundation deposit (14522) below a platform in Building 65 that also included two unworked scapulae. Two of these are 'classic' plaster tools with long beveled edges. The third is more expedient: not worked, but polished from use along the medial edge. The three plaster tools from other contexts are also expedient. 13545.F17 resembles the expedient tool in 14522. A tool from the 4040 (14186.F62) and one from Trench 8 on the West Mound (15102.F1) are both scapula fragments that have broken with a rounded point, which has then been used. They would have been particularly suited for forming concave corners of plaster features and the like.

### Hafts/Handles

Two antler hafts were recorded from Trench 7 on the West Mound. Both probably held metal tools; one is suspiciously well-preserved and may be Hellenistic or later.

### Spoons



The bases of two spoons carved on thick long bone shafts (probably aurochs metacarpals) were recorded in 2007. From TP, 15829.X4 (Figure 120) has the base end carved into a diamond shape. 15490.X1 from a foundation trench in the 4040 has a more elaborately carved base, although it is not clear what the shape is intended to represent. The very end has a series of lumps that could be seen as a recumbent animal such as a sheep. Below it is a raised circle with a long

‘nose’ carved into it, evoking “Kilroy was here”. This sign should probably be read in relation to the animal, but it is unclear how. We should probably also bear in mind that spoons such as these, which are not common at Çatalhöyük, were most likely used in festive contexts, so the design may have ceremonial significance.



Figure 121: Spoon Fragment: 15490.X1; Two Views

### Spatulae

Spatulae are carved objects similar to spoons, but instead of bowls the tips are flat and may end in a variety of shapes. Both recorded in 2007 are from the 4040 area. 14186.F157 is the base end of a tool with a broad flat end that may have ended in a bevel; the tip is missing. Two offset triangular protuberances decorate the shaft below the flaring tip. 8814.F3 is a fragment of the tip of a spatula carved with shallow teeth. The wear is on the tips of the teeth, rather than the notches between. Thus it could have been used to make combed designs.



Figure 122: Base of spatula: 14186.F157

### Knucklebones

The 57 worked astragali recorded in 2007 nearly triple the number known from the site. Most are from an unusual deposit excavated in 2006 in Building 67 in the 4040 that included a dump of at least 128 sheep and goat astragali along with small, round, black and white stones.



Figure 123: Bone fork: 15724.F1

Only some of the astragali are worked, and to varying degrees. The remaining eight knucklebones came from the IST and TP areas, and one from a different context in the 4040. Several caches of astragali found in recent years, often mixing unworked and

worked specimens, show that this bone took on considerable significance in the later levels of the East Mound.

### Ornaments

Four artefacts recorded in 2007 fall into this miscellaneous category for objects that appear ornamental but do not fit the usual categories. 15724.F1, from a midden in the South area, is a small fork similar to 8814.X14 found in 2004 in a burial in the 4040. It is made on an immature sheep/goat metapodial, with the tines including spongy bone from near the articulation. The surviving tine is not at all sharp, but on the contrary blunted to a flat surface. So the weak, dull prongs would not have been of much use for poking things. They might have been used for drawing lines in soft materials, but there is no trace of this.

15820.F94 is an equid incisor from a midden in the TP area. The shape is unmodified, but it has been polished in two distinct ways. The enamel surface has untempered ceramic striations all the way down (and thus surely not from eating gritty grass in life), while the secondary dentine has polish with virtually no striations, from contact with an organic material such as leather. The occlusal surface is untouched. Perhaps the enamel was shined up by rubbing it on the floor or wall, while the rougher and duller dentine received leather polishing.

14186.F65 is a rather weathered fragment of an antler artifact from a pit in the midden in the 4040. The shape suggests the bowl of a spoon, except that it is pierced by two perforations. It might be an unusual pendant, or a figurine with the holes for eyes.



Figure 124: Antler ornament: 14186.F65

From a burial in a foundation trench in the 4040, 16309.X2 is a button-like object, so far unique at Çatalhöyük. Two crescents join to form a curved X-figure, looking very like two sets of cattle horns. A fine incised line



Figure 125: Bone button with double horn motif: 16309.X2; 2 views

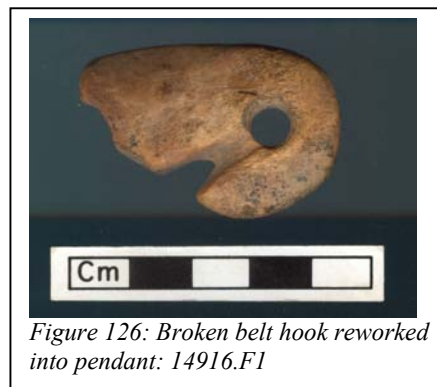


Figure 126: Broken belt hook reworked into pendant: 14916.F1



separates the two crescents on one side. On the other a raised tube has been carved. The wear is consistent with use as a button to fasten clothing or a small bag (there was no indication of a bag or its contents in the burial, however).

### Pendants

Three pendants were recorded in 2007. 14916.F1, from a midden in the 4040, was reworked from a broken belt hook. After it broke through its original perforation, the broken edges were smoothed, and a diagonal groove was added, carved from both sides. A new, smaller perforation was pierced through this groove; this perforation shows suspension wear. Perhaps the reworked artefact is meant to evoke a bird head.



Figure 127: 'Bullroarer' antler pendant: 14620.F1

14620.F1 comes from an oven fill in Building 59 in the 4040. It is a crude antler pendant of the bullroarer type, nearly complete but missing part of the tip in antiquity. A small complete pendant (15220.F1) on split boar's tusk comes from a midden in TP.

### Beads



Figure 128: Necklace of interlocking beads: 15924.X3

The 132 bone beads recorded this year more than doubled the previous cumulative total. Most of these (124) came from a single necklace in an adult female burial (15924) in Foundation Trench 1 in the 4040. These consist of three variants of a type of bead first recorded last year: the interlocking or 'chain link' bead; the necklace also contained several shell pendants. The 'necklace' was not actually found around the neck of the skeleton, but looped over the chest. Some of the beads are made on metapodials of fox-small dog-size animals, others on cylinders of sheep-size long bone cortex. The cylinders were incised with encircling grooves at intervals for cut-and-break, then notched between the grooves on both sides. They were then probably drilled through the notches, then detached, and a finer grade of

intervals for cut-and-break, then notched between the grooves on both sides. They were then probably drilled through the notches, then detached, and a finer grade of



abrader was used to complete shaping and smoothing. A few have a yellow sandy deposit in the holes, perhaps remnants of this fine abrasive. Then they were deliberately polished with a soft material such as leather or cloth: all over, but concentrating on the ends. This makes sense, since the end is what will show when they are strung in interlocking fashion: the notches fit together at right angles. The beads made on cortex cylinders tend to be narrower. A third variant has a perforation in only one of the facing notches, so that it was strung through the marrow cavity. This one is broader than most, and the marrow cavity ends are not just cut off straight but scooped down like the notches so it will interlock there; the effect is butterfly or labrys-like. There is little or no wear in the perforations, suggesting that the necklace may have been made for the funeral, or at least was not worn much beforehand. The exposed marrow cavities give a spotty leopard-skin effect, a possible reason for using small tubes rather than the solid ones for the whole thing. A further interlocking bead (as well as a preform, see below) came from unit (14535) in the South area, a dump north of Building 65.



Figure 129: Details of necklace, with bead 15924.F1; note yellow gritty substance in bead in center



Figure 130: Bead or lip/ear spool: 7780.F123; 2 views

Most of the remaining beads, one from the 4040 and five from the South Areas, are of the fake red deer canine type, ranging from realistic to stylized. Finally, a third ‘cufflink’ bead (or ear/lip spool) was recorded from the West Mound (7780.F123). The previous examples (7288.X1 and 7722.F1) are made on large mammal long bone and boar’s tusk, respectively. This artefact seems to be made on a red deer canine, although it is so thoroughly modified that it is difficult to be sure. There is no enamel, only thick dentine; alternately, it might be made on a piece of unsplit boar’s tusk near the tip.

### Rings

Only two rings were recorded this year, both from the 4040 area (15637.F2, 15675.F1), and both rather crude. Rings seem to wane in the later levels.

### **Belt Hooks**

A fragment of the tip of a belt hook was recorded from a pit in the midden in the 4040 area.

### **Collars**

A small, simple segment of a boar's tusk collar came from room fill cut by a grave in the 4040; very likely it was originally in a burial. It has perforations at each end and is well finished, but lacks the usual incised decorations. It exhibits substantial use wear from suspension.

### **Preforms and Waste**

Evidence of bone tool manufacturing was recorded from the 4040, South, and TP areas. These include preforms from three different techniques of point manufacture. From a midden in the 4040, 14922.F55 is a narrow splinter of metapodial shaft with some abrasion all along to start shaping it. It is unclear why it was never finished. Two preforms for abraded points were recorded from the South area. 14559.F68, from the Level IV midden, was discarded after a bad split. The toolmaker seems to have been inexperienced and impatient: the trick with using abrasion as a splitting technique is to grind down the anterior and posterior surfaces until the marrow cavity is exposed. But this bone has been ground only slightly. It bears a percussion scar about one-third of the way up the shaft on the posterior from a chisel or small axe used as a chisel, but with insufficient grinding there was nothing for the fracture to follow, and it propagated irregularly. It would have been possible to salvage at least one point, but with a change in technique; evidently the maker preferred to start over. Another preform from the same unit, which survives only as the unfused distal epiphyses of a metatarsal, has been much more thoroughly ground and should have worked better, but was apparently abandoned before splitting. Two groove-and-split point preforms came from an abandonment deposit in Building 75 (15742). In this technique, rare at Çatalhöyük, a longitudinal groove is incised down the anterior and posterior faces of a metapodial, and a chisel or similar implement is struck in one of the grooves to split the bone. These two preforms may have been split from the same bone, and were abandoned for no apparent reason after starting to shape one with abrasion, the other by scraping.

Two pieces of antler with traces of the cut-and-break technique were recovered from the 4040, and one from TP. A groove is created by slicing the antler (probably after it has been soaked to soften it) transversely to ring the beam or tine. This technique can be used to remove tines or segment the shaft. In TP a large hunk of beam thus roughed out was left in an abandonment deposit in Building 74. A pedicle attached to the frontal was removed by cut-and-break and discarded in a 4040 midden, while a smaller fragment that could be from either a preform or waste comes from pit fill. The groove-and-splinter technique involves cutting longitudinal grooves through the antler cortex to the spongiosa, then prying out the splinter. One such splinter, without further working but appearing fully useable, was recorded from a cluster of other raw material in Building 52 in the 4040: metapodials apparently stored to make points. Another raw material store at an earlier stage of groove-and-splinter was recovered from an abandonment deposit near Building 74 in the TP area. 13571.X1 is a large piece of shed red deer antler (hence collected as raw material), running from the base to just below the second tine, with brow and bez tine removed. It bears four long

grooves in varying stages of completion running up the shaft, but no splinters were removed. It seems surprising that this valuable stock of raw material was discarded.

A fox canine from an abandonment deposit in Building 65 in the South area has two shallow facets abraded on the sides. Presumably this was to thin it preparatory to perforation, which was never carried out. Two bead preforms come from a dump (14535) in an outdoor activity area north of Building 65. One is an unfinished tubular bead on a fox metapodial, both ends sliced off but otherwise unworked and unused. The other is a preform for interlocking beads: a thin piece of long bone cortex trimmed to a roughly square cross-section, with matching notches from two sides cut along it through which the perforation would run. Between the notches are encircling grooves incised for cut-and-break to separate the beads. A similar preform comes from the fill of a pit in the midden in the 4040 area. In this case, the notches do not line up well, perhaps the reason for its discard. They were made with a thin-edged abrader of sandstone or other rough stone.



*Figure 131: Fragment of preform for interlocking beads: 14535.F8*

The other is a preform for interlocking beads: a thin piece of long bone cortex trimmed to a roughly square cross-section, with matching notches from two sides cut along it through which the perforation would run. Between the notches are encircling grooves incised for cut-and-break to separate the beads. A similar preform comes from the fill of a pit in the midden in the 4040 area. In this case, the notches do not line up well, perhaps the reason for its discard. They were made with a thin-edged abrader of sandstone or other rough stone.

### **Indeterminate**

The 13 tools recorded in 2007 as indeterminate types are specimens that are too fragmentary or too poorly preserved to assign to a type.

### **DISCUSSION**

The large number of bone artifacts recorded in 2007 has added no new tool types. However, the balance has shifted. In part, specific rich deposits have substantially increased the overall percentage of beads and knucklebones. Additionally, frequencies of some tool types appear to shift in the later levels. The subtype of interlocking beads first appeared in last year's assemblage, and has become much more common in 2007; most of this increase is due to a single necklace, but additional beads and preforms have also come to light. This seems to be a bead type that comes into use ca. Level VI. At around the same time, some houses begin to contain abandonment deposits that include dumped stores of raw material. These stores often combine unworked pieces (astragali, metapodials) with partially worked or even completed and utilized artifacts. Manufacture and use are therefore not very distinct.

Column %	South	North	KOPAL	IST	BACH	TP	4040	West	Total
Point	395	39	2	58	77	74	271	57	973
	46.70%	41.10%	50.00%	53.7%	41.00%	54.80%	43.00%	53.80%	46.10%
Rounded point	4	2	0	1	2	1	8	0	18
	0.50%	2.10%		0.90%	1.10%	0.70%	1.30%		0.90%
Blunted point	1	0	0	3	0	0	1	0	5
	0.10%			2.80%			0.20%		0.20%
Needle	68	4	0	0	18	1	34	1	126
	8.00%	4.20%			9.60%	0.70%	5.40%	0.90%	6.00%
Harpoon	1	0	0	0	0	0	0	0	1
	0.10%								0.10%
Pick	1	0	1	0	0	0	0	1	3
	0.10%		25.00%					0.90%	0.10%
Hammer	1	1	0	0	0	0	1	0	3
	0.10%	1.10%					0.20%		0.10%
Pounder	0	0	0	0	0	0	0	1	1
								0.90%	0.10%
Chisel/gouge	14	0	0	11	0	2	6	3	36
	1.70%			10.20%		1.50%	1.00%	2.80%	1.70%
Chopper	0	0	0	0	1	0	0	0	1
					0.50%				0.10%
Scraper	5	0	0	1	0	1	2	3	12
	0.60%			0.90%		0.70%	0.30%	2.80%	0.60%
Punch	1	0	0	0	0	0	0	0	1
	0.10%								0.10%
Pressure flaker	6	0	0	0	1	0	7	0	14
	0.70%				0.50%		1.10%		0.70%
Soft hammer	4	2	0	0	0	0	0	0	6
	0.50%	2.10%							0.30%
Pottery polisher	11	0	0	1	4	5	7	7	35
	1.30%			0.90%	2.10%	3.70%	1.10%	6.60%	1.70%
Burnisher	4	0	0	1	0	4	6	1	16
	0.50%			0.90%		3.00%	1.00%	0.90%	0.80%
Plaster tool	10	6	0	0	0	1	1	2	20
	1.20%	6.30%				0.70%	0.20%	1.90%	1.00%
Haft/handle	1	0	0	1	2	1	0	5	10
	0.10%			0.90%	1.10%	0.70%		4.70%	0.50%
Fishhook	6	3	0	0	2	0	1	0	12
	0.70%	3.20%			1.10%		0.20%		0.60%
Weight	0	0	0	0	0	1	0	0	1
						0.70%			0.10%
Spoon	1	1	0	0	0	1	3	0	6
	0.10%	1.10%				0.70%	0.50%		0.30%
Spatula	5	0	0	8	1	3	6	0	23
	0.60%			7.40%	0.50%	2.20%	1.00%		1.10%
Bowl/cup	2	0	0	0	0	0	0	0	2
	0.20%								0.10%
Knucklebone	6	0	0	3	0	11	54	3	77
	0.70%			2.80%		8.20%	8.60%	2.80%	3.70%
Ornament	11	0	0	0	0	2	6	2	21
	1.30%					1.50%	1.00%	1.90%	1.00%

Pendant	15	6	0	0	3	1	5	0	30
	1.80%	6.30%			1.60%	0.70%	0.80%		1.40%
Bead	80	6	0	1	10	3	149	2	251
	9.50%	6.30%		0.90%	5.30%	2.20%	23.70%	1.90%	11.90%
Ring	55	15	0	0	33	4	6	1	114
	6.50%	15.8			17.60%	3.00%	1.00%	0.90%	5.40%
Belt hook/eye	2	0	0	1	2	0	3	0	8
	0.20%			0.90%	1.10%		0.50%		0.40%
Collar	6	0	0	1	0	0	2	0	9
	0.70%			0.90%			0.30%		0.40%
Preform/ Waste	70	3	1	1	20	8	16	3	122
	8.30%	3.20%	25.00%	0.90%	10.60%	5.90%	2.50%	2.80%	5.80%
Indeterminate	60	7	0	16	12	11	35	14	155
	7.10%	7.40%		14.80%	6.40%	8.20%	5.60%	13.20%	7.30%
Total	846	95	4	108	188	135	630	106	2112

Table 10 — Tool types by excavation area, cumulatıv

## Human Remains Archive Report 2007 / İnsan Kemikleri

**Başak Boz (1), Scott Haddow (2), Lori Hager (3), and Marin Pilloud (4), with contributions by Simon Hillson (5), Clark Larsen (6), Sabrina Agarwal (7), Sam Stout (8), Bonnie Glencross (9), and Patrick Beauschene (10),**

(1) Çatalhöyük Research Project, (2) Institute of Archaeology, University College London, (3) Çatalhöyük Research Project, (4) Ohio State University, (5) Institute of Archaeology, University College London, (6) Ohio State University, (7) University of California, Berkeley, (8) Ohio State University (9) University of California, Berkeley, (10) University of California, Berkeley,

### Abstract

Three areas of the East Mound and two trenches on the West Mound produced human skeletons during excavations in the 2007 field season. On the East Mound, human remains were recovered from the South, 4040 and TP Areas. A large portion of the 2007 skeletons were found within the foundation trenches (FT) for the new shelter construction. A total of 82 skeleton numbers were assigned to the human remains this season, including complete skeletons and incomplete but semi-articulated skeletons. Late or post-Neolithic skeletons numbered 18 while the Neolithic skeletons consisted of at least 64 individuals.

### Özet

2007 kazı sezonu boyunca, Doğu Höyük'teki üç alan ve Batı Höyük'teki iki açmadan insan iskeletleri gelmiştir. Doğu Höyük'te insan iskeleti kalıntıları Güney, 4040 ve TP alanlarından gelmiştir. 2007 iskeletlerinin çoğu Kuzey alanında yapılacak olan korunga örtünün temelleri için açılan açmalardan gelmiştir. Tüm ve tüm olmayan iskeletlerin toplamıyla 82 tane iskelet numarası verilmiştir. Geç ve Neolitik sonrası olarak tanımlanan iskeletlerin toplam sayısı 18, Neolitik iskeletleri ise toplam 64 kişiyi temsil etmektedir.

The human remains team of 2007 consisted of Simon Hillson, Clark Larsen, Başak Boz, Lori Hager, Scott Haddow, Marin Pilloud, Lesley Gregoricka, Michaela Binder, Utku Yalçın, Bonnie Glencross and Patrick Beauschene. In addition to the excavation

and analysis of many new human remains recovered this year, ongoing research projects were undertaken in the laboratory.

## NEOLITHIC BURIALS

### South

Human skeletons were found in four areas in the South that were excavated this season: Building 65, Space 199, Space 272, and Space 333.

### Building 65

The excavation in Building 65 was started in the previous field season (2006) and was completed in the 2007 field season. At least five individuals were excavated in this building last year (see 2006 in archive report). Six additional individuals were recovered this season.

In 2007, the burials were under the east and north-east platform of the house although two skeletons were buried as foundation burials at the construction level of the house (Sk.(11403) and Sk.(15748)).

#### F.2603 Sk. (14506)

An adult male skeleton was buried under the east platform. The tightly flexed body was on its right side, lying east-west with the head to the west. Phytolith remains were found on the pelvis and feet, suggesting that the body was bound by a type of cordage. The interment of Sk.(14506) disturbed Sk. 14507.b2 which was a female skeleton who had been buried earlier in a cut located to the south.

#### F.2604 Sk. 14507.b1 and Sk. 14507.b2

Burial F.2604 was a single primary inhumation that had been disturbed. Further analysis of the bones showed that there were in fact the remains of two individuals, a female and a male, both of which were disturbed. Some parts of their bodies were taken away and the rest was arranged to look like one flexed body.



A complete right leg and foot, intact but disarticulated from its skeleton, was found in articulation with its hip bone. A complete left leg and foot from another individual, intact and but disarticulated from its skeleton, was also found. Finally, an articulated hand was found near the foot of Sk.14507.b2 which possibly belonged to this person. Few

other parts of this individual were found in situ (Figure 132).



Sk.14507.b1, the adult male, was buried earlier than Sk.14507.b2, the adult female. The interment of the female disturbed the male. Only some parts of the body of 14507.b1 were found, including the skull, right arm, left lower arm, left leg, left hipbone, sacrum and some upper left ribs. The rest of the body was removed from this location.

An interesting aspect of the feature is that two bodies were assembled to look like one individual. A similar case where semi-articulated elements were deliberately placed into the grave in a simulated flexed position with a second individual was found in Building 60 from the 4040 Area (F.2225, Sk. (13133); see 2006 archive report).

F.2604 Sk. (14536)

This individual is a child aged 2-3 years. The child was placed on the left lower leg of 14507.b1. This interment seems to be done when the grave was reopened to take the parts of 14507.b1 and/or 14507.b2 and to arrange the bodies.

Skeleton (14536) was laid down on its right side in a flexed position. The body was in an east-west direction with the head to the east, in a flexed position.

F.2621 Sk. (15748)

A primary juvenile inhumation of ~ 10 years of age was found with the body tightly flexed on its left side. The body was oriented east to west with the head to the west. The juvenile was placed on the foundation layer of Building 65, Space 297. Phytolith remains were noted around the skull, shoulders, and the legs. An animal burrow damaged the bones.

#### **Space 199**

F.2620 Sk. (15739)

A baby was placed in the midden (Space 199) under Building 65 in its southern part. No cut was determined. The body seemed to be bent over itself with the head and the body bent over the legs in a dorsally flexed position. The head was oriented to the south, facing down. The legs were pointing to the north bent towards the head.

#### **Space 272**

A mandible and a clavicle of an adult were found in this space. These bones are possibly the remnants of a burial that was disturbed by a later burial in Building 53.

Sk. (14818)

An infant burial (14818) at a lower level of the same area was found on the slope of the west part of the area. Some of the exposed bones were collected but the main part of the skeleton is still in the ground to be excavated in following years. (No feature number at this time.)

#### **Space 333**

Several juveniles were found in this space. Eight neonates and infants and one young child were recovered from the excavation of this space. One grave was a double burial where the two neonates were probably twins.

F.2628 Sk. (15793)

Sk. (15793) is the incomplete skeletal remains of an infant or young juvenile, sex unknown. Only the cranial vault was recovered during excavation.

F.2629 Sk. (15796)

Sk. (15796) is the complete skeletal remains of a neonate. The tightly flexed body was placed on its stomach with its head to the north.

F.2630 Sk. (15799)

Sk. (15799) is the complete skeletal remains of a neonate. The body was placed on its back with its head to the south. The legs were flexed up above the body and the left arm was beside the back of the head.

F.2631 Sk. (16203) and Sk. (16204)

Sk. (16203) and Sk.(16204) are the complete skeletal remains of two neonates which were buried together. These individuals may be twins as they are identical in terms of skeletal development. Sk. (16203) was placed tightly flexed on its left side facing the body of Sk.(16204) which was flexed and placed on its right side. The heads of both individuals were oriented to the north. Both skeletons were placed in the grave cut with great care.

F.2632 Sk. (16207)

Sk. (16207) is the slightly disturbed but complete skeletal remains of a neonate. The body was placed on its stomach with the head to the west. The arms and legs were tightly flexed underneath the body.

F.2633 Sk. (16210)

Sk. (16210) is the disturbed but complete skeletal remains of a neonate. The partially articulated remains were pushed to the west side of the grave cut.

F.2634 Sk. (16213)

Sk. (16213) is the complete skeletal remains of a neonate. The loosely flexed body was oriented north-south, and placed on its right side with the head to the south. The placement of the arms and right leg was difficult to determine. The left leg was flexed, however.

F.2635 Sk. (16216)

Sk. (16216) is the complete skeletal remains of a neonate. The body was loosely flexed and placed on its left side with the head to the east. The right arm was extended behind the back and the left arm was loosely flexed in front of the chest with the hand near the face. Both legs were flexed against the abdomen.

**4040**

**Building 59**

F.2393 Sk. (14753)

A single human burial was found in Building 59 (14753). This skeleton was interred in a flexed position, supine and leaning slightly towards the left. The body was oriented east to west with the head to the west. This individual was a female aged at approximately 40 years.

**Foundation Trenches (FT)**

Two foundation trenches (FT's 1 and 2) were excavated into the east and northeast platforms of a Neolithic building. The northeast platform of this building was within

the borders of FT 1 while the east platform covered the area of the FT 2 and Beam slot A.

#### **FT 1**

A minimum of 13 individuals from a Neolithic context were recovered from FT 1. They include one infant, five juveniles and seven adults. The majority of the skeletal remains were either incomplete or partially incomplete as the result of disturbances to the earlier burials by later interments.

#### **F.2823 Sk. (15070), Sk. (15405), Sk.(15435)**

Burial F.2823 is a Neolithic multiple burial which contains the remains of three individuals (15070), (15405) and (15435). The grave cut was dug for the interment of Sk. (15435). The cut had disturbed two earlier burials (15070), (15405), and their partially articulated remains were found in the grave fill.

#### **Sk. (15070)**

Sk. (15070) is the incomplete skeleton of a child, sex unknown. This primary crouched burial was disturbed by the interment of Sk. (15435). The bones are in poor condition.

#### **Sk.(15405)**

Sk. (15405) is the partially complete skeleton of an older adult whose sex could not be determined. This primary burial was completely disturbed by Sk. (15435). The bones are in poor condition

#### **Sk. (15435)**

Sk. (15435) is the partially complete skeleton of an older adult female. The body was placed on its back with the legs and arms tightly flexed above it. The primary interment of this individual disturbed the earlier burials of Sk. (15070) and (15405). The skeletal remains are in poor condition.

#### **F.2834 Sk. (15467)**

Sk. (15467) is the primary disturbed incomplete skeleton of a child, sex unknown, whose remains are in poor condition. The tightly flexed body was and placed on its left side with the head to the south. This individual was disturbed by an unexcavated late burial in north section of FT 1. The remains are in good/fair condition.

#### **F.2839 Sk. (15499)**

Sk. (15499) is the partially articulated torso of a child, sex unknown. This individual was probably disturbed by the later interment of Sk. (15924) and the remains were put back in the cut with the grave fill. The bones are in good/fair condition.

#### **F.2846 Sk. (15640)**

Sk. (15640) is a primary disturbed incomplete adult (possibly female). The head and upper limbs of this individual are missing. The tightly flexed body was placed on its left side with the head to the north. This individual may have been disturbed by the interment of Sk. (15649). The bones are in excellent condition.

F.2848 Sk. (15649)

Sk. (15649) is the primary undisturbed burial of an incomplete mature adult (possibly male). The tightly flexed body was placed on its left side with the head to the north. The left leg and right tibia are missing post-mortem. The bones are in poor condition.

F.2908 Sk. (15901)

Sk. (15901) is the primary disturbed burial of a partially complete adolescent (truncated by Sk. (15924)). The body was tightly flexed on its left side with the head to the west. The left arm was flexed against the chest, while the right arm was bent slightly between the chest and legs with the hand at the feet. The bones are in good/fair condition.

*F.2910 Sk. (15924), Sk. (16064), Sk. (16065), Sk. (16066), Sk. (16067), Sk. (16068), Sk. (16069), Sk. (16076)*

Burial F.2910 is a Neolithic burial whose grave cut contained a single primary burial (15924), and the disarticulated/partially articulated remains of at least seven additional individuals whose remains were disinterred and re-deposited during the interment of Sk. (15924).

Sk. (15924)

Sk. (15924) is the primary complete burial of a mature adult female. The flexed body was placed on its left side with the head to the west. The right arm was flexed between the knees and the hand underneath the face. The upper left arm was underneath the skull, with the lower left arm flexed and extended upwards along the side of the grave cut. A great deal of care appears to have been taken in order to achieve a naturalistic sleeping pose. This individual was buried with several types of beads, one in the form of a black disc bead necklace with blue stone beads at intervals. A long string of finely worked interlocking bone beads, with shell beads at intervals, was also found draped atop the upper body. The bones are in excellent condition.

Several articulated skeletal elements were recovered in the grave cut for Sk. (15924).

Sk. (16064)

Articulated adult legs were the only bones recovered of this skeleton. The bones are in good to fair condition.

Sk. (16065)

An articulated adult left arm and hand were found. The bones are in good to fair condition.

Sk. (16066)

A disarticulated adult cranium, possibly male, was found in the grave cut. The bones are in good to fair condition.

Sk. (16067)

A disarticulated juvenile cranium, sex unknown, was recovered. The bones are in good to fair condition.

Sk. (16068)

A second disarticulated juvenile cranium, sex unknown, was found in the grave cut. The bones are in good to fair condition.

Sk. (16069)

The disarticulated mature adult cranium of a possible female was recovered. The bones are in good to fair condition.

Sk. (16076)

An articulated adult right leg of unknown sex was found. The bones are in good to fair condition.

F.3012 Sk. (16100)

Sk. 16100 is the primary disturbed burial of an adult, possibly female. The body was tightly flexed on its right side with the head to the north. The skull is missing, possibly as the result of the later interment of Sk. (15649). Sk. (16100) was also disturbed when the bottom of the grave cut for Sk. (15924) removed the left limbs. The remains are in good/fair condition.

#### ***FT 2 and Beam Slot***

During the excavation of FT 2, a burial (F.2836) was found in the northern part of the trench. The excavation of this grave led to the exposure of a massive multiple burial that extended to the beam slot between FT 1 and 2 for a total of at least 20 individuals.

F.2836 Sk. (15482)

A primary juvenile burial was found with the head to the west and the body oriented west-east. The head faced down. The juvenile was lying on its right, almost vertical, and slightly pushed forward so that the back of the body was facing up. The left leg was nearly completely missing apart from the proximal femur epiphysis. The position and slight disturbance of the body suggested that shortly after the child was buried, the platform was reopened for another interment (F.2843, Sk.(15621)) causing the disturbance and loss of one of the legs. The position of the body and the remains of phytoliths around the skull and body suggest that the body was wrapped pre-interment. A bone pin was near the head and two gypsum beads were found on the neck



*Figure 133 Adult female with a cluster of grave goods (F.2843, Sk.15621)*

*F.2843 Sk. (15621), Sk.(15671) (skull), Sk. (15956) (skull)*

A primary articulated female skeleton found under the Sk. (15482) which seemed to be disturbed by the interment of Sk.(15621). The body was on its back, flexed, oriented east-west with the head to the west (Figure 133). A cluster of grave goods consisting of 3 bone pins

and 2 obsidian blades was placed by the right shoulder (Figure 134). There were also 3 bone needles and some shell beads found under the skull.

Many loose bones of several individuals including some skulls seemed to be disturbed not only by the interment of Sk. (15621) but also several other times. The nature of the excavation (expanding the trench for the beam slot A much later in the season) made it difficult to interpret the sequences of the interments. These loose bones seemed to be part of the much bigger burial (F.3010) with at least 20 individuals. These disarticulated body parts, including two neatly arranged hipbones of the same individual around and under the Sk.(15621), could belong to either of those skulls or other individuals that were part of the mass grave F.3010.



*Figure 134 Close-up of bone pins and obsidian blades near right shoulder of adult female (F.2843, Sk.(15621))*

Sk. (15671) (skull)

A skull of a female was found within the grave F.2843. The skull was located directly beneath Sk.(15482) and near the feet of Sk. (15621) at about the same level.

Sk. (15956) (skull)

A skull of a male placed up side down under the two innominates of a same individual. A loose mandible was matched up with the skull later in the lab and also these two innominates most probably the same individual as the skull.

3025 Sk. (16309)



*Figure 135 Older adult female with grave goods (F.3025, k. (16309))*



*Figure 136 Close-up of older adult female with grave goods under chin, including black beaded necklace (F.3025, Sk.(16309))*

A primary skeleton of an old adult female was found with the head to the west, facing south (Figures 135, 136). The body was oriented east-west on its right in a tightly flexed position. A cluster of grave goods (16133) were placed under the chin. The

cluster contained a lump of green pigment, two lumps of clay, five shell beads, and a broken green stone bead. The nature of the cluster suggested the goods may have been in a container. In addition, two bone artefacts were placed next to the skull.

A necklace made of small black beads around the neck and a bone button shaped like a star was found just below the chest (Figure 137). The perforated button was in the right place to hold some sort of clothing. A block of yellow residue, possibly ochre, was found near by the skull. It is not clear whether this organic residue was directly related with this individual or Sk.(16137), (F.3031).

This skeleton seemed to be one of the earliest burials in the east platform. The body is in close approximation to Sk.16137 whose upper arm was moved in order to make space for Sk.16309.



Figure 137 A bone button found on the abdomen of Sk. (16309) (F.3025) in situ above, after conservation left.



#### F.3031 Sk. (16137)

This was a primary burial of a young adult male (Figure 138). The body was tightly flexed on its back and tilted slightly to the right. The head was removed carefully with the cervicals in perfect anatomical order. Some parts of the body were disturbed either during the interment of Sk.(16309) or other skeletons in F.3010. Some disarticulated bones were over the body. The right humerus seemed to be carefully removed and placed over the body, leaving the scapula and lower arm in situ. This action seemed to have been done in order to make a space for Sk. (16309). Removal of the head might have been done at the same time as when the pit was re-opened for the interment of Sk.(16309).



Figure 138 Young adult male, headless (F.3031, Sk. (16137))



However, while these two seem to be the earliest two skeletons under this part of the platform, the extension of the disarticulated bones of other bodies (that were over Sk.(16137) and partially over Sk.(16309) suggest that there were earlier burials than Sk.(16137) and Sk.(16309) in the platform.

F.3010 Sk. (16130), Sk. (16131), Sk. (16132), Sk. (16196), Sk. (16300), Sk. (16301), Sk. (16302), Sk. (16303), Sk. (16304), Sk. (16305), Sk. (16308)

The entire grave seems to be part of or related to F.2836, F.2843, F.3025, F.3010 and F.3031. They were all under the east platform of the house (Space 17).

F.3010 had some complete skeletons, some semi-articulated bodies and many disarticulated bones from the fill unit (16129) (Figure 139). There were many loose beads, shells, a small pink plaster plate with a spout that were scattered around the grave fill. Some of these artefacts might be related with a specific skeleton but this could not be determined from their locations. In terms of grave goods, the materials associated with the burials from this house are rich.



*Figure 139 Layer 1 of multiple burial, F.3010 and in site detail of pink plaster plate(16129.XI) with a shell found within F.3010 and (16129.XI) after conservation.*

#### Sk. (16131)

A burial of a child was found on the north-east part of the grave. The body was lying on its back in a north-west to south-east direction with the head to the north-west. The arms were extended along both sides with bracelets made of tiny shell beads on both wrists. The legs were flexed. The bones were destroyed by a rodent hole, especially in the area of the torso. A blue pendant was also found under the chin.

The child was buried slightly earlier than Sk.(16132). The conditions and the positions of the bones suggest that the child's body had been moved from its original place or/and position during the interment of Sk. (16132).

Sk.(16132)

A primary burial of a female was found in a loosely flexed position. The body was lying on its left side, oriented north-west to south east with the head on the north-west. The burial cut was quite large. The skeleton was the last one to be interred in the grave, disturbing several other individuals during the burial process. Some of the earlier burials were disturbed when the bodies were partially defleshed and these bones were therefore in articulation. The disturbed elements of other bodies were arranged around the body of Sk.(16132) (Figure 140).

The female had her arms flexed with the hands under the head. The remains of several bindings could be seen on the arms in the form of phytoliths, which suggest that at least some part of the body was bound. There was a bracelet on each wrist. The bracelets were made of black beads, shell beads, and a gypsum bead. The skeleton was badly damaged by several animal burrows.



*Figure 140 Final interment in the mass grave (F3010, Sk.(16132)) with disturbed body parts of earlier burials*

Sk. (16196)

A juvenile burial (6-7 years old) was truncated by a later cut in a multiple grave. It is likely the interment of Sk.(16132) disturbed this burial and truncated the lower part of the body. The upper body was on its left side in a north-south direction with the head to the north, facing east. The arms were flexed. The nature of the truncation suggests the legs would have been loosely flexed. Articulated legs found nearby possibly belong to this individual. If they do, it would suggest that Sk.(16196) was newly buried when the grave was reopened for the interment of Sk.(16132) A hematite bead was found on the neck.

Group of skulls from the south-east corner of F.3010

Five skulls were purposefully arranged in the south-east corner of the grave (Figure 141). It is likely they were arranged during the interment of Sk.(16132) but these individuals probably were disturbed more than once. Two skulls (15671), Sk.(15956) within F.2843 were also nearby and might be related to these arranged skulls.

Sk.(16130)

This was a mature male skull found in the southeast corner of the group.

Sk.(16300)

This skull was from an older individual, probably male. These bones were placed in the most southeastern part of the group. This skull must have been had some tissues intact when it was disturbed such as ligaments in order to hold the lower jaw.



*Figure 141 Five skulls arranged on the south-east corner of the grave*

Sk.(16301)

A young male skull was found slightly under Sk.(16300).

Sk.(16302)

This was a young male skull found in the south part of the group.

Sk.(16303)

The skull of a young adult was placed in the southwest area of the group. Sex was indeterminate.

Sk.(16304)

This was a partially articulated older female skeleton. The head and 5 cervical vertebrae were moved from its body, turned around from its original position and displaced. While the head was sitting on its base and facing east, the torso of this skeleton was lying on its right side, west to east direction. The head would have been on the west originally and facing south on its right side. Only the upper parts of the body, including the upper arms, were found. The rest of the body was truncated by later interments most probably during the interment of Sk.(16132) at least.

Sk. (16305)

Skull fragments of a juvenile on the western part of the multiple burial were found. This burial must have been one of the earliest one and it was disturbed many times. Several parts of the same skull found on the east part of the grave.

Sk. (16308)

Sk. (16308) was the final skeleton found within F.3010. This individual was a female estimated to be over the age of 50 years. The skeleton was interred in a tight flex with



the knees tucked up into the chest and the head to the west. Several plaster beads were located around the left proximal tibia. Located to the north of the skeleton, near the lateral clavicle, was found an egg-sized ball of blue pigment. This pigment had a worked bone spatula placed within it and was surrounded by phytoliths. The pigment was conserved and removed as a block with a piece of the lateral left clavicle and most of the left scapula.

**FT 23 and Beam Slot 22/23**

F.2904 Sk. (15658)

As excavation began on FT 23, a skeleton was found just below the surface Sk. (15658). The adult skeleton was in extremely poor condition. However, enough of the sciatic notch on the hipbone was present to suggest this was likely a male.



*Figure 142 Layer 1 of F.2915 with Sk.(15938)*

F.2915 Sk. (15938), Sk. (16124), Sk. (16125), Sk. (16140), Sk. (16139)

Within FT 23 and Beam Slot 22/23, a bone feature was located (F.2915). This feature consisted of a large mass of disarticulated human bone with some articulating elements. The bone was found within a large cut; however, the majority of the bone was pushed to the north-east corner.



*Figure 143 Layer 2 of F.2915 with Sk. (16124) and (16125)*

Burial F.2915 was excavated and lifted in three layers. The top layer (layer 1) consisted of articulated vertebrae with some ribs and a bit of a sacrum that was labeled Sk. (15938) (Figure 142). Also within layer 1 were several clusters of disarticulated bone, mainly loose hand and feet phalanges with some broken ribs. The next layer (layer 2) included several disarticulated skeletal elements that were adult in age. Also within this layer

were an articulating right radius, ulna, and complete hand (16124) as well as a skull (16125), both from an individual aged around 10 years (Figure 143). It is likely that these elements belong to the same young individual. The final layer (layer 3) of F.2915 had several disarticulated long bones and some articulated elements. The

articulated elements included the right and left feet (16140) and a left leg (femur, tibia, and patella with no fibula) (16139) (Figure 144).



Figure 144 (layer 3) of F.2915

During excavation skeleton numbers were assigned to articulating elements. Due to time constraints during the field season, only a cursory lab examination of these remains could be made. Based on robusticity, age estimates, and the number of repeating skeletal elements there are at least two adults and one child (~10 years old). It is worth noting that the lower levels of this feature were not reached. There almost certainly are more skeletal elements below the level where

excavation ceased. The recovered skeletal elements were most likely pushed to the north-east corner of the cut in order to accommodate a later interment that would have been placed further to the south. Unfortunately, the deeper levels of this area were unexcavated and this hypothesis remains untested.

#### F.3021 Sk. (16168)

Within FT 23, Beam Slot 22/23 there was another cut directly to the west of cut (15936) of F.2915. The second cut (16169) contained the skeleton of a completely articulated child of approximately 7 years (16168) (Figure 145). This individual was buried in an extremely tightly flexed position and appears to have been a solitary



Figure 145: Completely articulated child of approximately 7 years (16168)

primary interment separate from F.2915.

#### FT 23, Space 66

##### F.2918 Sk. (15952)

A single articulated left leg, absent the feet, was found ~7-10 cms above the articulated skeleton Sk. (15960). The leg was tightly flexed. The bones were located directly below the surface and they are highly eroded.

##### F.3036 Sk. (15960)

This is an adult skeleton who was tightly flexed on its left side. The arms and feet were crossed. Animal disturbance was high, particularly in the mid-thoracic region. The bones are in fair to good condition. Two beads were found at the right wrist and a

flint core and flake were located above the right hand. Five green beads, 1 turquoise bead and 1 shell bead were found below the skull.

**FT 25, Space 66**

*F.2767 Sk (14977), Sk (14978) Sk (14977)*

This is a completely disarticulated neonate burial. Only a few bones were recovered. The neonate was disturbed by skeleton (14978). The position of the body could not be determined.



*Figure 146: Primary burial of mature male (14978)*

Sk. (14978)

This was a primary (Figure 146) mature adult male buried in the northern part of the building in a fire

installation area. The body was lying on its right in a tightly flexed position. The head was to the east, facing south with the main axis of the body oriented east-west.

**TP Area**

F.2859 Sk. (15812)

Only parts of a single Neolithic skeleton were found in the TP excavation area during the 2007 field season. This skeleton (15812) was a cluster of human bones consisting of a few articulating thoracic vertebrae and an articulated radius and ulna. The bones were of an adult. The criteria for sex determination were not present.

**POST-NEOLITHIC/LATE SKELETONS**

Late burials were found in two areas of the East Mound: Foundation Trenches 1, 4, 9, and 10 in the 4040 Area. On the West Mound, Trenches 5 and 7 yielded post-Neolithic skeletons.

**4040 Area**

F.2753 Sk.(14919)

The upper part of the body an infant of 0-6 months of age was found truncated by the foundation trench of Building 41. The body was oriented west to east with the head to the west. The right arm was missing while the left arm was extended alongside the dorsally extended body. The legs were not extended but crossed. The bones were in good condition.

F.2801 Sk. (15021)

In a tile-capped and tile-lined grave, this adult, possibly female skeleton was found dorsally extended, slightly on its left side. The arms were alongside the body although

some disturbance was noted in the lower arm and hand regions. The hands may have been on the pelvis. Some feet bones were missing while others were displaced. A glass vessel was found on the chest.

**F.3006 Sk. (16060)**

The dorsally extended body was oriented west to east with the head to the west, facing southeast. The arms and legs were extended. The left lower arm and hand were under the right hipbone. The skeleton was probably from an older female who had degenerative joint disease of the proximal femur and highly worn teeth. A hairpin was found near the left foot.

**F.3007 Sk. (16074)**

Oriented with the head to the south and the feet to the north, this juvenile skeleton was dorsally extended. The arms were at the sides of the body. The hands were at the hipbones. The narrow coffin was noted by the location of the nails and a small amount of wood. Animal disturbance was extensive in the grave.

**F.2802 Sk. (15028)**

Sk. (15028) is a primary complete Late Roman/Byzantine burial of an adult female. The dorsally extended body was placed in a wooden coffin. The head was oriented to the west and the feet to the east. The arms were alongside the body and the head faced upwards and forward (east). This individual had an extremely curved spine, and its right upper and left lower limbs were small and atrophied in comparison to their antimeres. Polio is a possible diagnosis for these pathological lesions. This individual was buried with several copper-alloy grave goods, including a pair of hoop earrings, and two long needles placed near the feet.

**FT 1**

**F.2803 and F.2804**

Two Late burials, F.2803 and F.2804 were excavated in FT 1, while a third, located just to the north of the trench, was left unexcavated. Burial F.2804 is a possible Islamic burial, given the orientation of the skull. However, the body had been placed in a coffin, as traces of wood and iron nails were recovered.

**F.2803 Sk. (15031)**

Sk. (15031) is an adolescent individual of unknown sex. The body was dorsally extended with the head to the west and feet to the east. The remains are in poor condition.

**F.2804 Sk. (15034)**

Sk. (15034) is an adolescent individual of unknown sex. The body was dorsally extended with the head to the west and feet to the east. The arms were extended alongside the body. The skull was on its right side (facing south). The remains are in good/fair condition.

**FT 4**

**F.2826 Sk. (15417)**

This was a disturbed burial who was originally oriented with the head to the west and the feet to the east. The arms were by the side of the body with the right hand under



the pelvis and the left hand on top of the pelvis. Animal disturbance was significant in the grave area as evidenced by the scattered ribs and missing feet bones.

**FT 9**

F.2845 Sk (15608)

Within FT 9 was a fairly well preserved skeleton determined to be a female over the age of 50 years (15608). Remnants of a wood coffin and several pieces of nails were recovered within this feature. Included within the coffin were a glass vile and a pot rim, both located to the east of the left foot.

**FT 10**

F.2844 Sk. (15607)

An extended skeleton within a heavily degraded wooden coffin was found in FT 10 (15607). This individual was in extremely poor condition. Enough of the skeleton was present to determine the individual was a male mature adult. No grave goods were included.

**West Mound Burials**

All of the burials recovered from the West Mound are Post-Neolithic, probably dating to the Greco-Roman or Byzantine periods. The majority of these burials were disturbed either through animal activity or by erosion due to their proximity to the modern surface.

**Trench 5**

F.2415, Sk.(14226)

Sk.(14226) is the primary disturbed burial of an incomplete adult individual of unknown sex. This burial was located just below the modern surface and was largely eroded away. Only the base of the cranium and several cervical vertebrae arches were recovered. The body would have been dorsally extended with the head to the west and the feet to the east. The bones are in extremely poor condition.

F.2416, Sk.(14267)

Sk.(14267) is the primary burial of a complete young adult female. The body was dorsally extended with the head to the west and feet to the east. The arms were extended alongside the body. The body was placed in a mud brick-lined grave, and evidence for a coffin exists in the form of iron nails found along the edges of the inside of the grave. No grave good were recovered. The bones are in excellent condition.

F.2417, Sk.(14241)

Sk.(14241) is the incomplete and highly disturbed charnel deposit of an adult, sex unknown. Only the ribcage, vertebrae, mandible and several phalangeal and long bone fragments were recovered. The bones are in poor condition.

F.2419, Sk.(14296)

Sk.(14296) is the incomplete primary disturbed burial of an adult, sex unknown. The body was dorsally extended and placed in a fired and unfired brick-lined grave. The right arm was placed alongside the body, while the left hand was placed on the left pelvis. Both legs were bound together at the knees. The head was oriented to the west

and faced forward. Traces of a wooden coffin and iron nails were found in the grave cut. No grave goods were recovered.

F.2420, Sk.(14298)

Sk.(14298) is the partially complete primary disturbed burial of a possible adult, sex unknown. The body was dorsally extended with the head facing forward and to the west and the feet to the east. The right lower arm is missing, and the left hand was placed on the left pelvis. The right lower leg and both feet are missing post-mortem. The body was placed in a fired brick-lined grave. Several tiles were found on the floor of the grave. Iron nails found in the fill may indicate a coffin had existed. No grave goods were recovered.

F.2421, Sk. (15307)

Sk.(15307) is the partially complete primary disturbed burial of an adult, sex unknown. The body was dorsally extended with the head (missing) to the west and the feet to the east. Both arms were alongside the body with the hands on the hips. The right foot is missing.

#### **Trench 7**

F.2422, Sk.(15120)

Sk.(15120) is the primary disturbed burial of a juvenile, sex unknown. The body was dorsally extended with the head to the east and the feet to the west. This orientation is unusual for a Late burial. The skull faced towards the northwest. The left arm is missing, while the right arm was placed alongside the body. The feet are also missing. The bones are in poor condition, and much of the thorax and upper limbs are missing as a result of the body's proximity to the face of the deep sounding section. No grave goods were found.

F.2423, Sk.(15122)

Sk.(15122) is represented by an adult skull only. The body appears to have been oriented with the head to the west. The remainder of the body seems to have been removed by heavy machinery during the excavation of the deep sounding trench. The skull is in excellent condition.

#### **Research Projects**

- During the 2007 field season, in addition to co-directing the Human Remains Team with Simon Hillson (University College London), Clark Larsen (The Ohio State University) devoted his efforts to two activities: (1) Preliminary study of human remains for osteoarthritis. A larger project will be completed in conjunction with the study of the cross-sectional geometry begun during the summer of 2006. (2) Revision of the National Science Foundation proposal, to be submitted for the December 1, 2007 deadline.
- Simon Hillson and Başak Boz (Selçuk University) continued their research on the dental health of Çatalhöyük inhabitants. The research is at a stage where conclusions could be drawn.
- Marin Pilloud (The Ohio State University) continued data collection on dental morphology and metrics for a study of biological distance. Work began on this project during the 2006 field season during which data were collected on over

half the skeletons housed on site. Preliminary analysis of these data suggests a pattern of genetic homogeneity within Çatalhöyük; however, potential kin groups were discernable at the settlement level, implying that there was a biological basis for burial location. Future work on this project will include data collected during 2007 on additional individuals and will also extend to include two other Neolithic sites (Aşıklı Höyük and Musular).

- Sabrina Agarwal (UC Berkeley), Bonnie Glencross (UC Berkeley) Sam Stout (Ohio State University) and Patrick Beauchesne (UC Berkeley) continue to work on their project that focuses on bone loss and fragility across the life course at Çatalhöyük. Bone loss and fragility are important indicators of structural and mechanical integrity in a skeleton and more broadly indicative of a community's health and quality of life.

During the 2007 field season, all available subadult Neolithic skeletons as well as the adult Neolithic skeletons recovered in the past year were examined, and 4th lumbar vertebrae and cortical rib specimens removed for the purpose of addressing questions concerning bone metabolism and fragility. Lumbar vertebrae, from a total of 15 subadults ranging in age from infant through 15 years of age were taken, for non-invasive examination using high resolution peripheral quantitative imaging (HR-pQCT) of trabecular architecture to UC Berkeley. An additional 8 adult rib specimens and 89 subadult rib specimens were also taken for histological analyses currently being conducted at UC Berkeley and Ohio State University.

Preliminary results of age and sex-related changes in trabecular architecture and histomorphometry will be presented at the upcoming 2008 meetings of the American Association of Physical Anthropology (AAPA). To further characterize bone loss, fragility and fracture, second metacarpal specimens from 36 adults and 8 healed bone fractures were x-rayed at the Beyza medical clinic in Çumra. Preliminary evidence on the relationship between metacarpal cortical bone loss, bone fragility and skeletal fracture in individuals is currently being prepared and will also be presented the upcoming 2008 AAPA meetings.

Observations of cortical bone loss and bone fracture are also being examined in relation to preliminary findings on age and sex-related changes seen in trabecular architecture over the life cycle. This work will provide new and important insight on the extent to which dietary and lifestyle stresses may have influenced bone metabolism and predisposed individuals of the Çatalhöyük community to bone fragility and fracture.

## **Macro Botanical Remains / Makro – Botanik Buluntuları -**

**Amy Bogaard (1) and Mike Charles (2), with contributions from Füsün Ertuğ (3), Dragana Filipović (4), Catherine Longford (5), and Michael Wallace (6).**

(1) University of Oxford (2) University Sheffield (3) Istanbul University, (4) University of Oxford, (5) University Sheffield, (6) University Sheffield,

### **The Archaeobotanical team in the field, 2007**

**Team leaders:** Amy Bogaard, Mike Charles and Glynis Jones

**Flotation officers:** Kim Ng, Ellen Simmons

**Flotation workers:** Mevlüt Sivas, Hüseyin Yaşlı,

**Assistants:** Ryan Allen, Müge Ergun, Catherine Longford, Michael Wallace

**Ethnobotanist:** Füsün Ertuğ

### **Introduction**

The aims of this report are:

- to present preliminary archaeobotanical results for the 2007 season,
- to summarise current archaeobotanical work by postgraduate students,
- to describe a pilot study in the extraction and identification of plant remains in burnt mudbricks,
- to report on a new tuber identification project,
- to outline the development of an ethnobotanical-archaeobotanical database as a resource for interpretation, and
- to set out the aims and current status of major collaborative research projects involving the archaeobotanical team and other specialists working at the site.

### **Preliminary archaeobotanical results for 2007**

The average sample size in 2007 was c. 18 litres. In total, the team processed 632 samples (c. 12,012 litres of soil). The number of samples processed per excavation area is shown in Table 11.

We carried out level 1 assessment (identification and counting of crop and wild plant remains in a random subsample of the >1 mm flot fraction, plus scanning of the >4 mm flot fraction – see Bogaard et al. 2005 for methodology) on samples from the 2007 excavations in the 4040 and South Areas of the East mound, and from trenches 5, 7 and 8 on the West mound. We also completed a small backlog of samples from the 2006 excavations in the 4040 and South Areas. A similarly small backlog left at the end of the 2007 season will be completed at the beginning of the next season. As in previous years, samples from the Poznan excavation area did not receive level 1 assessment in the field, since Marek Polcyn (TP archaeobotanist) will carry out sorting and assessment of this material at his laboratory in Poland; TP samples from ‘priority’ units, however, were assessed at level 2 in the field (see below).

### **Giriş**

Sunulan raporun ana amaçları aşağıdaki gibidir:

- 2007 kazı sezonu sırasındaki yapılan arkeobotani çalışmaları sonuçlarını sunma,
- Şu anda lisansüstü öğrencilerinin üzerinde çalıştığı arkeobotani projeleri ile ilgili çalışmaların özetinin sunulması,

- Yanmış kerpicing içerisinde korunmuş bulunan bitki kalıntılarının çıkarılması ve tanımlanmasına dair olan pilot projenin tanıtılması,
  - Kök bitki kalıntılarının tanımlanması ile ilgili projenin raporu,
  - Arkeolojik bilimsel yorumlama metodu olarak kullanılan etnobotani-arkeobotani veritabanının geliştirilmesi ile ilgili ana hatlar,
  - Arkeobotani ekibi ile diğer uzman ekiplerinin ortaklaşa gerçekleştirdikleri ana projelerin şu anda durumunu ve amaçlarını ortaya koymak,
- 2007 kazı sezonunun arkeobotani ön raporu  
2007 sezonunda alınan ortalama örnek boyutu 18 litredir. Toplamında, ekip 635 örneği incelemiştir (c. 12,012 litre toprak). Tablo 11’de kazılan farklı alanlara göre alınan örneklerin listesi sergilenmiştir.

2007 kazı sezonunda Doğu Höyük’te 4040 alanında ve Güney Açması’nda, Batı Höyük’te 5,7 ve 8 numaralı açmalarda, Seviye 1 düzeyinde analizler (tahılların ve yüzdürme yönteminden elde edilen >1mm yabancı bitki kalıntılarının sayılması ve tanımlamalarının yapılması ve >4mm yüzdürme yönteminden elde edilen bitki kalıntılarının dijital olarak taranması-bakınız Bogaard 2005 arşiv raporu metodoloji) yapılmıştır. Aynı zamanda 2006 kazı sezonunun geriye kalan 4040 ve Güney açmalarından elde edilmiş olan küçük bir grup bitki kalıntısının incelemeleri tamamlanmıştır. Aynı şekilde 2007 sezonu sonunda da incelenmesi tamamlanamamış olan ufak bir grup bitki kalıntısı da önümüzdeki sezon incelenmek üzere geride bırakılmıştır. Daha önceki senelerde olduğu gibi, Poznan ekibinin yaptığı kazılarda elde edilen bitki kalıntılarının Seviye 1 düzeyindeki incelemesi yapılamamış ve bu örnekler Poznan Ekibi arkeobotanisti Marek Polcyn tarafından, Kültür Bakanlığı tarafından sağlanan izinle Polonya’daki laboratuvarlarda incelenmek üzere yurt dışına götürülmüştür. Bununla beraber TP alanından elde edilen ‘öncelikli’ kategorisine giren örnekler Seviye 2 düzeyinde kazı sezonu esnasında incelenmiştir.

A total of 27 samples derived from excavation units designated as priorities for specialist feedback in the course of the 2007 season (Table 11). These priority samples received level 2 assessment (identification and counting of crop and wild plant remains in a larger random subsample of 1 mm flot fraction, plus a subsample of the >4 mm fraction – see Bogaard et al. 2005 for methodology).

Excavation area	No. samples	Priority samples
40x40	252	6
South	194	15
Team Poznan	156	6
West Mound	25	0
<i>Total</i>	627	27

Table 11. Priorities units for specialist feedback 2007 season.

Considering all of the units processed in 2007 and assessed at levels 1 or 2, c. 150 contain at least 100 items and are potentially rich enough to warrant full analysis.

Around 20 of these samples are also very high in density, containing hundreds or thousands of seed/chaff items per litre soil. These particularly rich/dense samples come from areas of in situ burning (e.g. fires spots in the South Area, hearth fills in TP) and from midden deposits across the site.

Around 15 samples from the 2007 excavations, mostly from units designated as priorities, were of special botanical interest, either because they reflected the discrete residues of in situ burning events and/or due to exceptional preservation/content. These samples were subjected to further intensive identification and quantification in the field, corresponding more or less to full analysis. Below we present initial description, interpretation and discussion of samples from selected units of particular archaeobotanical interest.

### **South Area, fire spots in Space 314, Building 65**

Roddy Regan and his team excavated seven fire spots - discrete lenses of charred residue from in situ burning events - in Space 314, north of the main room (Space 297) of Building 65. Space 314 appears to have functioned as an external area or yard (Regan, this volume). The botanical material from these lenses is of particular interest since it appears to have been charred in situ and can be used to characterise individual burning/depositional events and localised activities. The content of these lenses varied but all of them contained fuel residues (wood charcoal and disaggregated charred animal dung). In several cases, distinctive combinations of crop and wild plant material, representing specific activities/events, accompanied the fuel residues.

Unit (14546) was exceptional in producing the first identified legume pod remains from the site. Preliminary identification using the site's herbarium collection suggests that these fragments derive from indehiscent pods of domesticated pea (*Pisum sativum* L.). Further work is planned to confirm this identification. Pod fragments are not usually preserved by charring, and these remains may represent some of the earliest direct evidence for domesticated/indehiscent *Pisum* in western Asia.

In addition to the pea pod fragments, the sample from unit (14546) contained some peas plus numerous seeds from a large-seeded species of *Galium* (bedstraw), amongst other wild/weed seed types. We tentatively interpret this sample as containing the by-product of cleaning peas by hand prior to consumption. The large-seeded wild taxa (especially *Galium*) mimic the cultivated peas in size and so would plausibly have been picked out by hand, along with occasional pods/pod fragments.

Other distinct 'events' preserved by individual fire spots include unit (14548) (tentatively interpreted as containing the by-product of hand-cleaning of glume wheat grain and containing an abundance of *Convolvulus* (bindweed) seeds) and units (14537) and (14564) (perhaps representing weedy by-products from crop fine sieving and hand-cleaning). Together with unit (14546), these samples afford valuable insight into the nature and scale of household processing/consumption events that are normally difficult to tease apart in midden areas. Moreover, the particular association of certain crops with specific arable weed taxa will be analysed to shed light on growing conditions and husbandry practices.



### **South Area, “Level IV” midden**

A midden area located to the south of Building 44 (assigned to Mellaart’s Level IV) and apparently contemporary with it provides a useful series of deposits for investigating the archaeobotany of the site’s later Neolithic phases. A prioritised unit (15728) from the midden contained a mixture of spent fuel (principally wood charcoal), food processing waste (from nutshell/fruitstone material to cereal chaff) and reed/sedge material (reed stems, sedge seeds) familiar from the site’s earlier phases. Continuity in middening behaviour is paralleled by fine-grained similarities in potential arable weed taxa (e.g. *Convolvulus* - bindweed; *Vaccaria* – cow cockle) between this unit and earlier deposits, including units dating two ‘house generations’ earlier in the same area (associated with Building 65). These specific long-term continuities in behaviour (middening, crop husbandry practices etc.) are remarkable and will form an interesting comparison with changes/continuities in other aspects of life at the site.

### **4040 Area, hackberry cluster, Building 55**

Unit (14926), in a side/storeroom area of Building 55, contained a small (< 1 litre) cluster of hackberry (*Celtis* sp.) nutlets. These nutlets are commonly found at a low density across the site – as at the earlier site of Aşıklı Höyük in Cappadocia (van Zeist and de Roller 1995) – and are distinctive in that their calcium carbonate-rich shells survive without charring (e.g. Pustovoytov et al. 2004). This deposit attests directly to small-scale storage of this wild plant food at Çatalhöyük and can be added to the growing body of evidence for wild plant food storage alongside hoarding of crops in household storerooms (e.g. Bogaard et al. 2005; Fairbairn et al. 2007; Twiss et al. submitted a, b). Phytolith samples were taken around the cluster, but there were no visible traces of a container.

### **4040 Area, dung-rich pit fill**

Unit (15676), from the lower fill of a distinct pit cut in Foundation Trench 24, contained a high-density, midden-like deposit. The samples contained a mixture of food processing waste, spent fuel and wild seeds from wetland (sedges) and drier habitats. What was distinctive were several fragments of charred animal dung, which contained embedded seeds, potentially offering information on animal diet. One fragment contained a seed of clubrush (*Bolboschoenus maritimus*), while another contained the caryopsis of a medium-sized, laterally flattened grass that has yet to be fully identified. The fine (<1 mm) fraction of the sample contained numerous tiny grasses (including the late-fruited taxon *Aeluropus*), rush (*Juncus*) and sedge seeds. This appears to be a sample rich in dung-derived material, and such samples are highly useful for identifying the nature of animal feeding as well as for comparing pastoral and arable habitats. Several other samples of this type were analysed this season and form part of the MSc dissertation work by Michael Wallace (see below).

### **West Mound**

Though none of the West mound samples this year was archaeobotanically rich, a well preserved grain of hulled barley was recovered from Trench 7, unit (15117), interpreted as occupation debris (including several large storage vessels) resting on a floor. Recent work on Building 25, West Mound (Bogaard et al. in prep), previous work on the upper levels of the East mound (Mangafa in Kotsakis 1996) and assessment of priority samples from the upper levels in the TP Area all suggest that hulled barley represents a newly introduced crop in the later part of the Neolithic

sequence which continued to be grown by the inhabitants of the Early Chalcolithic West mound.

### **Student Research Projects**

#### ***Exploring plant use and husbandry in the site's lower-middle phases (Dragana Filipović)***

In the course of new excavations at Çatalhöyük numerous questions have arisen relating to the social and economic significance of early crop cultivation within the settlement itself, and in the broader context of the Near East (e.g. Hodder 2006). Due to the systematic sampling of archaeological deposits for archaeobotanical remains at the site, it is now possible to address various bio- and geo-archaeological issues, including the role of domesticates versus wild plants and the nature of farming. Some of these questions have already been considered in papers by a range of specialists involved in the work at the site (e.g. Fairbairn et al. 2005) and these provide a good basis for future analyses.

This PhD project is focused on the evidence for plant use and crop husbandry in the early-mid Neolithic sequence of Çatalhöyük East. The aim is to identify the major taphonomic factors affecting the assemblage, to consider the role specific plants and processes played in the human and animal diet, to reconstruct crop-growing conditions and to assess possible relationships between crop and animal husbandry. A newly expanded archaeobotanical dataset will make it possible to re-examine previously proposed models of farming at Neolithic Çatalhöyük.

Archaeobotanical analysis of selected flotation samples is currently underway in order to address these research aims. The focus of this analysis is an assemblage of flotation samples from over 100 units excavated during the 1995-1999 seasons in the South, North and BACH areas, selected on the basis of archaeological context and archaeobotanical richness.

Once sorting, identification of crop and wild plant remains and quantification are completed, statistical and ecological methods will be used to consider internal variability across the archaeobotanical dataset and to compare it with ethnoarchaeological models (e.g. crop processing, animal dung fuel, crop husbandry regimes). It is anticipated that research questions will be refined in response to the potentials and limitations of the finalised archaeobotanical dataset.

#### ***The archaeobotany of a burned house: Building 63, Istanbul Area (Müge Ergun)***

The aim of this Msc dissertation is to analyse 21 archaeobotanical samples recovered in the 2005 and 2006 excavation seasons in the Istanbul Area of the East mound. Samples were mainly selected from a partially excavated burnt building (Building 63), with a few further samples from outside the building, in the southern part of the excavated area.

In the excavated part of Building 63, four spaces and two building phases ending with a fire were defined. The latest phase was exposed in each space, while the earlier phase was partially defined only in the south-eastern space of the building. The archaeobotanical samples from Building 63 selected for analysis derive from well sealed and archaeobotanically rich contexts, including bin, basin and fire installation

fills. Burning of the structure preserved several high-density in situ deposits of plant remains, which can ultimately be compared with other burned structures uncovered in recent excavations (e.g. Bogaard et al. 2005) as well as with Helbaek's studies (e.g. Helbaek 1964). Compositional variation between contexts will be discussed in terms of the presence of domesticated and wild plants in the sample and their economic/cultural roles.

***Ethnoarchaeological work on sheep dung and application to selected samples from Catalhöyük (Michael Wallace)***

There are many archaeological cases of charred plant material being found in association with dung, a frequently used fuel source (Miller 1984a). Samples of mixed dung and plant material have the potential to be used to reconstruct livestock diet (Charles 1998). Digestion, however, is a taphonomic process that tends to bias samples towards hardier plant material. To interpret animal diet it is therefore essential to understand the effects of digestion on assemblage composition. This is especially important as dung is often found fragmented and may contain material mixed-in post-digestion (Miller 1984b: 76). As of yet there are few studies that approach this issue from an archaeological context or with specific reference to archaeologically pertinent cereals (Jones 1998).

Despite the usefulness of ethnographic studies it is often unclear whether cereal parts in dung were mixed in post-digestion or not (i.e. Anderson & Ertug-Yaras 1998). Therefore an experiment was designed under controlled conditions to allow 100% collection of uncontaminated dung. To maximise its relevance to Catalhöyük a strictly managed diet of cereals were fed to sheep. The experiment ensured that exactly what went in to and what came out of the sheep was precisely known and thus that digestion could be studied in isolation from any other taphonomic factor.

Experimental results suggest both cereal chaff and grain have a very low survival rate through sheep digestion. The broad implication is that the frequent occurrence of well preserved cereals mixed with dung may be a product of post-digestion contamination and cannot necessarily be used as a basis to argue for cereal foddering. Ethnographic studies of dung cake use offer insight into how material can become mixed in with dung. Many seeds do survive digestion (i.e. Gardner et al. 1993; Russi et al. 1992) and thus the potential to reconstruct part of animal diets remains; however the experimentation highlights the need for caution and informed interpretations. The repetition and broadening of the experiments will greatly improve the reliability in which dung is used archaeologically.

***Study of botanical inclusions in mudbrick***

Together with Philippa Ryan we conducted a pilot study in the extraction and identification of plant remains in burned mudbricks. The aim is to improve understanding of which plant materials were incorporated into this building material (e.g. as temper). Several samples of brick from the pit fills in Space 261 were selected based on the high quality preservation of botanical impressions on their surface. Latex casts of these impressions were taken and tentatively identified, but better results were obtained when the bricks were broken into large fragments and the newly exposed facets studied under a low-power microscope (cf. Willcox and Fornite 1999). A number of intact silica skeletons of macroscopic plant parts were observed, including rachis, spikelet and awn fragments (Figure 147). These remains were



Figure 147. Cross-section of a burnt mudbrick showing whole silica skeletons of plant parts (spikelets, rachis, awn etc.) that can be identified macroscopically

tentatively identified using morphological criteria and will be studied further through phytolith analysis (see Phytolith archive report for 2007). Our intention is to apply this approach to broader set of samples in 2008 in order to improve understanding of plant use in mudbrick manufacture (e.g. crop by-products), and potentially also to infer aspects crop processing and harvesting practices.

### ***Tuber identification (Catherine Longford)***

The remains of plant tubers (whole and fragmented) are a frequent component of Çatalhöyük deposits both in flotation samples and from the on-site dry-sieving process. Their appearance on the site in such quantities is unusual though they are by no means an unknown component of assemblages at other western Asian sites. The reasons for their presence in the Çatalhöyük have been usefully considered by Wollstonecroft and Erkal (1999). Possible explanations include: collection of the tubers for use by humans as a food or medicine; inclusion in mudbricks as a strengthening agent; the result of livestock digestion; and accidental collection along with reeds/sedges for furnishings (mats, baskets etc).

As part of a project being run at the University of Sheffield, an assessment will be made of a range of samples, including those rich in whole or large fragments of tuber and those apparently lacking tuber material at an initial scanning stage, in order to establish the identification of the commonest tuber types, the frequency of tuber material (whole and fragmentary) and the processes undergone by the tubers (e.g. deliberate processing, digestion by livestock etc).

### ***Development of an ethnobotanical/archaeobotanical database (Füsün Ertuğ)***

In the 2006 season, we decided to create a database combining ethnobotanical and archaeobotanical data. The aim is to improve our ability to construct reliable analogies between past and present plant use in Anatolia, as well as to identify clear differences.

During the summer of 2007 we worked on the initial planning of the database, which will combine ethnobotanical data gathered by Füsün Ertuğ (Istanbul, Turkey) and Osman Tugay (Selçuk University, Konya) with archaeobotanical data from Çatalhöyük and other Anatolian sites. As Ertuğ's ethnobotanical data were recorded in various databases or card files, the first step was to combine these into one Excel file so that they could be transferred later into a database program. In the first week, this work was partly completed with the available data. Some data will need to be added later, when the database program has been chosen.

Initial ethnobotanical data entries (over 920) cover three areas of Anatolia: Central Anatolia (Melendiz region-Aksaray), SW Anatolia (Bodrum-Muğla) and Inner west

Anatolia (Buldan-Denizli). This dataset includes detailed data for around 426 genera and 790 species within 121 families.

Once these datasets were combined, the next step was to consider appropriate data fields for the archaeobotanical data, and to identify where these usefully overlap with the ethnobotanical data. Through discussion with Dragana Filipovic, it was possible to identify appropriate fields. Further work will include translation of ethnobotanical information from Turkish into English. Dragana Filipovic will enter the archaeobotanical data while doing her Ph.D. and F. Ertug will work on the actual transfers and translations.

### **Collaborative projects**

There are currently two major research projects involving the archaeobotanical team and other specialists working at the site.

#### ***NSF-funded project, 'Economic integration and cultural survival at Neolithic Catalhöyük, Turkey'***

Dr. Katheryn Twiss (faunal team) and Dr. Amy Bogaard are leading a three-year project that considers the nature of crop/livestock management and consumption midway through the Neolithic sequence (around Mellaart's Level VI) and in subsequent phases (e.g. Mellaart's Levels V-IV), when there appears to be a shift towards greater household autonomy (e.g. Düring 2005, 2006; Hodder 2006). The aim is to assess the hypothesis that integration of crop and livestock husbandry increased household production and enabled the community to survive in a period when other 'megasites' collapsed.

Our goals for this season centred around selection of excavation units for analysis using a set of chronological, contextual and archaeobotanical/zoarchaeological criteria. Building 52 in the 4040 Area, for example, dates to around Level VI and offers a range of high-integrity ecofactual deposits charred in situ (Bogdan 2005; Bogaard et al. 2005; Twiss et al. 2005). A list of c. 34 'primary' contexts from this structure were therefore targeted for full analysis, most of which was completed during the field season. Selection and analysis of units by the botanical and faunal teams (see also faunal archive report for 2007) will continue through 2007 and 2008. Meanwhile, selection and processing of samples for various isotopic analyses is also underway in collaboration with Dr. Jane Evans (NERC Isotope Geosciences Laboratory, Keyworth) and Dr. Jessica Pearson (University of Liverpool).

#### ***NERC-funded project, 'Crop stable isotope ratios: new approaches to palaeodietary and agricultural reconstruction'***

This three-year investigation focuses on the use of stable nitrogen and carbon isotope ratios in plant, faunal and human remains for understanding palaeodietary pathways and for tracing the impact of crop husbandry practices (e.g. Araus et al. 1997; Bogaard et al. 2007). The Catalhöyük case study involves Bogaard, Charles, and Jones on the botanical team in collaboration with Dr. Jessica Pearson (Liverpool), Dr. Tim Heaton (NIGL/Keyworth), the faunal team and the human bone team.

Work this season focused on the collection of modern botanical samples – crops grown under irrigated and unirrigated, manured and unmanured conditions in the Konya province. This work was carried out with Dr. Osman Tugay of Selcuk University and Dr. Füsün Ertuğ (ethnobotanist on the team) (Figure 148). The goal of this work is to establish baseline values for crops grown under varying conditions at multiple



Figure 148. Ethnobotanical fieldwork in the Konya area, June, 2007

locations from Anatolia and the eastern Mediterranean, through Greece and the Balkans to central, western and northern Europe. Modern botanical fieldwork was therefore carried out in a number of these areas (including the Konya region) in the spring and summer of 2007, with a smaller number of collection trips to other farming areas and experimental stations to follow in 2008. Once these modern plant and soil samples have been analysed isotopically, they can be used as benchmarks for interpreting isotopic measurements of plant remains from Çatalhöyük and other sites.

## References

Anderson, S. and Ertuğ-Yaras, F. 1998. Fuel, fodder and faeces: an ethnographic and botanical study of dung fuel use in central Anatolia. *Environmental Archaeology* 1: 99-109.

Araus, J.L., Febrero, A., Buxo, R., Camalich, M., Martin, D., Molina, F., Rodriguez-Ariza, M.O., Romagosa, I. 1997. Changes in carbon isotope discrimination in grain cereals from different regions of the western Mediterranean Basin during the past seven millennia. Palaeoenvironmental evidence of a differential change in aridity during the late Holocene. *Global Change Biology* 3: 107-118.

Bogaard, A., Charles, M., Ergun, M., Jones, G., Ng, K., Polcyn, M. and Stone, N. 2005. Çatalhöyük Archive Report 2005--Macro-botanical remains, [http://www.catalhoyuk.com/archive\\_reports/2005/ar05\\_13.html](http://www.catalhoyuk.com/archive_reports/2005/ar05_13.html).

Bogaard, A., Heaton, T.H.E., Poulton, P., Merbach, I. 2007. The impact of manuring on nitrogen isotope ratios in cereals: archaeological implications for reconstruction of diet and crop management practices. *Journal of Archaeological Science* 34: 335-343.

Bogdan, D. 2005. Çatalhöyük Archive Report 2005--Building 52, [http://www.catalhoyuk.com/archive\\_reports/2005/ar05\\_13.html](http://www.catalhoyuk.com/archive_reports/2005/ar05_13.html).

Charles, M. 1998. Fodder from dung: the recognition and interpretation of dung-derived material from archaeological sites. *Environmental Archaeology* 1: 111-122.

- Fairbairn, A.S., Martinoli, D., Butler, A. and Hillman, G. 2007. Wild plant seed storage at Neolithic Çatalhöyük East, Turkey. *Vegetation History and Archaeobotany* 16: 467-479.
- Gardner, C., McIvor, J. and Jansen, A. 1993. Passage of legume and grass seeds through the digestive tract of cattle and their survival in faeces. *Journal of Applied Ecology* 30: 63-74.
- Helbaek, H. 1964. First impressions of the Çatal Hüyük plant husbandry. *Anatolian Studies* 14: 121-123.
- Hodder, I. 2006. *The Leopard's Tale: Revealing the Mysteries of Çatalhöyük*. London: Thames & Hudson.
- Jones, G. 1998. Distinguishing food from fodder in the archaeological record. *Environmental Archaeology* 1: 95-98.
- Kotsakis, K. 1996. Çatalhöyük Archive Report 1996 --The Summit Area, [http://www.catalhoyuk.com/archive\\_reports/1996/ar96\\_04.html](http://www.catalhoyuk.com/archive_reports/1996/ar96_04.html)
- Miller, N. 1984a. Intentional burning of dung as fuel: a mechanism for the incorporation of charred seeds into the archaeological record. *Journal of Ethnobiology* 4: 15-28.
- Miller, N. 1984b. The use of dung as fuel: an ethnographic example and an archaeological application. *Paléorient* 10: 71-79.
- Pustovoytov, K.E., Riehl, S. and Mittmann, S. 2004. Radiocarbon age of carbonate in fruits of *Lithospermum* from the early Bronze Age settlement of Hirbet ez-Zeraqon (Jordan). *Vegetation History and Archaeobotany* 13: 207-212.
- Russi, L., Cocks, P. and Robers, E. 1992. The fate of legume seeds eaten by sheep from a Mediterranean grassland. *Journal of Applied Ecology* 29: 772-778.
- Twiss, K.C., Martin, L., Pawlowska, K. and Russell, N. 2005. Çatalhöyük Archive Report 2005--Animal Bone Report, [http://www.catalhoyuk.com/archive\\_reports/2005/ar05\\_13.html](http://www.catalhoyuk.com/archive_reports/2005/ar05_13.html)
- Twiss, K. C., A. Bogaard, D. Bogdan, T. Carter, M. P. Charles, S. Farid, N. Russell, M. Stevanović, E. N. Yalman, and L. Yeomans. submitted a. Arson or accident? The burning of a Neolithic house at Çatalhöyük. *Journal of Field Archaeology*.
- Twiss, K. C., A. Bogaard, M. P. Charles, J. Henecke, N. Russell, L. Martin, G. Jones. submitted b. Plants and animals together: interpreting organic remains from Building 52 at Çatalhöyük. *Current Anthropology*.
- Willcox, G. and Fornite, S. 1999. Impressions of wild cereal chaff in pisé from the 10th millennium uncal B.E at Jerf el Ahmar and Mureybet: northern Syria. *Vegetation History and Archaeobotany* 8: 21-24.



Wollstonecroft, M., and Erkal, A., 1999. Çatalhöyük Archive Report 1999--Summary of plant processing experiments at Çatalhöyük, August 1999, [http://www.catalhoyuk.com/archive\\_reports/1999/ar99\\_22.html](http://www.catalhoyuk.com/archive_reports/1999/ar99_22.html)

Van Zeist, W. and G.J. de Roller 1995. Plant remains from Aşıklı Höyük, a pre-pottery Neolithic site in central Anatolia. *Vegetation History and Archaeobotany* 4: 179-185.

## **Phytolith Archive Report 2007 / Fitolit Arşiv Raporu 2007 - Philippa Ryan – Institute of Archaeology, University College London**

### **Abstract**

The collection of samples for phytolith analysis took place between 14 July and 5 August by Philippa Ryan. Samples were analysed on site for priority analysis. Several other units were also studied on site: many of these were from visible phytolith remains from a variety of contexts such as burials, burnt mudbricks, and floors. Additional samples were taken back to UCL for further analysis. Phytoliths are durable plant microfossils, which are produced in and between the epidermal cells of certain plants. Phytolith analysis is being used to investigate the diversity of micro-environments around the site being exploited, and to investigate changes in plant usage and procurement over time.

### **Introduction**

Phytoliths are durable opaline silica plant microfossils, which are produced in and between the epidermal cells of certain plants. Grasses and sedges are the most abundant producers, but phytoliths also occur in lower levels in several other plant families. Phytoliths are formed from the soluble silica taken up by plants in groundwater and environmental conditions can affect phytolith production and levels of silicification. Areas of epidermal tissue may become silicified resulting in adjoining phytoliths referred to as 'silica skeletons' (Helbaek 1960:540, Renfrew 1973: 9). Silica skeleton phytoliths are abundant in the Çatalhöyük samples, and the presence of very large silica skeletons is apparent in the unusual level of visible phytolith remains at the site. This archive report will review this seasons sample collection, field analysis methods and some initial results of samples analysed during the field season.

### **Özet**

Fitolit analizleri için, 14 Temmuz ve 5 Ağustos tarihleri arasında Philippa Ryan tarafından örnekler alınmıştır. Örneklerin ön analizleri alan içerisinde yapılmıştır. Bunun dışında ünitelerin bazıları da alan içerisinde çalışılmıştır: bunların çoğu gömüt, yanmış kerpiç tuğla ve taban gibi fitolit kalıntılarının gözle görülür derecede belirgin olduğu kontekslerden alınmıştır. Buna ek olarak alınan örnekler incelenmek üzere Londra Üniversitesi'ne götürülmüştür. Fitolit, bazı bitkilerin epidermal hücreleri içerisinde veya arasında korunan, dayanıklı mikrofosillerdir. Fitolit analizleri yerleşim alanları çevresindeki mikroekolojilerin çeşitliliğini araştırmak ve zaman içerisindeki bitki

kullanımındaki deęişiklikleri ve bitkilerin elde edilmesi ile ilgili işlemleri anlamak için kullanılmaktadır.

## **Giriş**

Fitolit, bazı bitkilerin epidermal hücreleri arasında veya içinde bulunan dayanıklı yarı şeffaf cam silika bitki mikrofosilleridir. Ot cinsi bitkiler en çok fitolit sağlayan çeşitler olup bununla beraber daha alt seviyedeki bitki çeşitlerinde de bulunabilir. Fitolitler, bitkilerin tabansuyundan aldığı çözülebilir silika yoluyla oluşur ancak çevresel koşullar fitolitin oluşmasını ve silika oluşum derecesini etkiler. Epidermal zarın bazı bölümlerinin silikalaşması, 'silika iskeleti' denen birleşmiş fitolitleri oluşturur (Helbaek 1960:540, Renfrew 1973:9). Çatalhöyük örneklerinde bu tip silika iskeleti fitolitleri bolca bulunmakta olup, alandaki yüksek sayıda bulunan gözle görülebilir fitolit kalıntıları arasında çokça geniş silika iskeletlerine de rastlanmaktadır. Bu arşiv raporunda, bu sezonun örnek koleksiyonu, alan analiz metodları ve kazı sezonu sırasında yapılan incelemelerin ön sonuçları yeniden gözden geçirilecektir.

## **METHODS**

### **Sampling**

Seven samples were analysed on site from units designated during priority tours units. Additionally, several samples from other units were analysed, for example when visible phytolith remains were seen.

109 samples were taken back to UCL for further analysis during 2007/8. Sediment samples were taken mainly from middens and from Buildings 65 and 59. Samples were also taken from several excavated firespots; from the possible 'courtyard' space adjacent to Building 65, and also from Spaces 329, 328, and Foundation Trench 19 in the 4040 Area. A number of samples were also taken from visible phytolith remains.

Samples from floors are taken mainly as 'scrape samples'. These samples are taken to <5mm in depth. Many of the samples taken from middens are 'microstratigraphy' samples - taken from the thinner lenses sometimes visible in section within broader designated excavation units. 'White samples' is the term used to describe the samples (often less than 10mg) taken from visible phytolith remains. These three sample types are effectively 'micro-units' and many different 'micro-units' can be examined for one 'excavation unit'. This smaller scale of analysis is used to try and interpret types of plant usages and disposal within specific contexts. Phytoliths are present in every type of sediment/ deposit: samples taken from bulk samples will contain phytoliths from many different depositional pathways, and this may make it difficult to interpret plant based activities within particular locations. Some samples from bulk samples are analysed however in order to get a broader overview of plants present, and changes over time- these are termed 'averaging samples' and are taken mainly from middens.

### **Field Analysis**

Some samples, in particular those for priority unit analysis, are partially processed on site. Carbonates and clays are removed from sediments in order to get an overview of the main types and levels of phytoliths present (for fuller details of methods see the 2006 archive report). Fuller laboratory analysis at UCL enables the removal of other

components present in the sediments, such as organics. Since not all of these elements can be removed on site quantitative analysis is not possible.

### **Priority Unit Analysis (between 14 July – 5 August)**

- Unit 15728.s5, Space 319, South Area

This unit had a moderate level of phytoliths present but also a high level of sediment with more silts than clays. This midden unit visually looks like it may have partially derived from household refuse/ rake-outs. However this unit does not have any finer microstratigraphy within it and consists of a single homogenous midden lens. This unit has a ‘mottled’ appearance and has large fragments of charcoal visible. It visually looks like this midden unit is possibly a mix of household rake-out deposits that have become mixed with sediments.

Phytoliths present are dominated by plateys- a dicot phytolith form. There is a very low level of phytoliths from grass husk phytoliths, one is a wild grass husk phytolith and the other husk silica skeletons were unidentifiable. There are moderate levels of *Phragmites* sp. leaf and stem multi-cell phytoliths. It is possible that the *Phragmites* sp. and dicot phytoliths are from the ashy remains of fuel and the levels of dicot phytoliths suggest high levels of burnt wood. The high levels of organics present (which cannot be removed during field analysis) means that the husk phytoliths and some other multi-celled phytoliths cannot be seen clearly enough for fuller identification.

Full analysis of this sample will be undertaken at UCL.

- Unit 15676. s3, s4, Foundation Trench 24, 4040 Area

s3 - ‘Microstratigraphy sample’: A thick black lens at the top of this midden unit was sampled. This lens had high levels of large pieces of charcoal and dark gray ash. Phytoliths present were dominated by dicot phytoliths- likely derived from burnt wood, a low level of *Phragmites* sp. stem phytoliths and a high number of one specific type of sedge stem multi-cell phytolith.

s4 - ‘Averaging sample’: This sample provides a more general picture of phytoliths present within this unit. There are high levels of sedge stem multi-cell phytoliths and a moderate level of wild grass husks silica skeletons. There are a low number of wheat and barley husk silica skeletons present. There are a high number of woody dicot phytoliths.

The two samples are fairly similar in composition. However, the microstratigraphy sample (s3) has a much higher percentage of phytoliths present, and the averaging sample (s4) has higher levels of sediment present. The averaging sample has wild grass and cereal husk phytoliths, whilst the microstratigraphy sample has not. This demonstrates the different kinds of data that may be obtained by taking phytolith samples from bulk samples as opposed to from individual lenses.

Full analysis of these samples will be undertaken at UCL.

- Unit 15820.s8, TP Area

8 samples were taken for phytolith analysis from micro-stratigraphy lenses within this midden. This was a very ashy midden, consisting of multiple lenses of light to dark gray ash with occasional thin more compact lenses in-between ashy lenses. One 'averaging sample' s8, was analyzed on-site. This sample had a very high percentage of phytoliths. The high density of phytoliths from wild grass stems and *Phragmites* sp. leaves and stems suggest that the ash is predominately derived from grasses. These wild grass phytoliths may possibly derive from dung fuel. Platey phytoliths (from woody dicots) are also present, though in low numbers, suggesting that some ash may also derived from wood. Wheat and barley husk phytoliths are also present.

Full analysis of these samples will be undertaken at UCL.

- Unit 15829.s7, s12, TP Area

Five phytolith samples were taken from this hearth which contained insitu ashy remains. Samples were taken from different locations within the ashes in order to see if there are variable distributions in phytolith remains found. Two samples were analysed on site.

s7 – One Area looked like it may be the remains of dung fuel. It was possible to pick up layers of compact dark gray ash, and tiny visible flecks of phytoliths were present. High levels of a specific type of sedge stem multi-cell phytoliths were present.

s12 - A second sample was analyzed from a light gray loose ashy Area. Phytoliths present included sedge stem multi-celled phytoliths, *Phragmites* sp. leaves and stems and wheat husk silica skeletons.

Full analysis of these samples will be undertaken at UCL.

- Unit 15784.s3, Space 329, South Area

This deposit was ashy and organic rich. There was a high density of phytoliths in this sample. There is a broad mixture of phytolith forms present rather than any dominant types. There were more single celled than multi-celled phytoliths, and many phytoliths had the appearance of being broken. This fits with the idea that this unit consists of re-deposited material.

### **Burnt Mudbrick Analysis**

- Unit 14825.s3, Space 261, South Area

Several burnt mudbricks found in Space 261 had visible plant impressions. When some of these bricks were broken open, as well plant impressions, a number of silica skeleton casts of various plant parts could be seen. These bricks were analysed in conjunction with Dr Amy Bogaard and Dr Michael Charles who identified the macroscopic plant parts (for further detail see the macrobotanical archive report). One brick had particularly clear and abundant silica skeleton remains and it was studied and sampled in greater detail. Additional phytolith samples were taken from 2 more bricks, but in these bricks silica skeleton remains were more fragmentary.

Appropriate ways of processing and analysing these phytolith samples are being tested: carbonates need to be removed to enable clear analysis of phytoliths present, however these samples are so small (<1mg) that the usual methods have to be

adapted. Phytolith slides have been made for one of the spikelet silica skeletons identified from the main brick analysed, and from what appeared to be a silica skeleton cast of a stem from a second brick. The silica skeleton phytoliths derived from the spikelet were identified as *Triticum* sp. The silica skeletons analysed from the stem were from an unidentified grass stem. Further analysis of additional samples will be undertaken during 2007/8, and the sampling of more burnt bricks is planned for 2008.

It is hoped that these investigations might provide information relating to what temper material was being used in mudbrick making.

### **Samples from Burials**

- Unit 15924.s3, 4040 Area

Visible phytoliths were found in and around a shell found in association with a skeleton. Phytoliths present were from Panicoid grass leaf/stem silica skeletons. This phytolith type is frequently associated with basketry. The shell was full of phytoliths suggesting possibly that the shell had been contained within some sort of woven material.

- Unit 15466.s2, Foundation Trench 1, 4040 Area

Visible phytoliths were found associated with a juvenile burial skeleton (15467). Phytoliths present were from Panicoid grass leaf/stem phytoliths, and these may be from basketry remains. Basketry patterning could not be seen- but this was a very disturbed context so this is not surprising.

Unit 15746. s3, Building 65, South Area

Visible cordage could be seen on the skeleton (15748) of a child. Phytoliths present were from unidentified wild grass stem silica skeletons

### **Other Samples**

- Unit 15107. s1, West Mound, Trench 7

Visible matting impressions were sampled. Some sedge cone phytoliths were present. Whilst the matting impressions are clear the phytolith remains are too thin to sample separately from sediment so results were indeterminate.

- Unit 15732. s2, Building 65, South Area

Visible phytoliths were seen within a wall of Building 65. This was interpreted by excavators as a wooden beam; however phytoliths present were from unidentified monocot stem multi-cell phytoliths indicating that either grass or sedge stems were being used for some sort of construction purpose as opposed to a wooden beam.

- Unit 14072. s5, Building 68, South Area

Thick layers of visible phytoliths were found in the foundation layer beneath the earliest house floor. Phytoliths were all from *Phragmites* sp. leaf/stem silica skeletons. This has been observed beneath the earliest house floors of other buildings, and this may indicate the usage of *Phragmites* sp. leaf/ stems in the early construction phase of a building or that these are remains of removed roofing from the previous building (Roddy Regan pers. comm. 2007).

- Unit 15213.s3, Space 321, TP Area

Visible phytoliths were present in a 0.3cm lens within this midden unit. It looked like a layer of compacted chaff remains. Phytoliths present were *Triticum* sp. silica skeletons.

- Unit 14925. s4, Space 256, Building 55, 4040 Area

High densities of charred hackberries were found in this unit. A sample was taken for phytolith analysis in order to try and help identify the types of phytoliths that may be found in hackberries (*Celtis occidentalis*).

#### **Research Objectives include:**

Phytolith analysis will be used to investigate the diversity of micro-environments around the site being exploited for different types of purposes. Phytoliths will be used to investigate changes in plant usage and procurement over different timescales - seasonal and longer-term.

Whether certain phytolith signatures can be related to feature types within buildings as a way of understanding plant based activities in these locations is being explored. Samples from middens are being investigated to see if phytoliths can be used for investigating some types of depositional events/ activities within middens as a way of understanding some types of plant usage and disposal.

Visible phytolith remains will be further investigated for the potential insight they can provide into the usages of different plants for different types of woven materials (Rosen 2005; Wendrich 2005) and for construction purposes.

#### **References**

Rosen, A. 2005. Phytolith Indicators of Plant and Land Use at Çatalhöyük. In I Hodder (eds) *Inhabiting Çatalhöyük, reports from the 1995-99 seasons*. Cambridge: McDonald Institute for Archaeological Research; London: British Institute of Archaeology at Ankara, 203-212.

Wendrich, W. 2005. Çatalhöyük Basketry. In I Hodder (eds) *Changing materialities at Çatalhöyük: reports from the 1995-99 seasons*, Cambridge: McDonald Institute for Archaeological Research; London: British Institute of Archaeology at Ankara 333-339.

**Starch / Nişasta - Karen Hardy BioArCh, University of York, UK.**

#### **Introduction**

Starch-based foods today constitute about one third of the global dietary food intake. Evidence in the form of a combination of archaeological remains and ethnographic records suggests that starchy food had an important role in past human diet, indeed all major domesticates are sources of starch (cereals, rice, tubers, maize) (Hardy 2007). Recent work in various parts of the world has suggested the possibility of starch granules surviving in archaeological contexts to as far back as 180,000 years (Van Peer et al. 2003).

Starch is the major carbohydrate and energy reserve in seeds and plant tubers where it is usually found as granules. Most cereal starch is located in the endosperm which is the central and largest part of the grain, while starch granules are the dominant component of tuberous root crops such as potatoes. Starch is composed of a mixture of two polymers- amylose and amylopectin- which together form discrete granules (Evers et al 2004; Radley 1968), their packaging promotes stability, but they are also able to be readily decomposed enzymatically to water soluble sugars.

Though starch is normally susceptible to enzymatic attack, it is an inherently stable molecule and can survive for long periods of time in a stable environment. Starch also survives in dental calculus as the polysaccharides in dental plaque appear to protect it from the salivary amylase that would normally break it down (Hardy in press).

### **Giriş**

Nişastalı yemekler bugün global düzeyde tükettiğimiz yiyeceklerin üçte birini oluşturmaktadır. Arkeolojik kalıntılardan elde ettiğimiz kanıtlar ve etnografik kayıtların birleşimi nişastalı yiyeceklerin insanların beslenmesinde önemli bir rol oynadığını göstermektedir, gerçekten de bütün ehlileştirilmiş ana bitkiler nişasta özlüdür (tahıllar, pirinç, kök bitkileri, mısır) (Hardy 2007). Yakın zamanda yapılmış araştırmalar dünyanın çeşitli yerlerinde arkeolojik kontekstlerde korunmuş olarak bulunan nişasta granüllerinin tarihlenmesi 180,000 yıl öncesine kadar gitmektedir (Van Peer et al. 2003).

Nişasta bitki köklerinde ve tohumlarında genellikle granül şeklinde bulunan ana bir karbonitrat ve enerji kaynağıdır. Çoğu tahıl nişastası endosperm denen tahılın tanesinin en büyük parçası ve merkezinde yerleşmiş olup ayrıca nişasta granülleri patates gibi köklü bitki tahıllarının dominant unsurunu oluşturur. Nişasta birbirinden ayrılabilen granüllerden oluşan iki polimerin karışımından oluşmaktadır; amiloz ve amilopektin (Evers et al 2004; Radley 1968) dış kabuğu sağlam olmasına rağmen, enzimleri suda çözülebilir hale dönüşebilir.

### **Aims**

The aim of the sample collection in 2006/07 is

- a) to determine whether starch survives in the archaeological deposits at Çatalhöyük
- b) to determine what the potential for further more detailed study is
- c) to collect a range of background samples in order to create a context for the future artefact and dental calculus-based studies.

### **Fieldwork.**

Following a first visit in 2006, a small number of samples were obtained from a range of artefacts and a number of sub-samples were provided from the phytolith samples. In 2007, the focus was on obtaining a background picture of starch distribution. For this purpose, one house was selected (Building 65 South Area) for detailed sampling.



Samples were taken across the floor, into all sections and a small number of samples were also obtained from in and around cultural artefacts in Building 65.

Only one other area, (4040 Area, Space 315 unit (14921)) was sampled, immediately before it was taken down.

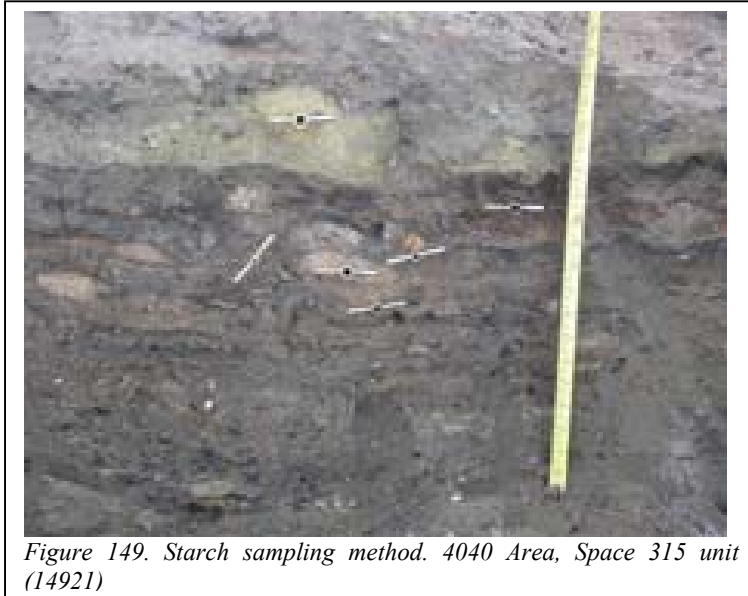


Figure 149. Starch sampling method. 4040 Area, Space 315 unit (14921)

The sampling strategy focused largely on obtaining uncontaminated material from inside section areas before these were taken down. An area of the section was selected and cleaned then a cork borer was inserted horizontally. On extraction of the cork borer, only the inside part of the sample was retained thus ensuring a

complete lack of contamination. The cork borer was cleaned and sterilized after each sample had been obtained. Samples were placed in eppendorf tubes and immersed in 75% ethanol for preservation purposes. Samples were kept refrigerated most of the time (except during transport).

#### **Laboratory extraction method.**

A small amount (normally around 0.50-0.8  $\mu$ ls) of sample were placed in centrifuge tubes with 200 ml of the heavy density liquid Sodium Polytungstate, at a density of 1.7. Starch has a density of 1.55 so this allowed for a wide margin of error in order to lose none of the samples. Samples were centrifuged at 1000 r.p.m for 15 minutes. The starch was then extracted from the surface and washed three times in ultra pure water then twice more in acetone. Samples were then dried. For rehydration and storage, tiny amounts of 70% ethanol were placed into each sample container. Samples were placed on microscope slides and mounted in Karo Corn syrup for optical observation.

Starch granules are identified initially using crossed polarized light in which case they exhibit birefringence. The refraction of the polarized light by its semi-crystalline structure gives the starch its characteristic Maltese Cross. Morphological analysis of the surface of the granules is conducted by measuring a range of attributes related to shape, size and location of the hilum. Starches are examined in detail under brightfield light, sometimes enhanced through the use of DIC (differential interference contrast). This can result ultimately in identification to genus level with occasionally, more detailed identification possible.

A light microscope (Meiji) was used with crossed polarized light to identify the presence and absence of starch, their overall morphology, size and distribution. Slide

scanning was carried out using a x20 objective while more detailed analysis was undertaken at x40. Once all samples had been examined and consistent morphological types had been identified, certain samples were selected for more detailed study and photography. This was carried out in 2006 using a Zeiss confocal microscope and in 2007 using an Olympus IX71 microscope. Photography and detailed analyses were carried out using a an oil immersion lens (Zeiss x63; Olympus x60) and all photography was undertaken using DIC (Differential Interference Contrast).

#### **Enzymatic degradation of starches.**

Starch granules have a characteristic morphology, however certain other micro-organisms display a similar birefringence that produces a Maltese Cross effect and they can be misidentified. Equally, starch is a biodegradable material and its survival needs to be demonstrated. Starch in archaeological samples is usually identified using a range of morphological criteria however as the survival of

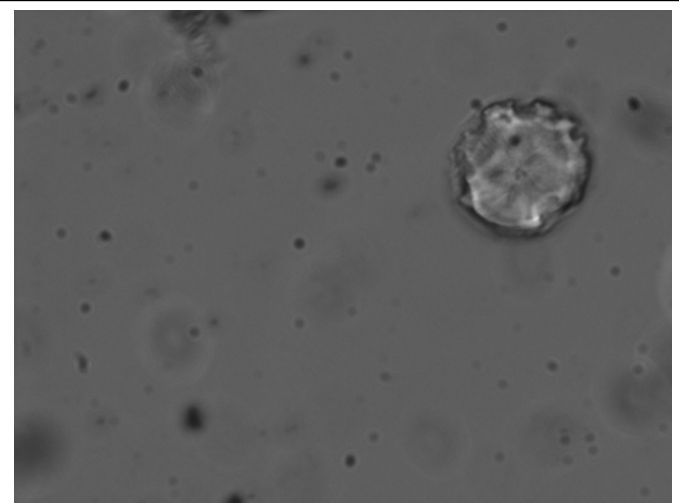


Figure 150 Çatalhöyük (Unit 12456) Base of Upper Midden Layer. Example of enzymatically degraded starch granule.

starch in archaeological deposits is not well understood, further tests to confirm the identity of starch as such are necessary. To confirm this, a sample of the starch was subjected to a thermostable alpha amylase test.

Two samples of starch from Çatalhöyük was selected and a small amount of the alpha –amylase enzyme (*B licheniformis*), which is uniquely destructive to starch, was injected onto a microscope slide containing several starches. The sample was then heated to encourage the amylase to become active. The degradation of the starches was then recorded photographically. This test has demonstrated, beyond any doubt, that the material occurring here is unaltered starch. This result is significant particularly in relation to a better understanding of the biochemistry of ancient starch and the potential for using starch as a means to reconstruct the starchy component of ancient diet.

#### **Results.**

To date only the material collected in 2006 has been analysed. Starch samples were examined from a morphological perspective and 6 clearly defined, distinct morphologies were identified.

- Type 1 is a small granule, between 10-15  $\mu$  in diameter, of angular shape with a central hilum. It was very common and occurred in almost all samples.
- Type 2 is a granule that is between 20 – 30  $\mu$  in diameter and oval to angular with a central hilum.
- Type 3 is a granule that is elongated with a hilum at one end. The length is between 40 -100  $\mu$ .

- Type 4 is a granule that is between 20 – 30  $\mu$  in diameter, round and with a weak extinction cross and central hilum.
- Type 5 are two granules together, the largest being 10-15  $\mu$  in diameter. These granules appear to be the types A and B characteristic of the cereals wheat and barley  $\mu$  in diameter.
- Type 6 is a very large granule around 100 >  $\mu$  in diameter and are lightly oval in shape. The hilum is not clear and appears to be at the extreme end of the granule. Type 6 is the only granule type that did not appear repeatedly. This type was created for several items found from one pottery sherd. They appear to be starch granules but further tests are needed to determine this with security.

An ethnobotanical programme is currently underway and no attempt is made here to interpret the genus represented by the six starch types identified in this preliminary study.

Two microscope slides were mounted and examined for each sample. Counts were made of the morphologically different starches.

Location	No of samples	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6
Bins	10	Very abundant	Abundant	Absent	Abundant	Present	Absent
Bricks	2	Very abundant	Very abundant	Present	Very abundant	Present	Absent
Floors	1	Very abundant	Abundant	Absent	Absent	Absent	Absent
Hearths	9	Very abundant	Abundant	Present	Abundant	Present	Absent
Ovens	2	Very abundant	Abundant	Absent	Abundant	Present	Absent
Middens	4	Very abundant	Abundant	Absent	Abundant	Present	Absent
Pottery sherds	2	Absent	Present	Absent	Absent	Absent	Present
Storage rooms	1	Very abundant	Very abundant	Absent	Very abundant	Absent	Absent

Table 12 Presence of starch.

Key: Present - <5 granules per slide  
 Abundant 5 – 20 granules per slide  
 Very abundant - >20 granules per slide.

Starch was found in all contexts though not to the same extent. Storage rooms and bricks contained the highest quantities of starch though bricks had the widest variety. Love (2006) noted a plant component in bricks while the phytolith evidence suggests the presence of sedge stems (Cyperaceae). Starch is a natural adhesive and may well have been used to bind the disparate elements, which came together to form mudbricks. Experimental work would be useful to test this, to determine whether Cyperaceae is a key starch sources or whether the starch composition represents a more widespread background ‘noise’ of manufacturing contamination.

Several morphologically similar types were identified repeatedly, though not all types occurred in all contexts.

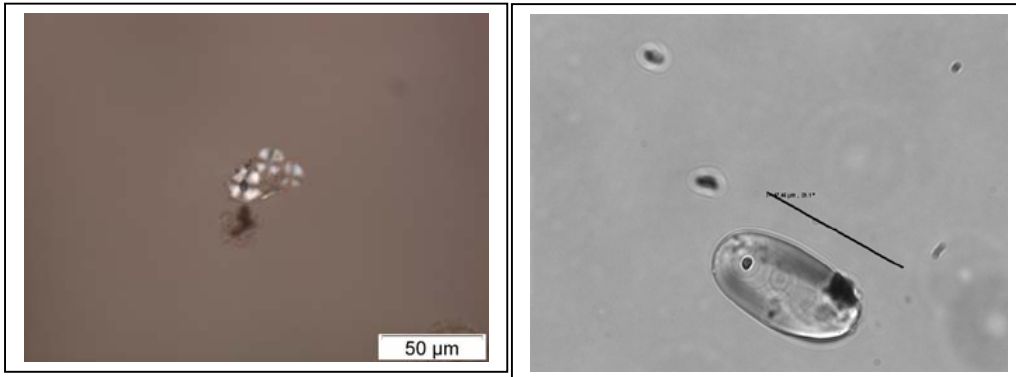


Figure 151 (Left) Starch granules from (12033), brick. (Type 1). (Right) Starch granule from unit 13079, (floor level near hearth) Size 47µ (Type 3)

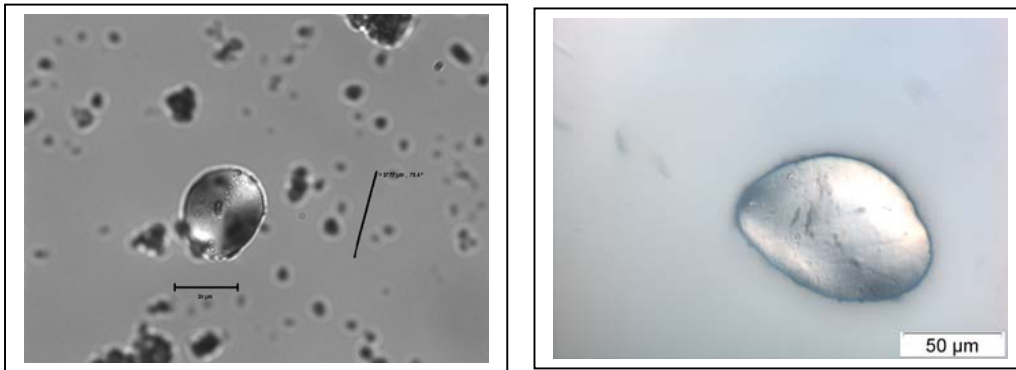


Figure 152. (Left) Starch granule from unit 13042, hearth rake out. Size 27 µ (type 4). (Right) Starch granule from unit 12488, pottery. (Type 6).

### Identification

Identification of plants from the starches is done by morphological comparison. A reference collection of endemic plants is used and a best fit is achieved. At Çatalhöyük type 5 (type A and B granules) is very likely to be a cereal while type 3 is likely to be from a tuber. Further more detailed identification of all types will need to wait until a reference collection has been compiled, work which is currently ongoing.

### Discussion

Starch survives in the deposits of Çatalhöyük and once the samples collected in 2007 are analysed this should provide a better understanding of its background distribution and repeated morphologies which will enable a type list to be established.

The preliminary analysis of one grinding slab produced very few starch granules. This is an interesting result particularly as Baysal & Wright (2006) have suggested that many grinding stones may not have been used for grinding food products however further extraction of a much larger sample, together with a description of how this sample was obtained will be undertaken in 2008 to determine whether this does indeed confirm use of grinding slabs for purposes other than seed or tuber grinding.

Starch survives in dental calculus. A preliminary study on starch extracted from dental calculus from another Turkish site ( Kaman Kalehöyük) has demonstrated that starch is plentiful in calculus (Hardy in press). Equally, based on the preliminary results obtained from Kaman Kalehöyük, it appears that the population of starches in

the calculus does not always correspond closely with that on many of the ‘food related’ artefacts. This interesting result will be tested in full from 2008 when a wider range of artefact and calculus sampling will begin at Çatalhöyük. The numerous skeletons found at Çatalhöyük and the extensive data available offers a wonderful opportunity to explore the real starchy component of early Neolithic diet and sampling will begin on the dental calculus in 2008.

A more detailed exploration of starch at Çatalhöyük will be able to deliver the following:

- 1) Identification of starchy plants to genus level, identification of the proportion of domesticated v. wild plants in the diet.
- 2) Dental calculus is created on animal teeth as well as human teeth. By including samples of dental calculus in the starch analysis, it will be possible to distinguish which types of plants were being eaten uniquely by humans, which were being used as fodder and which were being brought to the site for other purposes, bedding, tinder materials etc.
- 3) Details in relation to artefacts, for example which types of grinding stones are associated with starchy food and which are not, whether starch was used in building materials, whether certain flaked stone tools were used to skin or process starchy tubers, to what extent pots and clay balls were linked to starchy food etc.

#### **Reference material.**

Morphological identification of starch is carried out based on comparison with a reference collection. A reference collection both of starchy tubers and cereals is currently being created from material housed in the Institute of Archaeology, London. In order to expand the samples of potentially edible tubers, some field collection was carried out in collaboration with Dr Osman Tugay of Selçuk University and this is planned to continue in 2008.

#### **Acknowledgements**

Thanks to Ian Hodder for inviting me to Çatalhöyük and to Shahina Farid for help in organizing my visits. Thanks to members of the Çatalhöyük team who provided me with samples, in particular Phillipa Ryan and Amy Bogaard in 2006 and to Roddy Regan and Renee van der Locht in 2007 for their help in the sample collection. Thanks to Amy Bogaard and Mike Charles for collecting *Scirpus Maritimus* with me in 2006, and to Dr Osman Tugay for his invaluable help in locating and collecting samples of endemic, edible starchy tubers. Tony Blakeney is thanked for his help with the enzymatic degradation and the expertise in starch that he shares so readily. This work was funded by an EU Marie Curie Outgoing International Fellowship.

#### **References**

Baysal A., Wright K. 2006. Cooking, Crafts and Curation: Ground –stone Artefacts from Çatalhöyük. In Hodder I & Members of the Çatalhöyük teams (eds.) *Excavations at Çatalhöyük, Volume 5. Changing Materialities at Çatalhöyük: reports from the 1995 – 1999 seasons*: Cambridge and London: Monographs of the McDonald Institute for Archaeological Research, University of Cambridge; British Institute for Archaeology at Ankara, pp 307 – 324.

Evers A.D. with Blakeney A.B., Miller C., 2004. *A Short Course on Grain Morphology. Cereal Chemistry Division*. Royal Australian Chemistry Institute.

Hardy K. 2007. Food for thought. Tubers, seeds and starch in hunter gatherer diet. *Mesolithic Miscellany*. 18:2.

<http://www.york.ac.uk/depts/arch/Mesolithic/mmpdf/18.2.pdf>

Hardy K. In press. Report on preliminary work to assess the potential for survival, extraction and identification of starch granules at Kaman-Kalehöyük, Turkey. To be published in *Anatolian Archeological Studies XVI*.

Love S. 2006. Building Neolithic Communitites through mid-brick architecture: A preliminary report of brick and mortar compositions at Çatalhöyük. In *Çatalhöyük Archive Report 2006*. [www.catalhoyuk.com/](http://www.catalhoyuk.com/)

Radley J.A. 1968. *Starch and its Derivatives*. Chapman and Hall Ltd., London.

Van Peer P., R. Fullagar, S. Stokes, R.M. Bailey, J. Moeyersons, F. Steenhoudt, A. Geerts, T. Vanderbeken, M. De Dapper and F. Geus. 2003. The Early to Middle Stone Age transition and the emergence of modern human behaviour at site 8-B-11. Sai Island, Sudan. *Journal of Human Evolution* 45:187-93.

### **2007 Pottery Archive Report / Çanak-Çömlek- Nurcan Yalman (1), Duygu Tarkan (2), Hilal Gültekin (3)**

(1) *Çatalhöyük Research Project*, (2) *Istanbul University*, (3) *Istanbul University*

#### **Abstract**

During the 2007 field season the pottery team was responsible for the Foundation Trenches, the 4040 and South Areas. The team has completed recording the backlog of material from the 2006 season and all pottery from the 2007 season.

#### **Giris**

2007 sezonu boyunca Temel Açmaları, 4040, Güney ve IST alanlarından gelen 2006 yılında çıkan tüm çanak çömlek parçaları veritabanına geçirilmiş ve 2007 sezonundan gelen çanak çömleğin çalışması da tamamlanmıştır.

Here are the total units of 2007 season including TP (by Joannah Pyzel).

#### 4040 and South Totals 2007

AREA	4040
<b>TOTAL UNITS</b>	69
<b>TOTAL NUMBERS</b>	1366
Diagnostic Sherds	159
Body Sherds	864
Unidentified Sherds	266
Unidentified Diagnostic Sherds	77
<b>TOTAL WEIGHT</b>	18779,6
Diagnostic Sherds	5766,1
Body Sherds	11559,7
Unidentified Sherds	901,5
Unidentified Diagnostic Sherds	552,3

AREA	South
<b>TOTAL UNITS</b>	67
<b>TOTAL NUMBERS</b>	1490
Diagnostic Sherds	182
Body Sherds	660
Unidentified Sherds	568
Unidentified Diagnostic Sherds	80
<b>TOTAL WEIGHT</b>	14583,5
Diagnostic Sherds	5490,1
Body Sherds	7258,2
Unidentified Sherds	1435,3
Unidentified Diagnostic Sherds	399,9

#### Buildings, Spaces and Units of 2007 Season of 4040, Foundation Trenches and South

The spaces either within a building or without, were evaluated. While some of them produced large amount of pottery, some did not. Here are the results.

##### Space 17

Units: 15056  
15072  
16028

Total amount of sherds from three units are 3 none of them are diagnostic, and one of them (15056) has 1 Chalcolithic sherd.



<b>AREA</b>	:	4040
<b>SPACE</b>	:	17
<b>BUILDING</b>	:	

Ware Code	Unit		TOTAL	
	15056			
	Number	Weight	Number	Weight
CHALCOLITHIC	1	17	1	17
<b>Unit Total</b>	<b>1</b>	<b>17</b>	<b>1</b>	<b>17</b>
<b>BURNISHED</b>				
<b>UNBURNISHED</b>				
<b>SLIPPED</b>				
<b>MOTTLED</b>				
<b>PAINTED</b>				
<b>POLISHED</b>				

UNIDENTIFIED SHERDS	Unit				TOTAL	
	15072		16028			
	Number	Weight	Number	Weight	Number	Weight
<b>Diagnostic Sherds</b>						
Rim						
Base						
Lug						
<b>Body Sherds</b>	1	0.4	1	3	<b>2</b>	<b>3.4</b>
<b>Unit Total</b>	<b>1</b>	<b>0.4</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>3.4</b>

#### Space 24

Units: 15941

15967

*Total amount of sherds from two units are 3 with one diagnostic rim sherd.*

<b>AREA</b>	:	4040
<b>SPACE</b>	:	24
<b>BUILDING</b>	:	

Ware Code	Unit				TOTAL	
	15941		15967			
	Number	Weight	Number	Weight	Number	Weight
DMS-sh	1	4			1	4
DMM			1	9	1	8
<b>Unit Total</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>9</b>	<b>2</b>	<b>13</b>
<b>BURNISHED</b>	1		1		2	
<b>UNBURNISHED</b>						
<b>SLIPPED</b>						

<b>MOTTLED</b>						
<b>PAINTED</b>						
<b>POLISHED</b>						

Type Code	Unit		TOTAL	
	15967		Number	Weight
	Number	Weight		
BW3	1	9	1	9
<b>Unit Total</b>	<b>1</b>	<b>9</b>	<b>1</b>	<b>9</b>

**Space 28**

Units: 14970

14985

*Total amount of sherds from two units are 3 with no diagnostic sherds.*

<b>AREA</b>	:	4040
<b>SPACE</b>	:	28
<b>BUILDING</b>	:	

Ware Code	Unit				TOTAL	
	14970		14985		Number	Weight
	Number	Weight	Number	Weight		
CM-s			1	24	1	24
DMS-op	1	28			1	28
DMS-sh			1	12	1	12
<b>Unit Total</b>	<b>1</b>	<b>28</b>	<b>2</b>	<b>36</b>	<b>3</b>	<b>64</b>
<b>BURNISHED</b>	1		2		3	
<b>UNBURNISHED</b>						
<b>SLIPPED</b>						
<b>MOTTLED</b>			1		1	
<b>PAINTED</b>						
<b>POLISHED</b>						

**Space 29**

Units: 15964

15957

*Total amount of sherds from two units are 2 with no diagnostic sherds. One of these sherds is Late (non-prehistoric).*

<b>AREA</b>	:	4040
<b>SPACE</b>	:	29
<b>BUILDING</b>	:	

Ware Code	Unit
	<b>15964</b>

	Number	Weight
LATE	1	
<b>Unit Total</b>	<b>1</b>	
<b>BURNISHED</b>	1	?
<b>UNBURNISHED</b>		
<b>SLIPPED</b>		
<b>MOTTLED</b>		
<b>PAINTED</b>		
<b>POLISHED</b>		

UNIDENTIFIED SHERDS	Unit		TOTAL	
	15957			
Diagnostic Sherds	Number	Weight	Number	Weight
Rim	1	8.7	1	8.7
Base				
Lug				
<b>Body Sherds</b>				
<b>Unit Total</b>	<b>1</b>	<b>8.7</b>	<b>1</b>	<b>8.7</b>

### Space 63

Units: 15656

15676

15692

15693

15697

16113

16123

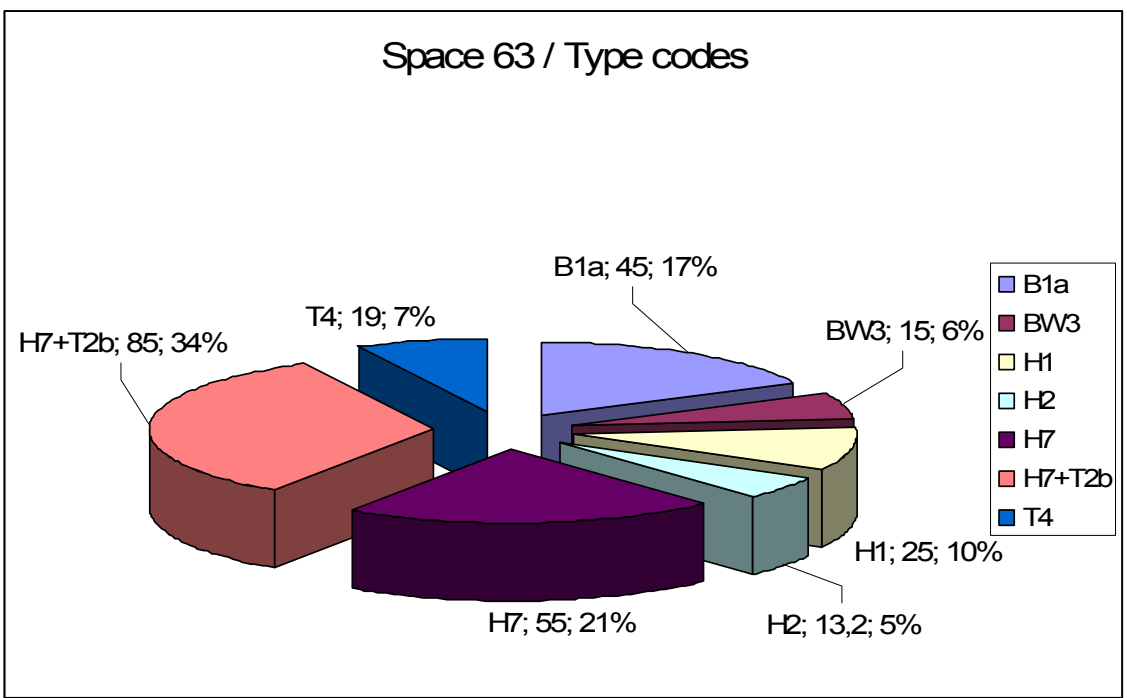
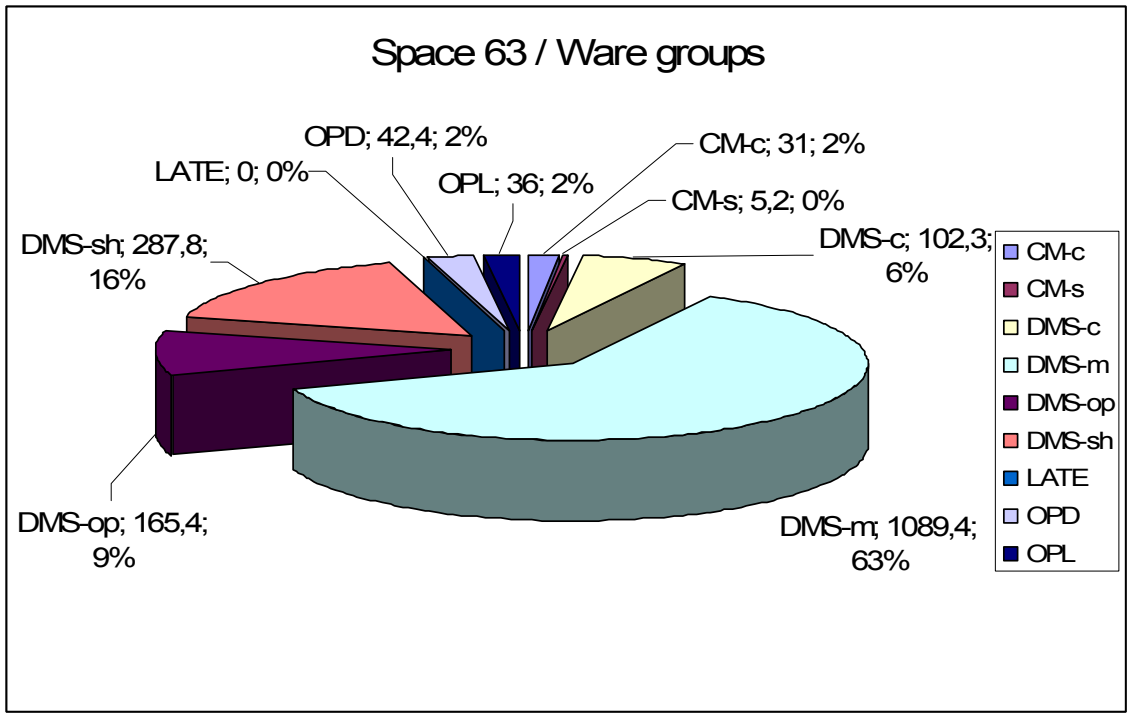
Total amount of sherds from 7 units are 102 including 8 diagnostic sherds.

**AREA** : 4040  
**SPACE** : 63  
**BUILDING** :


Ware Code	Unit														TOTAL	
	15656		15676		15692		15693		15697		16113		16123		NUMBER	WEIGHT
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight		
CM-c	1	31													1	31
CM-s			1	5.2											1	5.2
DMS-c	3	85									1	17.3			4	102.3
DMS-m	19	473	2	11.6	13	155.7	4	104.4	9	226.6	7	118.1			54	1089.4
DMS-op	2	90			3	18.5	1	13.2			4	43.7			10	165.4
DMS-sh	13	250			1	7.6					2	9.2	2	21	18	287.8
LATE	1														1	
OPD					1	34.1					1	8.3			2	42.4
OPL	3	36													3	36
<b>Unit Total</b>	<b>42</b>	<b>965</b>	<b>3</b>	<b>16.8</b>	<b>18</b>	<b>215.9</b>	<b>5</b>	<b>117.6</b>	<b>9</b>	<b>226.6</b>	<b>15</b>	<b>196.6</b>	<b>2</b>	<b>21</b>	<b>94</b>	<b>1759.5</b>
<b>BURNISHED</b>	35		3		18		5		9		15		2		88	
<b>UNBURNISHED</b>	6														6	
<b>SLIPPED</b>																
<b>MOTTLED</b>																
<b>PAINTED</b>																
<b>POLISHED</b>																

Type Code	Unit														TOTAL	
	15656		15676		15692		15693		15697		16113		16123			
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	NUMBER	WEIGHT
B1a	1	45													1	45
BW3	1	15													1	15
H1	1	25													1	25
H2						1	13.2								1	13.2
H7	1	55													1	55
H7+T2b	2	85													2	85
T4	1	19													1	19
<b>Unit Total</b>	<b>7</b>	<b>244</b>				<b>1</b>	<b>13.2</b>								<b>8</b>	<b>257.2</b>

UNIDENTIFIED SHERDS	Unit										TOTAL	
	15656		15676		15692		15697		16113			
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
<b>Diagnostic Sherds</b>												
Rim					1	5.4			2	8.9	<b>3</b>	<b>14.3</b>
Base												
Lug					1	20.4					<b>1</b>	<b>20.4</b>
<b>Body Sherds</b>	12	49	1	1.8	7	21.5	5	12.9	10	28.9	<b>35</b>	<b>114.1</b>
<b>Unit Total</b>	<b>12</b>	<b>49</b>	<b>1</b>	<b>1.8</b>	<b>9</b>	<b>47.3</b>	<b>5</b>	<b>12.9</b>	<b>12</b>	<b>28.9</b>	<b>39</b>	<b>148.8</b>



The dominant ware group is DMS (Dark Mineral Standard) which is quite common in the mid. Levels of Catalhoyuk. We can also see all variations [DMS-m (medium), DMS-sh (shell like), DMS-op (orange paste) and DMS-c (coarse)] of it in high proportions

Space 68  
 Units: 15903

There is only one UnIdentified sherd.

<b>AREA</b>	:	4040
<b>SPACE</b>	:	68
<b>BUILDING</b>	:	

UNIDENTIFIED SHERDS	Unit		TOTAL	
	15903			
	Number	Weight	Number	Weight
<b>Diagnostic Sherds</b>				
Rim				
Base				
Lug				
<b>Body Sherds</b>	1	2	1	2
<b>Unit Total</b>	1	2	1	2

**Space 102**

Units: 15605  
 15407

Total amount of sherds from 2 units are 8 including 1 diagnostic sherds. 4 of them (15606) are Chalcolithic and 1 is LATE.

<b>AREA</b>	:	4040
<b>SPACE</b>	:	102
<b>BUILDING</b>	:	

Ware Code	Unit			
	15605		15407	
	Number	Weight	Number	Weight
CHALCOLITHIC	4	32.9		
LATE	1			
CM-c			1	27.6
<b>Unit Total</b>	5	32.9	1	27.6
<b>BURNISHED</b>				
<b>UNBURNISHED</b>			1	
<b>SLIPPED</b>				
<b>MOTTLED</b>				
<b>PAINTED</b>				
<b>POLISHED</b>				

<b>Type Code</b>	<b>Unit</b>
------------------	-------------



	<b>15407</b>	
	<b>Number</b>	<b>Weight</b>
B12	1	27.6
<b>Unit Total</b>	<b>1</b>	<b>27.6</b>

<b>UNIDENTIFIED SHERDS</b>	<b>Unit</b>		<b>TOTAL</b>	
	<b>15605</b>			
<b>Diagnostic Sherds</b>	<b>Number</b>	<b>Weight</b>	<b>Number</b>	<b>Weight</b>
Rim	1	6.3	<b>1</b>	<b>6.3</b>
Base				
Lug				
<b>Body Sherds</b>				
<b>Unit Total</b>	<b>1</b>	<b>6.3</b>	<b>1</b>	<b>6.3</b>

Space 267

Building 70

Units: 14095

14905 (????)

Total number of sherds are 2 and no diagnostic sherd.

<b>AREA</b>	:	4040
<b>SPACE</b>	:	267
<b>BUILDING</b>	:	70

<b>Ware Code</b>	<b>Unit</b>	
	<b>14095</b>	
	<b>Number</b>	<b>Weight</b>
DMS-m	1	7.4
<b>Unit Total</b>	<b>1</b>	<b>7.4</b>
<b>BURNISHED</b>	1	
<b>UNBURNISHED</b>		
<b>SLIPPED</b>		
<b>MOTTLED</b>		
<b>PAINTED</b>		
<b>POLISHED</b>		

<b>UNIDENTIFIED SHERDS</b>	<b>Unit</b>		<b>TOTAL</b>	
	<b>14905</b>			
<b>Diagnostic Sherds</b>	<b>Number</b>	<b>Weight</b>	<b>Number</b>	<b>Weight</b>
Rim				
Base				

Lug				
<b>Body Sherds</b>	1	4.9	<b>1</b>	<b>4.9</b>
<b>Unit Total</b>	<b>1</b>	<b>4.9</b>	<b>1</b>	<b>4.9</b>

**Space 271**

Units: 14184

Only 1 body sherd.

<b>AREA</b>	:	4040
<b>SPACE</b>	:	271
<b>BUILDING</b>	:	

Ware Code	Unit	
	14184	
	Number	Weight
DMS-m	1	4.5
<b>Unit Total</b>	<b>1</b>	<b>4.5</b>
<b>BURNISHED</b>	1	
<b>UNBURNISHED</b>		
<b>SLIPPED</b>		
<b>MOTTLED</b>		
<b>PAINTED</b>		
<b>POLISHED</b>		

**Space 276**

**Building 59**

Units: 14641

14632

Total number of sherds are 3 and no diagnostic sherd.

<b>AREA</b>	:	4040
<b>SPACE</b>	:	276
<b>BUILDING</b>	:	59

Ware Code	Unit			
	14641		14632	
	Number	Weight	Number	Weight
DMS-op	1	14.4		
DMS-m			1	4
<b>Unit Total</b>	<b>1</b>	<b>14.4</b>	<b>1</b>	<b>4</b>
<b>BURNISHED</b>	1		1	
<b>UNBURNISHED</b>				
<b>SLIPPED</b>				
<b>MOTTLED</b>				
<b>PAINTED</b>				

<b>POLISHED</b>				
-----------------	--	--	--	--

UNIDENTIFIED SHERDS	Unit		TOTAL	
	14641			
Diagnostic Sherds	Number	Weight	Number	Weight
Rim	1	4.4	1	4.4
Base				
Lug				
<b>Body Sherds</b>				
<b>Unit Total</b>	<b>1</b>	<b>4.4</b>	<b>1</b>	<b>4.4</b>

**Space 279 (midden)**

Units: 14179  
 14180  
 14182  
 14183  
 14186  
 14187

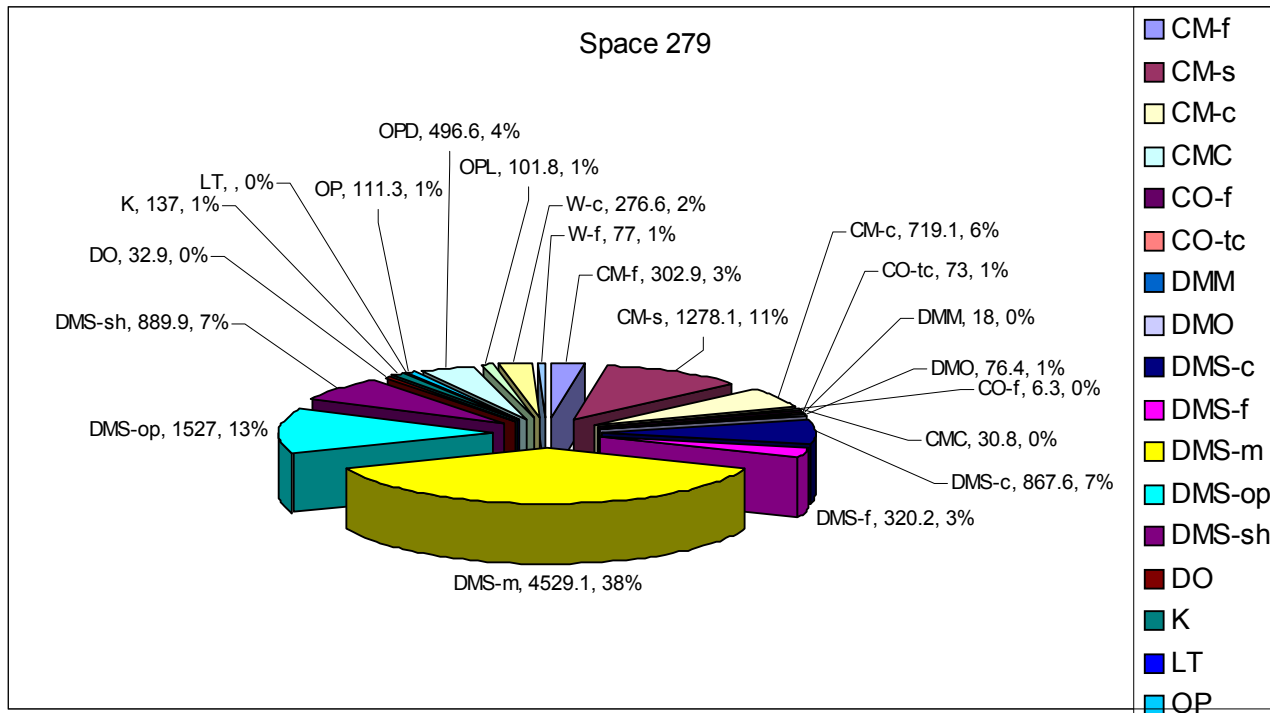
Total amount of sherds are in 6 units are 604 body, 125 diagnostic and 173 UnIdentified sherds.

The most interesting view in this unit is the variation. Although the dominant ware group is DMS (Dark Mineral Ware), the space should be on the stage that the CM (cream mineral) ware is increasing. The forms are also various, it is harder to see a dominant shape as a group but straight sided relatively deeper pots (H7) and Bowls are the dominant types.

**AREA** : 4040  
**SPACE** : 279  
**BUILDING** :


Ware Code	Unit												TOTAL	
	14179		14180		14182		14183		14186		14187			
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	NUMBER	WEIGHT
CM-f							6	120.5	8	182.4			14	302.9
CM-s					2	18	22	429.4	35	830.7			59	1278.1
CM-c					1	22	7	268.7	18	382	2	46.4	28	719.1
CMC							1	10.8	2	20			3	30.8
CO-f							1	6.3					1	6.3
CO-tc									1	73			1	73
DMM									1	18			1	18
DMO							2	26.4	3	50			5	76.4
DMS-c	1	15			5	141	14	395.8	4	275	2	40.8	26	867.6
DMS-f	4	33			1	17	13	160.2	4	89	1	21	23	320.2
DMS-m	20	467			4	191	140	2418.5	67	1248	14	204.6	245	4529.1
DMS-op			3	46.4			28	635.8	21	527	5	317.8	57	1527
DMS-sh	1	7			2	14	24	283.4	35	533	4	52.5	66	889.9
DO					1	5	3	27.9					4	32.9
K	1	17			2	84			1	36			4	137
LT	1	0					3	0	2	0			6	
OP	7	111.3											7	111.3
OPD							18	221.5	16	270.5	1	4.6	35	496.6
OPL							2	28.8	4	73			6	101.8
W-c							1	13.6	5	114	2	149	8	276.6
W-f									4	62	1	15	5	77
<b>Unit Total</b>	<b>35</b>	<b>650.3</b>	<b>3</b>	<b>46.4</b>	<b>18</b>	<b>492</b>	<b>285</b>	<b>5047.6</b>	<b>231</b>	<b>4783.6</b>	<b>32</b>	<b>851.7</b>	<b>604</b>	<b>11871.6</b>

<b>BURNISHED</b>	32		3											
<b>UNBURNISHED</b>	3				16		208		140		30			429
<b>SLIPPED</b>					2		72		88		2			167
<b>MOTTLED</b>														
<b>PAINTED</b>									1					1
<b>POLISHED</b>							2							2

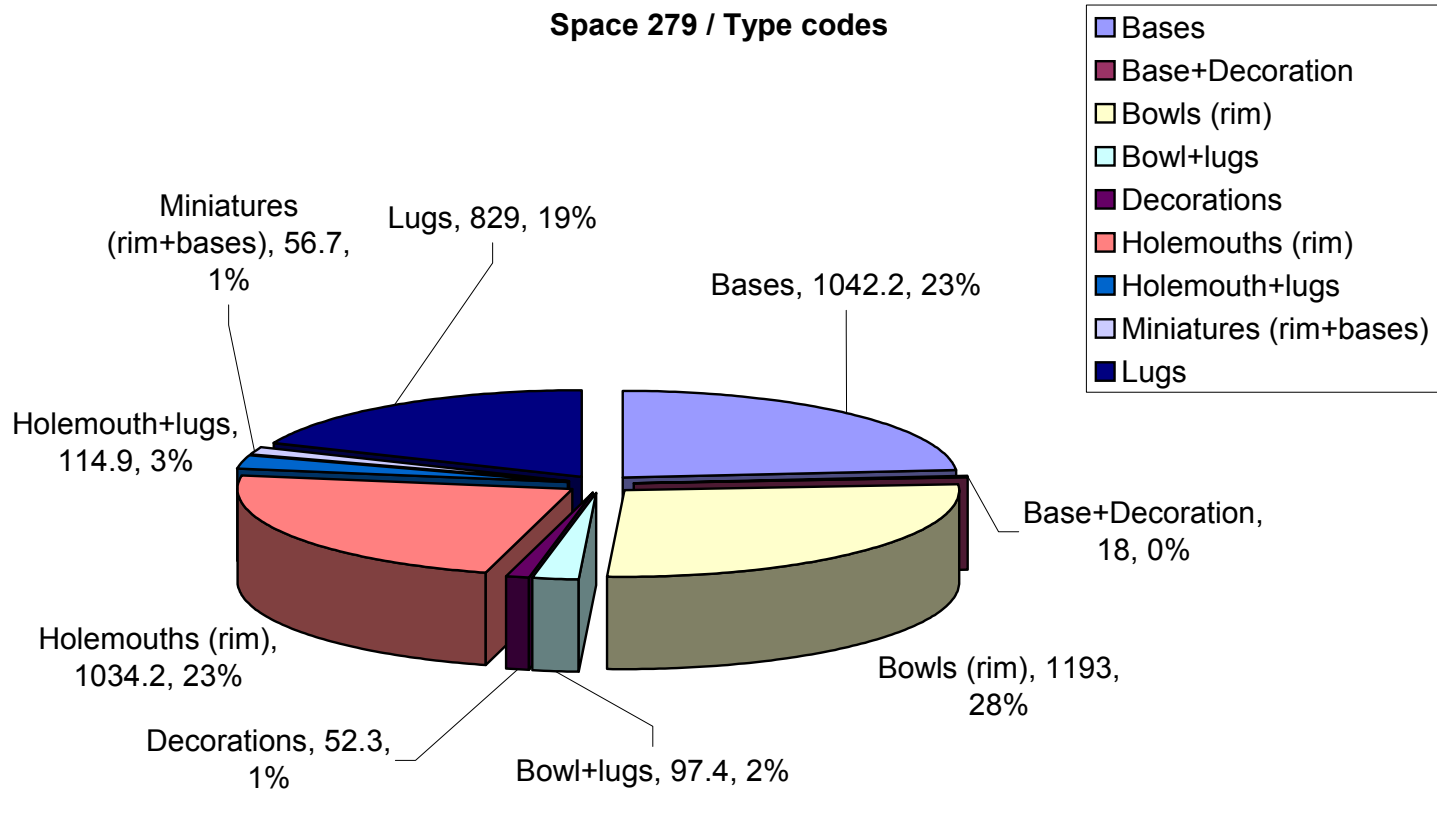


ype Code	Unit												TOTAL	
	14179		14180		14182		14183		14186		14187			
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	NUMBER	WEIGHT
B1									1	41			1	41
B12							1	61.8	2	39			3	100.8
B13	1	114					2	65.6	3	222			6	401.6
B1a									1	29			1	29
B2							1	13.2					1	13.2
B20									1	23			1	23
B21									1	73			1	73
B3									1	36			1	36
B3a							2	85.2					2	85.2
B4											1	113.7	1	113.7
B4a+D7									1	18			1	18
B8									2	24	1	101.7	3	125.7
BW1	1	9					3	55.1	5	113			9	177.1
BW10									1	14			1	14
BW11									2	74	1	37.7	3	111.7
BW11+uni.							1	24.9					1	24.9
BW11a									4	81			4	81
BW15									1	13			1	13
BW1a							1	32.7					1	32.7
BW2									3	338.2			3	338.2
BW2+B1									1	80.4			1	80.4
BW3					1	52	1	9.4	3	57			5	118.4
BW3+T1b									1	17			1	17
BW3c									1	23			1	23
BW4	1	12.3			1	22							2	34.3
BW8	1	25					1	14.5	3	37			5	76.7
BW8a									1	123			1	123
BW-s1									1	25			1	25
D6											1	15	1	15

D7						1	9.3	3	28				4	37.3
H1						4	155.6	1	42				5	197.6
H1+T1b								1	40	1	29.9		2	69.9
H11						1	54						1	54
H12						2	31.2						2	31.2
H1a								1	5				1	5
H2						2	66.7	3	101	4	192.2		9	359.9
H2a						2	63.6						2	63.6
H7	2	25				3	119.9	6	178				11	322.9
H7+T2b						1	45						1	45
M				1	5								1	5
M1						1	1.4						1	1.4
M1a						1	6.3						1	6.3
M5								1	27				1	27
M6+T5a								1	5				1	5
MB3a								1	5				1	5
MBW3								1	7				1	7
T10								1	67				1	67
T1b						3	183.6	1	17	1	47.3		5	247.9
T2b				1	83	2	91.8	3	136				6	310.9
T3b						2	54.2	1	39				3	93.2
T4	1	24											1	24
T9								1	86				1	86
<b>Unit Total</b>	<b>7</b>	<b>209.3</b>		<b>4</b>	<b>162</b>	<b>38</b>	<b>1245</b>	<b>66</b>	<b>2283.6</b>	<b>10</b>	<b>537.5</b>		<b>125</b>	<b>4437.7</b>



Space 279 / Type codes



**Space 315**

Units: 14900

14901

14902 (Midden dumped next to wall F.2750)

14916 (Midden below building 70 but above building 71)

14922 (Midden)

14924

14931

The number of the sherds in 7 units are 158 body, 14 diagnostic and 100 UnIdentified sherds.

(14900) has got 5 Chalcolithic sherds and (14916) has got one.

While body sherds more fragmented, diagnostics seem relatively large peices.

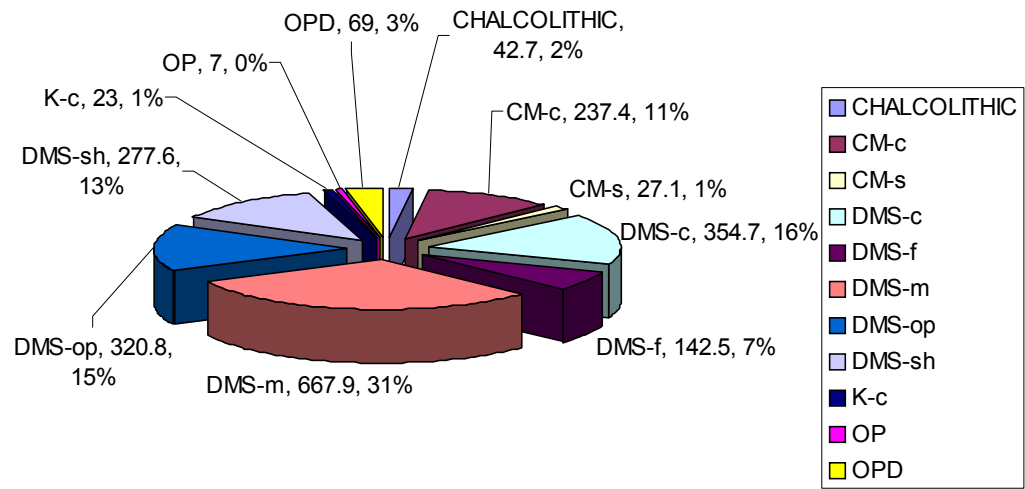
%82 of the sherds are belong to DMS group with all its variations.

%44 of the diagnostics are in bowl form, %19 of them are belong to the large and deep jars.

**AREA** : 4040  
**SPACE** : 315  
**BUILDING** :


Ware Code	Unit														TOTAL	
	14900		14901		14902		14916		14922		14924		14931		NUMBER	WEIGHT
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight		
CHALCOLITHIC	5	22.8					1	19.9							6	42.7
CM-c							2	237.4							2	237.4
CM-s									1	7	1	20.1			2	27.1
DMS-c	1	69			3	95			5	145	1	7	4	38.7	14	354.7
DMS-f					8	123							1	19.5	9	142.5
DMS-m	6	36	2	27	16	190	8	95.1	11	169.8	5	78.9	4	71.1	52	667.9
DMS-op							1	25.3	12	156.2	6	65.8	3	73.5	22	320.8
DMS-sh					20	126	15	93	2	13	3	34.2	2	11.4	42	277.6
K-c	2	23													2	23
OP					1	7									1	7
OPD							1	6.2	5	62.8					6	69
<b>Unit Total</b>	<b>14</b>	<b>150.8</b>	<b>2</b>	<b>27</b>	<b>48</b>	<b>541</b>	<b>28</b>	<b>476.9</b>	<b>36</b>	<b>553.8</b>	<b>16</b>	<b>206</b>	<b>14</b>	<b>214.2</b>	<b>158</b>	<b>2169.7</b>
<b>BURNISHED</b>	7		10		48		26		25		16		14		146	
<b>UNBURNISHED</b>	2						1		10						13	
<b>SLIPPED</b>			1		1										2	
<b>MOTTLED</b>																
<b>PAINTED</b>																
<b>POLISHED</b>																

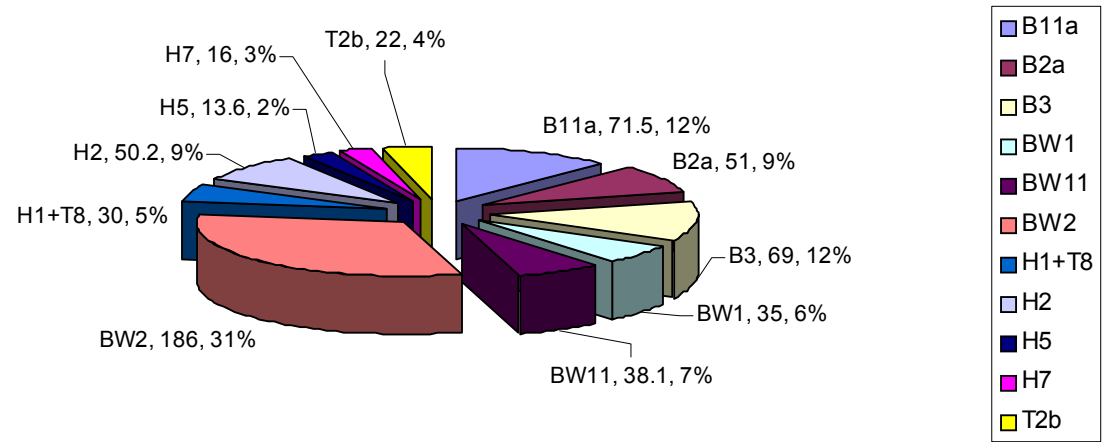
### Space 315 / Ware groups



Type Code	Unit												TOTAL	
	14900		14902		14916		14922		14924		14931		NUMBER	WEIGHT
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight		
B11a					1	71.5							1	71.5
B2a							1	51					1	51
B3	1	69											1	69
BW1							1	35					1	35
BW11			1	22					1	16.1			2	38.1
BW2					1	165.9			1	20.1			2	186
H1+T8			1	30									1	30
H2					1	30.7					1	19.5	2	50.2
H5					1	13.6							1	13.6
H7			1	16									1	16
T2b			1	22									1	22
<b>Unit Total</b>	<b>1</b>	<b>69</b>	<b>4</b>	<b>90</b>	<b>4</b>	<b>281.7</b>	<b>2</b>	<b>86</b>	<b>2</b>	<b>36.2</b>	<b>1</b>	<b>19.5</b>	<b>14</b>	<b>582.4</b>

UNID SHERDS	Unit																TOTAL	
	14900		14901		14902		14912		14916		14922		14924		14931		No.	Weight
	No.	Weight	No.	Weight	No.	Weight	No.	Weight	No.	Weight	No.	Weight	No.	Weight	No.	Weight		
Rim					7	33			6	41	6	53					19	127
Base											1	7					1	7
Lug																		
<b>Body Sherds</b>	15	48	2	7	15	50	19	57.1	16	37.5			9	27.9	4	13.4	80	240.9
<b>Unit Total</b>	15	48	2	7	22	83	19	57.1	22	78.5	7	60	9	27.9	4	13.4	100	374.9

### Space 315 / Type codes



**Space 317**  
**Building 71**  
 Units: 14917

Total number of pot sherds are 5 with no diagnostic.

<b>AREA</b>	:	4040
<b>SPACE</b>	:	317
<b>BUILDING</b>	:	71

Ware Code	Unit	
	14917	
	Number	Weight
DMS-op	1	42.3
DSM-m	2	21.8
OPD	2	11.7
<b>Unit Total</b>	<b>5</b>	<b>75.8</b>
<b>BURNISHED</b>	5	
<b>UNBURNISHED</b>		
<b>SLIPPED</b>		
<b>MOTTLED</b>		
<b>PAINTED</b>		
<b>POLISHED</b>		

**Space 322**  
**Building 55**  
 Units: 14926

Total body sherds are 18, 5 diagnostics and 11 UnIdentified.

These 5 diagnostics has got some unusual types in it.

For instance T6 is quite a rare lug type, it is a twin lug and we have only 2 from that type so far. In this unit we see T6 with a basket handle on H7 (a deep jar type).

<b>AREA</b>	:	4040
<b>SPACE</b>	:	322
<b>BUILDING</b>	:	55

Ware Code	Unit	
	14926	
	Number	Weight
CM-s	1	11
DMS-c	1	59
DMS-f	1	7
DMS-m	1	30
DMS-op	1	41
DMS-sh	12	235



OPD	1	49
<b>Unit Total</b>	<b>18</b>	<b>432</b>
<b>BURNISHED</b>	17	
<b>UNBURNISHED</b>	1	
<b>SLIPPED</b>		
<b>MOTTLED</b>		
<b>PAINTED</b>		
<b>POLISHED</b>		

Type Code	Unit	
	14926	
	Number	Weight
H1	1	49
H2	1	41
H7+H4a	1	59
H7+T2b	1	54
H7+T6+T4	1	97
<b>Unit Total</b>	<b>5</b>	<b>300</b>


UNIDENTIFIED SHERDS	Unit		TOTAL	
	14926			
	Number	Weight	Number	Weight
<b>Diagnostic Sherds</b>				
Rim				
Base				
Lug				
<b>Body Sherds</b>	11	25	11	25
<b>Unit Total</b>	<b>11</b>	<b>25</b>	<b>11</b>	<b>25</b>

**SOUTH**  
**Building 56**

Units: 14516

In 2007 there is only 14516 from B.56 which gives pottery. There are only 2 sherds and two of them are OPL (Orange Paste Loose Ware). We see that ware group generally towards upper levels. But two sherds is no efficient to make a comment.

<b>AREA</b>	:	SOUTH
<b>SPACE</b>	:	
<b>BUILDING</b>	:	56

WARE CODE	UNIT		TOTAL	
	14516			
	Number	Weight	NUMBER	WEIGHT

OPL-f	2	7.2	2	7.2
<b>Unit Total</b>	<b>2</b>	<b>7.2</b>	<b>2</b>	<b>7.2</b>
<b>BURNISHED</b>	1		1	
<b>UNBURNISHED</b>				
<b>SLIPPED</b>				
<b>MOTTLED</b>				
<b>PAINTED</b>				
<b>POLISHED</b>				

**Building 65**

Units: 14504

**14509** (burial cut)

14522

14561

**14569** (Thin, ashy spread running under floor areas (14556) and (14558). Also under hearth F.2549).

14573

14586

14588

14594

15710

15712

15718

15723

15729

15744

Total number of sherds from 15 units are 66 body, 6 diagnostic, 36 UnIdentified.

This shows that the pottery existence is not dense. Only (14569), (15718), (15719) has got diagnostic sherds. (14509) and (14569) has got relatively dense pottery amount. The others are 1 to 2 sherds each. To have that much pottery in a unit described as “burial cut” is interesting.

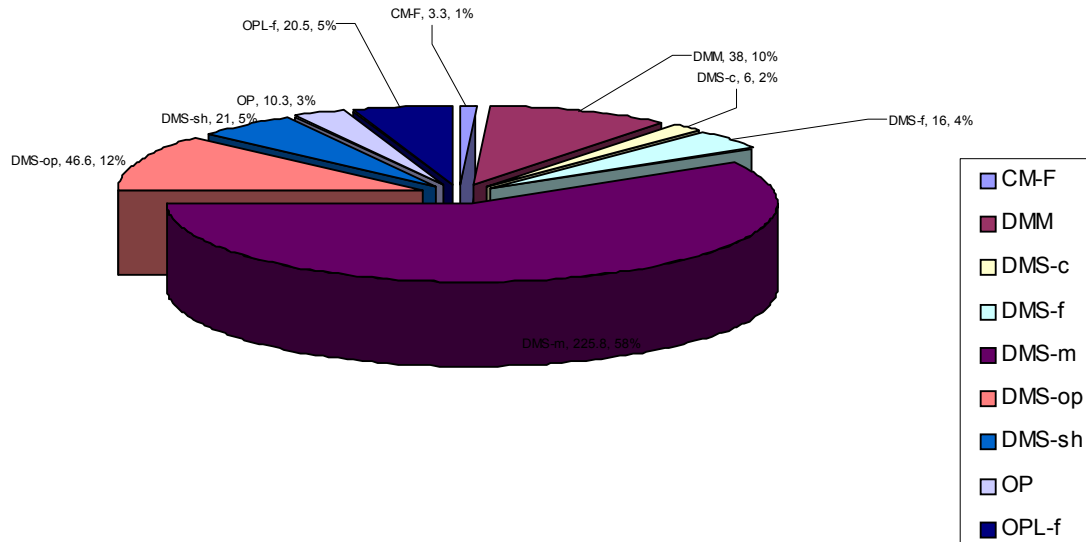
%82 of the sherds counted as DMS group and its variations. But DMO (Dark Mineral Organic) and OP (Orange Paste) ware groups became visible in this building units, although OP is seen only in (14509) in the whole

Forms in 2007 units are mostly bowls or miniatures.

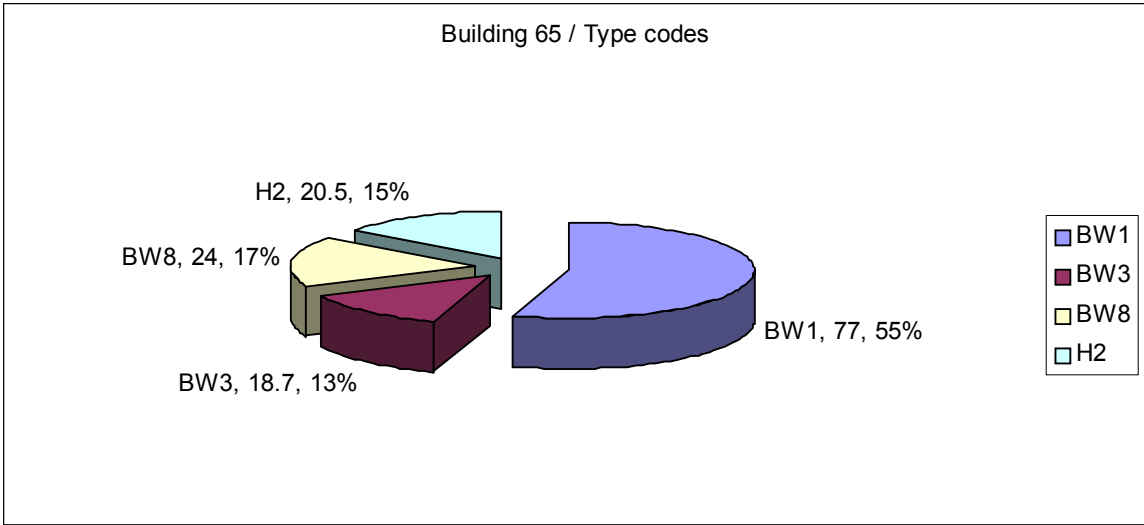
AREA : SOUTH  
SPACE :  
BUILDING : 65


Ware Code	Unit																												TOTAL			
	14504		14509		14522		14561		14569		14573		14586		14588		14594		15710		15712		15718		15723		15729		15744		NO.	GR.
	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.		
CM-c			1	7.7																											1	7.7
CM-s											1	19																	1	7.7	2	26.7
DMO-c													1	18.8																	1	18.8
DMO-f									1	29			1	28.7																	2	57.7
DMS-c									10	123.7															1	18			11	141.7		
DMS-m	2	22.4	3	25	1	27	1	9.1	8	126	1	27	1	28	2	16.7					2	22	2	34.3			1	14	1	13.1	25	364.9
DMS-op					1	15											1	16.8	1	5.3			5	107.5	1	3			9	147.2		
DMS-sh			4	18									1	8.3									4	57.9					9	84.4		
OP			6	58																									6	58		
<b>Unit Total</b>	<b>2</b>	<b>22.4</b>	<b>14</b>	<b>110</b>	<b>2</b>	<b>41</b>	<b>1</b>	<b>9.1</b>	<b>19</b>	<b>278.7</b>	<b>2</b>	<b>46</b>	<b>1</b>	<b>28</b>	<b>5</b>	<b>72.5</b>	<b>1</b>	<b>16.8</b>	<b>1</b>	<b>5.3</b>	<b>2</b>	<b>22</b>	<b>11</b>	<b>199.7</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>32</b>	<b>2</b>	<b>20.8</b>	<b>66</b>	<b>907.1</b>
<b>BURNISHED</b>	1		4		2		1		3		2		1		4		1		1		1		4		1		1		2		29	
<b>UNBURNISHED</b>									4																		1				5	
<b>SLIPPED</b>																																
<b>MOTTLED</b>																																
<b>PAINTED</b>																																
<b>POLISHED</b>																																

### Building 65 / Ware Groups



Type Code	Unit																												TOTAL				
	14504		14509		14522		14561		14569		14573		14586		14588		14594		15710		15712		15718		15723		15729		15744		NO.	GR.	
	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.					
BW1									2	59																					3	77	
BW4									1	9																					1	9	
M									1	55.7																					1	55.7	
T1b																							1	38.3								1	38.3
<b>Unit Total</b>									<b>4</b>	<b>123.7</b>													<b>1</b>	<b>38.3</b>					<b>1</b>	<b>18</b>	<b>6</b>	<b>180</b>	



UNIDENTIFIED SHERDS	Unit																		TOTAL		
	15718		14532		14573		14554		14588		15744		15718		14522		14521		NO.	GR.	
Diagnostic Sherds	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.	NO.	GR.			NO.
Rim	1	10																		1	10
Base	1	6.6																		1	6.6
Lug																					
<b>Body Sherds</b>			6	3.1	3	10	2	4.9	1	0.9	10	18	8	24	2	6.2	2	2		<b>34</b>	<b>69</b>
<b>Unit Total</b>	<b>2</b>	<b>16.6</b>	<b>6</b>	<b>3.1</b>	<b>3</b>	<b>10</b>	<b>2</b>	<b>4.9</b>	<b>1</b>	<b>0.9</b>	<b>10</b>	<b>18</b>	<b>8</b>	<b>24</b>	<b>2</b>	<b>6.2</b>	<b>2</b>	<b>2</b>		<b>36</b>	<b>86</b>

**Building 68**

Units: 15770

Only one sherd is found.

<b>AREA</b>	:	SOUTH
<b>SPACE</b>	:	
<b>BUILDING</b>	:	68

Ware Code	Unit	
	15770	
	Number	Weight
DMS-m	1	11.3
<b>Unit Total</b>	<b>1</b>	<b>11.3</b>
<b>BURNISHED</b>	1	
<b>UNBURNISHED</b>		
<b>SLIPPED</b>		
<b>MOTTLED</b>		
<b>PAINTED</b>		
<b>POLISHED</b>		

**Space 261**

Units: 14807

14814

14821

14822

14826

14830

14831

14833

14834

Total number of body sherds are 34 including 4 diagnostics, 3 unidentified from 9 Units.

The dominant ware group is DMS with its variations.

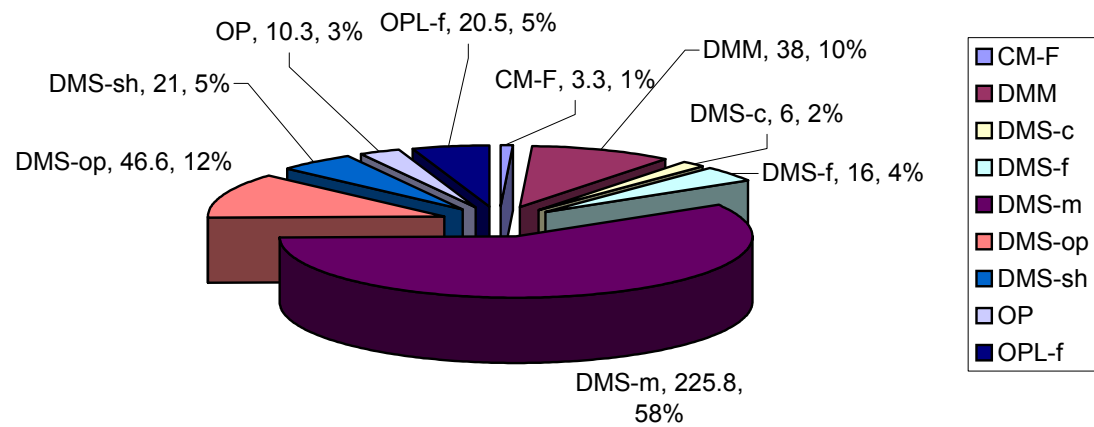
The number of diagnostics are small, therefore it is hard to talk about any percentage.

**AREA** : SOUTH  
**SPACE** : 261  
**BUILDING** :

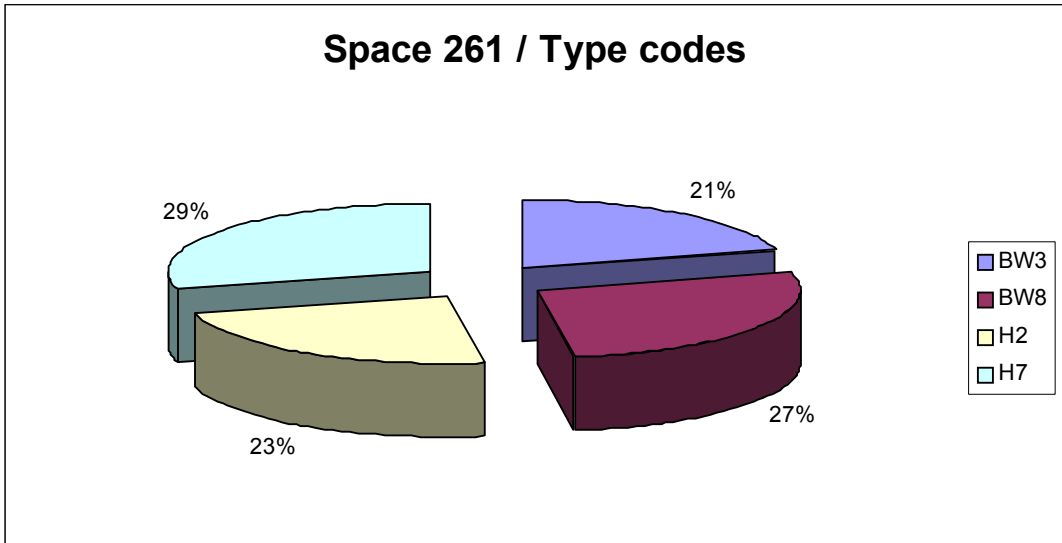
Ware Code	Unit																			TOTAL	
	14807		14814		14821		14822		14826		14830		14831		14833		14834		NUMBER	WEIGHT	
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight			
CM-F	1	3.3																	1	3.3	
DMM	7	38																	7	38	
DMS-c			1	6															1	6	
DMS-f													2	16					2	16	
DMS-m	6	93.8					1	8	1	26			2	15	5	83			15	225.8	
DMS-op					1	10.6					2	36							3	46.6	
DMS-sh									1	11							2	10	3	21	
OP	1	10.3																	1	10.3	
OPL-f							1	20.5											1	20.5	
<b>Unit Total</b>	<b>15</b>	<b>145.4</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>10.6</b>	<b>1</b>	<b>20.5</b>	<b>2</b>	<b>19</b>	<b>1</b>	<b>26</b>	<b>1</b>	<b>36</b>	<b>4</b>	<b>31</b>	<b>7</b>	<b>93</b>	<b>34</b>	<b>387.5</b>	
<b>BURNISHED</b>	8				1		1		2						2		6		20		
<b>UNBURNISHED</b>			1								1		1				1		3		
<b>SLIPPED</b>																					
<b>MOTTLED</b>																					
<b>PAINTED</b>																					
<b>POLISHED</b>																					



### Space 261 / Ware codes



Ware Code	Unit																					
	14807		14814		14821		14822		14826		14830		14831		14833		14834		TOTAL			
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	NUMBER	WEIGHT		
BW3	1	18.7																			1	18.7
BW8																	1	24			1	24
H2							1	20.5													1	20.5
H7											1	26									1	26
<b>Unit Total</b>	<b>1</b>	<b>18.7</b>					<b>1</b>	<b>20.5</b>			<b>1</b>	<b>26</b>					<b>1</b>	<b>24</b>			<b>4</b>	<b>89.2</b>



UNIDENTIFIED SHERDS	Unit						TOTAL	
	14807		14814		14809		Number	Weight
Diagnostic Sherds	Number	Weight	Number	Weight	Number	Weight		
Rim	3	26.6					3	26.6
Base								
Lug	1	11.8					1	11.8
Body Sherds			2	6	1	4.2	3	10.2
<b>Unit Total</b>	<b>4</b>	<b>38.4</b>	<b>2</b>	<b>6</b>	<b>1</b>	<b>4.2</b>	<b>7</b>	<b>48.6</b>

### Space 297

Units: 15964

14515

There are 5 sherds from these units and 14 UnIdentified pieces.

<b>AREA</b>	:	SOUTH
<b>SPACE</b>	:	297
<b>BUILDING</b>	:	65

Ware Code	Unit		TOTAL	
	15964		Number	Weight
	Number	Weight		
DMS-m	4	2323		
<b>Unit Total</b>	<b>1</b>	<b>2323</b>		
<b>BURNISHED</b>	3			
<b>UNBURNISHED</b>				
<b>SLIPPED</b>				
<b>MOTTLED</b>				
<b>PAINTED</b>				
<b>POLISHED</b>				

Type Code	Unit		TOTAL	
	14515		Number	Weight
	Number	Weight		
H7	1	13		
H7+B1a+T3b	1	2300		
<b>Unit Total</b>	<b>2</b>	<b>2313</b>		

UNIDENTIFIED SHERDS	Unit		TOTAL	
	14515		Number	Weight
Diagnostic Sherds	Number	Weight		
Rim				
Base				
Lug				

<b>Body Sherds</b>	14	11	<b>14</b>	<b>11</b>
<b>Unit Total</b>	<b>14</b>	<b>11</b>	<b>14</b>	<b>11</b>

**Space 298**

Units: 15704  
15727

There is only one UnIdentified sherd

<b>AREA</b>	:	SOUTH
<b>SPACE</b>	:	298
<b>BUILDING</b>	:	

UNIDENTIFIED SHERDS	Unit				TOTAL	
	15704		15727			
Diagnostic Sherds	Number	Weight	Number	Weight	Number	Weight
Rim						
Base						
Lug						
<b>Body Sherds</b>	1	2.8	1	3	<b>2</b>	<b>5.8</b>
<b>Unit Total</b>	<b>1</b>	<b>2.8</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>5.8</b>

**Space 299**

Units: 15720

15724

15743

There are 89 Sherds and 11 of them are diagnostics. 111 sherds are UnIdentified. The dominant ware group is DMS but in this space, we see CM (cream mineral) ware group in slightly increasing.

Also we see miniatures in this space with bowl forms.

The number of UnIdentified sherds indicates the high fragmentation within the space.

<b>AREA</b>	: SOUTH
<b>SPACE</b>	: 299
<b>BUILDING</b>	: 65

Ware Code	Unit						TOTAL	
	15720		15724		15743		Number	Weight
	Number	Weight	Number	Weight	Number	Weight		
CM-c	1	15			3	68.7	4	83.7
CM-s			6	71.8	4	43.6	10	115.4
DMM			1	12.5			1	12.5
DMS-c			1	17.8			1	17.8
DMS-m			12	185.2	14	233.4	26	418.6
DMS-op	2	8	7	53.8	6	69.3	15	131.1
DMS-sh			5	29	13	136	18	165
LATE	3				1		4	
OP			1	1.8			1	1.8
OPD					1	10.9	1	10.9
OPL-c			1	9.3			1	9.3
OPL-m			1	6.5			1	6.5
W-c			4	38.3			4	38.3
W-f	1	22	1	23.3			2	45.3
<b>Unit Total</b>	<b>7</b>	<b>45</b>	<b>40</b>	<b>449.3</b>	<b>42</b>	<b>561.9</b>	<b>89</b>	<b>1056.2</b>
<b>BURNISHED</b>	3		33		35		71	
<b>UNBURNISHED</b>	1		4		6		11	
<b>SLIPPED</b>								
<b>MOTTLED</b>								
<b>PAINTED</b>								
<b>POLISHED</b>								

**Building 65**

**Space: 314**

Units: 14510

14511

14534

14551

14552

14578

15769

Total number of sherds are 45, 6 of them are diagnostic and 37 sherds are UnIdentified.

Units (14510) and (14578) have got only UnIdentified sherds. There is a relatively high percentage of fragmentation in this space. (14511) (roomfill or levelling dump over the walls of the northern room of building 65) has got the highest amount of sherds comparing to the other units in space 314 including 2 late sherds.

DMS as a ware group looks slightly dominant in number but DMS-op (Dark Mineral-orange paste) ware group is increasing, we also see OP (Orange Paste) groups increasing as a later level (Mellaart's V) characteristics.

***It is hard to interpret 6 sherds about forms.***

**AREA** : SOUTH  
**SPACE** : 314  
**BUILDING** : 65


Ware Code	Unit										TOTAL	
	14511		14534		14551		14552		15769		NUMBER	WEIGHT
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight		
CM-s	2	40.3	1	9.4					1	18.9	3	49.7
DMM			1	13.9							1	13.9
DMS-c	1	46									1	46
DMS-f	1	9									1	9
DMS-m	5	65			2	33.2	1	4	1	10.1	9	112.3
DMS-op	4	31.9	2	17.5	3	43.6	1	4	2	18.4	12	115.4
DMS-sh	9	70			3	22.3	1	2			13	94.7
LATE	2										2	
OPD			1	11.3							1	11.3
OPL									1	5.7	1	5.7
OPL-f	1	4	5								1	4
<b>Unit Total</b>	<b>25</b>	<b>266.2</b>	<b>5</b>	<b>52.1</b>	<b>8</b>	<b>99.1</b>	<b>3</b>	<b>10</b>	<b>5</b>	<b>53.1</b>	<b>45</b>	<b>462</b>
<b>BURNISHED</b>	22		3		8		3		5		41	
<b>UNBURNISHED</b>	1										1	
<b>SLIPPED</b>												
<b>MOTTLED</b>												
<b>PAINTED</b>												
<b>POLISHED</b>												

Type Code	Unit					TOTAL	
	14511	14534	14551	14552	15769	NUMBER	WEIGHT
B14	1	16.9				1	16.9
BW10	1	25.3				1	25.3
BW8	1	46				1	46
H2	1	9	1	12.7		2	21.7
T2b			1	27.8		1	27.8
<b>Unit Total</b>	<b>4</b>	<b>97.2</b>	<b>2</b>	<b>40.5</b>		<b>6</b>	<b>137.7</b>



UNIDENTIFIED SHERDS	Unit														TOTAL	
	14510		14511		14534		14551		14552		14578		15769		Number	Weight
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight		
<b>Diagnostic Sherds</b>																
Rim			5	26.4			1	2.5					1	5.3	7	34.2
Base																
Lug			1	10.6											1	10.6
<b>Body Sherds</b>	1	1.5	17	56.3	8	27.7			2	1	1	2			29	88.5
<b>Unit Total</b>	<b>1</b>	<b>1.5</b>	<b>23</b>	<b>93.3</b>	<b>8</b>	<b>27.7</b>	<b>1</b>	<b>2.5</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>5.3</b>	<b>37</b>	<b>133.3</b>

**Space: 318**  
Units: 14528

The number of the pottery from one unit is quite distinctive, there are 62 sherds but only 5 of them are diagnostic. However, %54 of the sherds are LATE. It should be because of the unit belongs to the eroded soil.

<b>AREA</b>	:	SOUTH
<b>SPACE</b>	:	318
<b>BUILDING</b>	:	

Ware Code	Unit		TOTAL	
	14528			
	Number	Weight	Number	Weight
CM-f	1	10	1	10
CM-s	2	13.6	2	13.6
DMS-c	2	14.8	2	14.8
DMS-m	12	161.4	12	161.4
DMS-op	7	139.3	7	139.3
LATE	34		34	
OPD	3	23.6	3	23.6
OPL	1	9.8	1	9.8
<b>Unit Total</b>	<b>62</b>	<b>372.5</b>	<b>62</b>	<b>372.5</b>
<b>BURNISHED</b>	24		24	
<b>UNBURNISHED</b>	1		1	
<b>SLIPPED</b>				
<b>MOTTLED</b>				
<b>PAINTED</b>	3		3	
<b>POLISHED</b>				

Type Code	Unit		TOTAL	
	14528			
	Number	Weight	Number	Weight
BW3	1	13.1	1	13.1
H12	1	16.3	1	16.3
H13	1	10	1	10
H2	1	20.2	1	20.2
T3b	1	41.2	1	41.2
<b>Unit Total</b>	<b>5</b>	<b>100.8</b>	<b>5</b>	<b>100.8</b>

**Space 319**  
**Building: 65**  
Units: 14533  
14559  
14572  
14587  
15702  
15728

Except (15728), all the units have got relatively high amount of pottery. However, all the units have got LATE sherds that may indicate that there are some disturbed patches within these units.

**AREA** : SOUTH  
**SPACE** : 319  
**BUILDING** : 65


Ware Code	Unit												TOTAL	
	14533		14559		14572		14587		15702		15728		NUMBER	WEIGHT
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight		
CHALCOLITHIC	2	23											2	23
CM-c					3	63.9			2	19.5			5	83.4
CM-f			1	6			2	7.7	1	7.1			4	20.8
CM-s	2	50			2	34.3			2	18.3			6	102.6
CO-tc							1	22.1					1	22.1
DMM			9	91			2	25.4	4	58.1			15	174.5
DMS-c	19	303	1	22			3	341.5	5	191.8	1	13.9	29	872.2
DMS-f			2	14	4	31.2	1	9.3	1	16	1	9	9	79.5
DMS-m	14	123	25	400.9	13	70.3	19	324	9	87.5			80	1005.7
DMS-op			3	29	1	5.5	3	342.3	2	81.8			9	458.6
DMS-sh	2	13	6	62	7	60.2	11	84.2	14	163.7			40	383.1
grit tempered									10	82.4			10	82.4
K	2	17											2	17
LATE	9		6		7		2		1				25	
OP	6	58	1	8	3	39.4	1	5.2					11	110.6
OPD	1	15.7	2	49					4	77.3			7	142
OPL			1	5					4	32.7			5	37.7
W-c					1	19							1	19
W-f	1	8	1	4									2	12
<b>Unit Total</b>	<b>58</b>	<b>610.7</b>	<b>58</b>	<b>690.9</b>	<b>41</b>	<b>323.8</b>	<b>45</b>	<b>1161.7</b>	<b>59</b>	<b>836.2</b>	<b>2</b>	<b>22.9</b>	<b>263</b>	<b>3646.2</b>
<b>BURNISHED</b>	27		43		31				59				160	
<b>UNBURNISHED</b>	18		9		3								30	

<b>SLIPPED</b>														
<b>MOTTLED</b>	2													2
<b>PAINTED</b>	2		1											3
<b>POLISHED</b>														

Type Code	Unit												TOTAL	
	14533		14559		14572		14587		15702		15728		NUMBER	WEIGHT
	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight		
B1			1	43									1	43
B1(M)	1	17											1	17
B10	1	11											1	11
B12			3	29									3	29
B1a	1	10			1	27.6							2	37.6
B4a							1	3.4					1	3.4
B6			1	13									1	13
B8			1	32					1	75.9			1	32
BW1	1	8							1	11.6			2	19.6
BW1+B3+?							1	279.4					1	279.4
BW1+M2	1	15.7											1	15.7
BW11			2	45									2	45
BW2			1	4									1	4
BW3	1	8											1	8
BW3b			2	34									2	34
BW8			1	8			1	7.9					2	15.9
H1			2	27					2	52.2			4	79.2
H1+T4					1	21.1							1	21.1
H12									1	10.3			1	10.3
H2					1	5	2	32.5					3	37.5

H2+T3b	1	68												1	68
H4	1	11	1	9										2	20
H6			1	19										1	19
H7	2	45												2	45
H7+T3b					1	18.1								1	18.1
T2b	2	88												2	88
T3			1	45										1	45
T3b	1	18	1	14	34				3	82.6				5	114.6
<b>Unit Total</b>	<b>13</b>	<b>299.7</b>	<b>18</b>	<b>322</b>	<b>38</b>	<b>71.8</b>	<b>5</b>	<b>323.2</b>	<b>8</b>	<b>232.6</b>				<b>47</b>	<b>1173.4</b>

UNIDENTIFIED SHERDS	Unit												TOTAL	
	14533		14559		14572		14587		15702		15728		Number	Weight
Diagnostic Sherds	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight		
Rim	3	9.3							5	23	2	4.7	10	37
Rim (org.)	1	5											1	5
Base									2	13.3			2	13.3
Lug									1	5.5			1	5.5
<b>Body Sherds</b>	32	78	83	225	68	88.3	35	93.1	29	73.5	30	88.7	277	646.6
<b>Unit Total</b>	<b>36</b>	<b>92.3</b>	<b>83</b>	<b>225</b>	<b>68</b>	<b>88.3</b>	<b>35</b>	<b>93.1</b>	<b>37</b>	<b>115.3</b>	<b>32</b>	<b>93.4</b>	<b>291</b>	<b>707.4</b>

**Space 328****Building: 75**

Units: 15740

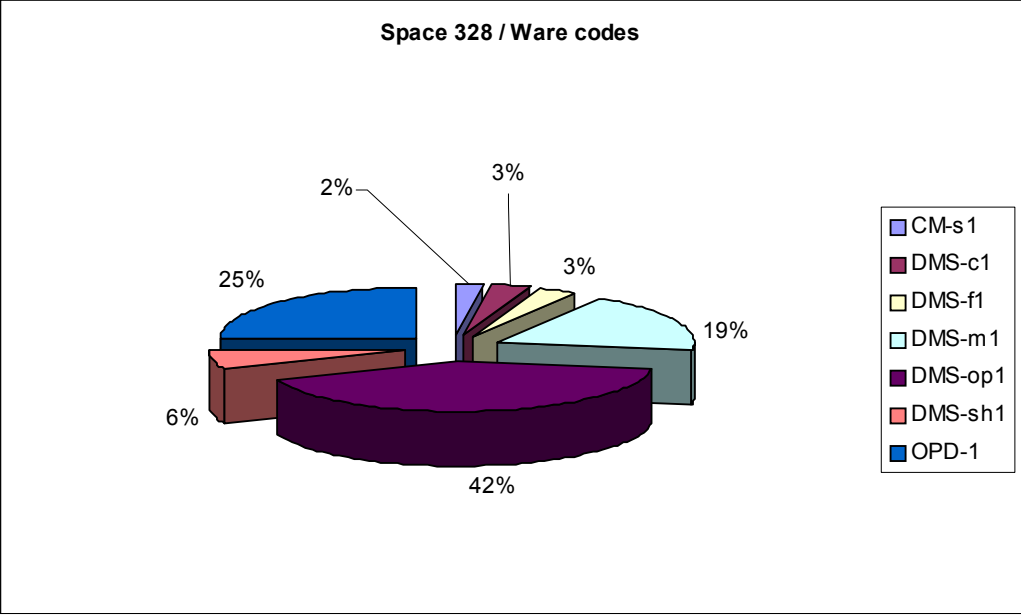
15742 (roomfill)

15783

There are 145 sherds in this unit, including 28 diagnostics and 144 of them are coming from one unit (15742). The increase of OPD (Orange Paste Dense) ware group is quite remarkable in unit 15742, the second large group is DMS but with orange paste. This roomfill has got many pot sherds in it. The dominant groups are DMS-op and OP ware. These groups are highly fired and their internal surfaces mostly burnt.

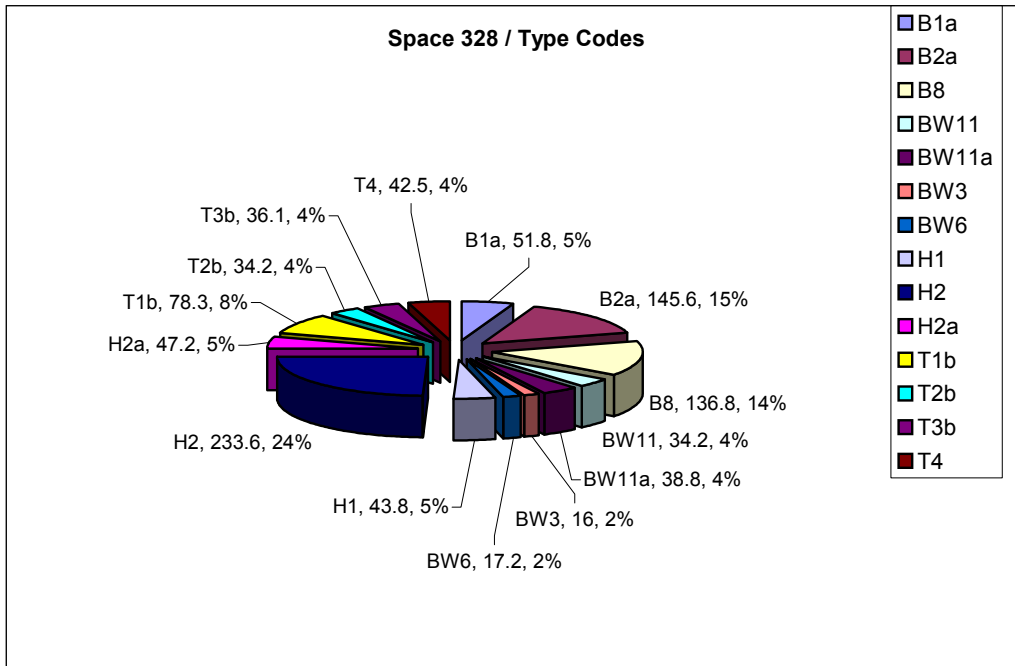
<b>AREA</b>	:	SOUTH
<b>SPACE</b>	:	328
<b>BUILDING</b>	:	75

Ware Code	Unit						TOTAL	
	15740		15742		15783		Number	Weight
	Number	Weight	Number	Weight	Number	Weight		
CM-s1			2	64.2			2	64.2
DMS-c1	1	36.1	4	64.8			5	100.9
DMS-f1			1	95.4			1	95.4
DMS-m1			36	587.3			36	587.3
DMS-op1			44	1236.6			44	1236.6
DMS-sh1	1	18.1	7	166.8			8	184.9
OPD-1			50	753.9	1	17.2	51	771.1
<b>Unit Total</b>	<b>2</b>	<b>54.2</b>	<b>144</b>	<b>2969</b>	<b>1</b>	<b>17.2</b>	<b>147</b>	<b>3040.4</b>
<b>BURNISHED</b>	2		144		1		147	
<b>UNBURNISHED</b>								
<b>SLIPPED</b>								
<b>MOTTLED</b>								
<b>PAINTED</b>								
<b>POLISHED</b>								



Type Code	Unit							
	15740		15742		15783		TOTAL	
	Number	Weight	Number	Weight	Number	Weight	Number	Weight
B1a			1	51.8			1	51.8
B2a			1	145.6			1	145.6
B8			2	136.8			2	136.8
BW11			2	34.2			2	34.2
BW11a			2	38.8			2	38.8
BW3			1	16			1	16
BW6					1	17.2	1	17.2
H1			2	43.8			2	43.8
H2			8	233.6			8	233.6
H2a			1	47.2			1	47.2
T1b			3	78.3			3	78.3
T2b	1	18.1	1	16.1			2	34.2
T3b	1	36.1					1	36.1
T4			1	42.5			1	42.5
<b>Unit Total</b>	<b>2</b>	<b>54.2</b>	<b>25</b>	<b>884.7</b>	<b>1</b>	<b>17.2</b>	<b>28</b>	<b>956.1</b>





UNIDENTIFIED SHERDS	Unit				TOTAL	
	15742		15740		Number	Weight
	Number	Weight	Number	Weight		
<b>Diagnostic Sherds</b>						
Rim	1	5.1			1	5.1
Base	1	5.6			1	5.6
Lug	1	8.3			1	8.3
<b>Body Sherds</b>	77	197.1	1	2.4	78	199.5
<b>Unit Total</b>	80	216.1	1	2.4	78	199.5

Space 329  
 Units: 15757  
       15773  
       15780

Total number of sherds are 36, 6 of them are diagnostic, only (15773) has got 13 UnIdentified sherds. DMS group is dominant but there is not much coarse version, they are generally thin walled dark sherds.

<b>AREA</b>	:	SOUTH
<b>SPACE</b>	:	329
<b>BUILDING</b>	:	

Ware Code	Unit						TOTAL	
	15757		15773		15780		Number	Weight
	Number	Weight	Number	Weight	Number	Weight		
DMS-m	3	35	11	135.7			14	170.7
DMS-op			11	184.5			11	184.5
DMS-sh			7	45.8			7	45.8
OPD			3	27.8	1	34.7	4	62.7
<b>Unit Total</b>	<b>3</b>	<b>35</b>	<b>32</b>	<b>393.8</b>	<b>1</b>	<b>34.7</b>	<b>36</b>	<b>463.7</b>
<b>BURNISHED</b>	3		32		1		36	
<b>UNBURNISHED</b>								
<b>SLIPPED</b>								
<b>MOTTLED</b>								
<b>PAINTED</b>								
<b>POLISHED</b>								

Type Code	Unit						TOTAL	
	15757		15773		15780		NUMBER	WEIGHT
	Number	Weight	Number	Weight	Number	Weight		
B3a			1	33.8				
H2			2	37.8				
T1b			1	13.2				
T2b			1	25.9				
T4			1	21.4				
<b>Unit Total</b>			<b>6</b>	<b>132.1</b>				

UNIDENTIFIED SHERDS	Unit		TOTAL	
	15773		Number	Weight
	Number	Weight		
<b>Diagnostic Sherds</b>				
Rim	1	3.4	1	3.4
Base				
Lug				
<b>Body Sherds</b>	12	45.4	12	45.4
<b>Unit Total</b>	<b>13</b>	<b>48.8</b>	<b>13</b>	<b>48.8</b>

### TP 2007 pottery - Joanna Pyzel

Alltogether pieces of pottery: 3567

Analysed in 2007: 2962 (83%)

From 2962 analysed (weight 22050 g) 699 unidentified:

561 unidentified body (weight 780 g)

138 unidentified diagnostic (weight 388 g)

2263 (weight 20882 g) identified, after fitting together 2111 left

among them 553 diagnostic (weight 9123 g) – after fitting together 432 left.

All identified diagnostic from 2007 have been analysed.

TP 2007	pieces	%
CM-c	158	6,98
CM-f	446	19,71
CM-s	600	26,51
CO	3	0,13
DMO	19	0,84
DMS-c	14	0,62
DMS-f	334	14,76
DMS-m	355	15,69
DMS-op	121	5,35
DMS-sh	1	0,04
K	9	0,40
OPD	147	6,50
OPL	44	1,94
W	3	0,13
chalk	4	0,18
late	5	0,22
<b>total</b>	<b>2263</b>	<b>100</b>

space	midden							
ware	15279	15280	15281	15282	15289	15822	total	%
CM-f	32	6	27		8	1	74	20,27
CM-s	49	13	39	1	9		111	30,41
CM-c	9	4	4		3		20	5,48
CO					1		1	0,27
DMS-f	21	7	21		8		57	15,62
DMS-m	31	6	11	1	6		55	15,07
DMS-c		1					1	0,27
DMS-op	9		9		3		21	5,75
OPD	6	2	4	1			13	3,56
OPL	3	1	2		3		9	2,47
K	1				1		2	0,55
late		1					1	0,27
<b>total</b>	<b>161</b>	<b>41</b>	<b>117</b>	<b>3</b>	<b>42</b>	<b>1</b>	<b>365</b>	<b>100</b>
burnished	44	14	38		14		110	30,14
unburnished	85	15	53	3	22	1	179	49,04
slipped	32	10	26		6		74	20,27
polished		1					1	0,27
others		1					1	0,27
total	161	41	117	3	42	1	365	100,00
							fragmentation	0,08356227
							pieces	365
							weight	4368

space	midden below unit 12229, 15825	
ware	15820	%
CM-f	21	22,58
CM-s	23	24,73
CM-c	18	19,35
DMS-f	11	11,83
DMS-m	9	9,68
DMS-op	3	3,23
OPD	7	7,53
OPL		0,00
K	1	1,08
<b>total</b>	<b>93</b>	<b>100</b>
burnished	52	55,91
unburnished	33	35,48
slipped	7	7,53
painted	1	1,08
total	93	100
fragmentation	0,04064685	
pieces	93	
weight	2288	

space	building 73	
ware	15816	%
CM-f	8	38,10
CM-s	6	28,57
DMS-f	3	14,29
DMS-m	1	4,76
OPD	3	14,29
total	<b>21</b>	<b>100,00</b>
burnished	2	9,52
unburnished	14	66,67
slipped	5	23,81
fragmentation	0,08235294	
pieces		21
weight		255

space	above building 73								
ware	13528	13531	13575	15234	15235	15236	15237	total	%
CM-f	2	8	1	19	1	9		40	15,69
CM-s	8	14	3	25	3	18	1	72	28,24
CM-c	3	5	2	1	1	6		18	7,06
DMS-f	13	6	1	11	4	11	1	47	18,43
DMS-m	9	11	1	13	2	3	4	43	16,86
DMS-c						1		1	0,39
DMS-op	3	5		1			3	12	4,71
OPD	2	1		8			1	12	4,71
OPL				2	1	3	1	7	2,75
K	1					1		2	0,78
late	1							1	0,39
<b>total</b>	<b>42</b>	<b>50</b>	<b>8</b>	<b>80</b>	<b>12</b>	<b>52</b>	<b>11</b>	<b>255</b>	<b>100</b>
burnished	16	16	2	31	6	20	3	94	36,86
unburnished	20	28	5	33	5	24	5	120	47,06
slipped	5	6	1	16	1	8	3	40	15,69
others	1							1	0,39
total	42	50	8	80	12	52	11	255	100,00
fragmentation								0,11888112	
pieces									255
weight									2145

space	318															total	%
ware	13067	13069	13091	13092	13093	13564	13570	13571	13572	13573	15217	15229	15230	15231	15232	total	%
CM-f		1		2	1	4	25	8	1	1	3	3	1	6	7	63	18,53
CM-s	3	2	1	3	1	2	40	7		4	7	3		14	12	99	29,12
CM-c		2	1	2		1	11	3			1	1		6	4	32	9,41
DMS-f		5		1	1	3	13	2	1		3	2		7	6	44	12,94
DMS-m	1	2		4	2	1	7	4		2	1	3		4	9	40	11,76
DMS-c					1		3									4	1,18
DMS-op	1	2	1			3	9	3			1			2	3	25	7,35
OPD		1		1	1	4	6	2			1	1		1	8	26	7,65
OPL						1		1						1	1	4	1,18
K				1												1	0,29
W							1									1	0,29
chalk											1					1	0,29
<b>total</b>	<b>5</b>	<b>15</b>	<b>3</b>	<b>14</b>	<b>7</b>	<b>19</b>	<b>115</b>	<b>30</b>	<b>2</b>	<b>7</b>	<b>18</b>	<b>13</b>	<b>1</b>	<b>41</b>	<b>50</b>	<b>340</b>	<b>100</b>
burnished	1	6	1	8	3	4	26	9		1	10	3		9	10	91	26,76
unburnished	4	8	2	6	4	13	68	17	2	6	4	8	1	28	32	203	59,71
slipped		1				1	20	4			4	1		4	8	43	12,65
painted						1	1									2	0,59
polished												1				1	0,29
<b>total</b>	<b>5</b>	<b>15</b>	<b>3</b>	<b>14</b>	<b>7</b>	<b>19</b>	<b>115</b>	<b>30</b>	<b>2</b>	<b>7</b>	<b>18</b>	<b>13</b>	<b>1</b>	<b>41</b>	<b>50</b>	<b>340</b>	<b>100</b>
																fragmentation	0,10047281
																pieces	340
																weight	3384

space	318 posthole			
ware	13552	13553	total	%
CM-f		1	1	20,00
CM-s		1	1	20,00
DMS-f		1	1	20,00
OPD	2		2	40,00
<b>total</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>100</b>
burnished	2	1	3	60,00
unburnished		2	2	40,00
total	2	3	5	100
		fragmentation		0,14705882
		pieces		5
		weight		34

space	320				
ware	15267	15802	15806	total	%
CM-f	1		8	9	24,32
CM-s		1	3	4	10,81
CM-c			2	2	5,41
DMS-f	1	1	9	11	29,73
DMS-m		2	2	4	10,81
DMS-op		1	4	5	13,51
OPD		1		1	2,70
K			1	1	2,70
<b>total</b>	<b>2</b>	<b>6</b>	<b>29</b>	<b>37</b>	<b>100</b>
burnished			11	11	29,73
unburnished	1	5	14	20	54,05
slipped	1	1	4	6	16,22
total	2	6	29	37	100
		fragmentation		0,17619048	
		pieces		37	
		weight		210	

space	320 oven	
ware	15269	%
CM-s	2	50,00
DMS-f	1	25,00
DMS-m	1	25,00
<b>total</b>	<b>4</b>	<b>100</b>
burnished	2	50,00
unburnished	2	50,00
total	4	100
fragmentation		0,11428571
pieces		4
weight		35

space	321					
ware	15244	15246	15249	15256	total	%
CM-f	11		5	1	17	26,56
CM-s	19	1	2	2	24	37,50
CM-c	3			1	4	6,25
DMS-f	2		5		7	10,94
DMS-m	6	1	1		8	12,50
DMS-op	2				2	3,13
OPD	1				1	1,56
chalk				1	1	1,56
<b>total</b>	<b>44</b>	<b>2</b>	<b>13</b>	<b>5</b>	<b>64</b>	<b>100</b>
burnished	13		5	1	19	29,69
unburnished	21	2	8	3	34	53,13
slipped	10				10	15,63
painted				1	1	1,56
total	44	2	13	5	64	100
				fragmentation	0,13445378	
				Pieces	64	
				Weight	476	

space	321 late							
ware	13596	15200	15201	15208	15210	15213	total	%
CM-f	1	2	6	26	4	21	60	27,78
CM-s	1	1	4	25		25	56	25,93
CM-c	1			12		6	19	8,80
DMS-f	4	1		15		4	24	11,11
DMS-m	2	3		7	1	5	18	8,33
DMS-op	1		1	8		2	12	5,56
OPD	2	1	1	10		4	18	8,33
OPL			1	3		2	6	2,78
K	1				1		2	0,93
late						1	1	0,46
<b>total</b>	<b>13</b>	<b>8</b>	<b>13</b>	<b>106</b>	<b>6</b>	<b>70</b>	<b>216</b>	<b>100</b>
burnished	3	4	3	24		23	57	26,39
unburnished	7	4	8	72	5	39	135	62,50
slipped	3		2	9	1	7	22	10,19
painted				1			1	0,46
others						1	1	0,46
total	13	8	13	106	6	70	216	100,00
						fragmentation	0,12616822	
						pieces	216	
						weight	1712	



space	above space 321								
ware	13543	13545	13558	13566	15250	15251	15252	total	%
CM-f	4		1		5	7	2	19	23,75
CM-s	4	6		1	4	1	2	18	22,50
CM-c						2	1	3	3,75
DMO		1						1	1,25
DMS-f	2	1		1	4	3		11	13,75
DMS-m		5			5	4	2	16	20,00
DMS-c	1							1	1,25
DMS-op		1		1			1	3	3,75
OPD						2		2	2,50
OPL		1			3			4	5,00
chalk				2				2	2,50
<b>total</b>	<b>11</b>	<b>15</b>	<b>1</b>	<b>5</b>	<b>21</b>	<b>19</b>	<b>8</b>	<b>80</b>	<b>100</b>
burnished	4	7		2	7	7	3	30	37,50
unburnished	6	7		1	9	6	5	34	42,50
slipped	1	1	1		5	6		14	17,50
others				2				2	2,50
<b>total</b>	<b>11</b>	<b>15</b>	<b>1</b>	<b>3</b>	<b>21</b>	<b>19</b>	<b>8</b>	<b>78</b>	<b>97,5</b>
								fragmentation	0,11049724
								pieces	80
								weight	724

space	323				
ware	15206	15207	15224	total	%
CM-f	8	3	9	20	18,69
CM-s	4	6	17	27	25,23
CM-c		2	1	3	2,80
CO			8	8	7,48
DMO			16	16	14,95
DMS-f	3	1	2	6	5,61
DMS-m	5	2		7	6,54
DMS-op		2	6	8	7,48
OPD	2	3	5	10	9,35
OPL			1	1	0,93
late			1	1	0,93
<b>total</b>	<b>22</b>	<b>19</b>	<b>66</b>	<b>107</b>	<b>100</b>
burnished	10	3	15	28	26,17
unburnished	9	12	39	60	56,07
slipped	3	4	10	17	15,89
mottled			1	1	0,93
painted			1	1	0,93
others			1	1	0,93
<b>total</b>	<b>22</b>	<b>19</b>	<b>66</b>	<b>107</b>	<b>100</b>
				fragmentation	0,12214612
				pieces	107
				weight	876

space	324						
ware	13582	15205	15292	15293	15813	total	%
CM-f	3	1	6	4		14	9,93
CM-s	11	5	14	12		42	29,79
CM-c	1			3		4	2,84
CO				1		1	0,71
DMS-f	3		7	17	1	28	19,86
DMS-m	6	3	11	8		28	19,86
DMS-c				3		3	2,13
DMS-op	1		2	7		10	7,09
OPD	2	1	3	2		8	5,67
OPL		1		2		3	2,13
<b>total</b>	<b>27</b>	<b>11</b>	<b>43</b>	<b>59</b>	<b>1</b>	<b>141</b>	<b>100</b>
burnished	9	2	10	18		39	27,66
unburnished	17	7	26	36	1	87	61,70
slipped		2	7	2		11	7,80
mottled				1		1	0,71
painted				1		1	0,71
polished	1			1		2	1,42
total	27	11	43	59	1	141	100
fragmentation							0,15210356
pieces							141
weight							927

space	325	
ware	15261	%
CM-f	18	21,69
CM-s	20	24,10
CM-c	11	13,25
DMS-f	14	16,87
DMS-m	15	18,07
OPD	3	3,61
OPL	1	1,20
W	1	1,20
<b>total</b>	<b>83</b>	<b>100</b>
burnished	34	40,96
unburnished	36	43,37
slipped	7	8,43
mottled	5	6,02
painted	1	1,20
total	83	100
fragmentation	0,15543071	
pieces	83	
weight	534	

space	326	
ware	15803	%
CM-f	13	16,25
CM-s	14	17,50
CM-c	8	10,00
DMS-f	15	18,75
DMS-m	16	20,00
DMS-sh	1	1,25
OPD	10	12,50
OPL	3	3,75
<b>total</b>	<b>80</b>	<b>100</b>
burnished	18	22,50
unburnished	50	62,50
slipped	5	6,25
mottled	4	5,00
painted	3	3,75
total	80	100
fragmentation	0,18348624	
pieces	80	
weight	436	

space	327					
ware	15818	15824	15835	15839	total	%
CM-f	8	6	2		16	13,91
CM-s	11	6	3		20	17,39
CM-c	2	2			4	3,48
DMS-f	14	14	4		32	27,83
DMS-m	4	9	4		17	14,78
DMS-c		1			1	0,87
DMS-op	6	5		1	12	10,43
OPD	1	1	2	1	5	4,35
OPL	4	2			6	5,22
W		1			1	0,87
late		1			1	0,87
<b>total</b>	<b>50</b>	<b>48</b>	<b>15</b>	<b>2</b>	<b>115</b>	<b>100</b>
burnished	14	9	3	1	27	23,48
unburnished	29	31	12		72	62,61
slipped	7	7		1	15	13,04
others		1			1	0,87
total	50	48	15	2	115	100,00
fragmentation	0,16812865					
pieces	115					
weight	684					

## 2007 Archive Report Çatalhöyük Figurines / 2007 Arşiv Raporu Çatalhöyük Figürinleri -

Lynn Meskell (1), and Carolyn Nakamura(2), with Rachel King (3) and Shahina Farid (4).

(1) Stanford University (2) Columbia University (3) Stanford University (4) Çatalhöyük Research Project

### Abstract

The 2007 season had several research objectives. In addition to presenting this season's materials and work, we will discuss the work of two projects: one just completed and one in progress. Since the concentrated excavation of large swathes of midden beginning last year in the 4040 Area, we have seen certain anthropomorphic body forms appear with increasing frequency and the emergence of some rather different animal forms. These results have prompted us to turn our attention towards certain aspects of figural practice. Most generally, figurine forms appear to negotiate various tensions between exaggeration and abbreviation, mobility and immobility. For instance, anthropomorphic examples offer a distinct range and preference for certain bodily zones, while the abbreviated figures play on both the attenuated (basic bodily form of head and torso) and overstated (phallic form). Currently, we are further developing these and other themes in terms of how they invite and allow different forms of human engagement and activity for another publication. We discuss some of the main ideas of this work below and, secondly, we incorporate here our work on figurine depositional patterning that has been ongoing over the past 6 months, the results of which will be published in 2008 in the Cambridge Archaeological Journal.

### Özet

2007 kazı sezonunda çeşitli bilimsel gündemler etrafında çalışılmıştır. Bu sezondan çıkarılan buluntuların ve yapılan çalışmanın tanıtılmasının dışında, iki farklı projeyi tartışacağız; bir tanesi tamamlanmıştır ve bir diğeri hale devam etmektedir. Geçen yıl 4040 Alanındaki kazıların çöplük alanlarına yoğunlaşması nedeniyle, antropomorfik formlar artış görülmüştür ve diğer farklı hayvan formları da ortaya çıkmıştır.

Bu sonuçlar figürlerle ilgili gelenekler açısından yeni bilgilerle bize ışık tutmuştur. Genel olarak ifade edecek olursak, bu figürin formlarına bağlı abartı, küçülterek ifade etme, hareketlilik ve hareketsizlik gibi unsurlar birbirleriyle iletişim halindedir. Örneğin, antropomorfik örnekler çok çeşitli ve farklı öncelikleri yansıtan farklı vücut kısımlarına işaret ederken, bazı figürler ise bazı bölümlerin hem normalinden fazla küçültülmesi şeklinde (baş ve boyun kısmı) hem de normal boyutuna göre abartılarak (fallus formları) gösterilmiştir. Şu anda, bahsedilen temalar ve bunlara bağlı başka olası temalar üzerinde çalışmakta ve bu farklı formların insan aktiviteleri ile ilgili bağlantısını başka bir yayın için tartışmakatayız. Aşağıda bu projenin ana fikirleri üzerine tartışmış buluyoruz ve ikinci olarak da burada Cambridge Arkeoloji Dergisi'nde 2008 yılında yayınlanacak olan, son 6 aydır

yaptığımız figürin kalıntılarının geldikleri kontekslere göre dağılım haritasını ve oranları ile ilgili çalışmayı ortaya koymaktayız.

### 2007 Figurines

The 2007 excavation season retrieved 95 figurines (Table 13). As we have come to expect, most of these finds came from midden contexts. The majority of the figurines were zoomorphic types, with far fewer anthropomorphic and abbreviated forms. Strikingly, relatively few abbreviated examples were found this year. In the past, these types have been less ubiquitous than the animal forms, but generally substantially more common than the human forms; whereas, this year, the number of abbreviated forms is more or less on a par with the human forms (the density calculations for these materials still need to be done in order to see if this apparent pattern is in fact significant, and correlates with any type of change over time and/or space (see discussion below)). Building 65 in the South Area also produced the current project's first human female figurine from a primary context (14522.X8).

Deposition context	Anthropo-morphic	Zoomorphic			Abbreviated	Phallo-morphic	Other	Totals
		Horn	Quadruped	Indeterminate				
Primary	1	3	1	0	0	0	0	5
Secondary	3	2	5	0	0	1	1	12
Midden	7	16	28	5	13	1	7	77
Unassigned	0	0	0	0	1	0	0	1
<b>TOTALS</b>	<b>11</b>	<b>21</b>	<b>34</b>	<b>5</b>	<b>14</b>	<b>2</b>	<b>8</b>	<b>95</b>

Table 13. Summary of 2007 Figurines.



Figure 153: 14522.X8 is a robust, standing female figurine with large breasts and a protruding stomach with a large navel.

14522.X8 (Figure 153) is a robust, standing female figurine made from fine marly clay. The piece was rendered by hand and perhaps using a simple tool. The figure has large breasts and a protruding stomach with a large navel. The backside is damaged, but probably sported slightly protruding buttocks. The legs are divided towards the bottom; however, the figure does not appear to have been free-standing. The figure is broken at the neck and both shoulders; on the right side, the break extends across the front of the breast. The head appears to have been broken off in antiquity as the break is very worn; the shoulder breaks are less worn, but also likely ancient. This figurine is reminiscent of Haçilar female forms now in the Ankara Museum of Anatolian Civilisations, but is distinctly lacking any indication of the genital region or pubic triangle. Rather this figurine, like the other Çatalhöyük female figures, seems to emphasize or articulate non-reproductive and non-genital female traits. Notably, this figurine

also derives from a primary context—a deposit feature under a ladder base (F.2094), which cut into SE platform F.2086 in Space 297 in Building 65 (see discussion below for Building Sequence 65, 56 44, 10).

### **Body Typing**

After working with the figurine materials for four seasons, we have seen the emergence of several bodily traditions within the corpus that often cross-cut the broadly descriptive anthropomorphic, zoomorphic and abbreviated categories. Many of these bodily traditions or treatments also extend across different media such as wall art, human burials and room features/installations. We have continually stressed that the boundaries between figurine categories (ours, discursive) are not rigid and clearly defined. Rather they are quite fluid and we have seen numerous intermediate forms with traits that fall in between the basic types. Three, often enmeshed, bodily themes have become apparent: 1) exaggeration/abbreviation of bodily zones or traits, 2) the mobility/immobility of certain forms or bodily parts, and 3) the enfleshment and defleshment of bodies and body parts. We will touch on only one of these themes here briefly as we are currently compiling more data for publication, namely the notion of bodily exaggeration.

### **Bodily Exaggeration**

The conventions of emphasizing certain body zones and traits or alternatively, pairing down bodies to simple forms or silhouettes, are characteristic of Çatalhöyük practices, but also seemingly to Anatolia more broadly during Neolithic times (Badisches Landesmuseum Karlsruhe 2007). We noted for the human forms last year that there is a strong tendency for exaggerating the buttock and stomach regions seen in increasing numbers on female and non-gendered examples: this attention to the buttocks, to their careful delineation or pronouncement, typically at the expense of other bodily characteristics. These two sites of exaggeration tend to be combined on a single figurine, leading us to consider the lower body as a focal zone, notably without marked genitalia in almost all cases. The non-genital, non-reproductive elements of the lower body do not, however, negate the presence of erogenous zones or a sexual emphasis. There are of course many cultures, including contemporary ones like our own, that place enormous emphasis on the buttocks in social, sexual and visual terms. Where breasts are indicated, they are typically large and pendulous, or malformed and flattened. Many bodies are headless and a growing number show evidence of the removable heads with dowel holes.

Some figures with markedly distended stomachs, also gesture towards certain earlier forms found by Mellaart in which the stomach or lower front extends outward into the head of an animal, as in the example from the 1960s (see Ankara 79-457-65 and 79-161). Clay parallels can also be found for these at Mezraa-Teleilat (Özdoğan 2003) and other Neolithic sites. These should not be confused with Mellaart's stone examples of men with leopards such as Ankara 79-168-65, and 79-162-65. Here the legs are clearly demarcated against the spotted animal bodies that they overlay. Alternatively, the examples we point to here are not clearly defined but rather amorphous bodies that defy the natural boundaries of the body (Figure 154). These are not generally smoothed contours but roughly modeled surfaces. We also note a concerted interest in the navel, marking it either as an indentation or an added detail. This can be



*Figure 154. amorphous bodies that defy the natural boundaries of the body*

seen across the site in figurines, stamp seals as well as the famous plastered wall figures with swelling, decorated stomachs (see Mellaart's 'Shrines' VI.B.8, VI.B.10, VII.31, VII.45). It should be said that we do not interpret this focus as a preoccupation with fertility or birth: there are no representations in the wall art of pregnant women, scenes of birth and so on, and with possibly only one or two representations that might be children. But the navel may be connected to ideas of birthing as a cultural concern and a generative process that may extend beyond offspring to producing animals or ancestors. It also seems to implicate male examples, which may seem incongruent with our own notions and knowledge of reproduction. In the same vein, there are no depictions of sexual intercourse or interaction in any media across the site.



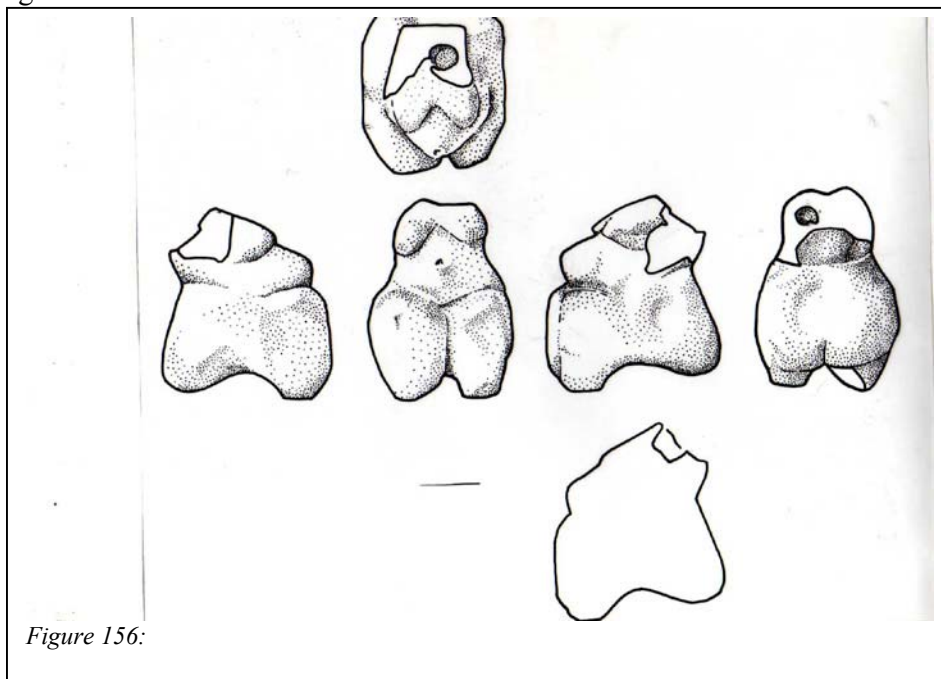
*Figure 155: Plastered splayed figure, probably of a bear*

The only scenes detailing interaction are between wild animals and groups of what appear to be men in the wall paintings uncovered in Mellaart's time.

This year we uncovered a plastered splayed figure, probably of a bear (Figure 155), in the 4040 during construction of the site shelter. Unusually, it was placed in the corner of a building with its legs astride the corner. It was carefully shaped and smoothed;

the stomach was round and protruding with a pronounced navel. It was clear that the stomach was shaped and added later and plastered over to convey a smooth three-dimensionality. The presence of the navel on animal forms, especially animals like bears, presents us with a clear case of anthropomorphism or human/animal cross over. It is salient to note that while in theory all mammals (with the exception of monotremes) are born connected to the placenta by way of an umbilical cord, this does not leave the trace of a navel that is peculiar to human offspring. The mother cleans away the remains of the umbilicus and there is no visible mark. Moreover, unlike human bodies those of animals like cats and bears are covered with fur making any presence even more impossible to view. Just like the numerous bears anthropomorphized today in our own society (for both children and adults) there was a need to insert the navel to make the body legible and familiar for those viewing and comprehending the perhaps human like traits of the animal.

We suggest that the figured world at Çatalhöyük directs our attention to heads and necks, stomachs and buttocks, with scant attention to arms, legs, feet, facial features. The illustrated figurines above from this season's excavations concretely reiterate these trends (see above). The torso is the main area of interest. Figures are naked for the most part, though there are a handful of dramatically costumed examples. This again is at variance with the wall



paintings that show a predominance of male figures costumed in fabrics that mimic leopard skin, with tails or feathered attachments, sometimes with headgear. Given the leopard's solitary and cunning behaviour, it strikes us as an animal that the villager's may not have had regular access to. It should be remembered too that there are no leopard or feline skulls within the plastered forms as there are with other animals.

Returning to the figurines more generally, we should also consider what these specific and diverse body types evoke, represent, and enable in terms of human interaction. For instance, what kinds of bodily engagement and participation do they allow and



require? Many of the abbreviated examples and well-made quadrupeds appear to be free-standing and therefore were capable of sitting or standing about on surfaces or floors, whereas the more elaborated stone and clay human forms are not free-standing and therefore would have had to be held, supported, or kept laid down (Meskell 2007, Meskell and Nakamura 2005, Meskell et al. 2008, Nakamura and Meskell 2006). Both types were likely circulated to some extent, however these different formal aspects perhaps suggest a more personal relationship with the elaborated human figurines in the sense that they required and invited a certain amount of handling.

### Depositional Practices

From the outset, one of our larger goals has been to perform a site-wide analysis of the figurine assemblage through time and space. Based on this preliminary information, we have found that a number of different factors make this kind of intra-site comparison challenging (Meskell et al. 2008).

In the first instance it is useful to make some general comparisons between figurines found in association with buildings and figurines found in external areas (i.e. in large middens and in between walls). Significantly, more figurines come from these external areas, which are all secondary deposition; and of these figurines, most come from midden areas (566), while significantly less come from fill in between walls (31). One notable pattern that emerges in the comparison of building and non-building deposition across the site is that the distribution of figurine types remains the same (Table 14). Zoomorphic forms dominate, followed by abbreviated forms and then anthropomorphic forms. Although not conclusive in itself, this general result supports the idea that figurines were in circulation rather than kept and guarded as ‘special’ objects. Notably, all form types are found in secondary building and discard contexts (for specific parallels at Nevalı Çori see Morsch 2002), contradicting the idea that the elaborated human forms might have been treated differently from the more expediently made animal and abbreviated forms.

	<i>Anthropomorphic</i>		<i>Abbreviated</i>		<i>Zoomorphic</i>		<i>Non-diagnostic</i>		<i>Other</i>		<i>Total</i>
	<i>#</i>	<i>%</i>	<i>#</i>	<i>%</i>	<i>#</i>	<i>%</i>	<i>#</i>	<i>%</i>	<i>#</i>	<i>%</i>	
<i>Location</i>	<i>Figs</i>	<i>Comp</i>	<i>Figs</i>	<i>Comp</i>	<i>Figs</i>	<i>Comp</i>	<i>Figs</i>	<i>Comp</i>	<i>Figs</i>	<i>Comp</i>	
<b>Buildings</b>	20	6%	50	17%	109	34%	105	33%	37	12%	321
<b>External</b>	49	8%	72	12%	223	38%	166	28%	80	14%	590

Table 14. *Figurines Types found in Buildings and External Areas (through 2006).*

Since archaeologists tend to privilege stone over clay we were interested in determining whether specific types of figurines were deposited in midden as opposed to buildings. We discovered that those figurines carved from various stones are found both within midden and buildings, which suggests that there was no distinction between the treatment or deposition of stone and clay figurines. At the time of writing, 61 of some 1966 examples are stone, only 3.1%. From a modern perspective, we might expect that carved stone pieces were considered as more labor intensive, more precious or more ritually charged pieces by their makers. Most of the stone figurines from Çatalhöyük were found during the 1960s, but those that have been excavated since the 1990s with exact provenience suggest that they were not deposited differently from their seemingly more humble clay counterparts. Of eight total stone figurines found during the current excavations, four come from buildings and four come from external or unstratified contexts (Table 15). Taking a larger view,

this pattern may further indicate that, irrespective of material chosen, there was some cohesion in the classification of ‘figurines’ for the inhabitants of Çatalhöyük. This should not be assumed a priori, as type of material chosen may indicate specific contextual hierarchies of production, use, value, meaning and deposition.

<i>ID</i>	<i>Form</i>	<i>Deposition</i>
1505.X1	Phallus	Midden/construction
4116.D1	Human	unstratified
5189.X1	Abbreviated? (fragment)	B.17 - construction
7814.X1	Human	midden
10264.X1	Human	B.58 – fill
10475.X2	Human	B.42 - fill
11324.X3	Human	B.42 - fill
12102.X1	Human	midden

*Table 15. Depositions Contexts of Stone Figurines*

The majority of Çatalhöyük figurines derive from middens rather than houses. This is a general pattern across the site for all materials, however shell, bone and obsidian were periodically curated or cached within houses at Çatalhöyük and have been interpreted as integral for the crafting of memory or long-term social identity. Since such practices of caching, embedding and burying were consistent practices at the site, it is striking that figurines were not typically treated this way (see below for one potential example). Depositional practices at other Neolithic sites (Gebel, Hermansen, and Jensen 2002, Kujit and Chesson 2005, Verhoeven 2002) often indicate protective, magical and ancestral concerns. We have to ask why figurines at Çatalhöyük were not intentionally placed in burials, in foundation deposits, around platforms, ovens and basins, plastered into house features or left on floors. Perhaps their ease of manufacture and general ubiquity meant that they were considered commonplace and easily reproducible, thus not ‘special’ in the same way. Conversely, an argument could also be marshalled that their very frequency and quotidian characteristics suggest that they were central to the Çatalhöyük lifeworld. They may not have operated within some imagined separate sphere of ‘religion’ or ‘ancestor worship’ but rather in the practice and negotiation of everyday life. These ideas of cultic and religious figurine practice, while seemingly commonplace in archaeological narratives do not find much purchase with the actual figurine data at Çatalhöyük.

Similar to the finds of obsidian, stamp seals, and so on, Çatalhöyük figurines come from secondary deposits, mostly midden and fill (Tables 16 and 17). The midden number is especially high due to the fact that vast swathes of midden excavated in the 4040 and South Areas produced enormous amounts of materials, including figurines during the 2007 field season. Again it is notable that figurines have not been found intentionally placed on benches, around hearths or buried with individuals, but rather were retrieved from the mix of materials used to fill houses after abandonment, as well as from other deposits and middens. It has been suggested that both the abandonment of houses and their subsequent infilling was underwritten by both practical and symbolic motivations, possibly in an attempt to maintain continuity across generations or lineages (Hodder 2006: Ch. 6). These practices were repetitive,

<i>Building</i>	Levels represented	% Excavated Assessed at the end of 2007.	Dry sieve volume (KL)	# Figurines Includes indeterminate pieces.	Figs/KL
1	VIII-IV	Full	60.555	30	0.495
2	IX-VII	2/3, ongoing	30.446	24	0.788
3	VII-VI	Full	35.322	141	3.992
<i>Sp. 87 (room)</i>	VII-VI	1/2, ongoing	0.968	4	4.132
<i>Sp. 88 (room)</i>	VII-VI	Full	8.440	13.5	1.600
<i>Sp. 89 (room)</i>	VII-VI	Full	7.250	16.5	2.276
4	VIII	1/3, ongoing	5.195	2	0.385
5	VII-V	1/2?, on display	37.564	19	0.506
6	VIII, VI	1/3 – truncated, completed	31.508	17	0.540
7	VIII-VII	Wall stub and niche fill, completed	0.362	3	8.287
8	VIII-VII	West wall only, completed	0.361	6	24.931
10	IV	c. 1/5, heavily eroded, completed	6.232	2	0.321
16	IX	1/8, completed	0.035	6	171.429
17	X-VIII	1/2, ongoing	36.838	22	0.597
18	IX	1/2	3.305	13	3.933
21	VIII	Less than 5%, completed	0.000	1	-
22	IX	Less than 5%, completed	0.075	1	13.333
23	X	1/2, ongoing	9.365	5	0.534
29/42	V-IV	2/3, completed	1.131	2	1.768
40	VI	Less than 10%, completed	0.000	1	-
43	VIII	Less than 1%, ongoing	6.990	2	0.286

44	IV	Full	1.152	2	1.736
45	V	1/3	0.400	1	2.500
47	IV	1/5, completed	0.000	13	-
49	VI	3/4, ongoing	3.228	13	4.027
50	VII	Full	0.000	0	0.000
51/52	VI-V	2/3, ongoing	0.030	0	0.000
53	VI	1/3, completed	6.379	2	0.314
56	V-IV	Full	0.015	5	-
57	IV-III	1/3, ongoing	0.026	0	0.000
58	IV-III	1/3, completed	0.060	0	0.000
59	VI-V	Full	0.180	0	0.000
60	V-IV	1/3, completed	1.44	3	2.080
61	I-0	1/2, completed	1.878	0	0.000
62	II-I	1/2?, completed	3.251	0	0.000
63	V-VI	1/4, ongoing	0.030	0	0.000
64	V-VI	1/3, ongoing	0.210	0	0.000
65	VI-V	Full	0.000	2	-
66	VI-V	None, ongoing	0.040	0	0.000
67	IV	1/5, ongoing	1.448	0	0.000
68	VI-V	1/5, completed	0.120	0	0.000
69	VI-V	1/8, completed	0.000	0	0.000
<i>Space 229</i>	VI-V	1/3, ongoing	0.120	1	8.333
<b>Midden</b>					
60	V-IV	Less than 10%, ongoing	6.880	34	4.942
85	VII-VI	1/10, ongoing	1.947	54	27.735
106	VII	1/5, completed	5.092	2	0.393
107	VII		1.215	5	4.115
<i>107-108 Transition</i>	VII		0.735	3	4.082
108	VII		5.397	7	1.297
115	VIII	1/3,	38.484	66	1.715

		ongoing			
117	IX		21.992	108	4.911
181	Pre-level XII	Unknown	34.285	84	2.450
226	V-III	Unknown, ongoing	14.780	15	1.015
227	IV-III		0.120	2	16.667
260	VI	Unknown, ongoing	1.440	4	2.778
261	VI	Unknown, ongoing	10.563	51	4.828
268	II	1/4, ongoing	3.190	11	3.448
279	V		17.125	85	4.964
280	V		12.540	65	5.183
283	V-IV		0.030	1	33.333
294	V-IV	Unknown, ongoing	0.000	3	-
295	IV/V	Unknown, ongoing	0.000	1	-
301	V-IV	Unknown, ongoing	0.000	1	-
306	IV/V	Unknown, ongoing	5.680	1	0.176

Table 16. Summary of Figurine Totals and Densities in Buildings and External Spaces (through 2006).

time consuming and meaningfully enacted. Some of these fill deposits were carefully processed or even screened, as in the case of Buildings 1, 4 and 5. The amount of soil that went into filling Building 5 is comparable with the amount of mudbrick and earthen material that could have been obtained from the destruction of the upper walls and roof (Hodder, Cessford, and Farid 2007). But there are also cases of houses being filled with midden when they were not to be rebuilt, as for Building 2. In the earlier excavations Mellaart (1967) also noted large amounts of burnt material and construction debris in buildings that constituted another kind of fill. Additionally, there is some evidence that different fills were placed in different rooms within a single building at Çatalhöyük. One might deduce that there were various methods appropriate for filling in a house throughout the site's history, and that each was carefully executed (Hodder, Cessford, and Farid 2007).

Focus on house lifecycles and their distinct processes of infilling, reuse and abandonment provides a practical analytical horizon for the study of figurine work since here our attention is drawn to process rather than to a clearly defined space or product. Work by Cessford (2006) on dating house lifecycles at Çatalhöyük is salient to our analysis, since any easy determination of observable phases for houses is complicated by an elaborate and unending repertoire of rebuilding and replastering practices. Using a variety of measuring techniques he demonstrates with a reasonable level of agreement that the lifespan of houses fell in the range of 50 to 80 (68% probability) or 45 to 90 (95% probability) years. These recent results are broadly comparable with ethnoarchaeological analysis that posits mudbrick buildings in semi-arid climates tend to last 50 to 100 years (Cessford 2006).

In order to get at both site-wide and localized patterning, we worked strictly with the volume of sieved fill material from individual houses and middens to ascertain the density and type of figurines present. Most useful are those buildings excavated by the current project, particularly those that have been fully excavated, with substantial volumes and which do not significantly overlap with buildings previously excavated in the 1960s.

One of our first tasks then was to investigate the density of figurines retrieved during the current excavations and to try and work in a limited comparison with the earlier, less reliable, data from Mellaart's excavations where possible. In fact, such a comparative analysis is necessary. If one were to take the Mellaart finds at face value, specifically the published pieces and thus ignore the wide variation in figurine types, then one might posit that two rather different sites had been dug (see Mellaart 1962, 1964, 1965, 1966, 1967, 1975). Mellaart would have uncovered a large number of impressive stone and clay pieces, whereas conversely the new project would have found more mundane clay examples of quadrupeds, horns and bucrania, and abbreviated forms. Although we have found a few impressive examples, the mundane dominate numerically. Might this discrepancy be explained away by differences in excavation methodologies and goals or does it, in fact, present some kind of meaningful patterning? Clearly, we need some dialogue between the two periods of excavation in terms of material culture — despite the fact that exact contexts are not available, given the lack of specificity in recording during the 1960s (Todd 1976). The scale and speed of the early work uncovered a dazzling array of materials, yet lacked the benefit of the current team's careful, contextual methodologies. This is evinced very clearly with the figurine corpus. As was typical of the time, most of the noteworthy objects (totaling only 288 figurines) were hand selected while most of those considered more 'ordinary' were neither recorded nor kept. Moreover, since Mellaart's workmen were rapidly excavating one house per day it is not surprising that they did not record the exact provenience of each figurine. Excavated deposits were not sieved either, which accounts for the differences in retrieval rates between the two projects.

One way to explore this scenario is to re-excavate Mellaart, to literally work in his areas and through his spoil heaps. Under the aegis of a wider EU funded educational program called TEMPER, a children's summer school is conducted every year. Part of the children's activities on site is to excavate and sieve the 1960's spoil heap and we now have a much clearer idea of what Mellaart missed, overlooked or even discarded. Our numbers indicate that he missed significant amounts of whole figurines (abbreviated and zoomorphic), along with figurine fragments, non-diagnostic pieces, shaped clay pieces and scrap that is probably ceramic debitage (see also Morsch 2002). The TEMPER Summer School project (Bartu Candan, Sert, and Bagdatli 2007) removed a total of approximately 23,050 litres of dry sieve from Mellaart's spoil over several years (The density calculations for these materials still need to be done in order to see if this apparent pattern is in fact significant, and correlates with any type of change over time and/or space (see discussion below)), retrieving some 58 clearly identifiable figurines to date. This gives us a density of 2.51 figurines per kilolitre, a rather high density in comparison with the buildings on site (see discussion and Table 16 below), and a clear indication of the materials that were missed in the 1960s.

Materials from the current excavations in Mellaart's area (now called the South Area) also contribute to balancing out the profile of the 1960s excavation. The current figurine database includes these older materials, recorded in appropriate detail yet, since contextual information is missing or minimal for most of these finds, they cannot be used in analyses that directly target patterning over time and space. Ostensibly our analyses of figurine densities are based on data collected from the recent excavations at Çatalhöyük. The densities presented here are the ratio of figurines to kilolitre of the total material excavated from buildings prior to being dry sieved for individual small finds. Despite protocol stipulating that every unit excavated be documented and its dry sieve volume and small finds recorded, several points regarding our excavation data must be made. First, the dry sieve volumes reported for each unit, while well-noted in the excavation reports, are not scientifically precise measurements; they are the most accurate estimates possible given the excavation conditions and are not considered absolute quantities. As such, we do not intend these volumes to represent a scientifically precise measurement of the buildings, but rather they provide an indication of the relative proportion of contents from each building at this stage in the excavation process. Additionally, we do not include in our analyses buildings that have only a small proportion excavated by the current project, such as those in the South Area where Mellaart left small portions of houses unexcavated. These tend to have little or no figurines and yield almost no deposit for dry sieve, such as Buildings 7, 8, 16, 21, 22, and 40. Other buildings that are located in the new 4040 Area and are only partially excavated at the time of writing will not be considered in detail here, but will in future work. These include buildings 47, 54, 55 and so on (see Table 16).

<i>Level</i>	<i>Buildi ng</i>	<i>Total # Figurines</i>	<i>Primary</i>			<i>Secondary</i>			<i>Internal Midden</i>		
			<i>Volu me (KL)</i>	<i>#Figuri nes</i>	<i>Densi ty</i>	<i>Volume (KL)</i>	<i>#Figuri nes</i>	<i>Densi ty</i>	<i>Volume (KL)</i>	<i>#Figuri nes</i>	<i>Densi ty</i>
<b>IV</b>	1	0	0.000	0	0.000	0.365	0	0.000	0.000	0	0.000
	10	0	0.000	0	0.000	0.410	0	0.000	0.000	0	0.000
	44	1	0.000	0	0.000	0.000	1	-	0.000	0	0.000
	47	1	0.000	0	0.000	0.000	1	-	0.000	0	0.000
<b>V-IV</b>	1	2	0.320	0	0.000	1.041	2	1.921	0.000	0	0.000
<b>V</b>	45	1	0.000	0	0.000	0.000	1	-	0.000	0	0.000
	Sp. 229	1	0.000	0	0.000	0.120	1	8.333	0.000	0	0.000
<b>VI-V</b>	1	28	6.728	5	0.743	27.656	23	0.832	0.000	0	0.000
	5	0	5.000	0	0.000	5.433	0	0.000	0.000	0	0.000
<b>VI</b>	3	141	7.245	5	0.690	25.336	122	4.815	2.741	14	5.108
	Sp. 87	4	0.000	0	0.000	0.986	4	4.057	0.000	0	0.000
	Sp. 88	13.5	0.835	0	0.000	2.606	13.5	5.180	0.000	0	0.000
	Sp. 89	16.5	3.094	2.5	0.808	4.336	14	3.229	0.000	0	0.000
	6	1	0.000	0	0.000	0.330	1	3.030	0.000	0	0.000
	40	1	0.000	0	0.000	0.000	1	-	0.000	0	0.000
	49	13	0.000	0	0.000	0.465	13	27.957	0.000	0	0.000
<b>VII- VI</b>	1	0	0.000	0	0.000	23.834	0	0.000	0.000	0	0.000
	5	19	0.030	0	0.000	32.101	19	0.592	0.000	0	0.000
<b>VII</b>	2	0	0.000	0	0.000	0.020	0	0.000	0.000	0	0.000
	7	0	0.000	0	0.000	0.120	0	0.000	0.000	0	0.000
	8	3	0.000	0	0.000	0.360	3	8.333	0.000	0	0.000
<b>VIII</b>	1	0	0.000	0	0.000	0.105	0	0.000	0.000	0	0.000
	2	0	0.000	0	0.000	0.020	0	0.000	0.000	0	0.000
	4	2	0.405	0	0.000	4.790	2	0.418	0.000	0	0.000



	6	16	0.000	1	-	31.178	15	0.481	0.000	0	0.000
	7	3	0.000	0	0.000	0.240	0	0.000	0.000	3	-
	8	6	0.000	0	0.000	0.361	6	16.620	0.000	0	0.000
	17	4	0.000	0	0.000	6.665	4	0.600	0.000	0	0.000
	21	1	0.000	0	0.000	0.000	1		0.000	0	0.000
<b>IX</b>	2	24	0.398	1	2.513	29.060	21	0.723	0.195	2	10.256
	16	6	0.000	0	0.000	0.000	6		0.000	0	0.000
	17	17	0.000	0	0.000	24.730	17	0.687	0.000	0	0.000
	18	0	0.000	0	0.000	0.060	0	0.000	0.000	0	0.000
	22	1	0.000	0	0.000	0.075	1	13.333	0.000	0	0.000
<b>X</b>	17	1	0.000	0	0.000	0.000	1	0.000	0.000	0	0.000
	18	13	0.000	0	0.000	3.245	13	4.006	0.000	0	0.000
	23	5	0.385	3	7.792	8.980	2	0.223	0.000	0	0.000

Table 17: Figurine distribution in Excavated Buildings (through 2006).

Due to the recording procedure for data collected from individual units of excavated material, some of this material were recorded as belonging to particular buildings but could not be assigned to sequential levels. Therefore, there is a slight discrepancy of only a few liters between the total volumes reported in Table 3 and those in Table 5 as a result of more readily apparent associations with spatial features such as buildings than with chronological features. This discrepancy does not impact the conclusions drawn from the data shown here, nor does it greatly alter the reported figurine densities. For further explanation, please visit <http://www.catalhoyuk.com/database/catal>

<i>Context</i>	<i>Anthropomorphic</i>	<i>Zoomorphic</i>	<i>Abbreviated</i>	<i>Non-diagnostic</i>	<i>Other/unknown</i>	<i>Context Totals</i>
<b>Construction/make-up/packing</b>	1	23	4	19	16	63
<b>Fill</b>	11	57	29	54	31	181
<b>Floors</b>	2	14	5	17	13	51
<b>Midden</b>	5	9	9	8	5	36
<b>Other (backfill, animal hole, unknown)</b>	1	2	3	4	0	11
<b>Form Type Totals</b>	<b>20</b>	<b>105</b>	<b>50</b>	<b>102</b>	<b>65</b>	<b>342</b>

Table 18: All Buildings: Breakdown of Figurine Types by Context (through 2006).

### **Building Biographies**

As outlined above, figurines and shaped clay objects are largely found in secondary contexts (Table 17); within buildings figurines most commonly appear in fill (Table 18). Only very occasionally have they been found even near floors in buildings. In the current excavations we do not see the patterns that Mellaart evinced, namely that figurines (specifically anthropomorphic) were retrieved from special or cultic areas associated with features such as platforms, shrines, grain bins and so on (but see discussion of 14522.X8 above). For example, Mellaart (1964) described finding a ‘goddess figurine’ painted red in an associated shrine. We too have found red paint on clay figurines but none from such grandiose contexts since the whole notion of what constituted a ‘shrine’ has been cogently deconstructed (Hodder 1996). Mellaart often claimed that figurines (‘Goddess figurines’ no less) were found only in ‘shrines’, whereas the more rigorous excavations over the past decade have shown them to be consistently in rubbish and fill deposits, alongside vast quantities of animal bone, plant remains, ground and chipped stone and other small finds.

In general, we must remember that figurines and fragments of figurines were deposited into these fills and dumps alongside many other cultural and organic materials. Although these are secondary deposition contexts, such assemblages still provide useful information concerning the potential range of figurine practice at the site. While the broader site-wide patterning suggests that perhaps all figurines were treated equally and randomly, the resolution at the building level could present a somewhat different story. The building figurine assemblages vary significantly, from quantity of figurines to the composition of the assemblage in terms of form types. However inconclusive, certain building complexes are quite suggestive.

### **Buildings 44 and 49**

In terms of notable figurine assemblages associated with particular buildings, Buildings 42 and 49 stand out from the rest. B.42 in the South Area has revealed a number of interesting characteristics and associations. Although severely truncated and therefore not a complete building, excavators were able to reveal the southern part of the building, which was extremely well preserved (see Chaffey and McCann 2004). They noted a particular division of space where activity focused around two platforms and a bench in the eastern part of the building. Initially, the excavators were inclined to interpret this building space as perhaps ‘special/different’ from the typical Catalhöyük house. This specific division of space formed a single layout that was maintained throughout the building’s lifecycle, with the platform and bench features, ‘clean’ and ‘dirty spaces’ remaining constant. However, such conservation of layout and division of space is typical of many houses, and while B.42 has some interesting features, it is not so different as to support a claim that its purpose was less ‘domestic’ or more ‘ritual’.

There are nevertheless some interesting aspects of this building assemblage. First, a foundation burial containing a female holding a plastered skull was dug. And second, the only two figurines to come out of B.42 (10475.X2, 11324.X3) were, notably, both elaborated human forms depicting limbs and head/face features, made of stone. Such human stone figurines have been the least commonly found under the current excavations at the site, as outlined above. While their deposition in building and redeposited burial fill suggests that these were not highly revered, ‘inalienable’ objects (Wiener 1992), the plastered skull burial and figurine forms associated with

B.42 might articulate a focus on persons or certain treatments or aspects of the human body. Given the particularities of Çatalhöyük house lifecycles, we might consider the possibility of the biography, or use lives, of certain figurines as being connected to a particular house or place. This idea does not imply that such figures were static, religious objects of worship, rather they might have belonged to a certain spatiotemporal setting or genealogical lineage. Although the effort made to preserve and maintain the building in its original plan is not unique to this house, such concern coupled with the internment of a rather elaborate burial assemblage and durable human figurines in house and burial infill does seem to articulate a special concern for multi-generational human relations within this household during its main use and perhaps afterwards. These practices — the concealed and carefully structured burial, and the remaining durable presence of stone figurines — perhaps articulate a multigenerational temporality, one that reinforces a concern for durability and memory of certain people, ancestors or groups. Statements crafted in durable media or contexts in some sense strive to become objects of memory, as if created for descendents (Bakhtin 1981:19, Nakamura in prep). Even when these memory anchors are not visible, they may continue to ‘work’ in their being remembered, forgotten and rediscovered.



Figure 157: 10475.X2. Front (L) and back (R) views. (7.5h x 4.9w x 3.5th cm, 84g)



Figure 158: 11324.X3. Front (L) and back (R) views. (2.8h x 1.4w x 1.1th cm, 2.5g)

It is also interesting to consider the different scales of these two figurines. While 10475.X2 appears to depict a female form with hands held up to its chest and is of substantial size, 11324.X3 is a small androgynous form. Given the occurrence of both

relatively large (palm-sized) and extremely small (fingertip-sized) elaborated figural forms within the Çatalhöyük assemblage, we have often wondered about the significance of this difference in scale. We have noted previously that that the human figurines tend to receive a rather non-sexualized treatment; genitalia are not depicted, but rather buttocks, stomachs and breasts are emphasized (Nakamura and Meskell 2006). Taken in toto, the human figurines from the current Çatalhöyük excavations do not articulate the reproductive lifecycle of pregnancy, birth, adolescence, and death. We have found only one very unusual figure possibly depicting pregnancy (however, this interpretation is rather debatable) and no examples clearly depicting any of the other events. Both of the B.42 figures display exaggerated stomachs and buttocks, which are redolent of a non-generative sexuality or personhood, rather than a focus on a reproductive lifecycle. Furthermore, these forms are often reminiscent of geriatric bodies with markedly slumping or angular features.

Building 49 in the 4040 Area presents a very different scenario. Almost all figurines found here were expediently made animal quadrupeds (14 quadrupeds or fragments thereof and 2 non-diagnostic pieces), 8 of which were found in a cluster (7958). Although B.49 is still under excavation, it appears to have been occupied for a considerable period of time based on the number of wall plaster applications and possibly the number of burials present. Intriguingly, its complex stratigraphy indicates that it was subject to constant alteration and modification. At least superficially, this building seems to have a strong association with animals, since both the building infill and post retrieval pit (13641) fill contained horn cores (some deliberately plastered) and other interesting animal bones. Russell et al (2004) regard the former as a large spread of feasting remains and installations, and the latter animal bone assemblage as something atypical for the site given the extensive range of taxa represented in a fairly small assemblage (at least three different species of birds, large amounts of eggshell and fish bone, as well as equid, pig, deer, and dog bones; small quantities of cattle bone, antler, some turtle shell; a hedgehog bone; and two or probably three juvenile sheep and at least one perinatal sheep/goat). The faunal team suggests that this sequence may represent the remains of a special meal or closely spaced series of special meals.



Figure 159: Figurines from B.49. (Left) 7958.X5, quadruped; (Center) 7958.X2, quadruped; (Right) 7938.X1, quadruped with 'stab mark' from wall baulk.

While the composition and density of such faunal assemblages are provocative, these deposits may not necessarily indicate feasting events or the concomitant interpretation of 'ritual' activity. This building could also be read as more generally evoking a place of human-animal relations, perhaps those of a more regular or repetitive nature. Other notable features of B.49 include the presence of several layers of painted plaster on the northern and western walls. Excavators note that on the western wall, paintings consisting of red and black geometric designs appear to have been plastered over

relatively quickly and then repainted with an identical design in the exact same location every time. The above-mentioned aspects of this building are suggestive of some kind of frequent, repetitive activity possibly related to animal control, processing and/or consumption. Certain aspects of the figurine assemblage in this building may lend support to this idea. As mentioned briefly earlier, these quadrupeds are rather expediently made. While they are certainly recognizable as animal forms, their proportions and renderings were not naturalistic in the strictest sense. Rather, efforts seemed to focus on the treatment of these forms perhaps immediately after their fabrication. For instance, 8 of the 12 quadruped figurines bear some evidence of intentional puncture marks (4), breakage (2) or deformation (2). The remaining four figurines are fragmentary and inconclusive in this regard. At least the puncture marks and deformation would have to have been carried out while the clay was still plastic. These characteristics would seem to indicate that it was the process of making, acting upon and discarding or depositing these figures that was deemed salient — not the final object product. While these and other events associated with B.49, to some extent, appear to have been ‘ritualized’, it is important to not automatically assume that they comprised special rites that were radically set apart from everyday life. In fact, it is quite possible that they were part of quotidian or regular activities.

### **Building Sequence 65, 56 44, 10**

One find from this season also brings us to consider the presence of figurines in house ‘histories.’ As mentioned above, Building 65 located one of the few figurines found in a primary context (14522.X8). Under the current excavation program, almost all of the figurines have come from secondary deposition contexts. However, this figurine was found in a cluster deposit (14522), which lay in front of and around a pot inset into the floor at the base of the ladder, and also contained equid scapulae, stones, and an infant bone. Excavator, Roddy Regan (2006) has noted that the sequence of Buildings 65, 56, 44 and probably 10 share certain continuity in layout and events, and has surmised that the same family group occupied the same space throughout the house sequence. For instance, he has observed the placing or leaving of objects or groups of objects prior to a space or feature going out of use and subsequently becoming something else, and similar patterns of plaster use in Buildings 56 and 65 (Ibid, 103). The placement of a pot near ladder bases is also a repeated activity, common to Buildings 44, 56, and 65.

One notable aspect about this building sequence is that it has produced very few figurines: 3 from B.65, 5 from B.56, 2 from B.44 and 2 from B.10. All but two of these are non-diagnostic pieces or horn fragments from make-up/packing or ashy layer contexts. The remaining two are anthropomorphic figurines: one a human torso fragment from the make-up of a platform in B.44 (10663.X1), and the other, a human head, possibly complete, from a room fill deposit between walls in B.65 (13352.H1). This latter figurine and context are notable given that four of the X-finds from 13352 seemed to have been deliberately placed on the floor along with cluster 13559. These materials included horn cores, obsidian, an antler, a scapula, a bone awl and a small stone. Although, we can only speculate at this point, it would be interesting to consider the possibility that the human head figurine was included among these deliberately placed items; if this were the case then the assemblage would bear some similarity to the ladder deposit described above. These two scenarios, then, might point towards a specific use or role of human figurines in the house biography or

household continuity, perhaps acting as a kind of memory anchor as discussed above in relation to Building 42.

### **Figurines in Buildings**

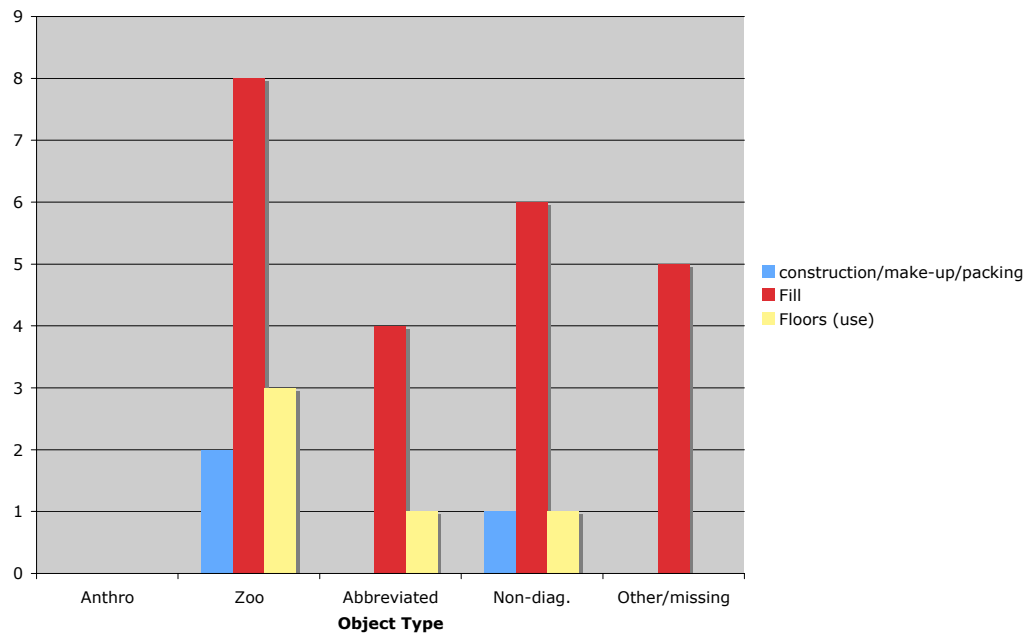
What is compelling about these different building assemblages is that they suggest a very diverse set of figurine practices. Figurine assemblages like building plans, seem to conform to certain general patterns, yet they also demonstrate remarkable flexibility and diversity. In the best cases, the consideration of figurine patterning alongside other building features and practices suggests some compelling relations or notions related to house character and biography, its associated activities, and the concerns of its inhabitants. The B.42 scenario with human figurines and plastered skull burial might lend support to the idea that some figures were considered meaningful or were 'working' objects that were essential parts of the house and even continued in their affective presence after being buried within fill. Whereas, the animal-rich B.49 assemblage suggests that some figurines were more spatially and temporally circumscribed by specific locales and practices. The absence of figurines in houses such as the closure phase of B.52 is also provocative in the sense that elsewhere figurines have been ubiquitous in building closure infill (e.g. B.3) or even interpreted as part of a ritualized 'closing event' (B.17, see discussion below). Moreover, that B.52 had no figurines but contained a room with striking architectural features casts further doubt on a tacit connection between figurine work and ritual or religious practice. Finally, the general ubiquity of figurines in fill and midden initially led us to question if some figurines were made primarily for discard. Unlike other materials such as clay balls and obsidian, figurines are not found stored in caches or bins inside buildings, nor are they embedded in architectural features like certain animal bones. As relatively non-labour-intensive objects, many clay figurals might have been quickly made and quickly discarded. A few deformed pieces suggest that the clay was still somewhat wet and plastic at the time of discard. In other cases, however, observable patterns of wear tend to mitigate such a theory. Nonetheless, much has been made of a broken figurine (5043.X1) in B.17, where the head and body were found within an ashy fill associated with a hearth (F.541). It has been interpreted as part of a ritualized 'closing event' (Hamilton 2006), however, it is equally possible that the figurine was accidentally broken during the process of filling the house. Another broken head of a similar type, though missing the remaining body, was also discovered within the fill of this same house (see Farid and Cessford 1999).

### **Figurines in External Areas**

In addition to building contexts, figurines are also commonly found in external midden areas. Some of these are contemporary and associated with certain buildings, while others cannot be connected to particular buildings and habitations. In the former case, Space 85 can be associated with B.3 habitation and Space 279/280 with B.60 (see also Table 16). In both cases, the figurine density is significantly higher in the external midden area than in the buildings, and although B.60 is still under excavation, no figurines have been found in this building thus far. We should not be surprised that there are higher densities in midden areas, and little or no presence of figurines in adjacent houses. Activities employing figurines such as narrative, play and performance, as well as their original manufacture and decoration, might have taken place outside. Additionally, their ubiquity in dumps points to the highly disposable nature and perhaps brief use life of most figurines.

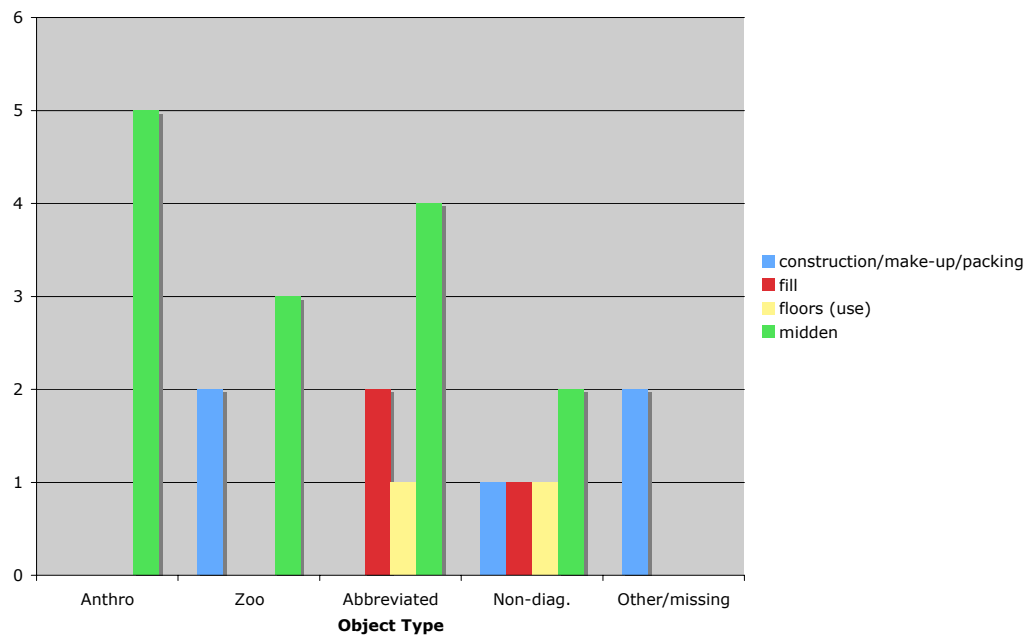
Appendix: Additional Charts from depositional analysis

**Bldg. 1**



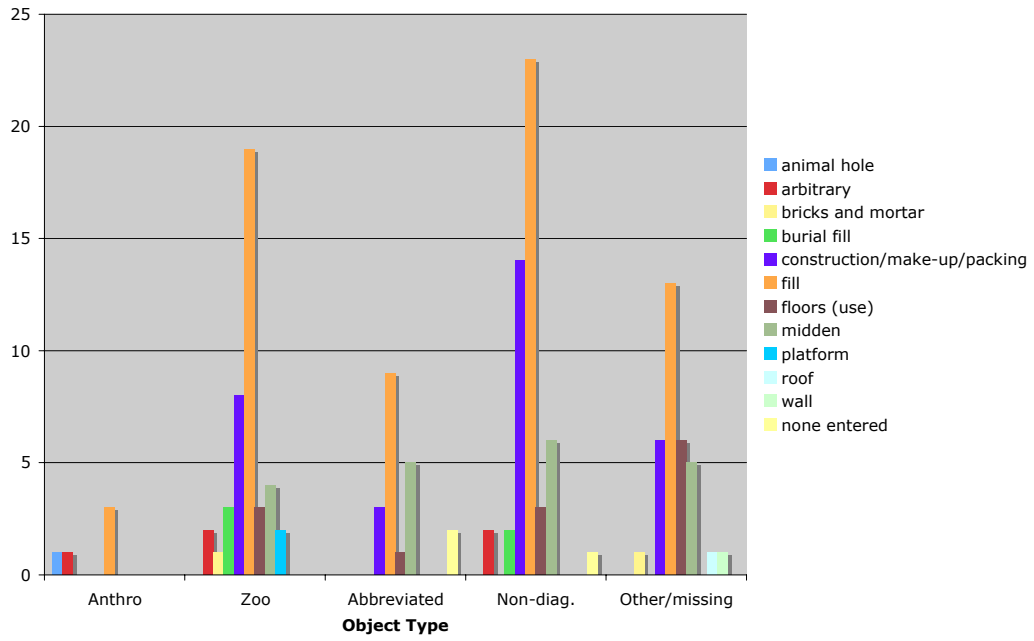
**Building 1**

**B2**



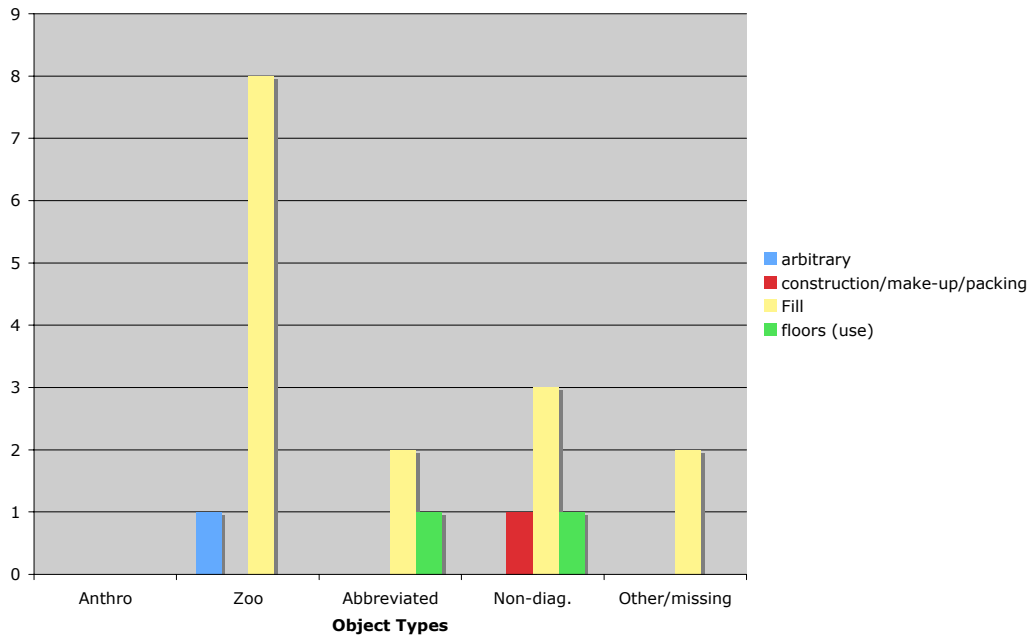
**Building 2**

**B3 (BACH)**



**Building 3**

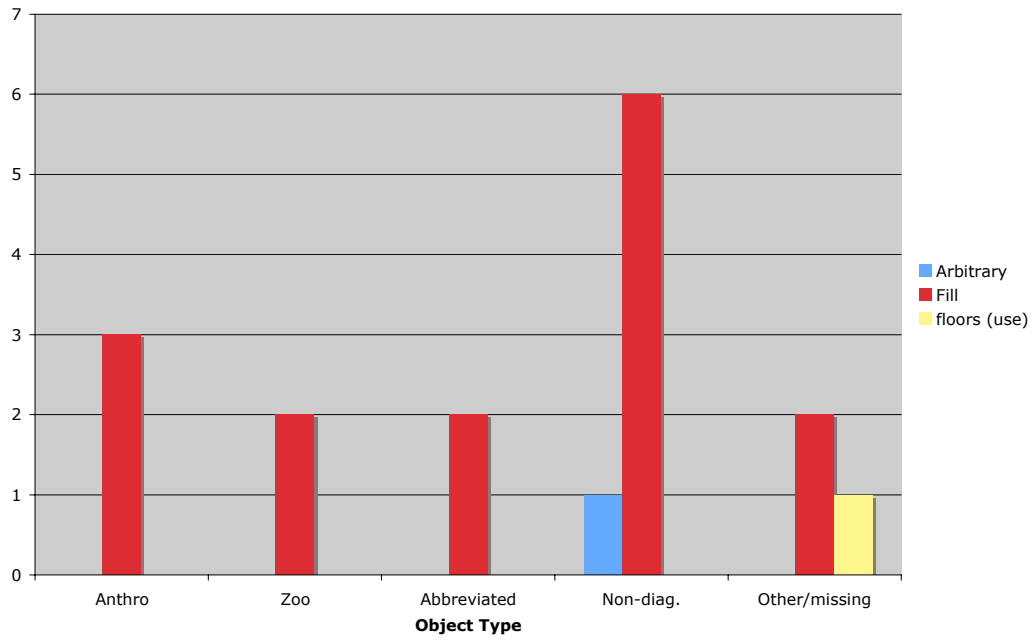
**B5**



**Building 5**

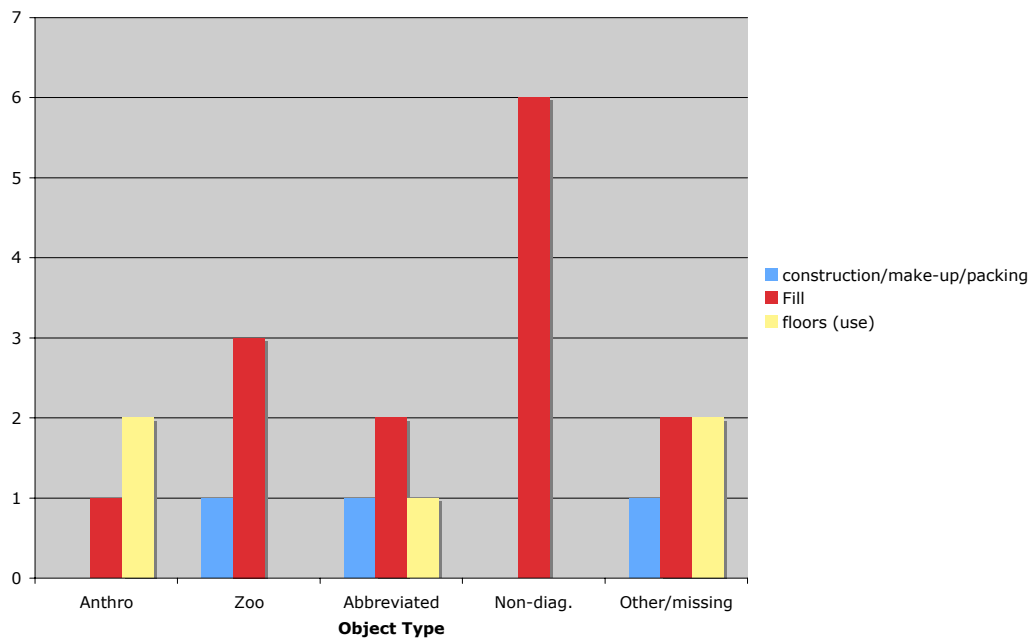


**B6**



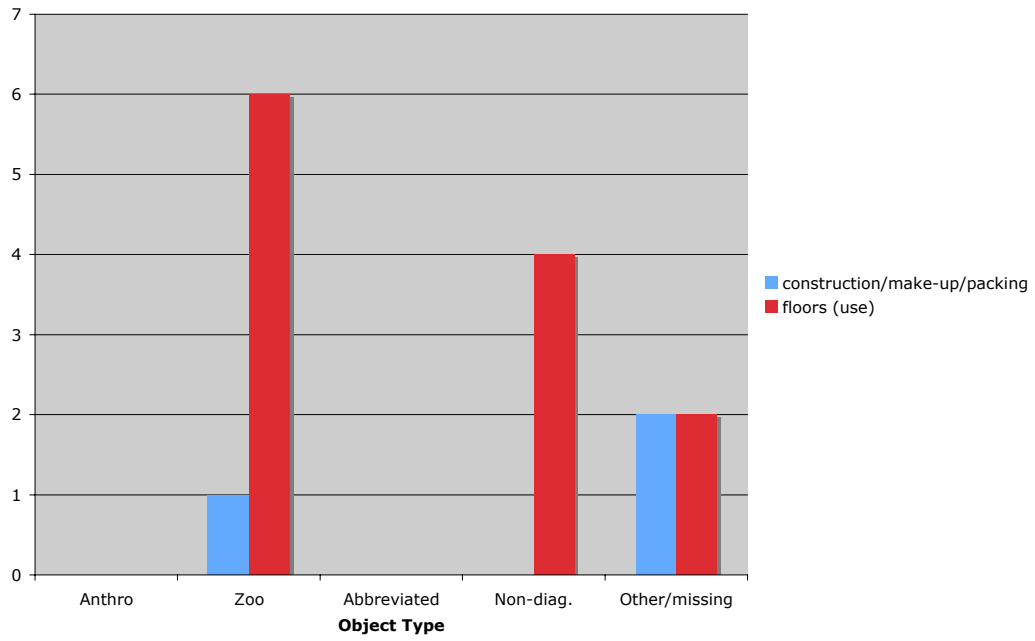
**Building 6**

**B17**



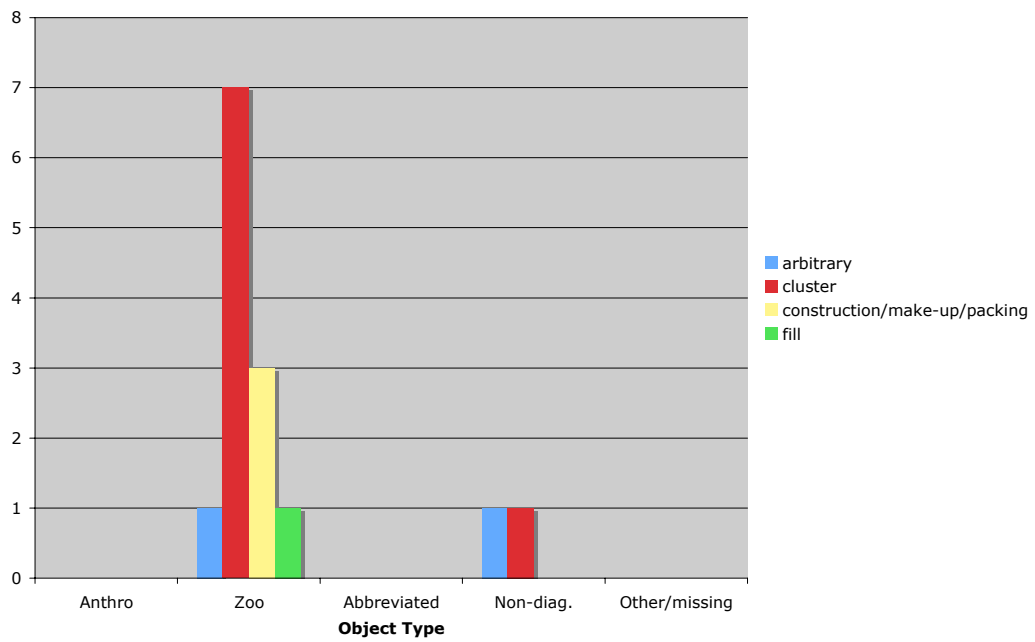
**Building 17**

**B18**



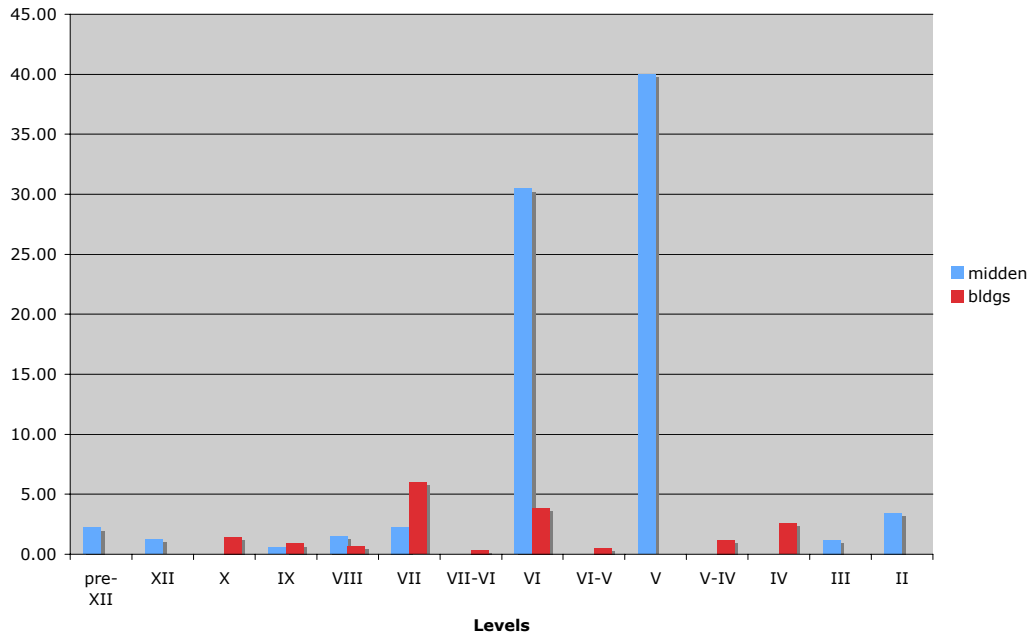
**Building 18**

**B49**

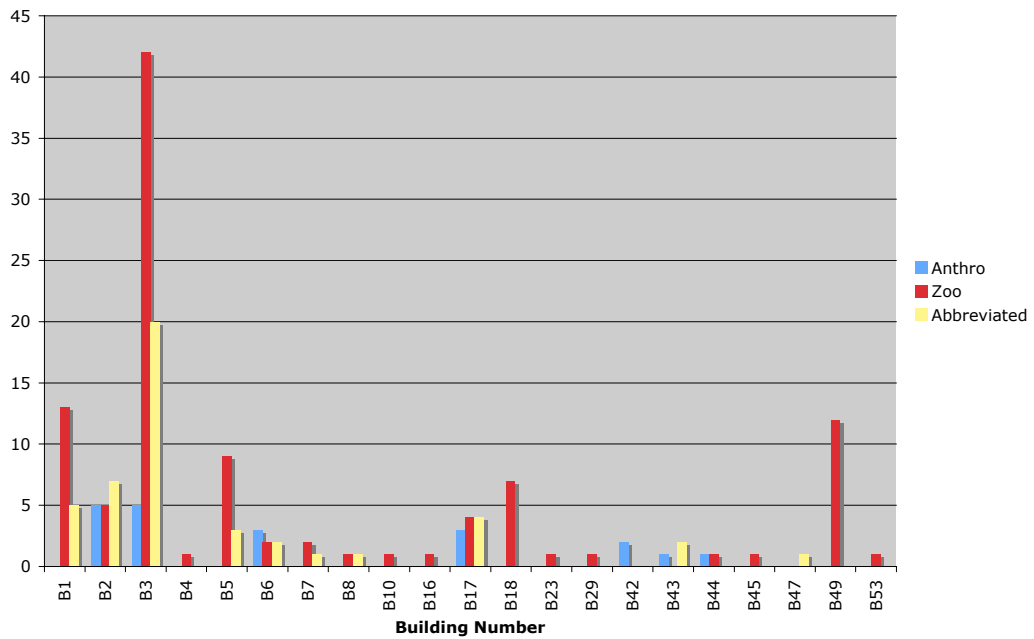


**Building 49**

**Comparison of External Area and Building Figurine Densities by Level**



**Figurine Types by Building**



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We would especially like to thank Mia Ridge and Sarah Jones for all their assistance with the database over the past year. Without their patience these results would not have been possible. Ian Hodder, Madeleine Douglas, Serena Love, Nerissa Russell, and Mira Stevanovich also offered invaluable information and support.

## References

- Badisches Landesmuseum Karlsruhe. Editor. 2007. *Die ältesten Monumente der Menschheit*. Karlsruhe: Badisches Landesmuseum.
- Bartu Candan, A., G. Sert, and M. Bagdatli. 2007. "Developing educational programs for prehistoric sites: the Çatalhöyük case," in *Mediterranean Prehistoric Heritage: Training, Education and Management*. Edited by I. Hodder and L. Doughty, pp. 95 - 104. Cambridge: McDonald Institute for Archaeology.
- Cessford, C. w. c. b. M. W. N., P.I. Kuniholm, S.W. Manning, M. Özbakan, A. M. Özer, K. G. Akoğlu, T. Higham, P. Blumbach, . 2006. "Absolute dating at Çatalhöyük," in *Changing Materialities at Çatalhöyük: Reports from the 1995-99 Seasons*. Edited by I. Hodder. Cambridge: McDonald Institute for Archaeological Research.
- Farid, S., and C. Cessford. 1999. "Archive Summary for the South Area," in *Çatalhöyük 1999 Archive Report*: [http://www.catalhoyuk.com/archive\\_reports/1999/ar99\\_03.html](http://www.catalhoyuk.com/archive_reports/1999/ar99_03.html).
- Gebel, H. G. K., B. D. Hermansen, and C. H. Jensen, Editors. 2002. *Magic Practices and Ritual in the Near Eastern Neolithic*. Berlin: Ex Oriente.
- Hamilton, N. 2006. "The figurines," in *Changing Materialities at Catalhöyük: Reports from the 1995-99 Seasons*. Edited by I. Hodder. Cambridge: McDonald Institute for Archaeological Research.
- Hodder, I. Editor. 1996. *On the Surface: Çatalhöyük 1993-1995*. Cambridge: McDonald Institute.
- . 2006. *The Leopard's Tale: Revealing the Mysteries of Çatalhöyük*. London: Thames and Hudson.
- Hodder, I., C. Cessford, and S. Farid. 2007. "Introduction to methods and approach," in *Excavating Çatalhöyük: South, North and KOPAL Area Reports from the 1995-99 Seasons*. Edited by I. Hodder, pp. 3-24. Cambridge: McDonald Institute.
- Kujit, I., and M. Chesson. 2005. "Lumps of clay, pieces of stone: ambiguity, bodies and identity as portrayed in Neolithic figurines," in *Archaeologies of the Middle East: Critical Perspectives*. Edited by S. Pollock and R. Bernbeck, pp. 152-183. Oxford: Blackwells.
- Mellaart, J. 1962. *Excavations at Çatal Hüyük. First Preliminary Report, 1961*. *Anatolian Studies* 12:41-65.
- . 1964. *Excavations at Çatal Hüyük. Third Preliminary Report, 1963*. *Anatolian Studies* 14:39-119.
- . 1965. *Earliest Civilizations of the Near East*. London: Thames and Hudson.
- . 1966. *Excavations at Çatal Hüyük, 1965. Fourth preliminary report*. *Anatolian Studies* 16:165-191.

—. 1967. *Çatal Hüyük: A Neolithic Town in Anatolia*. London: Thames and Hudson.

—. 1975. *The Neolithic of the Near East*. London: Thames and Hudson.

Meskel, L. M. 2007. "Refiguring the Corpus at Çatalhöyük," in *Material Beginnings: A Global Prehistory of Figurative Representation*. Edited by A. C. Renfrew and I. Morley. Cambridge: McDonald Institute Monographs.

Meskel, L. M., and C. Nakamura. 2005. *Çatalhöyük Figurines*. Archive Report on the Catalhöyük Season 2005 [www.catalhoyuk.com](http://www.catalhoyuk.com).

Meskel, L. M., C. Nakamura, R. King, and S. Farid. 2008. *Figured lifeworlds and depositional practices at Çatalhöyük* *Cambridge Archaeological Journal*.

Morsch, M. G. F. 2002. "Magic figurines? Some remarks about the clay objects of Nevalı Çori," in *Magic Practices and Ritual in the Near Eastern Neolithic*. Edited by H. G. K. Gebel, B. D. Hermansen, and C. H. Jensen, pp. 145 - 162. Berlin: Ex Oriente.

Nakamura, C., and L. M. Meskel. 2006. *Çatalhöyük Figurines*. Archive Report on the Catalhöyük Season 2006 [www.catalhoyuk.com](http://www.catalhoyuk.com).

Özdoğan, M. 2003. "A group of Neolithic stone figurines from Mezraa-Teleilat," in *From Village to Cities: Early Villages in the Near East*. Edited by M. Özdoğan, H. Hauptmann, and N. Basgelen, pp. 511-523. Istanbul: Arkeoloji ve Sanat Yayinlari.

Russell, N., K. Pawlowska, K. C. Twiss, and with a contribution by E. Jenkins & R. Daly. 2004. "Animal Bone Report " in *Çatalhöyük 2004 Archive Report*, vol. [http://www.catalhoyuk.com/archive\\_reports/2004/ar04\\_17.html](http://www.catalhoyuk.com/archive_reports/2004/ar04_17.html).

Todd, I. 1976. *Çatal Hüyük in Perspective*. Menlo Park, CA: Cummings Publishers.

Verhoeven, M. 2002. *Ritual and ideology in the Pre-Pottery Neolithic B of the Levant and Southeast Anatolia*. *Cambridge Archaeological Journal* 12:233 - 258.

## 2007 Chipped Stone Report / Yontma Taş Raporu

Tristan Carter (1) Marina Milić (2) and Chris Doherty (3)

(1) Department of Anthropology, McMaster University, Canada . (2) Department of Archaeology, Belgrade University  
(3) Research Laboratory for Archaeology and the History of Art, Oxford University.

### Introduction

This short report offers a preliminary assessment of the chipped stone from the 2007 excavations of the 4040 and South Areas, together with a brief discussion of other ongoing research and the Team's activities and publications since last year. While there were full excavations in the TP Area the associated lithic specialist Marcin Waş was unable to attend in 2007 and thus no report is forthcoming for this year.

### Giriş

Bu kısa rapor, 2007 yılında 4040 ve Güney alanlarından çıkan yontma taş malzemenin, geçen seneden beri süre gelen kazı ekibi arasındaki tartışmalar ve yayınlarıyla birlikte değerlendirilmesini içeren bir ön rapor niteliğindedir. TP alanındaki kazılar devam ederken, bu ekibin taş uzmanı Marcin Waş'ın 2007 kazılarına katılamaması sonucu bu alanla ilgili malzeme bakılmamış ve bu alanla ilgili rapor sunulamamıştır.

### 4040 Area – T. Carter

The large number of contexts exposed this season in the 4040 Area failed to produce anything significantly different to the material reported on last year in terms of raw materials, technology, typology and – for the most part – depositional practices. That said, we feel the devil will be in the detail and at present much of the assemblage from this part of the site is still being studied, ergo there will be a great deal more to be said about this material after the completion of a study season (or two). In general it can be stated that:

1. The midden and pit fill contexts continue to provide us with large assemblages which have provided us with a great insight into the nature of the later Early Pottery Neolithic chipped stone from the site. In terms of raw materials, obsidian dominates, with the non-obsidian chipped stone (NOCS) component comprising on average only 2-3% of any major assemblage.
2. The obsidian from these upper levels is comprised primarily of what appears to be products from the Nenezi Dağ source in southern Cappadocia, often in excess of 98% of the obsidian from any major assemblage, the remainder being a small quantity of East Göllü Dağ products. This ratio is in marked difference to what we see earlier in the Çatalhöyük sequence (during the Aceramic Neolithic the relative proportions are virtually the reverse, levelling out about halfway through the Early Neolithic) and subsequently on the West mound during Early Chalcolithic I-II (see below).
3. The NOCS assemblage appears to be comprised almost entirely by chert, albeit a variety that we have yet to really appreciate, the focus of Doherty and Milić's studies having been up until now the Aceramic Neolithic material (see below).

4. Technologically the 4040 assemblage is made up of the various products and associated manufacturing debris of a series of blade traditions, with the Nenezi Dağ Dağ represented primarily by unipolar pressure-flaked products, together with a series of larger (wider/thicker) blades whose features indicate their production by percussive technologies. These latter blades also include good quality bipolar (naviform) products, with the elongated pointed versions (often likely reworked into large projectiles) and distinctive epsilon-blades represented alike. The smaller unipolar products display certain variability in form and regularity, some of which last year were labelled as being knapped by indirect percussion. On reflection we are no longer so certain that this was in fact the case, discussions with various colleagues make us now believe that we have to examine these pieces in greater detail as it remains possible that they are all pressure-flaked, 'simply' embodying slightly different techniques of preparation and removal from the core. There is a great deal of associated knapping debris associated with these products, not least classic core-tablets and other rejuvenation and preparation pieces indicating that most of the reduction sequence was performed on-site. The question then becomes (following Conolly 1999) to what extent were these technologies performed on a house-by-house basis, or was the organisation of production far more exclusive?
5. Projectiles are relatively common and embody a range of types at any one time.

#### **Noteworthy assemblages**

There is one assemblage we wish to note here, specifically unit (15621), the fill associated with burial F.2843, included a spread of phytoliths in front of the inhumation's face (perhaps a container of some sort), upon (within) which originally lay four fine prismatic obsidian blades. These grave goods are highly significant as the individual was an adult female; according to our knowledge this is the first clear association of chipped stone implements with a female interment. The items were recovered in two lots 15621.X7 and 15621.X2 (disturbed). Found in six pieces, they represent four complete/near complete pressure-flaked blades knapped of Nenezi Dağ obsidian. The implements seem to represent two pairs of objects based on their shared banding, colour etc, the two longest and the two narrowest going together.

One final artefact of note came from midden context 14931.A1, the medial section of an inscribed Canhasan III point (Figure 160). Çatalhöyük has produced two examples of these highly distinctive marked projectiles previously, both from Aceramic Neolithic contexts in Space 181 (Level Pre-XII.A and Level Pre-XII.C [Carter, Conolly and Spasojević 2005]). Another example was found this year from Trench 7 on the West Mound (see below) making four examples in total; all seem to have been made from East Göllü Dağ obsidian. The recovery of this piece from a c.Level VI context is somewhat anomalous given that all prior examples (from Canhasan III, Kaletpe and Musular) have all come from good stratified late 8th millennium BC contexts. One wonders if this is a residual / 'kick up', or perhaps represents a carefully curated heirloom; the importance accorded projectiles – after use – at Çatalhöyük suggests that we should not dismiss the latter theory out of hand.

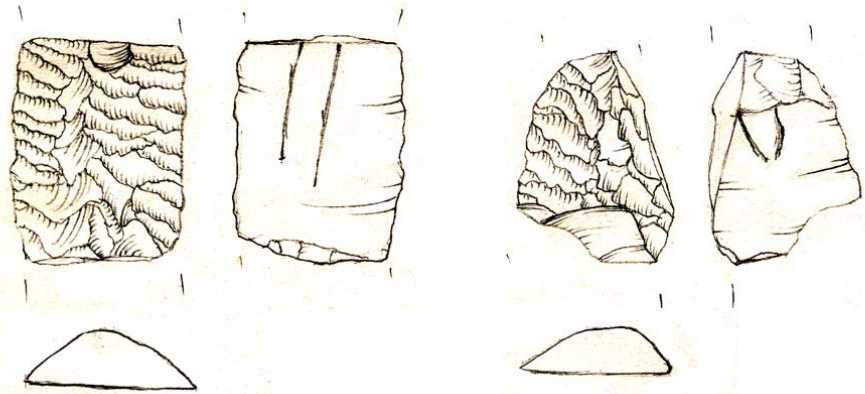


Figure 160: inscribed Canhasan III type points from the 4040 Area (left) of Çatalhöyük East and Trench 7 (right) of Çatalhöyük West

### Foundation trenches

The assemblages from the foundation trenches [FT] from the 4040 Area offered us a rapid insight to a wide area and also gave us a quick idea as to the levels being exposed. In certain areas it rapidly became apparent that we were exposing the ‘interface’ (though the rapidity of the change still has to be elucidated) between the earlier and later Early Pottery Neolithic part of the occupation sequence. Debate continues amongst the team as to when we should place this change (for example the old conceptualisation of pre-/post Level VI.B) and to what extent this marked shift in techno-cultural practices was a site-wide phenomenon and occurred at the same time. Nonetheless the changes in lithic technology are marked. Most of our time in the 4040 Area is spent drowning in blade products of Nenezi Dağ obsidian, once one gets into the earlier levels the change is stark, being confronted with a mass of non-cortical flake and blade-like flake debris (i.e. blades virtually or completely absent), the great majority of which is made from East Göllü Dağ obsidian. It is THAT striking. Those trenches where we hit upon these earlier assemblages included FT 4 (e.g. midden (15675)), FT 9 (e.g. midden (15407)), FT 10 (e.g. midden (15400)), FT 10-11 (15914), FT 19 (midden (15645)) and some of the North Beam Slot (e.g. midden (14974)).

### The West Mound

The 2007 season produced a fairly large assemblage of chipped stone, though much of the Trench 5 material continued to derive from mixed surface contexts and is thus not discussed in detail here. Trench 8 is also not reported on as their timing on site was after the lithics team had departed. Those finds from the sondage (Trench 7) were perhaps of greatest interest if only to give us a rapid insight into what we might expect in future seasons and to provide a snapshot of the transitional assemblages between the TP material and the previously studied Early Chalcolithic data from the Gibson and Last project. Invariably one of our most interesting finds came from a surface context (actually collected at the end of 2006), a huge conical unipolar blade core (Et. 209) weighing c.710g and measuring 13.49cm long, 8.99 x 7.08cm wide (platform). It has a single plain platform (one flat flake removal) and is worked around its entire circumference – reduced by direct percussion with platform overhang continually dealt with by flaking / abrasion (line of abrasion all around platform). The material is



difficult to ascertain due to its thickness but appears to be East Göllü Dağ (likely Kaletepe).

#### *Trench 7*

The first thing to state is that the relative proportion of the two main obsidians seems to change throughout the deep sounding sequence. Towards the top Nenezi Dağ products are dominant, comprising up to two-thirds of an assemblage. As one descends the sequence the ratios even out, but by the base of the West mound East Göllü Dağ obsidian is in the majority. Detailed figures will be produced in future seasons and it should be recalled that this is a first impression and involves a slightly biased sample in that the artefacts were hand-picked and do not include samples from heavy residue. The Nenezi Dağ material is represented primarily in the form of pressure-flaked centre blades, usually of narrow-medium width (though there is some variability). It further includes the occasional primary series blade with remnant cortex (e.g. 15101.A1), plus a series of core rejuvenation pieces, non-cortical flakes and exhausted blade cores, indicating clearly that the inhabitants of the West Mound (certainly at certain times) were in the habit of procuring raw nodules and working them on-site, with local knappers being quite capable of performing pressure-flaked blade technologies. There are a very few larger and less regular blades that may represent percussion technology products.

Conversely, East Göllü Dağ obsidian seems to be represented in a slightly wider range of products / technologies. Once again there are lots of pressure-flaked blades, but there are also a number of broken plain platform direct percussion pieces, some of which would have been quite large (of the type that would relate to the large surface find core noted above). Bipolar products are rare if not completely absent. The East Göllü Dağ material similarly includes preparation and rejuvenation blanks (including core tablets) associated with the on-site manufacture of pressure-flaked blades (and to an extent the larger percussion products). The pressure-flaked blades made from both southern Cappadocian raw materials have their overhangs removed by scrubbing and have very small / linear platforms.

Retouched products include a few end-scrapers and the usual array of blades with simple linear modification. The upper levels produced a distinctive small tanged point made on a centre blade of East Göllü Dağ obsidian (15102.A33), the likes of which are known from the East Mound in the TP Area (see Archive Report 2006, Fig. 162 – albeit with a shorter tang), as well as Tepecik-Höyük (Karlsruhe exhibition catalogue page 343, fig. 302). Such projectiles are also well-documented in Late Neolithic 5th millennium BC contexts in the Aegean (cf. Perlès 2004). From the same assemblage and of the same raw material there was also a broken blade with bifacial retouch (near covering on dorsal surface, on ventral margins [15102.A11]), whose pointed end appears to have been used as a drill / perforator with macroscopic ground/polished tip and nearby margins (1.7cm up edges). One last item of note is the mid-section of a Canhasan III point (15101.A28) with unifacial covering retouch and a triangle (minus base) inscribed on the back (Figure 160); this was the second such example found at Çatalhöyük this year (the other from the 4040 Area, see above) and the first from the West Mound.

The non-obsidian chipped stone [NOCS] component was very much in the minority (perhaps 1-2% of the overall quantity), but included a few pieces of note. There was

the proximal section of a large unipolar blade of whitish chert (the colour may be altered as it has been burnt, blackened on right margin and has fire cracked surface), measuring 3.88 x 3.48 x 0.92cm [15104.A10]. The platform is faceted and the overhang has been removed, flaked from debitage surface towards butt; there is also a large, flat bulbar scar. This has to be in the scale of the later Canaanite blades (cf. Anderson, Chabot and van Gijn 2004), and has retouch down both margins on upper part of blade – perhaps making a handle/haft (there is no apparent gloss on the margins)? The technology is currently uncertain but we are very interested in these large blades (from South Area and 4040 as well) and their relationship to the lever-produced Canaanite blades that are usually associated with a later date and more SE Anatolian / Levantine distribution. There is no evidence to suggest such blades were actually being made at Çatalhöyük, whereby they could indeed be the products of long-distance exchange. Trench 7 produced one other example of these large unipolar prismatic blades, this time with a clearly glossed edge (15107.X12), made of grey-white banded chert (6.59 x 3.5 x 0.92cm). If the blade was pressure-flaked then its width indicates that it had to have been lever produced (D. Binder and J. Pelegrin pers. comms.). Its scale and use makes it directly comparable to Canaanite blades; it may have been deliberately snapped to produce an insert for a threshing sledge. A of these large prismatic chert blades were also noted amongst the Trench 5 assemblages.

#### **South Area – M. Milić**

The focus of this year's report is the material from Building 65, i.e. the structure stratified directly Building 65 lies directly beneath Buildings 56 and 44. The obsidian and flint artefacts from the two later buildings have already received preliminary discussion in previous archive reports. In general, if we compare the quantity of chipped stone in three buildings, the lowest Building 65 contained slightly less material than the upper Building 56, while the upper most Building 44 had half as much as that from Building 65 (Figure 161). The large quantity of artefacts from Building 56 is due to the obsidian rich cluster in Space 121 found in 2006, with unit (12873) comprising a huge quantity of flake material as a part of in situ knapping deposit, subsequently incorporated into the makeup for the construction of platform F.2055.

A total of 871 pieces of chipped stone have been recovered from the dry sieve sample of Building 65 (1329,95g), of which 855 pieces were obsidian (1271,97g [98,2%]) while only 16 pieces were made of chert (57,98g [1,8%]). The relative proportion of chert is even smaller when one considers the heavy residue sample, with only 8 pieces (3,78g [0,2%]), compared to 3240 of obsidian (185,7g [99,8%]). Building 65 is made up of three spaces – Space 297 is a central part of the building, Space 298 is to the west, a storage area, Space 299 is a small space to the south of the central area, while Space 314 is an external space to the north of the building. If we compare the quantity of material that was found in these spaces (Figure 162) it is noticeable that the richest areas are central part of the building (Space 297) and the external space (Space 314).

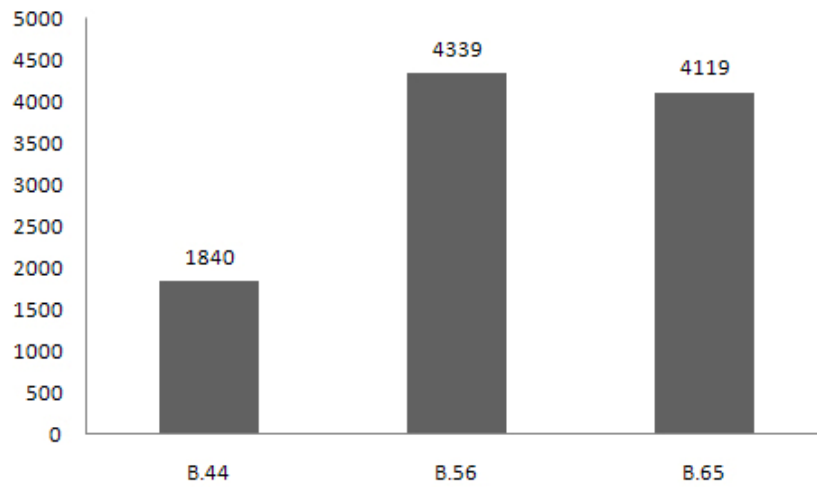
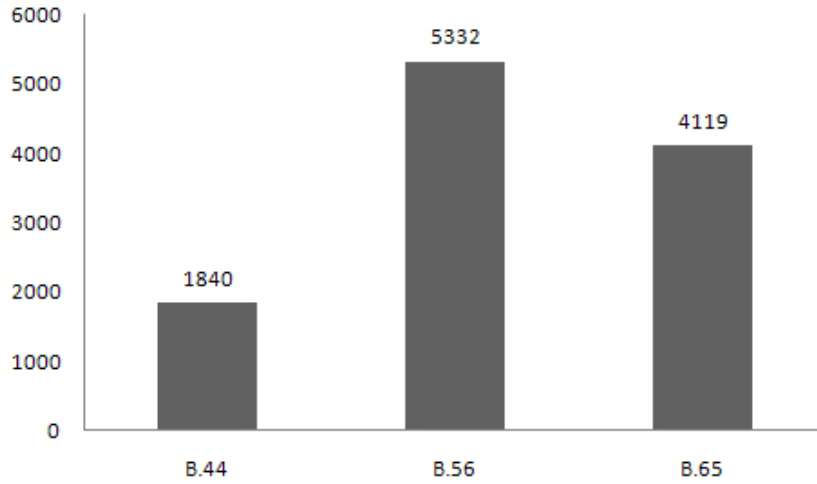


Figure 161: Total number of chipped stone in B.44, B.56 & B.65 (upper graph); total number of chipped stone without knapping deposit (12873) in B.56 (lower graph)

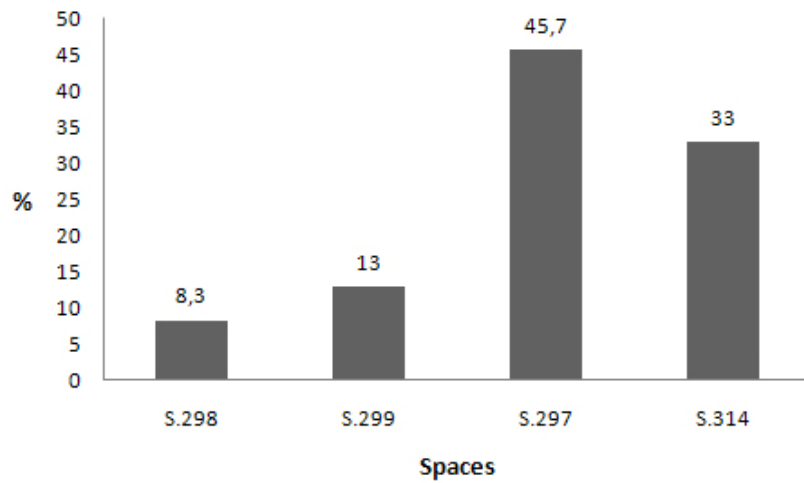


Figure 162: comparing the chipped stone richness of spaces within Building 65

As was expected, most of the chipped stone comes from room fills and construction deposits (thus partly explaining the fact that the greatest amount of chipped stone comes from that part of the building with the largest volume of soil). That said, if we consider those finds from surface contexts and clusters, it is the platforms to the north (F.2096), north-west (F.2089) and central platform (F.2093) that produced the greatest concentrations and quantities of obsidian. This situation is very different to what we saw in Building 56, while in Building 44 we again had concentration of obsidian on surfaces of platform to the NW (F.1321) and on the central platform and bench (F.1320 and F.1310) next to the west wall. What is common for all three buildings is that platforms to the SW contained no obsidian on their surfaces and very little within construction and makeup deposits. As with the upper buildings (56 and 44), Building 65 has produced no obsidian hoard but there are a few bone/stone/obsidian clusters, mainly on the platforms of Space 297. The obsidian and bone cluster unit (13359) on platform F.2096 contained five regular prismatic blades with no traces of use, all in fresh condition. All the blades were made of Nenezi Dağ obsidian; four are broken while one long example was recovered complete ( $10,63 \times 1,49 \times 0,36\text{cm}$  [Figure 163]). We can compare this assemblage with obsidian cluster in Building 44 where we had a group of fine obsidian blades, some of which were intact, that were left placed on a platform surface (see 2004 report). Similar to this is another cluster on SW platform (F.2099) where again five obsidian blades were found on the surface in unit (14019). Other parallels between buildings in the upper levels of the South Area were described in 2006 report.

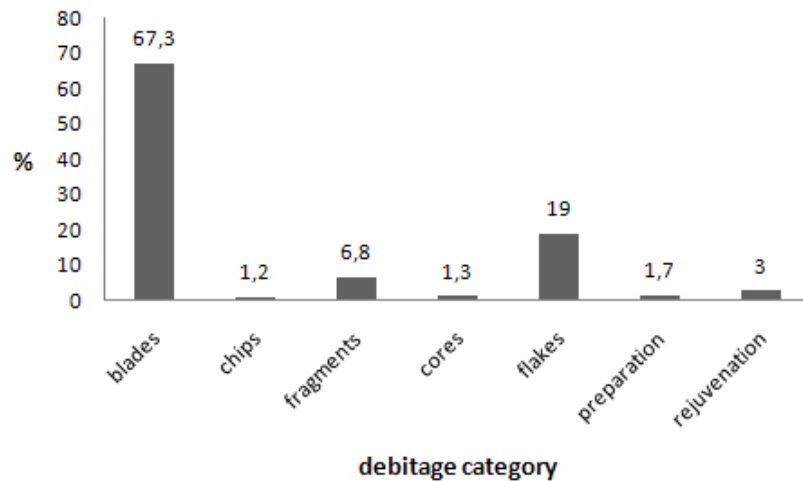


Figure 163: debitage categories in Building 65

In terms of technology, typology and raw material, the Building 65 assemblage is very similar to those from the structures stratified above it – blades are the most common category (Figure 163), of which the great majority can be classified as center blades (86,9%). Most of these products are unipolar prismatic products, most of which are considered to have been manufactured by pressure-flaking. In contrast to the Building 56 and 44 material, this assemblage contains a few larger bipolar blades, likely to be percussion products. This is the first appearance of such bipolar blades in this South Area sequence, mainly in the form of Upsilon blades (Figure 164), distinctive products that are well attested in the 4040 and North Areas (see previous archive reports). Most of the bipolar blades, including all three Upsilon blades

(14534.A10, 14511.A18 and 15753.A5) were found in the outside Space 314. Another type of object that serves to link the Building 65 assemblage with the c. Level VI contexts of the 4040 Area are a few of the highly distinctive ‘Çayönü tools’ (14535.A4 and 15769.A1 [Figure 164]); once again these items come from Space 314 and as with the 4040 examples appear to be made on ‘local’ Cappadocian raw materials, specifically Nenezi Dağ obsidian, as were the Upsilon blades (again as with the 4040 examples). There is one more parallel between Space 314 and the 4040 Area to be made - the shouldered and tanged projectile point (14511.X11) is a common shape, but this piece together with two pieces from Sp. 279 (4040) – 14179.X3 and 14186.X19 has partly retouched dorsal surface and completely covered ventral surface which made these objects typologically and maybe chronologically distinctive (Figure 164). Similar projectiles with only covered ventral side are mentioned by Bialor (1962, fig. 3) in his report and were assigned to Mellaart’s Level VI.

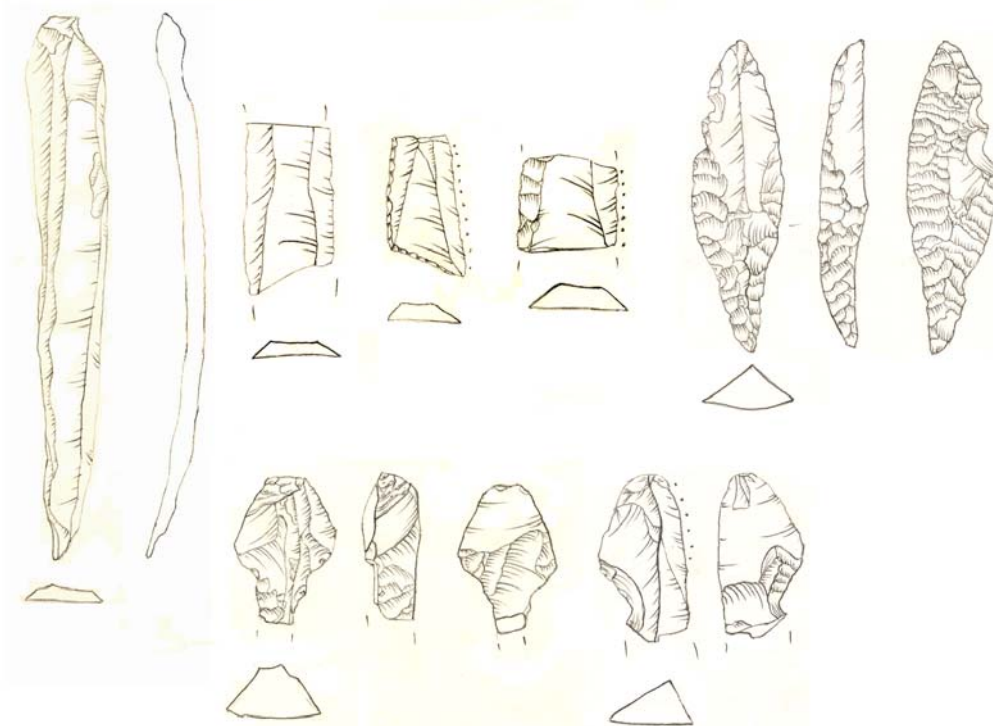


Figure 165: selection of obsidian debitage from Building 65

### Sourcing Studies

Work has continued over the past 12 months on the various characterization programmes that we are involved in, one dedicated to the sourcing of the obsidian from the site, the other to the ‘Non-obsidian chipped stone’ [NOCS] component, i.e. our various cherts, radiolarites and flint. Good progress has been made on both fronts, suites of analyses have been made at labs in Berkeley, Bordeaux, Paris, Oxford and Stanford, with a series of presentations given at various universities and conferences, together with a handful of publications submitted. In turn, the work undertaken on the 42 samples of obsidian from the BACH excavations are now published fully in *Archaeometry* (Carter and Shackley 2007).

### **Obsidian characterization studies**

In 2006-07 a series of analyses were undertaken on those samples selected in the summer of 2006. A total of 97 artefacts from Early Chalcolithic I-II contexts on the West Mound (Gibson and Last excavations) were trace elementally characterized at two laboratories, with 48 analysed at UC Berkeley using EDXRF (R. King and M.S. Shackley), 45 by ICP-AES at Stanford University (R. King, G. Li and G. Mahood), plus a further 4 at the AGLAE facility, Musée du Louvre, Paris using PIXE (T. Carter, S. Dubernet, F.X. Le Bourdonnec, G. Poupeau and T. Calligaro). The results indicate the use of at least 4 different sources, with 3 (probably 4) Cappadocian and one east Anatolian. As expected the majority were assigned to Çatalhöyük's two major long-term raw material suppliers, East Göllü Dağ and Nenezi Dağ (cf. Carter et al 2006), though we witness an interesting shift in procurement strategies in that both sources appear now to have been exploited in roughly equal terms (in as much that the samples assigned to these volcanoes were about 50:50, the specifics of how these obsidians were exploited will be detailed elsewhere). This data is in stark contrast to what we view in the upper levels of Çatalhöyük East, where a visual inspection of the 4040 Area assemblages (now largely proven by this year's characterisation studies) indicates that on average in excess of 98% of the obsidian comes from Nenezi Dağ. It thus follows that an analysis of the TP material is required to chart the change from a dominance of Nenezi Dağ products to a roughly equal state of affairs between Nenezi Dağ and East Göllü Dağ in the Early Chalcolithic. Both of these obsidians were employed in the manufacture of pressure-flaked blades, though most of the large percussion (unipolar) blades were made of East Göllü Dağ products. Cortical blanks of both these southern Cappadocian obsidians were attested, indicating that raw nodules were being procured at this time, again in striking contrast to what we see on the East Mound (though once again we need to elucidate if this is the case with the intervening TP assemblage).

The analyses also characterised one sample as being made of obsidian from the northern Cappadocian sources of East Açıgöl ante-caldera, the first documented appearance of this raw material at Çatalhöyük. There is also one other yet-to-be-provenanced piece that we have the feeling is also likely to be Cappadocian, albeit another of these less commonly represented sources. Finally, we have a single artefact (a transverse arrowhead) made of the highly distinctive peralkaline (greenish) obsidian from one of the eastern Anatolian sources. The specific outcrop has yet to be ascertained (and indeed is likely only to be achieved using a dating technique such as Fission Track analysis), whereby at present 'all' we can say is that the raw material came from either one of the peralkaline outcrops associated with Bingöl, or from Nemrut Dağ (Poidevin 1998: 136-42), located at a distance of 660-825 km to the east of Çatalhöyük respectively (Carter et al in press).

The preliminary results from this new analysis of the Çatalhöyük West assemblage provides us with a more diverse range of raw materials than usual. Over 40 years ago Renfrew et al. (1966: 48) suggested that the 'trade' in Anatolian obsidians changed in the Chalcolithic (later 6th / 5th millennia BC) becoming "more cosmopolitan and widespread" in nature. The new data from Early Chalcolithic Çatalhöyük would certainly seem to support this thesis. What we need to do next is to locate our results more broadly within an Anatolian context, though few characterization studies relating to this period have been undertaken, with research having largely been

focused on Aceramic and Early Pottery Neolithic assemblages over the past few decades (Chataigner 1998).

A further 58 artefacts from Çatalhöyük East were analysed, 40 at AGLAE and 18 at UCB, the samples coming from a range of contexts in the 4040, IST and South Areas, together with a handful of pieces from the 1960's excavation. The focus here, as ever, was the interrelationship between raw material and technology, this being the first major analysis of artefacts from the upper levels of the Neolithic sequence. We also employed this and the Early Chalcolithic data-set to test our current understanding of raw material variability (as represented by the typology created by Kayacan and Milić last year), the aim being to eventually have a clear idea of what the various hues, banding, inclusions and textures mean in terms of source. Some of this data has been integrated into our report (above) with regard to the specific blade technologies we confront regularly in the large 4040 assemblages and South Area building fills. The full archaeometric data is currently being prepared for publication, however we do note the fact that a group of blades of greenish obsidian from the IST Area (and some 1960's contexts) have now been proven to originate from the Bingöl / Nemrut Dağ area, as indeed was suggested clearly by Nurcan Kayacan in recent Archive Reports. The recovery of these distinctive peralkaline products extends westwards the earliest distribution of these raw materials some 300km, a highly anomalous discovery that has implications for the reestablishment of Çatalhöyük's relations with SE Anatolia in the later Early Pottery Neolithic (we also noted the recovery of a few local variants of Cayönü blades from 4040 Area contexts last year). A preliminary discussion of these exotic finds has been submitted to *Antiquity* (Carter et al in press).

The one other point of significance from our analysis of the 4040 Area artefacts is that we analysed a few of distinctive matt grey-black obsidian that we noted for the first time last year, obsidian that was almost invariably represented in the form of large/wide percussion blades (bipolar and conceivably also unipolar). Last year we rather foolishly referred to this material as possibly coming from 'Acıgöl', struck as we were by the fact that we had not seen this material before. Analysis has indicated clearly that this is a previously unseen (at Çatalhöyük) version of the Nenezi Dag obsidian, suggesting that perhaps at this moment in time a new outcrop had been exposed by the elements? It does not seem to be thus far represented amongst the later West Mound assemblages, so it seems to have a relatively narrow period of use; further work is required on this material.

#### **Non-Obsidian Characterisation Studies – Chris Doherty and Marina Milić**

Last year we detailed the initiation of a new project dedicated to characterising Catalhöyük's 'non-obsidian chipped stone' [NOCS] component, finally addressing a question that has received little dedicated attention (though see Bezić 2007) since Mellaart's claims that the Taurus Mountains and SE Turkey, specifically the Gaziantep region, were the likely source of the Çatalhöyük 'flint' (Mellaart 1963, 103, 1967, 213). The study has commenced by targeting NOCS component of Çatalhöyük's Aceramic Neolithic assemblages, i.e. the material from Level Pre-XII and the Lower KOPAL deposits. Our reasons for starting with these assemblages were due to the fact that they:

A. Represented the richest data sets in terms of quantity - NOCS comprising between 3% - 8% of the chipped stone from these early levels.

B. Raw material variability - these early assemblages having been claimed to be the most diverse within the entire Neolithic sequence (Carter, Conolly and Spasojević 2005: 279), with ca. 30 different types separated visually in 2006.

C. Techno-typological diversity – a wide range of tool types represented within this NOCS material, including unipolar microblades, unipolar and bipolar blades, microliths, sickles, end & side scrapers, perforators, backed pieces inter alia.

D. Manageable quantity – the total NOCS from the Level Pre-XIIA – Pre-XIID and KOPAL assemblages totals only 693 pieces (dry sieve and heavy residue combined).

The overall project aims can be summarised as follows:

1. To show just how easy or difficult is to produce a raw material classification based on visual characteristics alone and to identify the most useful observations. This was intended simply as a working classification, designed to get the ball rolling, with the intention that the classifications would evolve as further analysis is phased in. In the summer of 2006 we defined some 38 initial NOCS raw material groups/sub-groups based on a visual inspection of the Level Pre-XII and KOPAL material, of which 31 were classified as varieties of chert, two as true flint, a radiolarite, a quartzite, a limestone and one other ‘red-brown non-radiolarite’. The attributes employed to define these working groups included: (1) colour, colour uniformity, colour distribution and banding; (2) lustre; (3) reflectivity; (4) patination; (5) internal features; (6) fracture quality; (7) density.

2. To test the visually defined raw material groups’ definition through archaeometric analysis.

At this early stage the most versatile analytical method to test our developing ideas proved to be Scanning Electron Microscopy (SEM) combined with Wavelength Dispersive Spectroscopy (WDS). Two types of measurement were made: (1) analysis of the siliceous matrix, i.e. the body of the chert, to identify major element signatures; (2) analysis of any inclusions in the chert, as these may point to its formation method, and therefore its type and possible provenance. This work has been carried out at the Research Laboratory for Archaeology, Oxford, using the Cameca SU30 SemProbe facility. In due course it is our intention to begin to “fingerprint” the major chert types by determining their trace element profiles by Inductively Coupled Plasma Mass Spectrometry (ICP-MS).

3. The final aim of this study is to determine possible raw material provenance, how the material was distributed the region and their specific techno-typological modes of consumption at Çatalhöyük.

Having visually and then analytically characterised the NOCS at Çatalhöyük (i.e. finally coming up with some consistent terms to replace the previous nomenclature of ‘flint’, ‘limnic-quartzite’ etc) we need to turn our attention off-site to investigate the fundamental question of where these raw materials originated and what their procurement and use tells us about the community’s external relations and participation in inter-regional exchange/social networks.



This part of the project involves a combination of detailed literature / geological map review to map out chert types around Çatalhöyük and to narrow down those areas more generally that we need to visit and sample. This approach is to be undertaken in tandem with our somewhat more low-tech approach of hosting the raw material images on-line and entering into discussion with our colleagues working elsewhere in Anatolia and beyond to begin tracking down those sites/regions with (apparent) parallels for our lithic resources and/or technologies. Once again this would merely serve as a starting point for further analyses in order to prove hypothetical comparanda.

#### Initial results

It was discovered that there was considerable overlap between the 38 visual groups defined visually. With a few exceptions, it has not been possible to match these groups to possible sources, particularly given the geological complexity of the area, however it has at least been possible to determine what types of chert are represented in this assemblage, using a standard terminology underwritten by archaeometric data. As a result of preliminary SEM/WDS analysis we have now shown that the (major) 23 visual groups actually comprise 6 or 7 chert types (Table 19). Since different chert types occur in different geological setting, this simplifies the task of starting to provenance these NOCS. The early indications are very promising, with some of these cherts now provisionally identified with outcrops on the margins of the Konya basin. The next stage is to undertake a comparative analysis of how these raw materials were used at Çatalhöyük: in which form(s) they were imported (raw material, preformed cores or finished tools) and the specific ways in which they were worked and used.

	<i>Chert Type</i>	<i>No. Of Groups</i>	<i>Possible Provenance</i>
1	Lacustine	4	Margins of the former Konya lake, i.e. a few km south of Çatalhöyük.
2	Marine	8	Beds within the Mesozoic limestone formations which outcrop extensively in the Taurus mountains south of the Konya basin.
3	Deep Marine	14	Deep water cherts interbedded with the Mesozoic marine facies of the Taurides.
4	Radiolarite	2	Deep water cherts formed from radiolarian siliceous oozes. Main provenance thought to be the extensive outcrops to the N. of Antalya. There are also significant outcrops in the foothills north of Mersin, and there are small / scattered outcrops in the Taurides melange facies, e.g. immediately W & SW of Konya.
5	Ophiolite-related/metachert	4	Small outcrops potentially exist adjacent to any of the numerous scattered outcrops of ophiolite across the whole region. This group includes jasper.
6	Volcanic-related (hydrothermal)	4	Associated with localised volcanic activity where this has resulted in mineral veins. The Sille volcanic complex around Konya is a likely source.

Table 19: Major raw material types represented in Çatalhöyük's Aceramic Neolithic NOCS

### **Conferences attended and papers given**

During the 2006-07 academic year a number of us gave presentations at various institutions on our work at Çatalhöyük, some of which have been submitted for publication:

### **Conferences**

Archéometrie '07, Aix-en-Provence, April 2007 - Towards an Integrated Archaeometry: Obsidian Sourcing Studies at Çatalhöyük (Turkey) (T. Carter, S. Dubernet, N. Kayacan, M. Milić, G. Poupeau, M.S. Shackley and T. Calligaro).  
Archéometrie '07, Aix-en-Provence, April 2007 - Non-Obsidian Chipped Stone Characterization Studies at Çatalhöyük, Turkey (poster [C. Doherty and M. Milić])  
Archéometrie '07, Aix-en-Provence, April 2007 - The consumption of obsidian in Early Chalcolithic Anatolia: A Characterization Study from Çatalhöyük-West (poster [T. Carter, R. King, G. Li, G. Mahood and M.S. Shackley]).  
Tree-Rings, Kings, Old World Archaeology & Environment, Cornell University, November 2006 – Provenance of Obsidian from Çatalhöyük West: Changing Relationships with Geological Sources (poster [R. King, T. Carter, G. Mahood and M.S. Shackley]).

### **Talks / seminars**

Bilkent University, October 2006 – City of Glass: The Role of Obsidian at Çatalhöyük (T. Carter)  
Middle Eastern Technical University, November 2006 - From Çatalhöyük to Knossos and from Knossos to Kaneš: Relations between Central Anatolia and Crete in the 8th and 2nd millennium BC (T. Carter)  
CNRS, Sophia Antipolis, April 2007 - City of Glass: Çatalhöyük, Obsidian and the Neolithic of Central Anatolia (T. Carter).

### **References**

Anderson, P.C., Chabot, J. and van Gijn, A. (2004), 'The functional riddle of 'glossy' Canaanite blades and the Near Eastern threshing sledge', *Journal of Mediterranean Archaeology* 17.1: 87-130.

Bezić, A. (2007), 'Distribution of flint in Turkey from 10,000 to 6,000 cal BC. Case study – Çatalhöyük', in C. Delage (ed.) *Chert Availability and Prehistoric Exploitation in the Near East*. BAR Int. Series 1615, Archaeopress, Oxford: 68-86.

Carter, T., Conolly, J. and Spasojević, A. (2005), 'The chipped stone', in I. Hodder (ed.), *Changing Materialities at Çatalhöyük: Reports from the 1995-1999 Seasons*. McDonald Institute Monographs and BIAA, Cambridge: 221-83 & 467-533.

Carter, T., Dubernet, S., King, R., Le Bourdonnec, F.-X., Poupeau, G. and Shackley, M.S. (in press), 'Eastern Anatolian obsidians at Çatalhöyük and the reconfiguration of regional interaction in the Early Pottery Neolithic', *Antiquity* [in post-review revision].

Carter, T., Poupeau, G., Bressy, C. and Pearce, N.J.G. (2006), 'A new programme of obsidian characterization at Çatalhöyük, Turkey', *Journal of Archaeological Science* 33(7): 893-909.

Carter, T. and Shackley, M.S. (2007), 'Sourcing obsidian from Neolithic Çatalhöyük (Turkey) using Energy Dispersive X-ray Fluorescence', *Archaeometry* 49(3): 437-454.

Chataigner, C. (1998), 'Sources des artefacts néolithiques', in M.-C. Cauvin, A. Gourgaud, B. Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner (eds.) *L'Obsidienne au Proche et Moyen Orient: Du Volcan à l'Outil*. Maison de l'Orient Méditerranéen, BAR Int. Series 738. Archaeopress, Oxford: 273-324.

Conolly, J. (1999), 'Technical strategies and technical change at Neolithic Çatalhöyük, Turkey', *Antiquity* 73: 791-800.

Doherty, C., Milić, M. and Carter, T. (in press), 'Characterizing the non-obsidian chipped stone raw materials at Çatalhöyük (Turkey)', *ArchéoSciences* [submitted June 2007].

Mellaart, J. (1963), 'Excavations at Çatal Hüyük, second preliminary report, 1962', *Anatolian Studies* XIII: 43-103.

Mellaart, J. (1967), *Çatal Hüyük. A Neolithic Town in Anatolia*. McGraw-Hill, New York.

Perlès, C. (2004), *Les Industries Lithiques Taillées de Franchthi (Argolide, Grèce): Tome III, Du Néolithique Ancien Au Néolithique Final*. Fascicle 13, Indiana University Press, Bloomington.

Poidevin, J.-L. (1998), 'Les gisements d'obsidienne de Turquie et de Transcaucasie: géologie, géochimie et chronométrie', in M.-C. Cauvin, A. Gourgaud, B. Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner (eds.) *L'Obsidienne au Proche et Moyen Orient: Du Volcan à l'Outil*. Maison de l'Orient Méditerranéen, BAR Int. Series 738. Archaeopress, Oxford: 105-203.

Poupeau, G., Le Bourdonnec, F.-X., Dubernet, S., Scorzelli, R.B., Duttine, M. and Carter, T. (in press), 'Tendances actuelles dans la caractérisation des obsidiennes pour les études de provenance', *ArchéoSciences* 31 [accepted September 2007].

Renfrew, C., Dixon, J.E. and Cann, J.R. (1966), 'Obsidian and early culture contact in the Near East', *Proceedings of the Prehistoric Society* 32: 30-72.

**Stone Bead Technology At Çatalhöyük / Çatalhöyük'te Taş Boncuk Teknolojisi - Katherine I. (Karen) Wright , Roseleen Bains - Institute of Archaeology, University College London**

#### **Abstract**

Research on beads from Catalhoyuk in 2007 emphasized the stone beads. We are researching variations from house to house, with at the moment a particular emphasis on identifying techniques and areas of manufacture (production contexts). We are also researching occurrences of stone bead materials and formal types in burials (consumption contexts).

Previous preliminary work on the beads was published in 2005 (Hamilton 2005). However, as of 2006, there was no digital database of stone or shell beads, whilst bone beads were recorded in the worked bone database. Shell beads, of which some materials were studied previously (Reese 2005), still need much work of recording and analysis. This is expected to begin in 2008 under the direction of Dr Danielle Bar-Yosef Mayer.

## Özet

Çatalhöyük 2007 kazı sezonu sırasında yapılan boncuklara yönelik incelemeler daha çok taş boncuklar üzerine yoğunlaşmıştır. Evden eve olan farklılıklarla, farklı boncuk yapma teknolojilerini anlama ve üretim alanlarını tespit etme üzerine araştırma yapmaktayız. Ayrıca taş boncukların elde edildiği hammaddelerin oluşumu ve gömütlerde bulunan tipolojiler (tüketim kontektleri) üzerine çalışmaktayız

Daha önceki taşlar üzerine 2005 yılında bir ön rapor yayınlanmıştır (Hamilton 2005). Bununla beraber, 2006 yılına kadar taş veya deniz kabuğundan yapılmış olan boncuklarla ilgili aynı bir dijital veritabanı bulunmamakta ve kemik boncuklarda işlenmiş kemikler için oluşturulmuş veritabanına işlenmekteydi. Daha önce bir kısmı çalışılmış olan (Reese 2005) deniz kabuğundan yapılmış boncukların hala veritabanı girişi ve analiz açısından çalışılması gerekmektedir. Bu çalışmanın 2008 yılında Dr Danielle Bar-Yosef Mayer başkanlığında gerçekleşmesi beklenmektedir.

In 2006, a database of all stone beads in the excavation house was created, with initial classifications and assessments of raw material. A selection of bead fragments was exported to London for material identification using scanning electron microscopy. This work is in progress but we have been able to clarify some mysteries concerning materials, which were previously been identified macroscopically (Jackson 2005). Most stone beads from Çatalhöyük were made of soft stones (Mohs 1-4). In 2006-2007, a report was written on the beads from Building 3 (the BACH Area); this volume is now in the process of being reviewed and published (Wright 2008 in preparation).

Four main tasks were completed during the 2007 field season:

(1) Stone beads found during 2007 excavations were added to the stone bead database. The database itself is being refined and extended as well.

A number of stone beads were found during the 2007 excavation. Most were from areas 4040, TP, and West 8. These beads were scanned or photographed in high resolution and recorded into the stone bead database, created in 2006. The database is up-to-date with the exception of a number of beads housed in the Konya museum. It is hoped that these beads will be recorded later this year.

(2) Finished beads, bead pre-forms (bead blanks), and bead-making debitage from Buildings 16, 17, 18, 22, and 23 in the South Area (1999 excavations) were all closely examined to determine the spatial variation of bead manufacture between buildings.

This second task involved systematically examining heavy residues from five buildings in the South Area, which were excavated during the 1999 excavations. Buildings 17 and 18 in this area, in particular, revealed finished and unfinished (bead pre-forms) beads and possible bead-making debitage. Prior studies of stone beads in the South area emphasized a concentration of unfinished beads in these two buildings, as evidence of bead manufacture (Hamilton 2005:328). This year, we chose to investigate these and three other buildings within the South area to determine: (a) whether or not there is sufficient evidence of bead-making within these buildings, by looking at finished beads, bead pre-forms, and bead-making debitage (retrieved in heavy residue); (b) whether some households were engaging in bead-making more than others; (c) if beads were indeed being manufactured, then where specifically were these production contexts located; (d) what types of beads were being produced, and from which materials; and (e) how stone beads were produced (reconstruction of chaîne opératoire), by looking at the different stages of bead manufacture, from raw material (stone nodules or pebbles) to the finished bead.

Only floor and midden contexts of heavy residues were sampled in Buildings 16, 17, 18, 22, and 23. A number of middens outside these buildings were also sampled, and some middens contained finished beads, bead pre-forms, and related macro- and micro-artefacts. This discovery is very exciting, albeit in a secondary context. Because floors were kept very tidy, finding a similar scenario in a primary floor context is difficult. However, by studying these bead materials in detail, questions regarding their manufacture, can be addressed.

(3) Silicone moulds were made of beads found in Buildings 16, 17, 18, 22, and 23, in order to identify traces of manufacture using SEM (Scanning Electron Microscope) analysis.

The third task also related to bead manufacture and entailed making moulds of finished and unfinished beads for study at the Institute of Archaeology, UCL, London. By making moulds (accurate to the nanometre) we are able to study beads despite the impossibility of export and also to study them in greater detail using SEM analysis. First the moulds will be studied under SEM, specifically to examine the method in which the beads were perforated. Second, replicas of the stone beads will be made by filling the moulds with epoxy resin. These replicas will also undergo SEM analysis for different traces of manufacture and surface features such as pecking, abrading, sawing, and polishing.

Before the commencement of the 2008 excavations at Çatalhöyük, we hope to complete the analyses needed to finish tasks two and three. Spatial maps of the South Area Buildings 16, 17, 18, 22, and 23 will be constructed to answer questions regarding the spatial variation (see above) of bead-making within these buildings. We were fortunate to be able to export heavy residue samples from in and around Buildings 17 and 18. The bead-making debitage will be examined and the heavy residue samples will also undergo X-ray Diffraction (XRD) analysis in order to determine mineral content and compare the results to finished and unfinished beads also found within the same secondary contexts. A number of bead fragments initially exported in 2006 were again exported to London this year to continue SEM and XRD analyses in order to establish the identity of the raw materials used to make stone beads.

In addition to completing tasks two and three, another important task to perform before next season is to undertake experimental studies which will allow us to engage in bead-making at a practical level. It will help us understand the intricacies of bead-making and, by experimenting with different drills, abrasives, and raw materials, we hope to examine the different surface features and drillings under SEM and compare these results to the beads from Çatalhöyük.

Next season we intend to focus on another set of objectives which will include: (1) a survey of possible raw material sources from near the site (ie alluvial river pebbles); (2) study of bead manufacture and spatial variation of buildings in area 4040 (2006 excavations); and (3) determining the tools possibly used in bead production. The survey will determine the range of materials, which were or were not readily/immediately available to the inhabitants of Çatalhöyük for bead production. In particular, river beds will be investigated as a source of raw material. The raw materials acquired during the geological survey will be identified and subsequently compared to the raw material identifications of the bead fragments exported from Çatalhöyük, using XRD analysis.

The bead technology studies conducted in this season concentrated on the South Area (1999 excavations). During the 2006 excavations, a number of bead pre-forms were found in area 4040. We will conduct an examination of bead materials from area 4040 similar to that conducted during this season in the South Area, including heavy residue analysis and bead manufacture studies using moulds and replicas.

Many of the finished beads found in the South area indicate a bi-conical drilling. A number of tools could have been used to perforate through the marble, limestone, and schist bead pre-forms. Drills could have been made of bone or stone; in addition, abrasives were likely utilized to speed up the drilling process. Experimental work is necessary to determine how beads at Çatalhöyük were perforated. The silicone moulds (specifically the positive drilling relief) will also be carefully examined under SEM.

(4) A fourth task, which is ongoing, is identification of chipped stone and ground stone artefacts that may have been involved in stone bead production. We communicated with Marina Milic (Chipped Stone Team) concerning possible drills or other perforating tools at Çatalhöyük, of which there seem to be rather few. The ground stone team is paying close attention to artefacts that may have figured in beadmaking (see below).

A fifth task, which will be a long-term collaborative project, will be understanding how the production and use of stone beads compares with production and use of beads made from bone and shell. In burials, beads of all three materials often occur. Our impression is that bone and shell beads may have had special significance within a suite of personal ornaments. Shell beads may have been exceptionally special items, since they imply long-distance procurement/exchange. Bone beads may have had special significance as well, since some were made from wild animals (Hodder 2006; Russell 2005). Many stone beads, however, may have been made from locally available materials, although this is still under investigation. It will also be interesting to compare and contrast stone bead production techniques to those of shell beads (cf. Bar-Yosef-Mayer 1997).

## Discussion

Many stone bead studies have concentrated on typology and style, especially of finished beads (Hamilton 2005). In part this is because so many beads turn up in burials (or other use contexts) rather than in production contexts. Also, evidence for manufacture can be elusive; fine-scale sieving is essential and examination of micro-debitage can take much time. At Çatalhöyük, we are exploring manufacturing technologies and chaînes opératoires, within theoretical frameworks of technology, social agency, and experimental archaeology. It would be premature to present any conclusions at this stage, since this work is still very much in progress.



*Figure 166. Sandstone abrader with groove, and unfinished red limestone bead found in association with it. Çatalhöyük West, (9016). (Compare to Wright et al, in preparation.)*

Interesting contrasts are emerging between the Çatalhöyük bead technologies and stone bead technologies documented at other sites of comparable age, eg in Jordan (Wright and Garrard 2003; Wright et al. 2008, in preparation; Wright 2008a, in preparation). These contrasts concern not only materials but lithic reduction technologies. However, there are some points of comparison as well. For example, small sandstone abraders with grooves have been found in Neolithic bead manufacturing sites in Jordan. Although many ground stone analysts might classify these as crude ‘shaft straighteners’ we believe them to be tools for abrading bead blanks into

final form. At Çatalhöyük West, such an artefact was found in the same context as an unfinished cylindrical bead (Figure 166). This reinforces our opinion that (1) ground stone artefacts were crucial to craft production in the Neolithic; (2) relationships between different types of lithic technologies need to be explored carefully despite such artificial specializations as ‘chipped stone analysis,’ ‘ground stone analysis,’ etc. (Wright 2008b).

In western Asia, there are relatively few reports on prehistoric stone bead manufacturing techniques and production areas. Most reports are relatively brief (Berna 1995; Garfinkel 1987; Kaliszan et al. 2002), but detailed analyses of bead reduction sequences are now emerging from some sites (Wright et al. 2008; Bar-Yosef Mayer et al. 2004). Much detail is available concerning late Neolithic, Chalcolithic and Early Bronze Age bead production sites in Pakistan and neighbouring areas (Kenoyer and Vidale 1992; Roux 1999; Tosi and Vidale 1990; Vidale 1995).

For Turkey itself, reports on details of manufacturing seem to come mostly from later sites (Grace 1989), although ongoing investigations of stone beads at Çayonu may change this picture (Özdoğan 1995). We were fortunate in being able to visit Aşıklı Aşıklıhöyük during the 2007 season and Dr Mihriban Ozbasaran kindly offered us the chance to study stone beads from that site. Our initial impression is that at least the large beads at Aşıklı are quite different from the beads of Çatalhöyük, especially in materials used.

It will be very interesting to see what emerges from the site of Boncuklu, close to Çatalhöyük and ante-dating it. The site's very name means 'beads' and Dr Douglas Baird kindly permitted us to have a look at some of the materials in 2006. Our initial impressions suggest that the Boncuklu beads have some traits in common with the stone beads of Çatalhöyük, in materials and typology, but there could well be many differences; this awaits further work at Boncuklu.

### **Acknowledgements**

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### **References**

BAR-YOSEF MAYER, D., PORAT, N., GAL, Z., SHALEM, D., and SMITHLINE, H. 2004 Steatite beads at Peqi'in: long distance trade and pyro-technology during the Chalcolithic of the Levant. *Journal of Archaeological Science*, 31 : 493-502.

BAR-YOSEF-MAYER, D. 1997 Neolithic shell bead production in Sinai. *Journal of Archaeological Science*, 24 : 97-111.

BERNA, F. 1995 La lavarazione dell'amazonite nel villaggio neolitico di Jebel Ragref (Giordania meridionale). *L'ecologia del Quaternario*, 17 : 41-54.

GARFINKEL, Y. 1987 Bead manufacture on the Pre-Pottery Neolithic B site of Yiftahel. *Mitekufat Haeven, Journal of the Israel Prehistoric Society*, 20 : 79-90.

GRACE, R. 1989 The use-wear analysis of drill bits from Kumartepe. *Anatolica*, XVI : 145-155.

HAMILTON, N. 2005 The beads. In : I. Hodder (ed.), *Excavations at Çatalhöyük, Volume 5. Changing Materialities at Çatalhöyük: reports from the 1995-1999 seasons* : Cambridge and London : Monographs of the McDonald Institute for Archaeological Research, University of Cambridge; British Institute for Archaeology at Ankara.

HODDER, I. 2006 *Çatalhöyük. The Leopard's Tale*. London : Thames & Hudson.

JACKSON, B. 2005 Report on bead material identification. In : I. Hodder (ed.), *Excavations at Çatalhöyük, Volume 5. Changing Materialities at Çatalhöyük: reports from the 1995-1999 seasons*: Cambridge and London : Monographs of the McDonald Institute for Archaeological Research, University of Cambridge; British Institute for Archaeology at Ankara.

KALISZAN, L., HERMANSEN, B.D., JENSEN, C.H., SKULDBOL, T., BILLE, M., BANGSGAARD, P., IHR, A., SORENSEN, M.L., and MARKUSSEN, B. Shaqarat Mazyad: the village on the edge. *Neo-Lithics*, 1/02 : 16-19.

KENOYER, J.M. and VIDALE, M. 1992 A new look at stone drills of the Indus valley tradition. In : P. Vandiver (ed.), *Materials Issues in Art and Archaeology* : 495-518. Pittsburgh : Materials Research Society.



ÖZDOĞAN, A. 1995 Life at Çayönü during the pre-pottery Neolithic period. In : H. Çambel (ed.), *Prehistorya Yazilari (Halet Çambel Festschrift)* : 79-100. Istanbul : Graphis.

REESE, D. 2005 The Çatalhöyük shells. In : I. Hodder (ed.), *Excavations at Çatalhöyük, Volume 4. Inhabiting Çatalhöyük: Reports from the 1995-1999 Seasons of the Çatalhöyük Research Project* : 123-128. Cambridge and London : Monographs of the McDonald Institute for Archaeological Research, University of Cambridge; British Institute for Archaeology at Ankara.

ROUX, V. 1999 *Cornalines De L'Inde*. Paris : Editions de la Maison de l'Homme.

RUSSELL, N. 2005 Çatalhöyük worked bone. In : I. Hodder (ed.), *Excavations at Çatalhöyük, Volume 5. Changing Materialities at Çatalhöyük: reports from the 1995-1999 seasons* : Cambridge and London : Monographs of the McDonald Institute for Archaeological Research, University of Cambridge; British Institute for Archaeology at Ankara.

TOSI, M., and VIDALE, M. 1990 Fourth millennium BC lapis lazuli working at Mehrgarh, Pakistan. *Paléorient*, 16 : 89-99.

VIDALE, M. 1995 Early beadmakers of the Indus tradition: the manufacturing sequence of talc beads at Mehrgahr in the fifth millennium BC. *East and West*, 45 : 45-80.

WRIGHT, K.I. 2008a (in preparation) Beads and the body: ornament technologies of Building 3 at Çatalhöyük. In : R. Tringham and M. Stevanovic (eds.), *Çatalhöyük Building 3: the Excavations of the University of California at Berkeley at Çatalhöyük (BACH)* : Los Angeles : Monographs of the Cotsen Institute of Archaeology, University of California at Los Angeles.

WRIGHT, K.I. 2008b (in press) Craft production and the organization of ground stone technologies. In : Y. Rowan and J. Ebeling (eds.), *New Approaches to Old Stones: Recent Studies of Ground Stone Artefacts*: 130-143. London: Equinox Archaeology Books.

WRIGHT, K.I., CRITCHLEY, P., GARRARD, A.N., GROOM, S., BAINS, R., and BAIRD, D. 2008 (in preparation) The technology of Neolithic stone beadmaking in Wadi Jilat, Eastern Jordan. *Levant*.

WRIGHT, K.I., and GARRARD, A.N. 2003 Social identities and the expansion of stone beadmaking in Neolithic western Asia: new evidence from Jordan. *Antiquity*, 77 : 267-284.

## SUPPORT TEAM REPORTS

### Conservation / Konservasyon - Duygu Çamurcuoğlu Cleere

Team: Liz Pye\*, Duygu Çamurcuoğlu Cleere\*, Philip Kevin (British Museum), Nyssa Mildwaters\*, Alaina Schmisser\* Kelly Caldwell\* Casey Macksey\*

\*Institute of Archaeology, University College London

#### Abstract

Site and artefacts conservation was successfully carried out during the 2007 excavation season in collaboration with conservation students from the Institute of Archaeology-University College London and excavation and laboratory teams. The main activities of the season were the burial of the Building 5, conservation and reconstruction of a large number of Neolithic pottery, faunal and human bones as well as the conservation and lifting of plaster wall decorations. In addition to this, some architectural features and plastered walls were conserved as needed.

Research into particular on-site conservation problems were also carried out in order to find the most suitable solutions.

#### Özet

2007 kazı sezonu boyunca, gerek alan konservasyonu gerekse küçük buluntu konservasyonu, Londra Üniversitesi, Arkeoloji Enstitüsü'nden katılan öğrencilerin, kazı laboratuvar ekibinin ve diğer kazı yapan arkeologların katkıları ile başarıyla tamamlanmıştır. Kazı sezonunun ana konservasyon işlemleri sırasıyla; Bina 5'deki gömüt, çok sayıda Neolitik çanak-çömleğin yeniden yapılandırılması ve konservasyonu, hayvan ve insan kemiklerinin konservasyonu ile duvar sıvası bezeklerinin kaldırılması olmuştur. Buna ek olarak, bazı mimari unsurların ile sıvanmış duvarların konservasyon işlemleri de yapılmıştır.

Aynı zamanda alan konservasyonuna dair bilimsel araştırma konuları içerisindeki sorunsallar da, alan içindeki yapılan işlemlerle tartışılıp çözüme kavuşturulmaya çalışılmıştır.

#### Excavation and treatment of fragile and complex materials

In the 2007 season, the conservation team worked on one of the first discoveries of the current excavations, a decorative wall border with a spiral motif (Figure167). The border surrounded 3 walls of a small room in the TP Area and was made of mud plaster. The spiral motif was incised on the mud plaster and was eroded in places. Once exposed, the mud plaster was cleaned with fine tools in order to reveal the surface detail for rectified photography as well as for drawing. After discussion, it was agreed that the border could not be left in situ due to the harsh climate and the risk of erosion in winter and therefore needed to be lifted. Time restrictions did not allow the lifting to take place this season but a mould was taken of the spiral motif prior to treatment and burial until next season.



Figure 167: Decorative border with the spiral motif

The mud plaster was very fragile to deal with. Upon exposure, it began cracking and delaminating in areas. For this reason, it became crucial to use a moulding technique, which would not cause any damage to the border during application and removal. Since the use of available moulding materials posed the risk of staining the mud-plaster (as well as placing physical pressure) i.e. silicon rubber (synthetic elastomer made from a cross-linked polymer which is reinforced with silica), modelling wax etc., the least harmful method was considered to be squeeze paper.



Figure 168: Taking the squeeze mold

Prior to moulding, the surface of the mud plaster was consolidated by using 2.5% Paraloid B72 (ethyl methacrylate co-polymer) in Xylene (petroleum distillate) in three layers. The squeeze method involved dampening strips of blotting paper with water and gently pushing into the incisions with a medium hard brush (Figure 168). Once the paper dried, it formed the shape of the area applied and was gently removed from the surface. Even though this method worked well, the deeper incisions proved to be difficult to mould. In these cases, the paper strips were used in multiple layers to prevent ruptures.

The result of the moulding was successful. The next step will be to take a silicon rubber mould from the mother mould and then to make a cast of the spiral motif for further study and display. In the mean time, the border is planned to be lifted in the 2008 season.

Another complex project undertaken in the 2007 season was the lifting of a plaster wall relief, which was found on a plastered wall in Foundation Trench 22 in the 4040 Area (Figure 169).

The relief is interpreted as the bottom half of a bear (see Introduction). Its belly and belly button were quite clear even though the upper portion of the relief was eroded due to its proximity to the surface of the mound. It was made of many layers of plaster and its condition was relatively sound. It was located on the corner of a wall and therefore presented a challenge in terms of excavating, cutting and lifting. Prior to the lifting process, the plaster layers



*Figure 169: Plaster bear relief*

were consolidated by spraying with 25% Primal AC-33 (Acrylic dispersion) in distilled water in many applications. The areas that remained unstable were further consolidated with 50% Primal AC-33 in distilled water, which made the mud-brick wall as well as the plaster layers quite strong to withstand the lifting process.



*Figure 170: Cutting the plastered wall*

Once the plastered wall was fully stabilised, the surrounding soil was excavated in order to create an area wide enough to be able to cut and lift the relief. During this process, the relief was supported by placing plastazote (closed cell polyethene) foam against its surface and propping it with sand filled buckets. When the excavation was complete, the buckets and the support material were removed and the area of the

relief (10cm in depth, 35 cm in height from the top of the wall) was marked out for cutting. Before the cutting took place, a padded, wooden board (custom made for the shape of the wall corner) was prepared. A variety of saws was used for cutting (Figure 170). As the relief separated from the wall it was placed onto the board with the help of local workmen and was carried to the excavation finds laboratory in order to undertake further work in the 2008 season (Figure 171a,b).





Figure 171 (left) Plaster relief on the lifting board (right) Plaster relief after being brought to the excavation

### Conservation of small finds

Work on a variety of finds excavated in the field (horn cores and other animal bones, human bones, pottery, clay, metal, glass) was undertaken on the site throughout the 2007 season. Unlike the previous years, a large number of Neolithic pottery was conserved and reconstructed in order to understand the original forms and evidence of use. Two important objects of the season were a lump of blue pigment found in a Neolithic burial with a bone spatula attached (Figure 172) and a bone bead necklace, carved from small tailbones in a particular way that the beads interlock with each other (Figure 173). Both objects were conserved and packaged for further study and display. In addition to these, more sherds of the “Face pot” (recovered in 2006, Figure 174) were found from unsorted bags of pottery and the continuing reconstruction helped to understand the actual form, design and the use of the vessel.



Figure 172: Blue pigment with the bone spatula



Figure 173: Bone & shell necklace



Figure 174 Face pot

## Conservation Research Projects

### *Human Remains Project (Nyssa Mildwaters)*

Building upon the work carried out last season by Dominica D’Arcangelo and Christie Pohl regarding the condition and treatment of human remains on site, a review was undertaken of the treatment of human remains from excavation through to storage and draft guidelines produced. During the course of this process a new packaging method was developed, which aims to reduce the amount of damage suffered by the remains during long term storage, though based essentially upon a tray system similar to that developed at York Archaeological Trust by Bowron. A number of adaptations were required given both the lack of space available in the human remains laboratory and the difficulty of sourcing certain materials. The storage situation in the human remains laboratory will be further improved by the installation of new dexion shelving for which the laboratory was also measured this season. The guidelines produced from this review have not been tested and thus are still in draft form, though if effective they may hopefully be used at other sites where human remains are recovered.

### *Sample Guidelines for the Treatment of Human Remains at Çatalhöyük*

During the 2006 and 2007 seasons the human remains and conservation teams have worked together to assess and improve the way in which the human remains excavated on site are handled. As a result of this project, the following guidelines have been produced with both archaeologists and conservators in mind and are specifically aimed at the treatment of human remains from Çatalhöyük.

### *Excavating and Lifting*

- The human remains team should be notified as soon as a burial is discovered.
- All burials should be excavated by either one of the human remains team or an archaeologist.
- Please excavate any remains with care using leaf trowels, dental picks and soft brushes as necessary. Remember to show respect for any remains being excavated, i.e. resist the temptation to attempt ‘Alas poor Yorrick’ impressions.
- If any grave goods or phytolith remains are present please photograph and record these on the context sheet. In the case of phytoliths, these will need to be sampled, if unsure of how to do this please ask for help. If the associated grave goods appear fragile please contact the conservation team who will assess and help to lift the artefacts as necessary.
- When not working on a burial please ensure that it is adequately and securely covered with a layer of SympaTex\* followed by dampened filter paper and plastic sheeting (All materials provided by the conservation team). This will help to protect the bones from drying out and also prevent any visitors to the site from finding unexpected human remains.
- Ensure that all remains have been photographed, planned and all levels taken prior to lifting.
- If the bone is very fragile or there are diagnostic areas which may be damaged during lifting, consolidation and lifting may need to be carried out by the conservation team. Any such course of action should be discussed with the human remains team supervisor.

- When lifting bones without the aid of conservation, use the pedestal method working either from head to foot or vice versa. Ensure all bags used to hold and transport bones contain labels with the appropriate contextual information.

\*A synthetic membrane made of polyester and polyether. It is waterproof/breathable, often used in clothing and shoemaking.

#### *Cleaning*

- Please do not wash human bones as this may cause deterioration.
- Bones should be carefully dry cleaned using soft brushes, bamboo skewers and puffers.
- It is advisable to wear facemasks when cleaning bones to prevent inhaling dirt and bone dust, but this is optional.
- To avoid a build up of dust, loose soil and debris should be regularly removed from the workbench and placed in the bin. Though all fragments of bone over approximately 5-6 mm should be retained.
- Should the removal of salt incrustations be necessary, this may be done using a pipette, ethanol and pliers. Drop a small amount of ethanol on to the salt crystals then carefully use the pliers to crush the crystals, the resulting powder may be brushed off the bone.

N.B. Salt removal in this way should only be attempted if the bone appears to be sound, fragile bone may disintegrate.

#### *Documentation*

- Please ensure a full inventory is conducted on each skeleton using the sheets provided (Examples of these may be found attached). This will be transferred to the central database during the course of the season.
- Please note the use and location of any consolidants or adhesive in the notes section of the inventory sheet. This is important as the use of consolidants may affect future analytical testing.
- Any treatments carried out by members of the conservation team should additionally be logged in the conservation database.

#### *Reconstruction*

- Reconstruction should only be undertaken where there are fresh breaks, allowing easy identification of the fragments and a good join.
- Bones and teeth may be reconstructed using HMG Cellulose Nitrate, tubes of which may be requested from conservation. If not available Paraloid B72 (ethyl methacrylate co-polymer) may be used. Again this is available from the conservation laboratory and may be applied using tube or brush.
- After applying the adhesive, time will be required for it to dry. During this time gentle pressure should be maintained upon the join in order to achieve a tight join.

#### *Packaging*

- Once cleaned and inventoried, all remains should be packaged for storage. The remains should be carefully placed within padded polyethylene bags. Thin

Plastazote (closed cell polyethene) foam is available from the conservation laboratory in order to provide padding. The bags should also be pieced in four to six places using a sharp implement such as a mounted needle in order to provide ventilation.

- When dividing the skeleton for packaging please use common sense, for example all the bones of the left hand or the teeth do not need to be bagged up separately. Though differentiate between the left and right sides of the body.
- Do not use tissue paper to wrap fragile bones as this obscures the view of the bone and may cause more damage when unwrapped.
- Remember to ensure that a finds label is placed alongside the bones in each bag.
- Bags should not be over filled if the remains appear overcrowded. Please use a large bag. Bags are available from the finds laboratory.
- The bags containing the remains should be carefully laid flat within one of the available plastic crates. When stacking the remains please try to ensure that the heaviest material is placed at the bottom of the crate.
- Each crate should be divided between three and four layers using a stiff inert board in order to allow easy access to the underlying remains. Again, materials may be requested from the conservation team.
- Infant remains should be packaged within bags as above however the bags should then be placed within one of the small plastic food containers available from the finds laboratory. Holes should be drilled in the plastic container prior to use in order to allow ventilation.
- All crates and containers should be placed upon the provided shelving, please use a ladder when reaching the high shelves and always ask for help should you need it.

#### *Study/Research*

- Take care when moving crates - they may be heavy. Ask for help if you need it.
- When unpacking crates please ensure that you have either a sand tray or a padded surface prepared. This will prevent unnecessary damage occurring. (Polyethylene Foam may be acquired from the conservation laboratory).
- Avoid moving around the laboratory holding/carrying material - it is much more likely to get dropped or broken.
- When repacking, try to replace material back into the crate where it was removed - the heaviest elements should ideally be at the base of the crate.
- Should you wish to undertake any sampling this should be discussed and agreed with the team leaders prior to arrival at site.

#### *Health and Safety*

- Before using any chemicals or undertaking any conservation processes please ensure you have read and signed any relevant COSHH (Control of Substances Hazardous to Health) sheets - it a legal requirement - the sheets may be found in the conservation laboratory.
- Should you have an accident or feel unwell at any point please inform your team leader immediately.



### ***Reburial of Building 5 (Alaina Schmisser)***

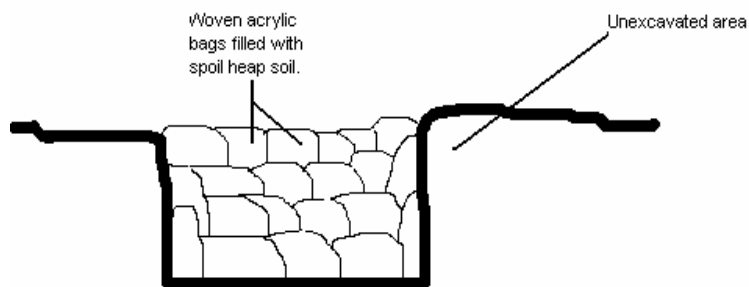
The removal of the semi-permanent shelter which covered Building 5 since 1999 and the erection of the new shelter planned for the summer 2008 required a method of interim protection to be implemented. As reburial of Building 5 had been successful in the past, and as reburial in general at Çatalhöyük between excavation seasons has also proven to be a good method of protection, reburial was again selected as an appropriate conservation strategy. However, Building 5 necessitated a more specialized plan of reburial. It was important to consider the role of the building as a public heritage display. Changes in the appearance of the building were undesirable, and the known fragility of the plaster work, particularly of the plaster bins and ladder scar, required a reburial method that would ensure the protection of these features. A method of reburial developed by Frank Matero of the University of Pennsylvania had been used with great success in the prior reburial of Building 5 during the winter of 1998/1999, and a slightly modified version of this method, which consisted of reburial using geotextiles and bagged spoil heap soil, was implemented.

#### *Methods of Reburial:*

As previously mentioned, there are already two methods of reburial in place at Çatalhöyük. One of these methods is the standard method of reburial which is practiced at the end of each excavation season in order to prevent damage to exposed archaeological remains. The other is used for especially delicate features and buildings which will be put on display to the public, such as Building 5.

#### *Standard Reburial (Figure 175):*

This is the type of reburial which is commonly practiced at Çatalhöyük at the end of each excavation season, on archaeology which has already been photographed and recorded and will be removed in the next season of excavation. It involves filling the excavated areas with layers of carefully placed 'sand bags' woven acrylic bags filled with excavated and sieved soil. These bags are used to fill the excavated area to ground level. This method of reburial has proven successful in protecting the unexcavated remains, though the top layers of plaster are sometimes damaged.



*Figure 175: Standard reburial method employed at Çatalhöyük.*

#### *Geotextile Reburial Method (Figure 176)*

The use of geotextile in reburial at Çatalhöyük is limited. It is generally only employed when the features exposed are fragile or plastered, such as in the case of Building 5. The geotextile method is quite similar to the standard reburial method, with the exception of a layer of geotextile applied to the delicate features for cushioning and water resistance. Perlite-filled bags have also been used to cushion feature edges and delicate plaster, and uneven surfaces on the floor and bins are

sometimes filled with loose soil or sand. The next step in the geotextile reburial method is to fill the remaining void with carefully packed bags of spoil heap soil.

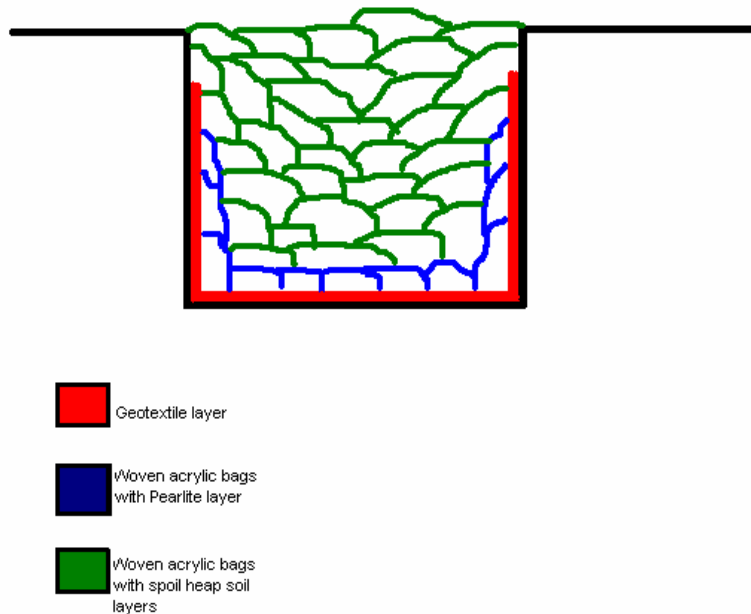


Figure 176: Reburial method implementing geotextile and Perlite.

The method of reburial applied for Building 5 during the summer 2007 followed the geotextile reburial method. As the site is located in an extremely rural area of Turkey, the expense of transporting large quantities of materials is substantial. Because of this consideration, it was decided to attempt to source appropriate reburial materials from within Turkey rather than pay international shipping costs. As short-term reburial was already part of standard practice at Çatalhöyük, the issues of environmental seasonal change and degradability of materials in the soil conditions were already understood.

#### *Materials:*

The two materials used which differentiated the reburial of Building 5 from the standard reburial in use in other places at Çatalhöyük was the amount of geotextile layers and the quantity of perlite-filled bags.

#### *Geotextile:*

For the 2007 reburial of Building 5 at Çatalhöyük, a needle-punched, non-woven geotextile was chosen in order to provide a level of protection from water penetration, provide cushioning, and to clearly delineate the archaeological remains to aid in excavation after completion of the new shelter. The geotextile selected had a thickness of 2 millimetres and a relatively smooth surface to lessen the potential of damaging the plaster by catching roughened edges. It was bought from Art & Restoration, a Turkish company based in Istanbul, which sells conservation materials.

#### *Perlite:*

Perlite is a term used for naturally occurring siliceous volcanic rock with a water content of between two and six percent. If it is heated to a specific range (above 870° C), it will expand to four to twenty times its original volume as the water evaporates and creates bubbles in the softened glassy particles. These bubbles are white in colour. Perlite is used as low-cost bulk absorptive filler in the construction industry. The lightweight allows for low shipping costs ([www.schundler.com](http://www.schundler.com)). It is a potential irritant and masks must be worn while working with the loose particles to prevent inhalation. Perlite particles are irregular in shape and contain cavities, which may hold moisture, making it an idea material to use as an insulator or for absorption. The irregular particle sizes also allow for airflow and movement. Perlite is inorganic and inert and will not deteriorate or further compact, and has a neutral pH in the range of 6.5 to 7.5. It is therefore considered safe to use in archaeological conservation contexts ([www.perlitecanada.com](http://www.perlitecanada.com)). It has been found to be very effective at protecting the moisture-susceptible mud brick and plaster construction at Çatalhöyük from water ingress when used in the reburial context. For these reasons, perlite was selected as an appropriate and beneficial material for the reburial of Building 5. It was bought locally from a company in Konya.

#### *Woven Acrylic Bags:*

Woven acrylic bags were used to contain the perlite and the spoil heap soil which was used to fill the interior of Building 5 during the reburial process. The bags were chosen as they are inexpensive and readily available in Turkey.

#### *The Reburial of Building 5:*

The reburial of Building 5 began with blanketing the floor of the entire structure in geotextile fabric as well as covering the walls to a height of 1.5 metres (Figure 176). Nothing was used to secure the fabric to the walls, as it was undesirable to cause potential damage to the walls by hammering in nails or other fixtures. Instead, the fabric was tucked over and around in direct contact with the features and



*Figure 176: Building 5 during reburial. The walls were covered with Geotextile.*

occasionally held in place using a clump of soil. Geotextile was used in order to serve as a visual horizon indicator, a cushion, and a moisture barrier to protect the plaster walls and mud brick structure from excess water ingress and the associated erosion and swelling/shrinking patterns. Financial considerations were of importance, and the high costs associated with importing large quantities of materials were not acceptable. Therefore it was decided to use products which were readily available in Turkey and would not require import. After the covering of the floors and walls in geotextile was complete, low platforms, bins, pits, and postholes were filled with sieved spoil soil. This ensured an additional layer of protective cushioning before reburial and support to the hollow features. After the addition of the sieved spoil soil, woven acrylic bags filled with 4 litres of Perlite and sealed with staples were placed over and around all delicate mud brick and plaster features. The Perlite bags were selected as they are

extremely malleable and will mould around the features to be protected, ensuring that the burden of the fill material is spread across the surface and the weight does not directly impact the delicate plaster features.



Figure 177: Building 5 during reburial with perlite and sand bags

The perlite bags were laid in place in conjunction with the placement of the bags of spoil heap soil (Figure 177). It was necessary to place soil bags immediately after placing perlite as the perlite did not hold a shape and would slump down if not held into place. As it had been decided to avoid the use of any fastening materials to reduce damage to the plaster, it was necessary

to closely coordinate the placement of the initial layer of soil bags in order to ensure that the perlite remained in the proper position and did not slump and thus leave unprotected areas. In all, a total of several hundred perlite bags were used to cover features and delicate plasterwork areas. After placement of the layer of perlite bags and the initial anchoring layer of soil bags, the remainder of Building 5 was filled to ground surface level with soil bags (Figure 178).

After the interior of Building 5 had been completely filled to original ground level, the semi-permanent shelter was disassembled in preparation for erection of the new shelter during winter 2008. By waiting until the reburial had been completed before removal of the shelter, it was ensured that Building 5 would not be exposed to the elements, harsh changes in humidity and temperature, or accidental damage through misadventure during the disassembly of the shelter above.



Figure 178: Building 5 after reburial and the covering tent dismantled.

#### *After Reburial: Re-excavation:*

After the desired time for reburial has passed, which in the case of Building 5 will be the summer 2008, the reburial materials will be re-excavated under cover of the shelter. It is important to wait until after the erection of the new shelter as the shelter will provide a level of protection from the elements and will allow the reburied

archaeology to adjust slowly to the new environment. As the reburial period is short, the largest potential for problems comes with the covering and uncovering of the structure, as that is when the microenvironment of the archaeological remains is most impacted. The erection of the shelter should slow the drying process, allowing for an easier adjustment and fewer potential problems.

#### *The Trial Monitoring Trench*

Because the long-term results of reburial at Çatalhöyük are unknown, it was decided to create a trial monitoring trench. The trench was planned as a way of assessing the long term suitability of reburial using the standard method employed at Çatalhöyük at the end of each season (woven acrylic bags filled with spoil heap soil and placed directly into the excavated areas to ground level) as well as the geotextile method of reburial for Building 5 (using geotextile and perlite bags to separate and cushion the archaeological remains from the spoil heap soil bags). As the most delicate features reburied are plaster features, specifically bins and platforms, the trial monitoring trench had to incorporate these for assessment.

#### *Materials*

The same materials as used in reburial practices elsewhere at Çatalhöyük were used for the trial monitoring trench. These included geotextile, the woven acrylic bags filled with perlite, and the woven acrylic bags filled with soil. Plaster samples retaining a thick mud brick backing were taken from a wall under excavation in the South Shelter. The wall was part of Building 65, Level V in the South Shelter in unit (14525). It was selected for sampling as



*Figure 179: Plaster sample after removal from the wall*

the plaster was undecorated, was in typical condition for Çatalhöyük, and showed an average number of cracks. The sampled area had already undergone full recording and was due to be removed the next day in order to expose earlier archaeological levels. The plaster sample was carefully removed using trowels and files in an effort to preserve a thick mud brick backing and avoid delaminating and additional cracking of the plastered surface (Figure 179). The plaster sample was taken to the conservation lab for micro-excavation of the excess mud brick backing. After the plaster sample was removed from the wall in Building 65 and micro-excavated in the conservation laboratory, it was divided into sections. Four pieces with stable mud brick backing were selected as samples to be reburied in the trial monitoring trench. These were labelled A-D and corresponded with unit quadrants I-IV.

The trial monitoring trench consisted of a 1 metre by 1 metre square dug to a depth of 70cm and placed at the base of the mound. The site for the trial monitoring trench was selected carefully in order to ensure that it would not disturb known archaeological deposits and so that it would not be placed in an area which had already been disturbed by modern building activity. The centre of the trial monitoring trench has an



elevation of 1003.34 m and is located 115.69 m N/NW from the centre of Building 5, and 15.95 m from the SE corner of the Environmental Flotation Shelter. The location of the trial monitoring trench has been surveyed in on the site grid.

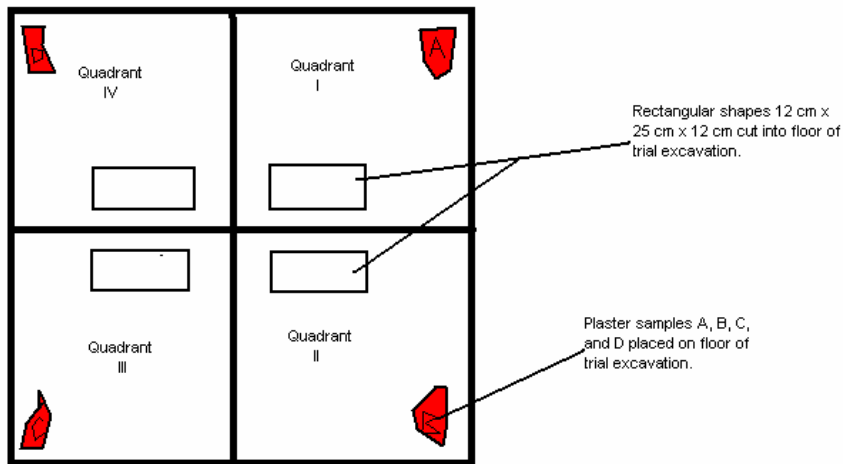


Figure 180a: Trial monitoring trench plan.

The design of the trial monitoring trench was planned so that it would be possible to excavate one or two quadrants at a time in order to leave the others undisturbed for future excavation and recording. The base of the trench was divided into four quadrants, I, II, III, and IV, which were delineated using lines of modern ceramic tiles inserted into the floor of the unit (Figure 180a and b).



Figure 180b: Trial monitoring trench prior to reburial showing quadrants I, II, III, and IV and plaster samples in situ.

One sample of plaster was placed in the far corner of each of the quadrants (Samples A, B, C, and D). Additionally, a rectangular void was dug into each quadrant. The rectangular voids were given sharply defined edges and were 12 cm x 25 cm x 12 cm in depth. It is hoped that the rectangular voids will effectively show compression problems from the soil overburden. Quadrants I and IV contained plaster samples A and D respectively and were reburied following the standard end of season reburial practice used at Çatalhöyük, with woven acrylic bags filled with spoil heap soil placed directly in contact with the surfaces of the quadrants and brought to ground level. Quadrants II and III contained plaster samples B and C respectively and were reburied following the exact reburial method used for the 2007 reburial of Building 5, first covered with a layer of geotextile which extended to the top edges of the trial monitoring unit. This layer was then covered over with perlite bags, which

were positioned to protect and cushion the plaster samples and the rectangular cut voids. Quadrants II and III were then filled to ground level with woven acrylic bags filled with spoil heap soil so that a uniform level was attained for all four quadrants.

It is hoped that the trial monitoring trench will provide a useful method of analysis of the long-term suitability of the reburial methods currently employed at Çatalhöyük, particularly the geotextile/perlite reburial combination. Ideally, the trial monitoring trench will be left undisturbed for three years, at which time quadrants I and II might be uncovered to assess the condition of the plaster samples A and B and the rectangular void edges for compression damage. Quadrants III and IV could then be uncovered two to seven years afterward in order to check long term effects of both reburial practices.

### ***Construction of the new shelter (Duygu Çamurcuoğlu Cleere)***

The first shelter at Çatalhöyük (South) was built in 2002 to protect and continue excavations on the southern slope of the mound where James Mellaart had first excavated. This summer the Çatalhöyük Research Project started the construction of a new shelter on the northern hill of the mound, which will cover Building 5 as well as the current excavation trenches (4040), an area of 1000m<sup>2</sup> in total.



*Figure 181: Model of the new shelter to the north of the mound, designed by Atölye Mimarlık*

Both the South Shelter and the new shelter are designed and constructed by “Atölye Mimarlık” an Istanbul based architectural office. The architects Sinan Omacan and Rıdvan Övünç have been working very closely with the excavation team through the design and preparation process. The construction work is planned to be completed in two parts over a 2-year period: The first part to lay the foundations (summer 2007), followed by the second part to build the roof structure and the protective cover (spring 2008).

The topography where a shelter is to be built, the extent of archaeology, environmental factors (i.e. ventilation, drainage, light) and the long-term behaviour of the construction materials determine the design of the structure. Even though the new shelter will serve the same purpose as the first one, there are fundamental differences in their constructions. Unlike the South shelter, the new shelter will be built on the top of the mound. Due to this reason, it is designed to have a softer form, which can blend in with the natural topography and be aesthetically pleasing to the eye (Figure 181). It is also crucial that any excavation undertaken as part of a shelter construction, does not damage the underlying archaeology. The deeper the shelter foundations, the more complicated the excavation process can be. In such cases, it is important that the foundation trenches are carefully excavated by archaeologists, which is often a very

slow and a painstaking process. In order to minimize this strain on the archaeology as well as on the excavation team, a concrete, metre wide continuous plinth that required minimal excavation, is planned by laying it on the surface of the mound (Figure 182). This plinth will help to distribute pressure evenly over the ground and allow the frame structure to be dismantled if desired.

The design aims to achieve the right environment both for the archaeology, team members and people who will visit the site. The roof structure (Figure 182), which will be constructed of laminated timbers, will follow the gradient of the hill down to the surface and arise from a central point. In this form, the higher parts of the shelter will provide good air ventilation (with folding side panels) whilst the lower sections will create a slope for an effective drainage system (a channel made of pre-cast cement) as well as making the structure more durable against heavy wind in winter.

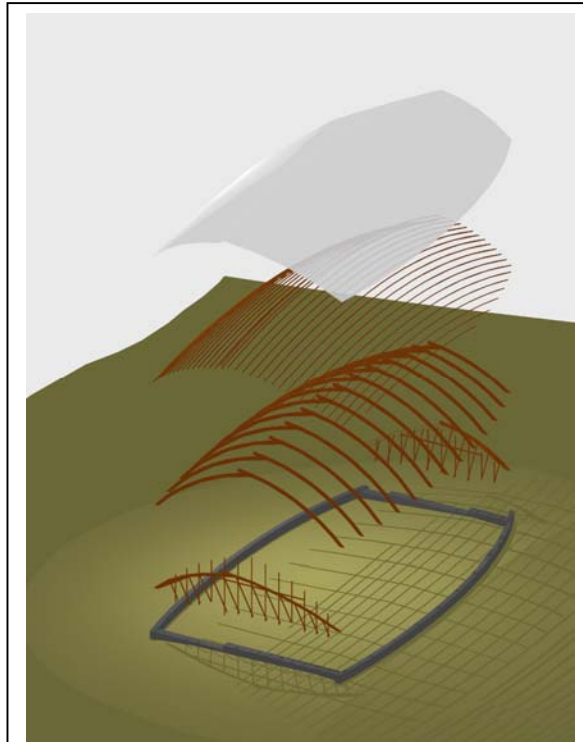


Figure 182: The construction components of the new Shelter designed by Atölye Mimarlık

For the final stage a protective cover, constructed from polycarbonate panels, will be installed (Figure 182). Polycarbonate can distribute daylight equally inside the shelter, which is vital for the recording of archaeological sites and equally for viewing. It is also durable against light degradation and is therefore preferred over the polyester panels used for the South shelter.

With much from the Çatalhöyük team, the initial part of construction is now complete. The project will resume in the Spring of 2008, with the aim to complete the shelter before the start of the excavation season in the summer. It is hoped that the new shelter will create a comfortable working environment for the excavation team and ensure more Çatalhöyük houses to be displayed for visitors through appropriate protection and presentation.

### **Other conservation projects (Duygu Çamurcuoğlu Cleere)**

#### ***Environmental Monitoring project***

We collected the dataloggers, which had been placed in Building 5 and Building 17 (South Shelter) during the 2006 season in order to monitor the RH and temperature for a year. We are currently assessing the results together with the results of the finds lab and the experimental house from the 2005 season.



### ***Documentation of conservation***

The development of the conservation database has continued throughout the season as we collaborated with the Database team and achieved very efficient results. All artefacts were photographed before, during, after treatment and registered to the new image catalogue in order to be linked into the recently developed Çatalhöyük Conservation database.

### ***Reflexive Conservation***

We continued training the local women in the painstakingly slow and careful job of revealing paint layers on selected plastered walls in the 4040 Area. With experience and familiarity that the local team gained last year, they were able to work independently and seek for supervision when necessary.

We also collaborated with the Ankara Anatolian Civilizations Museums for the design and preparation of a temporary Çatalhöyük exhibition, sponsored by Boeing. Selected artefacts from the current excavations were brought together to be displayed in the museum for a year. We worked with the conservators in Ankara Museum and exchanged knowledge and experience.

### ***Sourcing Conservation Materials***

At the beginning of the season, we undertook a complete inventory of all items in the laboratory. This will enable us to compile a list of most used items and to determine which materials need to be ordered for the 2008 season. We have been acquiring a number of conservation materials locally and from Istanbul, which proves to be more efficient both in terms of resources and transportation. Currently, we are still investigating the availability of some conservation materials in Turkey.

### ***Acknowledgements***

Big thanks to all team members who made 2007 a very successful season. We also would like to thank the British Institute of Archaeology in Ankara for the conservation materials they provided. Special thanks to Nurcan Yalman for helping with the lifting of the plaster bear relief.

## **Çatalhöyük Database Development Archive Report 2007 Part 1 / Veritabanının Geliştirilmesi - Sarah Jones, Çatalhöyük Research Project**

### **Abstract**

The work this year has mainly focused on bedding down the centralised database, linking in the new image catalog now in Portfolio SQL Server and integrating the Human Remains data structure.

The datasets available to the public via the online system have been extended based on the permissions and advice given by lab teams over the 2006 season.

### **Özet**

Bu sene yapılan işler genel olarak merkezi veritabanı sistemini ile ilgili işlerin tamamlanması, fotoğraf kataloğumuzun Portfolio SQL Server'ına bağlanması ve İnsan kemikleri veritabanının entegre edilmesi işlemleri olmuştur.

2006 sezonun boyunca laboratuvar ekibinin verdiği öneriler ve izin sonucunda, halka açık olan online veritabanı genişletilmiştir.

### **Team News**

The project no longer has a full time IT person but continues to employ Sarah Jones and Mia Ridge as consultants when required. Sarah takes on most of the support issues whilst Mia concentrates on the Clay database development. Both were able to spend time on site in 2007 to offer day-to-day IT support there.

Rich May has moved on from the Museum of London and was unable to come out to site this year so Neil Davies stepped in to set-up the systems ready for the season. It is hoped that Rich will be able to join us again in the future.

### **IT Infrastructure**

Before the beginning of the season the UK IT set-up was altered to take into account the project's move from the University of Cambridge to University College London. The project's PC's and file server were moved to London but the web and database server has remained in Cambridge where Mirza Baig continues to maintain it. When suitable arrangements are made with UCL it envisaged that this server will also move to London.

On site the infrastructure was not altered apart from the purchase of more UPS's (Uninterruptible Power Supplies) to provide shut down time in the event of power cuts. A few computers were lost due to hardware failure and a monitor died in dramatic fashion by catching fire!

It is hoped that next season a new server will be purchased to increase disk space and response speed.

### **Public Database Access Online**

Over the winter the available datasets on the public website were extended and new lab team data search facilities added with existing ones being improved. This work was based on the permissions and advice given by lab teams over the 2006 season. It is possible to allow only sub-sections of data to show on the website thereby allowing some degree of visibility without compromising research work.

Additional tweaks were made to improve the database access section of the website such as adding help to the Unit sheet screen and replacing basic lists of feature numbers (such as those features associated with a space) with a listing that showed feature types.

### **Database Development**

Work on developing the underlying data structures and their associated interfaces mainly took place on site this year. Many of the more established databases such as Faunal and Heavy Residue were slightly altered to cater for changing recording needs at the team leaders request.

A concentrated effort this season focused around integrating one of the last major datasets into the centralised database, the human remains data. The team devised their electronic recording strategy and this was implemented in stages throughout the

season. By the end of the season a workable system was in place to enable data entry to begin.

A lot of work was invested in linking the database with the new image catalogue (Portfolio now using SQL Server). It is now possible on-site to link the database with the image catalogue directly without the need to upload/download data between the two systems.

At the request of the West Mound Buffalo/Cambridge team a new feature was added to the Diary database – the ability to link a diary entry to a daily sketch. It is intended that this idea will be extended to the excavation database to allow a link to the sketch that is drawn on a unit sheet.

The continuing work on the centralisation of the clay databases is covered in a separate section in this archive report.

### **Database Querying and Data Cleaning**

The centralised database has now run successfully for a second season on site and the teams confidence in using it has visibly increased. The promised benefits of the centralisation are now coming to fruition as not only are the team interfaces able to draw data from different tables the teams themselves are venturing into cross-discipline querying.

On site a lot of useful conversations took place about the data required by teams and how the process of querying could be made easier and clearer. It is hoped to create a library of template queries and guides based on these needs. Mia has furthered this work as described in her section of this report.

The natural evolution of centralisation and has lead from concentrating on integrating datasets to looking at ways to clean and clarify the data. The excavation dataset has undergone many cycles of development over the years and now requires re-examination to clean up all redundant fields that have been left by these cycles. For instance the Level field, which used to be recorded against a Unit is now recorded with the Space number, however the legacy field in the Unit Sheet table still remains. Now the dataset is centralised this redundant level field - that used to be hidden in the MS Access version - is viewable to all those users querying the dataset and is very confusing. All redundant fields like this are to be identified and archived off to ensure that users are only offered the data that is valid and up to date.

### **Conclusion**

The work this year has focused mainly on bedding down the centralised database. It has now run successfully for two seasons and it is hoped that work can now concentrate of improving interfaces and adapting systems to evolve with recording strategies. This season we also saw clearly how we are moving onto another phase of development, namely that of providing tools to aid cross-discipline querying.

## **Clay Databases Development Archive Report 2007 Part 2 - Mia Ridge, Çatalhöyük Research Project**

The clay databases at Çatalhöyük are designed to implement a shared recording system allowing a unified view of related finds. It provides common value lists for use when it is supported by the attributes of the fabrics and the artefacts whilst allowing flexible recording where the fabrics and attributes differ. The extensible design will enable comparison of artefacts across specialisms on representational as well as material aspects. One of the goals was to record to a level of detail and on characteristics supported by the artefact rather than forcing it into a universal system, while providing enough consistency to ensure accurate counts of each type of find. An underlying goal is to manage the data entry interfaces and processes and the integration of previously recorded data to ensure that negative evidence is as reliable as positive evidence.

The requirements for the shared clay database application were reassessed this season in light of factors including: changing requirements as the infrastructure is embedded in practice; the time constraints teams face when recording on site; discussion of the portability of the ware code and fabric descriptions, and the ability to record technical material data consistently across teams, labs, languages and specialisms. The work by Chris Doherty and other teams on understanding the raw materials in the surrounding area, which has implications for the intentionality represented by the presence of various inclusions and for the basic understanding of fabrics for different types of artefacts, is also an on-going influence on the application design.

I reconfigured the recording model accordingly so that it follows a concept of 'observation, not interpretation'. This conceptual model provides a practical method for dealing with different levels of technical expertise and for different research interests across teams. The database schema and forms can be extended as we find out more about the raw materials around the site and to support different types of technical analysis.

This change particularly affects the recording of colour variations and inclusions or temper. For example, recording can range from basic observations of the dominant and variant colours, the probable type of heat exposure and the recorder's certainty about their interpretation, to a detailed analysis and interpretation of the reasons for colour variation. Conjecture about the cause of colour variation, whether a factor of fabric, manufacture, use, or post-depositional events, can be saved until technical can be performed. This analysis might also include research about the natural variations in the fabrics found in the region or experiments with firing and exposure to other heat to examine how the materials change over time or with exposure to different heating events. This model also allows the presence of inclusions to be recorded without requiring speculation about the natural or cultural origin of those inclusions.

### **Ceramics**

This season the mapping the cleaning and normalising of ceramics data, and issues around recording bulk, grouped or individual sherds, were finalised. I worked closely with Nurcan Yalman and Duygu Tarkan to devise the best solutions for their recording requirements and constraints, with the added challenge that other teams will be using versions of the ceramics databases. Our aim is to have fabrics recorded

consistently across the database, regardless of the recording method (which is often the result of post-depositional or use events that affect the size and condition of the sherd) to the extent that the material and physical aspects of the artefact permit.

### **Figurines**

Work included analysis of the portability requirements for off-line analysis, the use of images and review of existing structures to remove redundancies and data cleaning. Some data cleaning included the removal of non-figural objects such as clay balls and geoshapes so that the recording structures can be tailored for the confirmed figural objects that remain. The non-figural objects can be exported and integrated into the appropriate specialist database.

The Figurines database uses HTML forms to provide a cross-platform application for centralised data entry. It also uses SQL views to provide equivalents to the 'repeating fields' used in FileMaker Pro. These tables are also available for use in user-created queries.

### **Integration with Geographical Information Systems (GIS)**

While on site I explored the requirements for, and created some test data structures to link excavation and find data into the Geographical Information Systems (GIS) software that could serve as a 'proof of concept' for user-friendly methods of importing central database records into GIS software.

I experimented with linking X Finds recorded in the central database with views of the spaces, features and units in Building 51. A comparative experiment attempting to display the location of skeletal remains according to the age at the time of death, burial position and alignment, using records from the Human Remains database and human remains information from the excavation database, showed the benefit of highly structured data for pre-defined searches based on particular criteria. However, free form and subjective data is useful in contextualising the finds once a set of records has been selected according to criteria and displayed in the GIS application. This experiment showed why it is important to plan and digitise properly; and demonstrated that team members cannot analyse data points that have not been recorded individually and consistently.

However, it is impossible to anticipate all research questions so extensibility is also very important. Trials this season might point to a need for summaries of specialist data created for use by people from other teams or members of the public who do not have the same ability to review, interpret and update specialist data into a highly structured schema suitable for querying in GIS. These summaries could be recorded in supplementary data structures when initial specialist data is recorded or after a survey of the collection of objects for interesting possible points of analysis.

The use of geographical information system (GIS) could have exciting implications for the on-going work on clay artefacts and geological materials around the site. By using GIS in conjunction with the central database, we might be able to relate artefacts to the location of their source material, effectively re-populating the landscape with objects made from local materials.

### **Documentation and training**

This season I ran an informal workshop on 'database querying'. This was very useful as those who attended were able to construct their own queries and reports, resolving some of their on-going questions; it also helped us understand how people query the database and where we can make improvements.

I also created tables ('Database\_Documentation\_Table', for example) to store documentation so that it is accessible at the point of use in the AllTables database. The AllTables database was created in 2005 to allow team members to use the Microsoft Access visual interface and 'wizards' to create their own queries.

### **Mellaart numbers**

It is worth recording the decision to create a pseudo unit to allow with finds with Mellaart numbers to use the 'GID' or common object identifier in use for all finds recorded in the current system. This will require some additional search functionality, including an equivalency table to link the new GID with the previous Mellaart identifier. This table would serve as a central register, handing out new Find Numbers in sequence.

## **The Geomatics Team / Yüzey Araştırma Çalışmaları - David Mackie and Cordelia Hall – Çatalhöyük Research Project**

### **Introduction**

The geomatics team for the past two years has consisted of David Mackie and Cordelia Hall. We have been using equipment from Leica; their Total stations and traverse kit. Survey kit, survey software and help have been provided by Plowman Craven and SCCS.

Our main job is to maintain and reinstate the Site Grid based on the Control Network for the international team. We also digitise the Site's Drawn Record using AutoCAD and digitising tablets. The digital record is based on the site's co-ordinate system.

### **Giriş**

Yüzey araştırma ekibi son iki yıldan bu yana David Mackie ve Cordelia Hall'dan oluşmaktadır. Leica'nın teknolojik ekipmanını kullanılmaktadır. Yüzey araştırma alet seti ve yazılımı ve desteği Plowman Craven ve SCCS tarafından sağlanmıştır.

Ana işimiz uluslararası ekip için belirlenen control edilebilir network sistemiyle sağlanan Alan Grid sisteminin standard işleyişini sağlamaktır. Aynı zamanda AutoCAD yazılımını ve tableti kullanarak sağlanan planları dijitalize edip Alan Plan Kayıtı sistemine işlemektir. Bu dijital kayıtlar alanın koordinat sistemine göre bilgisayar ortamına aktarılmaktadır.

### **The survey work for 2006:**

- Checked existing control. Re-established the baseline from Kuçukköy Mosque and used it to place a control point on site. This established a baseline on site that we could work off.

- Re-instated grid. With our re-established baseline on site we set this as our new known and all the grid instated in 2006 respects this.
- Set out new trenches on the West Mound. Set out trenches on Eastern side of the East Mound for Selcuk University. Set out trenches for the new building foundations for the stores next to the Dig House at the East Mound.
- Co-ordinated mud brick and phytolith samples in all areas.
- A contour survey in 4040 Area for the architects to enable them in their design of the shelter in that area.
- Digitised the plans from the 2004 and 2005 seasons. In roads were made on the remaining seasons and those from 2006.
- Began the process of setting out a permanent fixed control. This involved setting permanent ground markers in concrete at Salient points around the East and West mounds.

**The survey work for 2007:**

- Setting out foundation trenches for the Architect's building the permanent North Shelter.
- Picking up baselines, section lines for the archaeologists recording the archaeology in the foundation trenches.
- Setting out grid for work in the South and TP Areas.
- Setting out foundation trenches for the new stores next to the Dig House.
- Surveying bore holes in the landscape around the East and West Mounds for the Coring Team.
- Continued to digitise previous seasons records in preparation for the GIS project.

## **OUTREACH PROJECTS**

### **Children Summer Archaeology Workshop 2007**

**Team leader: Gülay Sert**

**Assistants: Nuray Kaygaz, Heval Bozbay, Lerzan Akkaplan**

The 2007 Summer School at Çatalhöyük was conducted over 26 days between 16<sup>th</sup> June to 15<sup>th</sup> July 2007.

Several schools and private groups from different cities, districts and villages were invited to the workshop. Four hundred and forty six students, 46 teachers and 47 adults (in total 539 individuals) participated. The details of the schools are listed below.

The programme was as previous years:

#### **Morning**

- A slideshow presentation of Çatalhöyük in the Visitor Centre.
- A visit to the experimental house.
- Tour for the students around the excavation area on the site and informing them about the work of archaeologists.
- Excavation on the 1960s spoilheap.

#### **Afternoon**

- Making clay figurines and models of Neolithic houses.
- Wall painting the plastered walls of the Experimental House and making relief's which are seen in the Çatalhöyük houses.
- Stamping on textile by using replicas of Çatalhöyük stamps.
- Performing the old life style of the people who lived in Çatalhöyük.

At the end of the each day a certificate of "The Protector of Cultural Heritage" was handed out to the participants of the Çatalhöyük Children Summer Archaeology Workshop.

The workshop has received intense local interest but a much wider spread of introduction is yet to be achieved. This season, over 539 individuals participated in the workshop.

A book called "Çatalhöyük Diary" sponsored by Shell was published in the autumn of 2006. This is a book of collated paintings, stories, photographs of models and relief's that the children have made in previous years at Çatalhöyük. The theme was children's diaries written from the Neolithic period. This book has been distributed to Turkish and the foreign education establishments and archaeologists.

Another publication is planned again using stories written by the children.

We are grateful to Shell and the Çatalhöyük excavation team, and to Çumra Kaymakamlık, Memo Icecreams, Eti Biscuits and Coca Cola Company for their support for the Children Summer Archaeology Workshop.



### Participating schools and institutions

16.06.07	Özel Marmara Eğitim Koleji / İSTANBUL
17.06.07	Özel Marmara Eğitim Koleji / İSTANBUL
18.06.07	Küçükköy Çatalhöyük İlköğretim Okulu / ÇUMRA-KONYA
19.06.07	İhsaniye İlköğretim Okulu / KONYA
20.06.07	Mehmet Beğen İlköğretim Okulu / KONYA
21.06.07	Küçükköy ve Karkın Köyleri İlköğretim Okulu Öğretmenleri / KONYA
23.06.07	Türkiye Üstün Yetenekli Çocuklar Eğitim Vakfı (TÜYÇEV) / İSTANBUL
24.06.07	Türkiye Üstün Yetenekli Çocuklar Eğitim Vakfı (TÜYÇEV) / İSTANBUL
25.06.07	M. Necati Çetinkaya Kız Yetiştirme Yurdu / KONYA
26.06.07	Ovakavağı Kasabası İlköğretim Okulu / ÇUMRA-KONYA
27.06.07	Ovakavağı Kasabası İlköğretim Okulu / ÇUMRA-KONYA
28.06.07	İsmil Kasabası Büyük Camii Yaz Kursiyerleri / KARATAY-KONYA
30.06.07	Güzelyurt-Gelveri Halk Eğitim Merkezi Kursiyerleri / GÜZELYURT-AKSARAY
01.07.07	Atatürk İlköğretim Okulu / GÜZELYURT-AKSARAY
02.07.07	İhsaniye İlköğretim Okulu / KONYA
03.07.07	Abditolu İlköğretim Okulu / ÇUMRA-KONYA
04.07.07	Performans Spor Kulübü / KARAMAN
05.07.07	Performans Spor Kulübü / KARAMAN
07.07.07	İlgi Gençlik Kulübü / KONYA
08.07.07	İlgi Gençlik Kulübü / KONYA
09.07.07	Performans Spor Kulübü / KARAMAN
10.07.07	Performans Spor Kulübü / KARAMAN
11.07.07	Tek Dünya Yabancı Dil ve Bilgisayar Kursu / KONYA
12.07.07	Konya Büyükşehir Belediye Spor Kulübü / KONYA
14.07.07	Çumra Belediyesi Spor Kulübü / ÇUMRA-KONYA
15.07.07	Çumra Belediyesi Spor Kulübü / ÇUMRA-KONYA



Figure 183: Various activities at the Children Summer Archaeology Workshop 2007

## **Çatalhöyük Çocuk Yaz Arkeoloji Atölyesi 2007 Raporu**

**Team leader: Gülay Sert**

**Assistants: Nuray Kaygaz, Heval Bozbay, Lerzan Akkaplan**

Bu seneki atölye çalışmasında 16.06.07-15.07.07 tarihleri arasında, 26 işgünü çalışıldı.

Atölyeye, aşağıda listelenen il, ilçe ve köylerdeki okullardan ve çeşitli kurumlardan davet edilen 446 öğrenci, 46 öğretmen ve öğrencilerle birlikte gelen 47 yetişkinle birlikte toplam 539 kişi katıldı.

Atölye çalışmasına katılan öğrencilere önceki yıllarda olduğu gibi,

### **Öğleden önce**

- Müzede slayt eşliğinde Çatalhöyük tanıtıldı,
- Deneysel arkeoloji evi gezdirildi,
- Kazısı yapılan alanlar gezdirilerek arkeologların nasıl çalıştıklarına dair bilgi verildi,
- Özel olarak hazırlanan alanda kazı çalışması yaptırıldı.

### **Öğleden sonra;**

- Kilden figürin ve deneysel evin maketi,
- Çatalhöyük evlerinden bilinen duvar resimleri ve duvar kabartmaları,
- Kumaş üzerine Çatalhöyük mühür örneklerinin baskıları,
- Çatalhöyük'te geçmişte sürdürülen yaşam biçimiyle ilgili drama çalışması yaptırıldı.

Günün sonunda katılımcılara “Kültürel Emanetlerin Koruyucusu Belgesi” dağıtıldı.

Yaygın bir tanıtım yapılmamasına rağmen yoğun ilgi gören atölyeye resmi olarak 539 kişi katıldı ancak kaydedilmemiş katılımcılarla bu sayının 600'ü bulunduğu tahmin edilmektedir.

Önümüzdeki yıllarda da sürdürülecek atölyeye katılan öğrencilere dağıtılmak üzere, belli bir yaş grubuna yönelik bir Çatalhöyük kitabının yazılması gerektiği düşünülmektedir.

Geçmiş yıllarda atölyeye katılan öğrencilerin fotoğrafları, yazdıkları kompozisyonlar, yaptıkları resim ve kabartmaların fotoğrafları “Çatalhöyük Güncesi” adlı kitapta toplanmıştı. Shell'in sponsorluğunda basılan kitap, Çatalhöyük'e gelen yerli ve yabancı eğitimcilere ve arkeologlara dağıtıldı.

Başta Shell ve Çatalhöyük kazı ekibi olmak üzere, atölye çalışmasına destek veren Çumra Kaymakamlığı'na, Memo Dondurmaları'na, Eti Bisküvileri'ne ve Coca-Cola İçecek AŞ'ye teşekkürü borç biliriz.

### **Katılımcıların Listesi**

16.06.07	Özel Marmara Eğitim Koleji / İSTANBUL
17.06.07	Özel Marmara Eğitim Koleji / İSTANBUL
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19.06.07	İhsaniye İlköğretim Okulu / KONYA

- 20.06.07 Mehmet Beğen İlköğretim Okulu / KONYA  
 21.06.07 Küçükköy ve Karkın Köyleri İlköğretim Okulu Öğretmenleri / KONYA  
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 15.07.07 Çumra Belediyesi Spor Kulübü / ÇUMRA-KONYA

### **Remediated Places 2004-May 2007/ Remedial Mekanlar- Ruth Tringham, UC Berkeley**

#### **Fall 2004**

The Remediated Places project (<http://chimeraspider.wordpress.com>) .started in the Fall of 2004 with the idea of collecting together interview footage (audio and/or video) of members of the Çatalhöyük Research Project as well as visitors on their memories of sensorial experience at the site.

#### **Summer 2005**

During the summer of 2005 Ruth Tringham (funded by the UC Berkeley Townsend Center for the Humanities) and Michael Ashley (both UC Berkeley) and Steve Mills (University of Wales, Cardiff, UK, funded by the British Academy) developed this concept to embrace an underlying theme of videowalks. The idea of videowalks was based on artist Janet Cardiff's videowalks in museums and other installations in which the user walks along a path, following the path set by a video-camera which plays the pre-recorded walks as he/she looks at the viewer and walks (<http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&Params=A1ART A0009772>). The idea of Cardiff's walks is to create a parallel experience of the now and the past. The user wears binaural microphones and the only sounds that are heard are those of the pre-recorded (past) walk. The desired result is a heightened sensorial experience and confusion (RET and MA both experienced this in her SF MOMA walk). Chris Witmore, currently of Brown University has also developed such

“peripatetic video” for Classical archaeological sites in the Mediterranean (<http://proteus.brown.edu/witmore/home>). The design of the Remediated Places walks for Çatalhöyük was to create walks between and around nodes of activity on the East Mound, which could be followed with camcorders in on-site or on-line on an Internet version. However, our aim was to enhance the walks with thematic selections of supplementary materials of images, sounds, and video, which would encourage lateral thinking as the user took the walk physically or virtually. The themes at that time were Sensorial Experience, Memory, and Information. We designed the walks and the supplementary materials for general visitors as well as other archaeologists.

During July 2005 we created the walks. For this purpose, Ruth Tringham brought a Sony VX2000 camcorder and a FigRig designed as a flexible steadycam by director Mike Figgis. Steve Mills, whose specialization is auditory archaeology, brought both an iRiver H320 digital audio recorder with binaural microphones and a Garmin GPS so that the route of the walks could be mapped in a GIS.

### Özet

Remedial Mekanlar Projesi (<http://chimeraspider.wordpress.com>) 2004 yılının sonbaharında başlamış olan ve Çatalhöyük ekibi üyelerinin ve kazı alanına gelen ziyaretçilerin kazı alanı ile ilgili duyuşsal anılarını, yapılan ses ve video kaydı yöntemini kullanarak yapılan röportajlar yoluyla toplama fikrine dayanan bir projedir.

2005 yaz sezonu sırasında Ruth Tringham ( Berkeley Üniversitesi Townsend Sosyal Bilimler Merkezi fonunu sağlamıştır) ve Micheal Ashley (Berkeley Üniversitesi) ve Steve Mills (Galler Üniversitesi, Kardif, İngiliz Akademisi fonunu sağlamıştır) video yürüyüşleri kavramının anahatlarını ortaya koydular. Video yürüyüşleri fikri, Janet Cardiff’in müzelerde sunduğu ve bir video kamera eşliğinde kişinin yürüdüğü patikanın sesle birlikte kaydılması prensibine dayanan instalasyonlar projeye esin kaynağı olmuştur. (<http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&Params=A1ARTA0009772>) Cardiff’in bu yürüyüşleri geçmişle bugün arasındaki bağlantıyla bir paralellik yaratmaktadır. Kullanıcı kulaklarına taktığı mikrofon aracılığı ile yalnızca geçmiş yürüyüşlerden elde edilmiş ses kayıtlarını (geçmiş simgeler) işitmektedir. Beklenen sonuç ise yoğunlaşmış bir duyuşsal deneyim ile kafa karışıklığıdır. Şu anda Brown Üniversitesi’nde görev yapmakta olan Chris Witmore, Akdeniz’deki bir klasik arkeoloji kazı alanında bu ‘peripatetic video’ deneyimini gerçekleştirmiş (<http://proteus.brown.edu/witmore/home>). Çatalhöyük için düzenlenen Remedial Yürüyüşler’de ise amaç, Doğu Höyük üstünde yapılan yürüyüşlerin internet aracılığı ile on-line hale dönüştürülmesidir. Bununla beraber, bizim amacımız bu yürüyüşleri çeşitli temalarla ve görüntü, ses ve video yoluyla daha yoğun bir hale sokmak ve kullanıcının bu yürüyüşleri sanal veya fiziksel bir şekilde yaparkenki düşünsel dünyasını teşvik etmektir. Kullandığımız temalar; Duyusal Deneyim, Hatıra ve Bilgi olmuştur. Bu yürüyüşleri hem kazı alanına gelen ziyaretçiler hem de kazıda çalışan arkeologlar için dizayn etmiş bulunmaktayız.

2005 temmuz ayı boyunca birçok yürüyüş yarattık. Bu yürüyüşler için Ruth Tringham SonyVX2000 camcorder ve Mike Giggis tarafından dizayn edilen çok yönlü kullanımlı bir steadycam olan FigRig teknolojik donanım olarak kazı alanına getirilmiştir. Geçmişteki sesler ve algılanışları ile ilgili çalışan Steve Mills ise bir ses kayıt cihazı olan iRiver H320, uygulanabilir mikrofon seti ve Garmin GPS adlı donanımı daha sonra yürüyüşlerin GIS yazılımında haritalarını çıkarmak üzere kullanmıştır.

Fifteen Videowalks were created across the East Mound, around the mound, and in the Flotation and Compound areas. Some of these walks are nodes, such as Building 5, Building 3, South Area etc. and some are paths between. The camera records the walking pace without any commentary so that only ambient sound can be heard. These can then be integrated with a variety of additional audio and other video.



Much of the video footage that would supplement and enhance the videowalks themselves is designed to be harvested from the regular video database of the Çatalhöyük Research Project. The earliest of this is that taken by the team from Karlsruhe, Germany in 1996-1998. The Science Museum of Minnesota has also provided video footage from 1998-2000. A large body of video footage was recorded by the BACH team from 1997-2003 and there is video footage recorded by the main CRP team. In addition, during July 2005, Ruth Tringham recorded video footage specifically to act as enhancing material for the themes of sensorial experience of the Remediated Places videowalks. Some of this footage includes extreme close-ups of the archaeological process in excavation, flotation, and lab-work.

Audio recordings had not been collected as part of the regular excavation recording. However, during 2004 Steve Mills had begun to make recordings of the excavation process, and a variety of activities (cleaning, plastering) in the Replica House as part of an auditory archaeology study. These recordings became the first audio contribution to supplement and enhance the videowalks of the Remediated Places project. In July-August 2005, Steve continued this work, making recordings of ambient sound on and around the mound and the village of Küçükköy to enhance the senses of place theme of the videowalks.

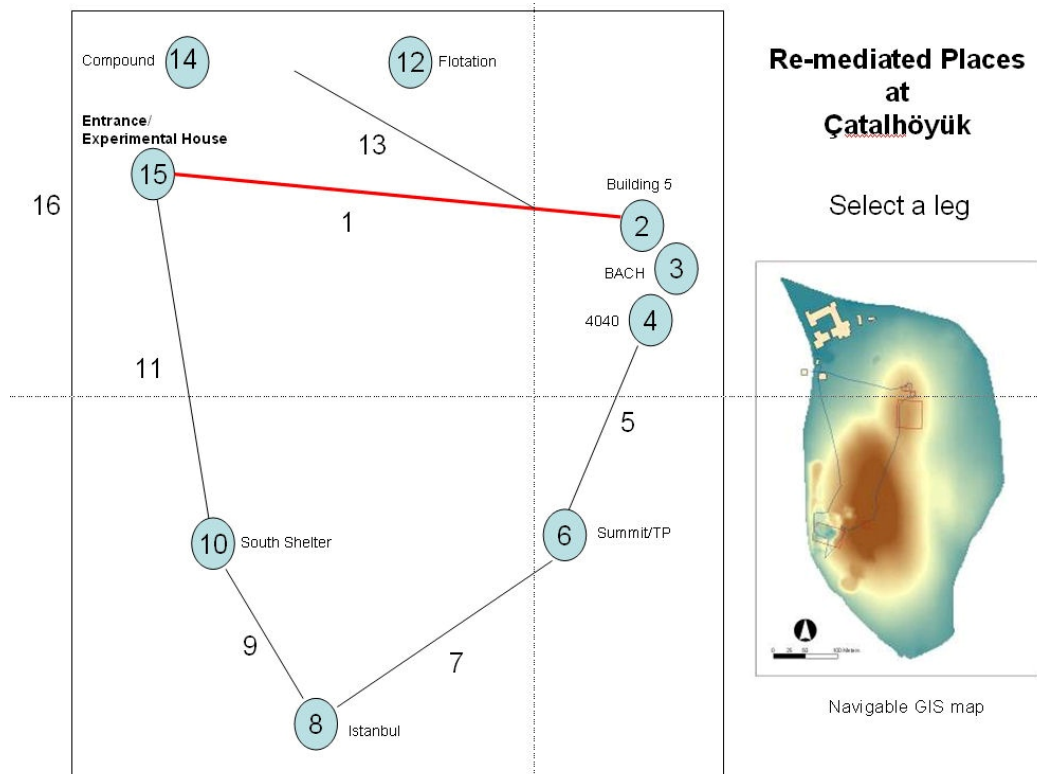


Figure 185: Representation in the design phase of Remediated Places project nodes and paths on the East Mound

### May-June 2006

During 2006, RET, MA, and SM did not participate in the field season at Çatalhöyük. Steve Mills, however, was able to draw on a British Academy grant to visit San Francisco and Berkeley to continue our collaborative research in the Remediated Places project for 6 weeks during May-June. During this time, the three of us had a very productive time thinking further about the concept and design of the project in terms of on-site and on-line interface building and installation. Blog postings from this period may be found at: <http://chimeraspider.wordpress.com/category/while-steve-mills-was-in-sf-may-2006/>.

A very important aspect of the research was the design and data entry of the indexing/cataloging of the video and audio recordings of the Remediated Places project. During 2005-2006 Jason Quinlan and Ruth Tringham had already captured the entire video collection from the BACH excavation 1997-2003, some of which included converting non-digital Hi-8 tapes. We had worked out the protocols of capturing the video as previews (NT/Off-Line) in a reduced resolution format using the video-indexing software SquareBox CatDV/Live Capture. The preview format allowed us to store digital versions of all the tapes on a 500GB external drive, and yet be able to watch the videos in enough detail to index them after capture. The full cataloging of the BACH Video Catalogue is still in process.

However, while Steve Mills was in San Francisco, we followed the same protocols in creating previews and a catalogue of all of the videos recorded during 2005 specifically for the Remediated Places project, including the videowalks themselves.

Moreover, full details for every clip were entered in the CatDV catalogue, including relevance to Videowalk Legs and themes, and other descriptive remarks.

### **July-August 2006**

In 2006, Colleen Morgan (UC Berkeley) joined the Remediated Places project. She was the only member of the project who participated in the 2006 field season at Çatalhöyük. In July and August 2006, she recorded video footage specifically to act as enhancing material for the theme of memory of the Remediated Places videowalks. This footage includes video interviews with a large number of the team participating in the excavation at that time.

Colleen also carried out a number of tests on-site of walking while following one of the 2005-recorded videowalks viewed on a video-iPod or while watching a thematic video (for example, for the “memory” theme to watch a video of excavating Building 3 while walking around the area of the now filled-in and invisible Building 3). One of the most successful tests was to watch the video-recording of the first firing of the oven in the Replica House while sitting or walking around the Replica House itself.

### **November 2006-Feb 2007**

In November 2006, Ruth Tringham and Michael Ashley were invited to present the results of the Remediated Places project in the symposium “Beyond E-Text” sponsored by the Visual Anthropology Association at the annual meeting of the American Anthropological Association in San Jose, California. This presentation resulted in a number of good developments for the project:

- We articulated very explicitly the theoretical basis for the project in the concepts of database narratives in New Media technology and the cultural geography literature on the senses of place (Tringham)
- We developed a working model for the on-line (and possible on-site) format of the Catalhöyük video-walks (Ashley building on the concept that he and Steve Mills had designed)
- We put into practice the performance format of the Remediated Places project, with the help of UC Berkeley graduate students in archaeology, including Colleen Morgan). An excerpt from the performance may be viewed at: <http://www.youtube.com/watch?v=NtFsp5hQ5U4&url=http://chimeraspider.wordpress.com/about/remediated-places-on-youtube/>.
- After the presentation/performance we were invited to transform it into an article for the first on-line version of Visual Anthropological Review. In this enterprise we were joined by Steve Mills. The final draft (<http://chimeraspider.wordpress.com/2007/09/19/remediated-places-final-draft/>) has been reviewed and, as of September 2007, is awaiting publication.

### **July 2007**

Ruth Tringham participated in the excavations in the South shelter from 5th until 18th July, 2007. Steve Mills arrived 19 July 2007. Together they carried out activities around the Remediated Places project until July 31, 2007:

- Videowalks were added through the same system as that developed in 2005 of parallel video and audio recording. The new videowalks comprised four walks on and around the West Mound, including the walk from the East to the West

Mound; new walks on the East Mound especially in the North Area to take into account the changes that had happened since 2005, such as the dismantling of the North shelter, the expanded excavation of the 4040 Area, and the planned shelter structure over the North Area. We also added the walk to Kücükköy, and one in the fields around the East Mound.

- Additional GPS-referenced audio recordings for ambient sounds on and around the East and West mounds, the Replica House and the Compound. These were co-coordinated to occur at different times of the day and night to capture daily variations in local sounds produced by animal, insect and human daily rhythms and the weather.
- Additional video footage including close-ups of excavation and lab process (hand-ballets), close-ups of the excavation in the West Mound and TP Area (conservation and drawing), and time-lapse videos of the East Mound and Compound areas across a 24-hour time period.
- All video was captured in preview form and the resulting clips were cataloged using SquareBox CatDV according to the four themes developed by the project (in relation to the Remixing Çatalhöyük project).
- We developed valuable protocols for transferring the CatDV catalogued data and metadata to Extensis Portfolio, the software used for cataloging the Çatalhöyük Research project image media. More details about Portfolio may be found at: [http://www.extensis.com/en/products/asset\\_management/product\\_information.jsp?id=2000](http://www.extensis.com/en/products/asset_management/product_information.jsp?id=2000). The aim was for both of us more easily to exchange audio and video data across platforms and make it accessible on the Web. In addition, Portfolio seems to enable a richer handling of metadata. We plan to serve the Remediated Places data from Media Vault Project at UC Berkeley (Michael Ashley). More details may be found at: <http://okapi.wordpress.com/2007/09/14/experience-from-catalhoyuk-2007-catdv-to-portfolio/> and <http://okapi.wordpress.com/projects/media-vault-program/>.
- On July 30th, we conducted a trial of walking on different legs and noting the viewing conditions on the video iPod:
  - On Guard to S Shelter walk: R: Can't see very well, but can hear it. S: not that bad seeing we have sun directly overhead. R: Certain angles: S: fiddleiness of it. As you're walking along, not good. Just audio would be fine. Might not work well in heat. Good step/walking sounds.
  - Looking in the iPod in east part of South Shelter. R: Whole screen is very reflective. Always? Yes. Surface of the thing itself. Good Roddy scraping sounds. iPod sound of wheel. Listening to opera. Still very glary. S: Must be other things with bigger screen. R: iPhone. Watch BACH area. Reflective brought up many times. Camcorder, but cannot walk around with it.
  - Looking in the iPod in west part of South shelter: R: can see things better on iPod than in east part. Play Mira. S: it is quite visible, if you position it right, less glare. R: Can't see it, now I can. Down here is much less glary. S: reflection of roof is what is causing problems. Need to try it on canvas; try it in TP. Wires of iPod very annoying.
  - TP iPod. Canvas shelter: Much better; can see everything; but new North shelter probably won't be this non-reflective material.



- o Walking back to Guardhouse at 3pm: People are interested in process. At 5pm no one is working, so can't view/participate in process, feel very alienated.
- o Viewing iPod in Replica House: Very good and bright. Watching Mira lighting the first fire while sitting in the RP. Mono? Really enhances experience in the RP.
- o Museum: An on-line contribution comments opportunity. Have a locally running Remixing Catalhoyuk?

Before our departure copies of media, catalogs, and metadata were given to Jason Quinlan for the Çatalhöyük Research Archive and possible website serving (via Stanford U).

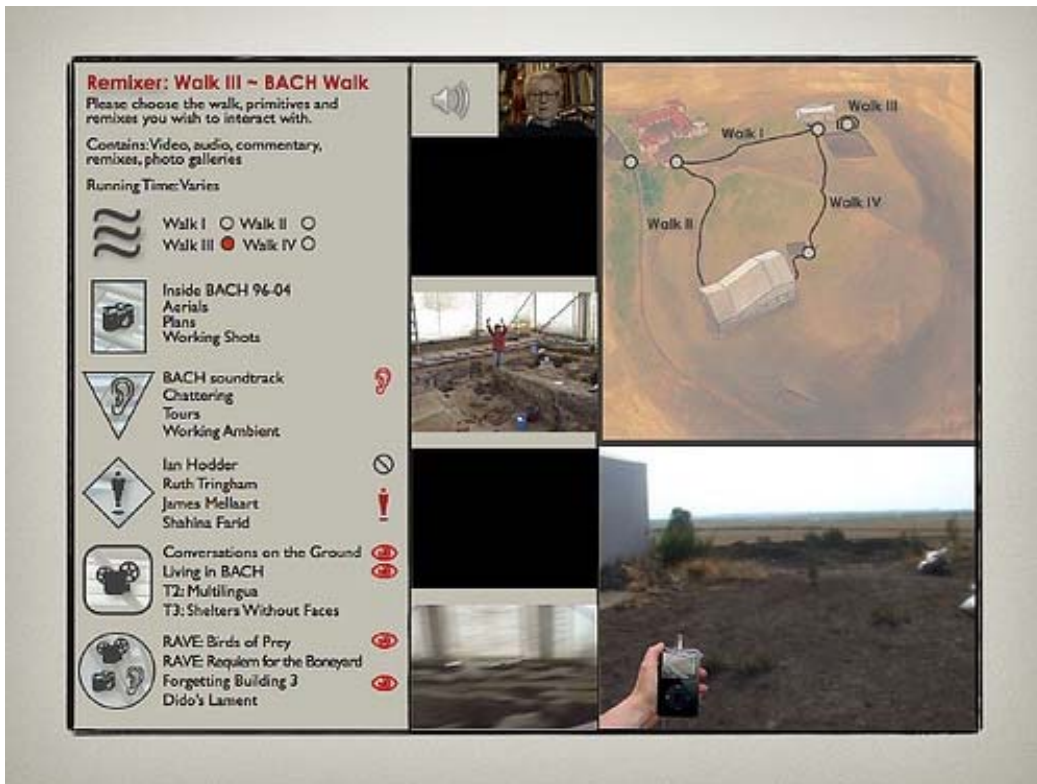


Figure 186:

While we were at Çatalhöyük in 2007, we engaged in three other activities that are relevant to this narrative:

- In collaboration with artist Eva Bosch, we experimented with the shadows on the light well that was created by the ladder hole in the Replica House to create a shadow puppet play about the life history of the East Mound. The creation process of the play – named Shadowhöyük – was filmed and the play itself was made into a film that was shown to the excavation team. The design and process is described in more detail by Eva Bosch. Copies (3) of the film and footage of the project were left in Turkey in both DVD-Rom and DVD-RAM format for the Çatalhöyük Research Archive. The film may also be viewed on the Okapi Island in Second Life (see below) and downloaded from the following URL: <http://okapi.dreamhosters.com/video/catal/> or <http://homepage.mac.com/chimeraspider/iMovieTheater13.html> .

- On July 17, 2007, Ruth Tringham gave a presentation to the Çatalhöyük team about the three interrelated projects, of which the Remediated Places project is one. These are three very different kinds of narratives that build out of the Çatalhöyük research media database. In addition to the Remediated Places project is the Remixing Çatalhöyük website and Okapi Island in Second Life. Remixing Çatalhöyük has been variously described as a database narrative and as a multimedia exhibition and research archive. It was launched on the Internet in October 2007 and may be accessed at <http://okapi.berkeley.edu/remixing>. It features the investigations and data of the Çatalhöyük Research Project, especially that of the Berkeley archaeologists at Çatalhöyük (BACH). The aim of the website is to engage the public of all ages in the exploration of primary research data through four themed collections that are selected from the research database. One theme – on the Life-History of People, Places, and Things also includes a K-12 activity module. Other themes are the Senses of Place, Archaeology at Multiple Scales, and the Public Face of Archaeology. The public are invited to download media items that are licensed with a Creative Commons 3.0 license, and to, create original projects, and contribute their own "remixes" about Çatalhöyük. Remixing Çatalhöyük highlights and supports a multi-vocal approach to history, where the global, online community is invited to participate in the dialogue alongside the physical, local community. A Turkish version of the entire site is easily accessed by a toggle button. The project was funded predominantly by the US Department of Education.
- The third related project is Okapi Island in Second Life, a mirror of the East Mound at Çatalhöyük, sharing the research of the archaeological project and its interpretation on this 3-D virtual world that may be visited at: <http://slurl.com/secondlife/Okapi/128/128/0>. Okapi Island is currently being developed by the same team that developed Remixing Çatalhöyük and Remediated Places. Even the Remediated Places videowalks are being mirrored on Okapi Island. For more information, go to: <http://okapiisland.pbwiki.com/>.

### **Conclusions and Future Plans**

We have concluded that by the end of the 2007 season, we had amassed enough video and audio recording with those from the BACH database and other video-recordings from CRP and Science Museum of Minnesota for the immediate needs of the Remediated Places project. The Visual Anthropology Review article contributed a great deal to our ideas for the on-line interface and its “installation”. The most urgent need is to develop concepts and planning for an on-site installation of the video-walks at Çatalhöyük. Our plan is to carry out some proof-of-concept tests at more accessible sites before embarking on the more expensive testing at Çatalhöyük. For example, in May 2008, Ruth Tringham will teach an intensive two-week workshop/field course at the San Francisco Presidio to test and develop digital, wireless, and other technologies in the construction of interpretive walks. Further discussion is planned with a broader audience at the World Archaeological Congress in Dublin, Ireland. In addition, Steve Mills is analysing data collected from a series of sound experiments conducted in 2005 and 2007 within and immediately around the Replica House. These investigate the acoustic properties of the Replica House and the sounds that can be heard in different spaces and that propagate through walls and roofs. It is hoped that this will inform our understanding of how sound may have influenced senses of place within

the built environment on the mounds in the past thus contributing to the Remediated Places project.

We have divided our future plans into those that are immediately feasible with the given content and technology at Çatalhöyük, those that could be implemented with further developments in communication technology, and those that – for the moment – are just dreams.

- Immediately Feasible
  - o 1 minute video or audio clips based around user sensations (eg stone in shoe, where are the stones from?; thirsty; where did they get water, off site? Dry dusty>Marshy environment in prehistory; dust> wind, excavations, painting, tools, sounds)
  - o Turkish and English
  - o Paths would have audio prompts based on personal experience
  - o OR pace would be kept by feet on gravel sounds, then audio would prompt user to stop, look up, down, out (based on experience of path)
  - o Museum: local database of options, mirrors on-line interface and experience except that on-site is immediate and additional. These movies and sounds can be longer and more complex
- Implementable with some IT developments (eg Broadband or satellite signal)
  - o W/ DSL or satellite cell, iPhone triggers around the site video/sound/options
- Dreamtime
  - o iPod transmits to special glasses displaying video walk in one eye, other eye options.

## RESEARCH PROJECTS

### Interim Report on Mud Brick Architecture / Kerpiç Tuğla ile ilgili Rapor - Serena Love - Department of Anthropology, Stanford University

#### Abstract

This report is a summary of compositional analysis of mud brick architecture between October 2006 and August 2007, including laboratory work conducted at Stanford University. There is a discussion of results from the pilot study and initial interpretations of the brick typology. Tri-variate scatter plots are included to illustrate patterns and trends within the assemblage of building materials. Compositional details from the off-site coring are discussed in relation to brick samples. Focusing on the South Area, house sequences are examined to determine material consistency and change. This information is compared with the data observed in the foundation trenches excavated around the 4040 Area. Several points for further study are raised, as well as presenting a discussion on brick size.

#### Özet

Bu rapor Ekim 2006 ile Ağustos 2007 arasında yapılan kerpiç ve mimari üzerinde yapılan ve Stanford Üniversitesi'ndeki laboratuvar analizlerini de içeren çalışmaların sonucudur. Burada ilk sonuçlarla ilgili yorumlar ve kerpiç tuğla tipolojisi bulunmaktadır. Alan dışından alınan jeolojik örneklerle tuğla örnekleri bileşenleri açısından tartışılmıştır. Güney alanına yoğunlaşarak, evlerin tabakalanmaları kullanılan malzemenin yoğunluğu ve değişimi açısından incelenmiştir. Bu bilgi, 4040 Alanında kazılan temel açmalarından elde edilen bilgiler ile karşılaştırılmıştır. Gelecek çalışmalarla ilgili öneriler yapılmış ve tuğla büyüklüğü ile ilgili bir tartışma sunulmuştur.

#### Sampling Statistics 2007

This season I collected a total of 270 samples, all of which were exported to Stanford University for analysis. 97 units were sub-sampled from the archive, including previously excavated wall features from North, BACH, and South Areas. An additional 28 samples were collected from in-situ walls in the South Area, 98 brick and mortar units were sampled from the 4040 Area, 85% of which came from the foundation trenches dug for the new shelter. A series of 10 off-site drill cores were conducted this year and I was able to sub-sample 47 of these natural deposits for comparisons against cultural material.

#### Summary Of Laboratory Results

The corpus of sampled material represents both wall features exposed by the current team and unprovenienced walls remaining from Mellaart's excavations. These samples represent the four principle excavation areas, South, IST, TP and to the north of the mound, including 4040, North (Buildings 1 and 5), and BACH (Building 3). A methodological pilot study was conducted in an attempt to understand how to adapt various geological techniques to this specific dataset. These methods included particle size analysis (PSA), loss on ignition (LOI), magnetic susceptibility (MS), bulk x-ray diffraction (XRD), diffuse reflectance spectrophotometry (DRS), and thin section analysis. These methods followed Peter Boyer's work (1999) that successfully

characterized the natural deposits around the mound, using particle size, loss on ignition and magnetic susceptibility. The other three methods were employed on an experimental basis to determine their applicability and effectiveness on this particular cultural dataset. I also adapted Boyer's method for numerically coding Munsell soil colours, based on hue, colour strength and darkness (1999: 166-169).

The results of colour, particle size (for textural analysis), loss on ignition (organic and carbonate) and magnetic susceptibility have proven to be successful in creating an initial compositional typology. In comparing the magnetic susceptibility against the organic loss data, I was able to determine that a high susceptibility reading is not affected by charcoal or burnt midden material, suggesting a genuine mineralogical variability. Also, there seems to be a significant relationship between sand content and organic loss. At this stage, these five variables have been analyzed with tri-variate plots. This method has allowed me to create elementary grouping of materials and to begin the temporal and spatial characterization of fabrics. The second phase of analysis is multivariate statistics, specifically principle components analysis.

The present data focuses only on brick samples. Mortars display an increased variability than the bricks. It is possible that the variability in mortars could mean that bricks may have been made at one time, and possibly stored, whereas mortars could have been made on a more as-needed basis. There is also some evidence of a consistent use of a single brick fabric within one house but more than one mortar type. Brick data is more constant and is easier to recognize pattern at this stage of analysis.

### **X-Ray Diffraction (Xrd)**

The 18 samples were subject to bulk XRD analysis (from the sieved < 63  $\mu\text{m}$  fraction), conducted by Arturas Vailionis in the Geballe Laboratory for Advanced Materials (GLAM) at Stanford University. The samples were processed using a PANalytical X'Pert PRO x-ray diffraction system. The four dominant minerals (in order) are quartz, calcite, feldspar and dolomite. Subtleties in mineral intensity between the samples are detected but fall within the expected range of variability for mixed materials derived from an alluvial environment. The results of this bulk analysis did not prove to be useful in distinguishing brick materials, as the bulk method masks the clay mineralogy. However, it is possible to make this distinction with a pure clay XRD analysis by isolating the clay fraction. A clay analysis will be conducted in the upcoming year.

### **Diffuse Reflectance Spectrophotometry (DRS)**

DRS can identify compositional differences and is sensitive to low concentrations of some minerals and can detect a wide range of mineral variability (Balsam et al. 2006). A trial of 20 samples (from the sieved < 63  $\mu\text{m}$  fraction) was subjected to DRS in an attempt to identify variability associated with different phases of construction. The samples were chosen on the basis of color as well as their location.

The DRS data fell into three groups. The first group was the white marl mortar, the second group was the sandy brown bricks and the third group were gray fabrics, which included both bricks and mortars. The white marl mortar of Level IX (12009) was unique from all the others with a "yellow colour due to the mineral goethite and possibly lepidocrocite and also high brightness values" (quoting email from Balsam, Nov. 1, 2006). The sandy brown bricks "all have a reddish cast and are characterized

by the mineral hematite. Most seem to have small amounts of goethite and possibly lepidocrocite.” The group of gray fabrics “is characterized by low brightness, high reflectance in the violet region of the spectrum. Organic material could be obscuring minerals in the visible. The peaks in the UV are not particularly diagnostic but may indicate a clay mineral, lepidocrocite, or maghemite or some combination of minerals”. These results suggest a widespread occurrence of goethite, lepidocrocite, and hematite and as such their formation is not compatible with a back-swamp environment.

### **Thin Section Analysis**

18 thin sections were made from the 250 µm fraction of sieved sand and sent to Spectrum Petrographics for vacuum impregnation and thin sectioning. The mineral identification was conducted by Chris Doherty at the Research Laboratory for the Archaeology and the History of Art at Oxford University. The sand fraction is dominated by mineral such as, basalt, granite, and exotic materials, as well as cultural material such as bone and charcoal fragments. These thin sections show sediments typical of an alluvial environment, with a peculiar combination of spherical and angular grains. On the basis of quartz overgrowths, Doherty suggests spherical grains are eroded from a sandstone parent rocks and not from a contemporary aeolian sand source. Traces of granite, garnet and pumice are present. The composition of the sand fraction is exactly what would be expected, given the underlying geology of the Konya Basin but was not specifically useful as a distinguishing technique. Ultimately, the thin sections were all similar in their mineralogical composition of the sieved fractions, once natural variation is allowed for. In examining the slides without knowing their site origin, the slides were indistinguishable based on mineral composition.

### **Natural Deposits**

The area south and southwest of the mound was subject to a series of ten drill cores to test sub-surface deposits. It was originally thought that this area was a “brick builders yard”, meaning that most of the sediments around the mound are a sort of “ready-mix”, where not much needed to be added. To the naked eye, these deposits appear more clay rich than what is found in most bricks across the mound. Particle size analysis confirmed this observation (Figure 187). The samples represented in Figure 187 are from depths reaching between 3.45-7.5 m from the modern surface, assuming that this depth is likely to be contemporary with site occupation. Most of the off-site samples had an average of 15% more clay than bricks. Too much clay in a brick will cause it to crack. Modern adobe research has shown an ideal brick recipe to have 30% or less clay and the Çatalhöyük bricks average at about 10% clay. This evidence argues against a “ready-mix” idea and may also suggest that this area is not the source location for building materials. Additionally, the sand fractions recovered from particle size analysis is not a direct macroscopic match with brick sands.

This evidence can be interpreted in several ways. One possible interpretation is that this area was exploited for building materials and the discrepancy of sand-silt-clay ratios is a result of heavy tempering, either with sediments from other locations and/or with midden material. It is also possible that this area south and southwest of the mound was the source location for building materials but the cores did not intersect the horizons exploited for construction. Given the mis-match of the sand fractions, it is likely that the cores do not represent the same sediment deposits used in building

materials. A third possibility is that this area was not used at all, but that conclusion is more difficult to prove at this juncture. It should also be noted that these natural samples represent the “scrapings” of the core and DO NOT represent the cores themselves.

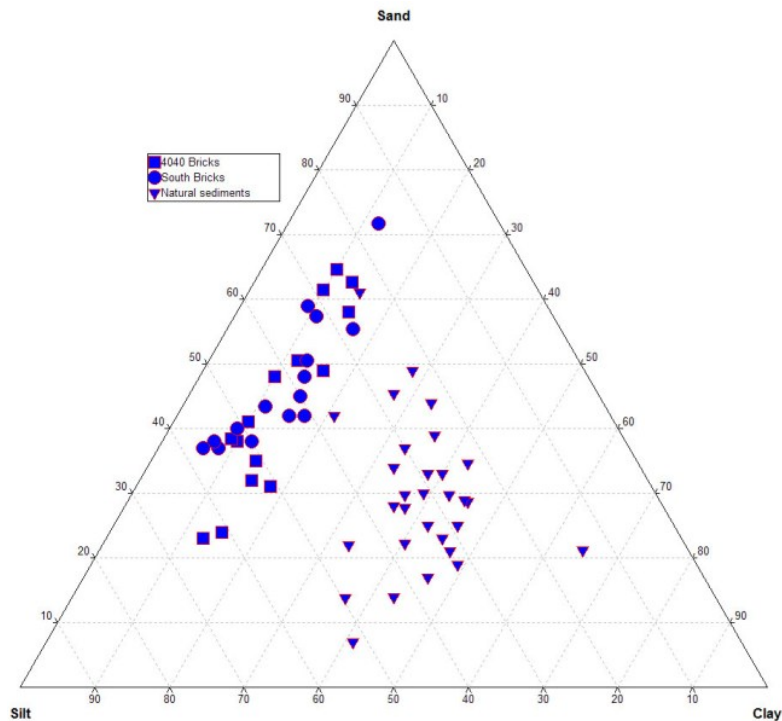


Figure 187. A textural analysis plotting bricks from the 4040 and South Areas against natural sediments recovered from off-site cores.

Both natural and cultural samples are currently being prepared for a clay XRD analysis with the intention of being able to find a mineralogical match and predict possible locations for raw materials. The XRD method may be able to distinguish between if the source was used but heavily tempered before incorporated into bricks or if the natural samples are dissimilar with bricks mineralogy to suggest an alternate source location.

### South Area Sequences

The results from this study thus far suggest a temporal discontinuity of building materials but definite spatial patterning. This trend may only be true for the lower levels and is present in the sections near the Deep Sounding [Shrine 10 sequence: Buildings 17, 6, 24 and above; Shrine 1 sequence: Buildings 23, 22, 21 and 8]. These sequences of houses display a different fabric with every successive rebuilding.

Figure 188 is a sequence of three consecutive houses in the South Area. Only Level VIII Building 43 has been partially excavated. Two other walls are visible in the south wall profile and I am assuming these two walls represent different consecutive houses. There was a distinct change in materials between Level VIII and VII and a subtle colour variation at Level VI but a definitely different composition than the previous two houses. Again, a different fabric was used to construct each new house.

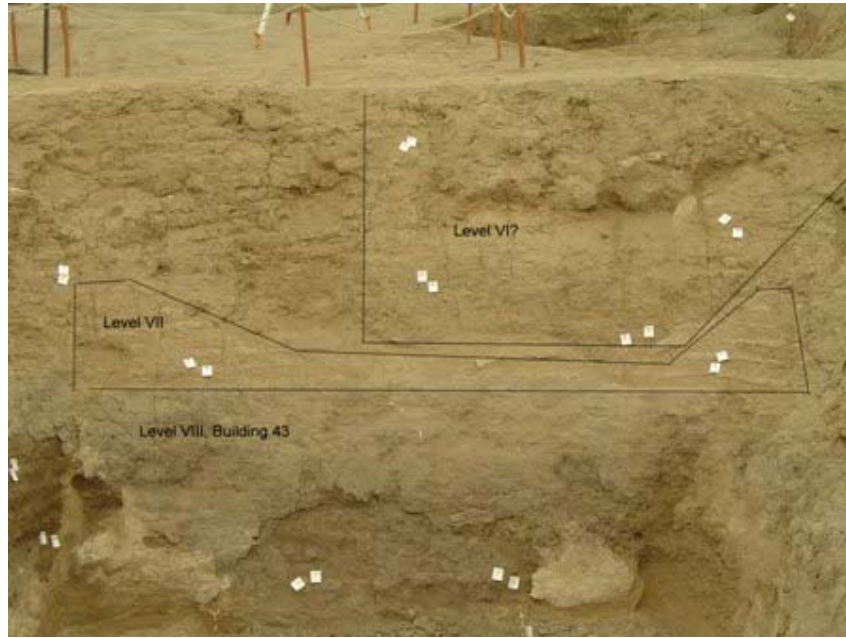


Figure 188. The south wall of Building 43 with two superseding wall sections visible in profile.

However, the trend changes in the later levels, as is evident in the Levels IV, V and VI sequences of houses in the east end of the South Area [Buildings 44, 56, 65]. There does not appear to be any significant variability in mud brick composition of these three houses, although there is a different fabric used in the fourth house in this sequence, Building 10. This pattern of repeated fabric use is markedly different from the earlier sequences. The excavator Roddy Regan has suggested that the reason for the continuity in materials may be due to the short occupancy of these three structures. There is some evidence to suggest that the 44-56-65 house sequences were structurally unsound, due in part to the steep lean in the south wall, which may have led to the premature ending of the building's history (due to real or threat of collapse). A short occupational duration can be further suggested from less than three re-plastering events on the walls and floors. Thus, if it can be demonstrated that the 44-56-65 house sequence each had a short life-cycle, then this could be one explanation for the repeating use of a single mud brick fabric.

### **Buildings 1, 5 (North), Building 3 (Bach) and 4040 Area**

A textural analysis places bricks from these three areas into three different categories (Figure 189). This data suggests that Buildings 1 and 3 are different from each other but they share similarities with some structures in the 4040 Area, such as Buildings 58, 60, 67 and 70. One of the anomalies is Building 5, which differs significantly from Building 1 and also does not compare with any of the other samples from 4040 or BACH Areas. However, I strongly suspect that this B.5 sample would match some of the foundation trench brick samples. This suspicion is based on the lateral relationships between buildings and all of the current 4040 Area samples are 'above' Building 5. This data suggests that Building 1 and 5 were constructed using different sources, which correlates with South Area patterns of discontinued use of building materials in subsequent re-buildings.



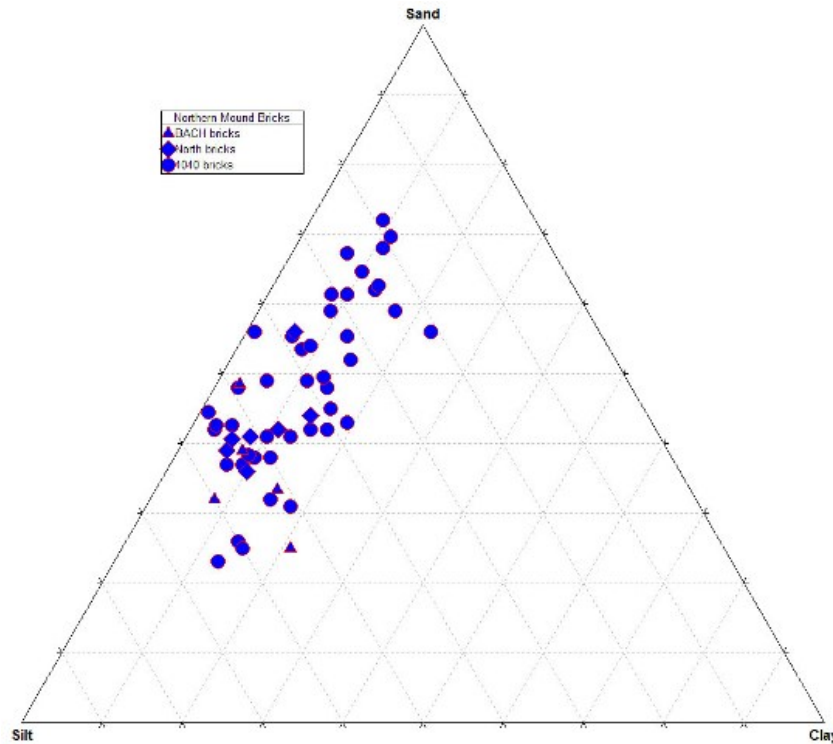


Figure 189. A textual analysis showing the three different groupings of 4040, BACH and North bricks.

Further evidence of this discontinued material pattern was present in the foundation trenches excavated around the 4040 Area. My sample set represents more spatial relationships in the 4040 Area than temporal ones, as the houses under the surface structures have yet to be excavated. However, the foundation trenches allowed a window below the exposed surface structures. Stratigraphic profiles in multiple trenches showed evidence of the use of more than one brick fabric, one atop the other. For example, the northeast walls of Space 276 in B.59 [F.2204, F.2206, F.2919] are a different fabric to the underlying wall, F.3005 in FT 18. This was also true in FT 7 where the underlying walls were a different fabric than the overlying structures. The relationships of the walls was challenging to interpret, given the restricted nature of the trench excavations, but there was convincing evidence to suggest these were indeed external walls made from differing fabrics.

The sequence of brick fabrics in the foundation trenches appear to parallel the discontinuous fabric sequences found in the South Area. Additionally, the type of materials being used were “old” fabric types, that went out of use in the South Area around Level VIII. For example, F.2840 in FT 7 had evidence of a back-swamp-like fabric and the mortar in F.3005 in FT 18 appeared to be of a similar fabric. F.2221, outside Space 288, had a white marl mortar, which again has not been used since Level VIII in the South Area. This white marl mortar was found again in a wall near FT 5. Compositional tests on these materials are waiting for analysis so these comments are made exclusively on visual observations.

One possible interpretation of the re-appearance of older fabrics could be that previous houses were being dismantled and materials were re-used. However, it may be more likely that a new extraction pit was opened in the landscape, as the horizon of back-swamp clay has been proven to be present throughout the Neolithic landscape

and in great abundance. Alternatively, there is a remote possibility that the underlying structures of the 4040 Area are contemporary with the Level VIII South Area. This possibility would be strengthened if my research can demonstrate the chronological sequence of brick fabrics.

Some walls in FT 7 had one or two bricks that did not match the fabrics of the other bricks in the same wall. I wonder if these bricks were either re-used from a previous structure or were these bricks left over from the construction of another house? For example, if a large batch of bricks were made and there were leftover bricks, could these be incorporated into another house? This may explain single compositional anomalies. Or is this evidence of a repair job where a new brick fabric was made? Or is this evidence of communal effort, where many different people are contributing to the construction of a house? Are different bricks representing different people? Previously, I have discussed the possibility of “craft specialization”, group versus communal effort, or if a guild-like unit was responsible for the construction of all the houses. I am starting to wonder if the variability could be a reflection of one of these scenarios.

### **Unprovenienced walls**

So far, the combined evidence is suggesting that if a house used different materials every time it was re-constructed, then there will be lateral relationships within a group of houses. A vertical discontinuity of materials inversely implies a lateral continuity. There are multiple examples of horizontal similarities, suggesting that more than one household group used the same source of materials. Therefore, a case could be made for contemporary building phases based on lateral fabric matches.

In a more localized area, I have been focusing on finding groups of similar fabrics and contextualize these walls to determine if brick fabrics can be used as temporal indicators. Also, this research asks if there are the social implications for fabrics groups. Every exposed wall in the South Area has been sampled and many of these walls are unprovenienced. In the large South Section (see Matthews and Farid 1996), there are six (of nine) walls that all match each other [F.2523= F.2526= F.2529= F.2531= F.2532= F.2533] and two different South sections walls are a compositional match [F.2524= F.2525]. The curious aspect is that the two abutting walls in Figure 190 are a mis-match (F.2529, F.2930), suggesting different source materials. Also, of the three walls in Figure 191, the top and bottom walls are a match (F.2525, F.2524), with a mis-matching wall in the middle (F.2523). When this data was compared with neighbouring walls, it was found that walls F.2524 and F.2525 match F.2601 in Building 65, a Level VI wall (12603) in the Building 43 sequence and another Level VI wall (12071) in the Shrine 10 sequence (see Figure 192).

At this stage, it is difficult to understand the implications of these spatial similarities until all the samples can be included in the analysis. Yet, there is enough data where I am inclined to consider these houses as ‘contemporary’ based on their building materials and their location.



Figure 190: North end of this section illustrates four walls, two pairs of which are matched (F.2523=F.2536; F.2524=F.2525)

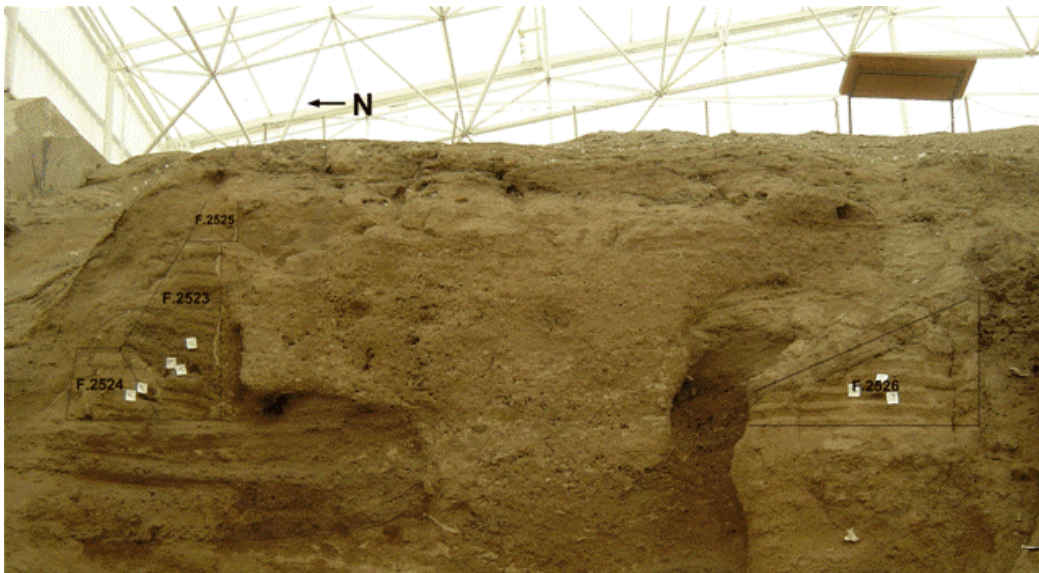


Figure 191: Two parallel walls, F.2529 and F.2530, are dissimilar in composition.

Another example of using bricks as temporal indicators is with an unusual brick type found in three different places of the South Area. Buildings 70, 52 and unit (12013) in the antechamber of Shrine 8 all have a brick with a unique signature. There is an average difference in elevation of 1.5 meters between each of the three houses, which would be expected, given the slope and known terracing of the mound. This particular brick type had prompted me to re-think the ‘Level’ dating scheme and



consider a replacement ‘history house’ sequence, based on brick typologies. This research thus far has been able to document a sequential order to fabric use, and the vertical and lateral applications/ relationships between buildings based on fabrics. House sequences and the relationships between buildings are more informative because the principle interests are how building relates to another. For example, Farid (2007: 280) says that Building 6 was built while Building 2 was still occupied, although both houses are dated to different Levels. Buildings 2 and 6 both use a back-swamp clay brick fabric, yet Building 6 is the only Level VIII house with this fabric. These types of subtleties suggest that an individual history-house analysis might be a more efficient approach than using Mellaart’s Level scheme.

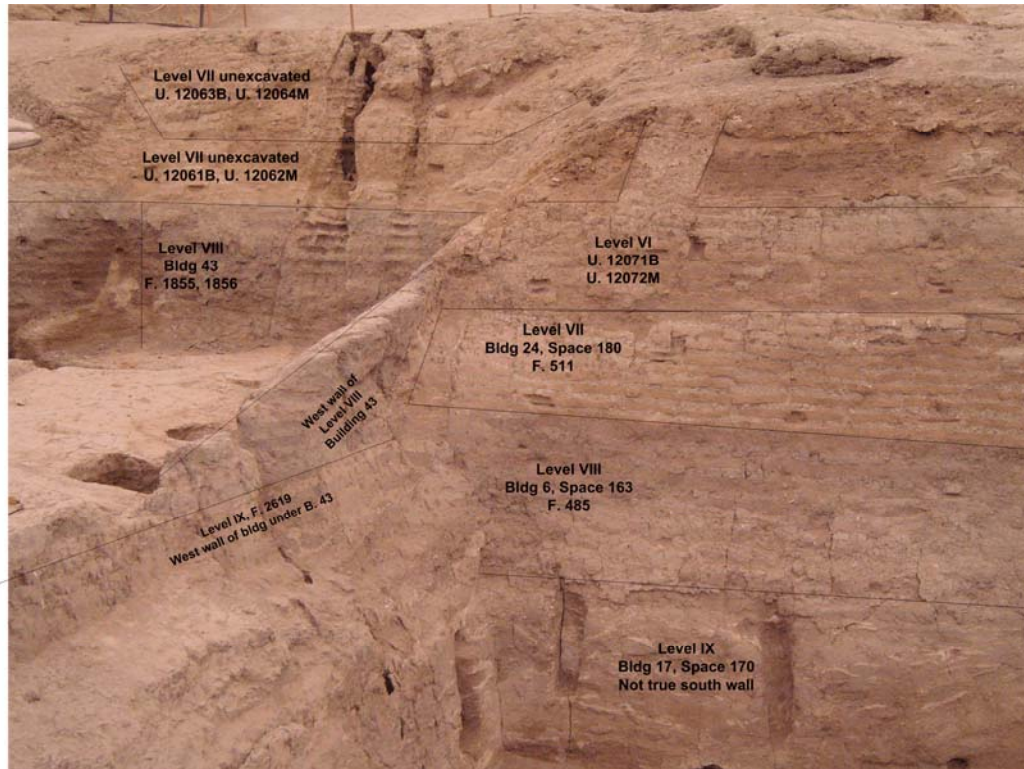


Figure 192: Two neighboring structures with a match in the Level VI walls, units (12063), (12071), which also match brick fabrics in the South Section (not pictured).

### Spatial Analysis

I have begun a rudimentary spatial analysis of the distribution of brick materials across the mound. The underlying assumption in this research is neighbourhood-based resource exploitation, presuming that different areas would have localized access to materials or control over certain resources. The social implications of this interpretation could suggest that spatially distinct areas correlate with social groupings, reflected in a differential access and/or use of landscape materials. To test this idea, I paired houses of relatively contemporary Levels in different areas. For example, Building 56 (Level VI, South Area) is different enough from Building 59 (Level V-VI, 4040 Area) to suggest that these two houses were composed of different source fabrics. Another note about Building 59 is that the bricks of Space 276 are different to those of Space 311, which could imply two different phases of construction or a later addition. The 4040 Area bricks appear to congregate into three distinct groups. Archived samples from Building 1 and 3 were analysed and match

into these 4040 Area groups, however, Buildings 1 and 3 are dissimilar to each other. The TP bricks also break into three groups but it is unclear if these groups represent a spatial or temporal difference. Two IST Area bricks appear to correlate with two of the three TP groups, although they are different from each other.

### **Brick Size And Standardization**

In the original excavation reports by James Mellaart, different brick sizes were mentioned that correlated with different occupational Levels. The variations in brick size, and the changes through time, have also been noted by the current team (Matthews and Farid 1996, Matthews 2006). The purpose of understanding brick size is related to questions regarding standardisation, the scale of production and labour investment.

Brick size has been discussed in several places before and the received wisdom is that bricks get smaller through time. However, the bricks in the 4040 foundation trenches contradict this idea. Full wall profiles visible in the foundation trenches have the bricks measuring over 100 cm. In FT 26, there was a single brick that measured 119 cm and then disappeared into the section implying that this brick was even longer. There are other examples of bricks exceeding 80 cm, which I had always assumed would have been standardized by the later periods. Very large bricks are being found in the 4040 Area on a more regular basis where the exact opposite was expected. I thought that the 4040 would have 'smaller' bricks but many of them are still large enough to require more than one individual to transport.

A study of the section drawings of wall features is used as a primary source of information on brick size. In surveying these drawings, I observed that there is no significant variability in brick width or thickness. The only consistent change is in the overall length. However, a house-by-house study of brick size reveals no standardization in brick length, only a range of sizes. For example, in one wall there were 32 full-sized bricks drawn, 20 of which were different lengths. This pattern is repeated throughout many different houses. Typically, there is a range of size that fluctuates roughly 10 cm within a single wall, with the occasional larger and smaller brick. If a standard rectangular mould was used, then a regular length and width would be expected. However, since the regularity is in the brick's width and thickness, and not the length, then perhaps bricks were made by flanking or shuttering, rather than by the use of rectangular moulds. Perhaps wet mud was poured between two parallel forms and the length was cut at set intervals. This is one possibility for the inconsistency in brick length, although many other interpretations are equally feasible.

I have only just begun this work and in the end, it raised more questions that I was able to answer. Future research will require comparing the brick size of neighbouring houses, especially in houses that are compositional matches. I expect this information to say something about production and community involvement. For example, if the brick sizes in multiple houses are the same, and the fabric composition is similar, then perhaps all the bricks were made at the same time and perhaps by the same people. Stratigraphic relationships between houses suggest a more organic nature to the sequence of construction, although there are a few buildings that were known to have been simultaneously constructed. I am also curious about standardization and when (or if) it was introduced? If there was a standardized size from the beginning, then it

suggests knowledge of “how things are done”. Did everyone adhere to this standard? What would the social implications be if a standardization was introduced at a later point?

The other main issue of brick size is the weight-bearing load. The main influence of the weight-bearing load of a brick is its quality, determined by its compositional ratio of sand-silt-clay. The strength of a brick is derived from its quality. Too much sand and the brick cannot support much weight. Too much clay and the brick will crack. Straw is added when the sediment is too clay rich. In reading the literature on building modern adobe houses, in many different parts of the world, the common thread is that a good brick is composed of no more than 30% clay and 70% sand/silt. Up to 40% silt can be tolerated but it makes no significant difference to the integrity of the brick. The average Çatalhöyük brick has a 40:40:10 sand: silt: clay ratio. There does not appear to be any correlation between brick size and brick composition, nor does it change with any regularity through time.

### **Conclusions**

Many of the ideas presented here are represent on-going research and is a work in progress. In the 2006 Archive report, I mentioned that the greatest change in South Area brick types was at Level VII but further analysis has revealed this to change to occur at Level VIII. Examples of this fabric are in two Level VIII houses, Building 24 [F.511] and Building 21 [F.505, F.474]. This change is marked by the change from a back-swamp clay to a silt-rich brown fabric. This change does not fit the change in the ceramic data, which occurs at Level VII, but perhaps a change in building material sources prompted further changes in clay technology. Originally, I had thought that the lower levels, particularly IX and VIII were more “communal” or community-based activities, evidenced by consistencies in building fabrics. However, an increased in fabric diversity contradicts the notion of communal sharing of resources and implies a slight more household-based resource use.

### **References**

Balsam, W., Adler, M., and B. Deaton. 2007. Analysis of Adobe Wall Composition at the Chaves-Hummingbird Site, MN by Diffuse Reflectance Spectrophotometry: Implications for construction. *Geoarchaeology*. In press.

Boyer, Peter. 1999. A Geoarchaeological Approach to Late Quaternary Environmental Change in South Central Turkey. Unpublished PhD thesis, University of Loughborough.

Farid, Shahina. 2007. "Introduction to the South Area Excavations," in *Excavating Çatalhöyük: South, North and KOPAL Area reports from the 1995-99 seasons*. Edited by I. Hodder, pp. 41-58. Cambridge: McDonald Institute of Archaeological Research.

Matthews, Wendy and Farid, Shahina. 1996. "Exploring the 1960's surface: The stratigraphy of Çatalhöyük," in *On the Surface: Çatalhöyük 1993-95*. Edited by I. Hodder, pp. 271-300. Cambridge: McDonald Institute for Archaeological Research.

Matthews, Wendy. 2006. "Micromorphological and Microstratigraphic Traces of Uses and Concepts of Space," in *Inhabiting Çatalhöyük: reports from the 1995-99 seasons*. Edited by I. Hodder. Cambridge: McDonald Institute for Archaeological Research.

Tung, Burcu. 2006. "A Preliminary Investigation of Mudbrick in Çatalhöyük," in Changing Materialities at Çatalhöyük: Reports from the 1995-99 seasons. Edited by I. Hodder. Cambridge: McDonald Institute for Archaeological Research.

## **Clay sourcing, Catalhoyuk 2007 - Matching the materials and the landscape / Kil Kaynakları**

**Chris Doherty** – (Research Laboratory for Archaeology and the History of Art, Oxford University)

### **Abstract**

This season continued the two clay-related themes initiated in 2006, these being: 1) investigating transitions in mudbrick and plaster use, and 2) the implication of moving from clay balls to pottery for cooking. These two studies combine to examine the changing materiality of clay at the site.

The situation of Çatalhöyük within an extensive backswamp is problematic from the materials viewpoint. From Level VII onwards the huge numbers of mudbricks are predominantly buff or reddish-brown, colours which indicate more oxidising (drier) conditions than associated with continuous wetland. The main objective for 2007 was to address this apparent contradiction, as it presents a major obstacle to developing these two clay themes.

A two-stage approach was taken. First, new observations were made on examples of these main clay-based materials (i.e. mudbrick, plaster, clay balls and pottery), to determine what types of raw materials were being used. Second, an east-west series of cores were taken along the southern margin of the mounds, to test ideas of where the raw clays were being sourced.

### **Özet**

Bu sezon da 2006 yılında belirlenen iki farklı kille ilgili tema üzerinden yürümüştür: 1) kerpiç ve sıva kullanımındaki geçişi belirlemek, ve 2) yemek pişirmede kil toplardan çanak çömleğe geçişi anlayabilmek. Bu iki çalışma alanda kullanılan kilin değişimi ile ilişkilendirilmektedir.

Çatalhöyük'ün geniş bir bataklık üzerine kurulu olması malzeme açısından problematik bir durum yaratmaktadır. Tabaka VII'den itibaren kullanılan kerpiç tuğlaların büyük bir çoğunluğu, oksidize (kuru) bir çevreyi gösteren kırmızımsı kahverengi bir renkte olup bu durum daha önce önerilen, sürekliliği olan ıslak bir çevre teorisiyle zıtlık gösterir. 2007'nin ana amacı, daha önce belirtilen kille ilgili iki ana problematiğe de ilişkin olarak bu çelişkinin açığa kavuşturulması idi.

İki düzeyde adım atılmıştır. Birincisi, alınan kil örnekleri (kerpiç tuğla, sıva, kil toplar ve çanak çömlek) üzerinde kullanılan hammaddelerin çeşitlerini anlamak için yeni gözlemler yapılmıştır. İkincisi, bu

hammadelerin nereden geldiğini anlamak için höyüğün güney marjini üzerinde doğu-batı hatlı bir seri jeolojik örnek alınmıştır.

## **1. A review of the clay-based materials**

### ***Mudbricks***

There are three main types of mudbricks used at Çatalhöyük. The first were made of dark grey-brown "backswamp" clay, and were typically associated with relatively thick layers of white marl mortar. At Level VII-VIII there is a relatively sharp change to the use of reddish-brown "mineral-based" brick. Bricks of this colour persist into the later levels, but at some point there is the start of a new tradition, which sees the use of midden as filler. The sequence of events therefore is:

- 1) Use of dark mud
- 2) Switch to use of reddish siltier/sandier sediments
- 3) Use of the same reddish silts but with midden material added as temper.

The earliest mudbricks are made from dark fine-grained sediments, which are rich in organic matter. While these are typically described as "clays" they are in fact largely clayey-silts. This may seem to be a minor terminological point, but this sedimentary distinction is significant both for the provenance of the raw materials and the manner in which these bricks would have performed during manufacture and use. For example, these clayey silts have a relatively high porosity and this would give the mudbricks better thermal insulating properties than those made from clay (proper).

At Level VII/VIII there is a switch to reddish brown mudbricks, which are much more variable than the earlier dark bricks. These appear to be more silty/sandy, and this is currently being confirmed by Serena Love's petrographic work. Such a high sand content, with just sufficient clay to act as a binder, is considered to be the optimum formulation of modern adobe bricks, as this gives the best compressive (i.e. load-bearing) strength. The shift from dark silts to these sandier bricks could be presented as a shift to a better performance material.

The yellow to reddish-brown colours point to a sedimentary environment in which organic matter cannot accumulate. This implies better-drained conditions than for those in which the darker backswamp clays were forming. A new observation this year is that a small number of these mudbricks have not been formed from "clay" mixed with water, but have been cut from naturally hardened sandy sediments. The diagnostic characteristics of these mudbricks include:

- 1) Internal sedimentary structures which are persistent across most of the interior of the mudbrick
- 2) A preferred alignment of the long axis of the coarser inclusions (mainly shells)
- 3) A lack of any mixing indicators, such as elongate porosity, inclusions oriented at high angles to the outer brick surfaces, convoluted banding etc.
- 4) Occasional laminae of slightly coarser sand, again parallel to the outer upper and lower surfaces of the mudbrick.



The number of these naturally cemented (lithified) bricks is only likely to be small and probably represents the opportunist use of small outcrops of hardened silt and sand. For example, Building 53 has examples of hardened sediment of this sort, which occur at the base of a wall, maybe to provide a sound foundation (Figures 193a and 193b).



*Figure 193a*

*Figure 193b*

However, there do seem to be some interesting concentrations of these “natural” bricks, and these are targets for further study in 2008 as they have some important implications for our understanding both of mudbrick provenance and the immediate Çatalhöyük landscape. For example, Building 56 has walls, which are very uniform in appearance. Here the mudbricks are composed of very fine yellowish sand, which has a few larger inclusions of chert and greenstone. These bricks appear homogeneous but close inspection reveals that they are finely laminated, and the larger inclusions are also aligned parallel to this lamination and to the upper and lower brick surfaces. Occasionally small-scale ripple structures are seen, especially where the brick surface is deteriorating. These textural characteristics are those of natural overbank silts and fine sand, which develop adjacent to river channels during floods. The fact that these textures are undisturbed suggests that these bricks are made by cutting into alluvial sediments, not from mixing and moulding clays.

The full extent of these natural “bricks” has not yet been mapped out. This is planned for the 2008 season when study will focus on how bricks were actually made at Çatalhöyük. However, Serena Love's extensive program of mudbrick analysis is proving very effective at identifying anomalous east mound materials. For example, Building 59 has very uniform pale pink mudbricks, which again appear slightly suspect. Outwardly these look as if they have been made from fine-grained lime-rich sediments, and the laboratory analysis confirms that these are silts with 8-10% calcium carbonate (Serena Love, pers. comm.). The backswamp model does not provide a sedimentary environment for the accumulation of calcareous sediments, and the suggestion here is that material is being accessed from beneath the marl. Again this has implications for our understanding of the immediate Çatalhöyük landscape.

In the later levels of the site, mudbricks start to be made partly from recycled midden material. The nature of this transition is not yet fixed but will emerge once the petrographic work is complete. However, there are major problems in trying to reconstruct the raw materials being used for mudbricks of this type, because much of the midden material itself is clay-based. Particle size and bulk chemical analysis will be of more limited use here and the focus will have to be on methods which can

separately analyse the clay matrix and added (midden) temper. The obvious technique is scanning electron microscopy (SEM) combined with energy dispersive analysis (EDA). A SEM/EDA approach is currently being developed to determine the mineralogical and geochemical fingerprints of Çatalhöyük mudbricks, pottery and plasters and will include these midden-tempers.

### ***Plasters and Mortars***

A wide range of clay-based plasters were used at Çatalhöyük and we need to know precisely what these materials were in order to examine the mudbrick-plaster transitions. Equally we need to understand these materials to locate them on in the landscape and determine what would have been involved in their procurement.

This year a series of plasters of differing appearance were sampled. Basic observations were made on site using a small binocular microscope at x10 magnification. These samples were exported to Oxford where they are being examined using a scanning electron microscope (SEM) with an energy dispersive analyser (EDA). Some preliminary results are presented below with reference to one floor plaster and one wall plaster, both from the 4040

(i) Floor plaster sample from unit (14666) in Space 311, Building 59

This represents the edge of a platform and is built of 4 separate plasters (Figures 194a and b)



Figure 194 a



Figure 194b

1. White plaster with a high proportion of chopped plant material (estimated at 50%). A few small mineral inclusions are present and comprise of quartz and feldspar grains. There are also a few small marl fragments, which show a yellowish hue, and a few more ochreous grains of carbonate.

2. Slightly greyish white plaster also with a high proportion (>50%) of chopped plant material. There are very few inclusions: no quartz or feldspar was observed only the occasional fragment of hard marl or carbonate.

3. A pale brownish plaster with added plant material (but less than for the white plasters). This has a significant silt content with conspicuous dark coloured ferromagnesian minerals. A few quartz grains are present but no marl fragments.

4. A brown clayey-silt with a few small (less than 0.5mm) quartz and feldspar grains but no dark volcanic minerals. Chopped plant material has been added but there is less than in the white plasters.

Chemical analysis of these four plasters is shown in Table 20. This data is semi-quantitative (normalised to 100%) but is adequate to show the main characteristics of these materials. The samples were prepared as stub-mounts and examined using a Cameca SU30 SemProbe with a PGT energy dispersive analyser.

This simple analysis shows that:

a) Samples 1, 2, and 3 are all related marls of differing purity, and sample 4 is clayey-silt or loam.

b) Sample 1 is the purest, having the highest calcium (carbonate) content (35%) , consistent with its white colour.

c) Sample 2 is similar but has slightly less carbonate (28%) and more of those elements which represent clay and silt (i.e. SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, and K<sub>2</sub>O, though surprisingly not FeO).

d) Sample 3 is still a marl but the higher FeO gives a pale brown colour.

e) These three marls form a natural sequence (Kadir and Karakas, 2002) and, except for plant materials, have not been modified by additions or by processing.

f) This gradational sequence represents marls, which have been deposited at different distances from the margin of the former Lake Konya. Sample 3 formed nearest the former lake edge and received more clay impurities while samples 2 and 1 formed progressively further from the shoreline and received only minor inputs of (reddish) clay. As the lake level is known to have fluctuated, these marls will be found interbedded in outcrop (or section).

Sample	Type	SiO <sub>2</sub>	TiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	FeO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O
Floor plaster (Building 59)	1 white	41.9	0.0	14.2	2.9	4.0	34.9	0.5	1.7
	2 white	45.4	0.0	15.8	1.9	4.7	28.0	1.6	2.6
	3 buff	50.2	0.1	16.4	4.4	2.9	22.9	0.4	2.9
	4 brown	59.9	0.2	23.1	4.6	2.5	5.9	1.0	2.7
Wall plaster (Building 55)	white	17.7	0.0	3.8	0.8	37.1	39.5	0.8	0.3
	brown	40.3	0.0	16.0	3.3	4.0	33.4	0.4	2.7

Table 20

(ii) Wall plaster (multiple-style) unit 14940.s1, Building 55, F.2045

This shows a sequence of alternating layers of pale brown and fine quality white plasters (Figures 195a and 195b). The brown layers have a small amount of very dark coloured volcanic minerals, and in this respect are similar to sample 3 of the above wall plaster. The white layers are very fine and have no visible inclusions. However, chemical analysis shows that:

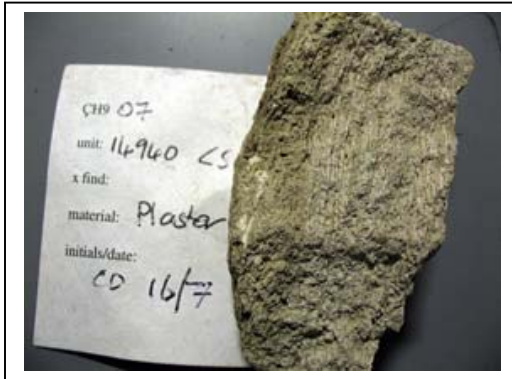


Figure 195a



Figure 195b

a) These brown base layers are more like the white sample 2 of the floor plaster, having a relatively high calcium (carbonate) content and relatively low clay and silt ( $\text{SiO}_2$  and  $\text{Al}_2\text{O}_3$ ).

b) The white layers of this wall plaster are very different to the white floor/platform plasters. The very high MgO values (37%) and low alumina (3.8%) indicate this is not a clay but is a fine-grained dolomite (with a small amount of clay impurities).

c) In the depositional scheme, dolomites form much further away from the former lake edge. Unlike the floor plaster marls and wall plaster base layer, this material may be some distance (a few kilometers) north of Çatalhöyük.

The remaining plaster samples will be analysed similarly, possibly supplemented by spectroscopic analysis (Infrared or Raman) to check for organic components. By using this simple combination of optical and chemical analysis it will be possible to fully index Çatalhöyük plasters in terms of their constituent clays and impurities. Only a very small sample is needed and the analysis is rapid and inexpensive so that these tests can be applied on a routine basis. This will allow us to see how the plaster raw materials change from early to mid to late levels, and to see how consistent their use is within a specific period. For example, for the multiple-layered wall plasters we can read the chemical signatures of successive white layers like barcodes. This can tell us whether all the walls of a building were re-plastered at the same time, or whether specific areas received separate attention.

### **Clay Balls**

The second of the two clay materiality themes looks at the transition between cooking with clay balls and pottery. The initial question again is to ask what is the range of clays and tempers in use?

A detailed study of clay balls and related clay objects has been undertaken by Sonya Atalay (Atalay, 2003).

Clay ball colours are variable, from dark brown to light yellow to an oxidised pale orange-red. The ratio of clay to mineral inclusions varies, but the types of minerals are relatively consistent (quartz, feldspar, biotite mica, hornblende, and basalt). Inclusions are commonly compacted at the surface, which may also show various impressions (fingerprints, matting etc). The study concludes that clay ball fabrics are variable due to the addition of various mineral tempers to a base clay. The different fabrics are

interpreted as the result of the actions of individual craftsmen using different temper and clay combinations.

During the first year of this current clay materials study (2006), no systematic clay ball observations were made. However, passing observations and archived images suggest that at least some of these clay balls and objects are not made from tempered clay, but are natural sediments which have been shaped. Some key points being:

- 1) It is very difficult to introduce such high quantities of fine temper into a clay so that a uniform fabric is produced
- 2) The fracture pattern of many clay balls suggests that this is controlled by an internal structure which has not been disrupted by forming.
- 3) Several clay balls show no colour change from core to matrix, and may even exhibit an oxidised colour throughout (Figure 196a). This colour distribution is difficult to explain if these balls are formed from clay but are not fired to pottery temperatures.
- 4) Given the very large diameter of some of these clay balls (up to 9cm), why is there so little evidence of shrinkage?

To gain a direct understanding of the nature of the raw materials being used here, an examination was made of a small number of clay balls and objects. Some example field descriptions are given below.

ÇH99 South Area unit 5195.s2 - A clay ball but made from a very fine-grained natural sandstone. The sandy texture may give the impression of a very high content of added sand "temper", as this is a feature, which is consistently recorded for clay balls.

ÇH99 South Area unit 5138.s2 - A large clay ball with an estimated diameter of 8cm. The fabric is very silty and contains whole small gastropod shells of up to 3mm. Although being a relatively large piece it is hard throughout. The surface is easily wetted but does not give a muddy streak. For this to be a clay object, a relatively high firing would have been necessary, one lasting long enough to give a uniform oxidised colour throughout. However this is not suggested by the delicate gastropod shells near the outer edge of the object, as these show no evidence for thermal degradation. Clearly this is not a formed clay object but is a shaped piece of overbank silt, one which still shows traces of the original sedimentary laminations and concordant shell fragments. The observed hardness was initially due to this silt having being cemented into a weak stone, and then further hardened during heating (use). The oxidised colour throughout is explained by this being the original colour of the silt.

ÇH99 South Area unit (5299) "Stone" - This is a tabular piece which has low angle planar bedding. Compositionally this sediment has a relatively high proportion of angular inclusions (quartz, feldspar, chert, greenstone) and also more delicate forms such as complete gastropods and orange-red mudflakes. These characteristics suggest that this is an overbank sediment. This material is identical to that used for some of these clay balls

ÇH99 South Area unit (3379) Clayball - A large (estimated 7-8cm) clay ball which again is made of laminated fine silt. Here the internal sedimentary laminations continue to the edge of the ball and have not been displaced during forming. This implies that the silt was relatively hard when used.

ÇH99 South Area unit (4121) Clay objects (loom weights?) - These are three disk fragments (representing more than one disk) which each have a central hole. They are made from a tabular-bedded siltstone similar to these clay balls.

ÇH99 surface, Area West - A large (7-8cm) clay ball, made from a slightly gritty siltstone. This has a light grey centre with light buff margins which have developed as a response to heating. The fabric appears structureless but close inspection reveals faint laminations which are parallel (and probably define) the flat base. The silt is slightly poorly sorted, the larger grains being mainly andesite/dacite volcanics.

As these notes indicate, several of the South and West Mound clay balls and clay objects have fabrics, which contain large quantities of fine sand and silt. Close inspection shows that these are not clays, which have been tempered (with fine sand/silt), but are natural silty sediments. These have been deposited as a series of thin layers, and any coarser inclusions present (e.g. shell) have become oriented parallel to these layers.

The light brown or buff colours of these sandier clay balls are therefore original and have not developed due to oxidation during heating. The same colours are seen in related objects which are not considered to have been fired or heated, example the doughnut-shaped "loom weights" (Figure 196b). These are made of the same silts/fine sands and show the same internal parallel sedimentary laminations.



Figure 196a



Figure 196b

The identification of some of the clay balls and clay objects as being based on natural silts and fine sands explains the initial concerns. The constituent silt and sand grains are very tightly packed with only a small amount of clay in between. This allows very little shrinkage even when subjected to heating. Further, the tightly packed (mainly) quartz grains give better heat storage/transfer properties than would a more clay-rich material. The difficulties of oxidising a 9cm diameter clay ball without firing is disposed of now that the observed colour is seen to be that of the original sediment.



Finally the observed fracture patterns are more easily explained now that residual sedimentary structures are recognised.

What seems to be happening here is that occasionally pieces of natural silt or fine sands are being used which have some degree of initial hardness. This is low enough for their outer surfaces to be wetted and smoothed into balls and other objects (and in doing so producing the observed higher concentration of inclusions at the outer surface). The wetted surface would have been sufficiently plastic to record fingerprints and matting impression etc.

While this small examination is by no means representative of the full assemblage of Çatalhöyük clay balls, it does indicate where further research could be directed. As in the case of mudbricks, this re-labelling of a few of these clay balls as silt-based (rather than clay-based) makes no immediate change to our general understanding of the social use of these objects. But this minor detail becomes very important when accounting for a number of forming and use-related observations and is particularly informative on aspects of provenance.

### ***Pottery***

Following the 2006 season, a total of twenty-two pottery sherds were submitted by the pottery specialists for petrographic analysis by thin section. The aim was simply to take a first look at the type of fabrics represented to assess what these can tell us about the pottery raw materials, methods of forming and firing, and of use. This is the first stage in the development of a reference collection of Çatalhöyük pottery fabrics which will assist the pottery specialists with the technical and provenance aspects of their studies.

Colour is often the first characteristic used to describe and classify pottery as it is the most immediately obvious feature. However, colour is dependent not only on the type of clay used but also on the degree to which this has been fired. This means that a dark grey or black colour can develop in a normally red-fired fabric in cases where the firing has been too short to allow oxidation. This has been the case for many of the Çatalhöyük wares, and colour differences must be used with caution.

A much better way of defining pottery fabrics is to focus on their inclusions, which can be either natural or added temper. For the twenty-two pottery sherds reviewed here there are six different types of inclusions. Two of these are in fact mineral assemblages which correlate with the geology of the headwaters of the Çarsamba river (referred to here as C-type inclusions) and its now “tributary” the May river (M-type inclusions). The six inclusion types are:

- 1) Çarsamba (C-type) inclusions
- 2) May (M-type) inclusions
- 3) “Chaff” or more correctly chopped plant material (which may include chaff, straw etc)
- 4) Marl
- 5) Metamorphic or fault-related
- 6) Exotics.

The Çarsamba and May-type inclusions occur in different combinations which give rise to further fabric groups. There are M-type only, M-types more abundant than C-types (M>C), M and C-types in equal abundance (M=C), and C-types more abundant than M-types (C>M). It is not possible to distinguish C-types only because of an overlap in the Çarsamba and May sediments. Table 21 shows the distribution of these fabrics within the twenty-two sherds examined.

Key: M=May river type inclusions, C=Çarsamba -type inclusions, > denotes greater than, >> much greater	
West Mound	Comments
CH1 - unit (2911.s9)	M-type (Volcanic inclusions) dominate (> 95% ).
CH2 - unit (2911.s8)	Dacitic volcanics. M>>C
CH3 - unit(7795. s2)	Marl tempered (no “sand”)
CH4 - unit 7774.s3)	An exotic asbestos tempered fabric, not local
CH5 - unit (736.s5)	Chaff-tempered silty "Backswamp clay"
CH6 - unit (9033.s8)	Pumice-rich - single source May colluvium, i.e. M only
CH7 - unit (9033.s3)	Andesitic volcanics present but not dominant, C>>M
CH8 - unit (9033.s4)	Has pumice inclusions- reworked M colluvium + C alluvium (mixed)
CH9 - unit (9033.s5)	Has both volcanics and marl – a re-worked colluvium (from south-west of the site )
CH10 - unit (9033.s6)	Has a dominant non-volcanic component, C>>M
CH11 - unit (9033.s7)	Equal influence of volcanics and non-volcanic inclusions , C=M
East Mound	
CH12 – unit (13140.s9) CM-c	Very fine volcanic-rich overbank silt, M>C
CH13 - unit (12648 s.9 CM-c	Dacite inclusions with perlitic groundmass, single source M, no C
CH14 - unit (13103.s.17) K-1 Str.B	High inclusion clay ratio, with equal C+M - possible beach ridge input as there are some rounded grains
CH15 - unit (1988.s7) W-c	Very high perlitic glass content, no C or carbonate - single source M close to ignimbrite outcrops
CH16 - unit (13103. s18) DMS-c	Very fine silt, calcareous matrix with C=M – an overbank silt with re-worked carbonate
CH17 - unit (13103 s.18 W-f	Temper = metamorphics, but no limestone or volcanics. A non-local fabric made with a residual clay from a fault zone. Upper Çarsamba ?
CH18 - unit (12652.s4) DMS-sh	M inclusions only - proximal M colluvium?
CH19 - unit (12980.s17) DMS-c	No M volcanics, but a high proportion of metamorphics - possible temper - from fault zone. Non-local fabric. Upper Çarsamba?
CH20 - unit (13140.s10) DMS-f	100% volcanics - M colluvium
CH21 - unit (12988.s8) CO	Chaff-tempered silty fabric with calcareous matrix and some shell
CH22 - unit (12980.s8) CM-f	Fine fabric with some possible temper - overbank silt/clay but calcareous, C>M.

Table 21



This initial inspection has only defined broad fabric groups rather than specific fabrics. These will follow once a larger number of thin sections have been examined, and the variability of the source clays is established by fieldwork. However, on the basis of these emerging fabric groups, it is possible to draw a number of conclusions:

1) As would be expected, the majority of fabrics are dominated by mineral and rock inclusions from the Çarsamba and May rivers. The younger Çarsamba is the active river, but the May has been responsible for the bulk of the pre-Holocene alluvium underlying the Çatalhöyük – Çumra area (De Ridder, 1965).

2) The Çarsamba and May rivers derive different assemblages of rock and mineral inclusions from their catchments (referred to in this study as C-type and M-type inclusions), due to differences in geology. Although there is some overlap, this provides a basis for reconstructing sources for pottery and all Çatalhöyük clay-based materials. Currently a full petrographic and mineralogical study is being undertaken at RLAHA, Oxford. A combination of optical microscopy and electron microprobe analysis will fully characterise inclusions from mudbricks, pottery, and clay balls and will compare these with cores taken from around the site, and with sediment samples from the Çarsamba-May catchment.

3) With a comprehensive understanding of the geology of the Çarsamba-May system, it is possible to identify fabrics whose inclusions were derived from outside this system and were produced at some distance both the limestone and the volcanics which indicate the use of a Çarsamba-May clay. from Çatalhöyük. For example, samples CH19 unit (12980. s17) DMS-c) and CH17 unit (13103.s18) W-f) lack. Instead these have inclusions of metamorphic and fault-related rocks, suggesting a provenance in the Taurus mountains to the south.

3) Except for those with “chaff” most fabrics are not tempered. Those which tend to be either atypical local types (e.g CH3 – unit (7795. s2) which is marl tempered) or “exotic” fabrics (e.g. CH4 – unit (7774.s3) which is tempered with asbestos).

4) Both W and E mounds include material which can only have been made in the upper reaches of the May as the inclusions are dominated by a single rock type with a restricted outcrop, e.g. CH6 – unit (9033. s8) (west mound) and CH15 – unit (1988. s7) W-c (east mound)

5) Most of these fabrics are natural silts and fine sands, rather than true clays which have fine sand or silt added to them. The main exception here is the “chaff” tempered fabrics (e.g. CH5 – unit (7736. s5) which are the only cases where a “backswamp” clay is being use.

### **Summary of the review of the main clay-based materials**

These new observations have been restricted relatively few examples of each of the main clay-based materials being studied within the remit of these two materiality themes. However, the aim here was not in any way to repeat previous work but to establish the types of “clay” being used and identify any sedimentary and petrographic characteristics, which could aid in determining the source of these materials.

To this extent this limited examination has been successful. The raw materials used for mudbricks, plasters, clay balls and pottery are now understood, with further detail being added by ongoing petrographic and mineralogical work at Oxford. With a developing understanding of the geology of the Çarsamba-May catchments and of the sedimentological conditions operative in the Çatalhöyük area, it is now possible to investigate where these raw materials were being sourced.

### Provenance

From this year's review we now need to locate the following raw materials within the Çatalhöyük landscape (Table 22).

Material	Sediment type	Colour
<b>Mudbrick</b>	backswamp clay	dark grey/black (organic-rich)
	clayey-silts	red-brown
	overbank silts	pale yellow to buff
	channel sands (lithified)	red
	calcareous silts	pale pink
<b>Plaster</b>	pure white marl	white
	impure white marl	grey
	reddish marl	reddish or light brown
	dolomitic clay	white
<b>Clay balls</b>	backswamp clay	dark gray/black
	overbank silt (partly lithified)	pale yellow to buff
<b>Pottery</b>	backswamp clay	dark grey/black
	clayey-silt	red-firing
	calcareous clay	reddish, also red-firing
	colluvium	buff

Table 22

Çatalhöyük is situated within the Çarsamba alluvial fan, where the sedimentary sequence has been extensively studied (Boyer et al., 2006; De Ridder, 1965). For the Holocene, two main alluvial deposits are recognised, referred to as the Lower Alluvium and the Upper Alluvium. A thin (< 20cm) layer of very dark organic clay separates the basal marl from the Lower Alluvium. The latter consists of approximately 1.5m of dark grey-brown smectite-rich alluvial backswamp clay. Deposition of this unit started just before the Neolithic occupation and extended to the start of the Chalcolithic. Following a short depositional hiatus, this was succeeded by the Upper Alluvium, a reddish-brown silt-clay of up to 1.3m thickness.

Both units represent a series of overbank sediments related to meandering channels of the Çarsamba river. Their widespread occurrence has suggested that Çatalhöyük was located in a seasonally, if not permanently, flooded environment. How well does this

Holocene alluvial sequence help us in locating the raw materials being used for mudbricks, plasters, clay balls and pottery?

Immediately we seem to have a problem. The earliest (pre-Level V11) mudbricks, early clay balls and early pottery appear to be the only cases where the dark-coloured Lower Alluvium is being used. Leaving aside the marls, all the other materials have buff, yellow or reddish colours, suggesting that they were deposited in more oxidising conditions than for the Lower Alluvium. Also, as the reddish Upper Alluvium did not form until the end of the Neolithic, this cannot be considered as a source.

How do we account for a Neolithic mound made largely of reddish mudbricks set within a wetland landscape in which mainly dark organic sediments are accumulating? This question has been previously raised by Wendy Matthews (Matthews, 2005), who also suggests some answers:

“Although mudbricks made from oxidized orange or brown sediments were selected for the bulk of buildings during the last half of the mound’s history, these sediments have still not been identified by KOPAL coring or excavation in the area surrounding the site. Given the volume and weight of these mudbrick sediments (10cm<sup>3</sup> = c.>1kg), they are likely to have been brought from source areas fairly close to the settlement. It has been suggested that the orange oxidized sediments that include unworked aggregates with water-laid bedding in mudbricks, may be from Pleistocene alluvium, which has since been largely excavated and is no longer present/abundant (Tim Astin pers.comm.). They may also relate to deposits. Some of the brown silt loam may originate from raised dry-land areas, although sediment in these areas is likely to have been at a premium for cultivation. Aggregates of orange oxidized sediment have been identified in deposits from the earliest levels of the site and in the northeast platform of Building 17, Level IX, confirming that at least some of these sediments were present in this early period.” (Matthews, 2005).

As this indicates, mudbricks are heavy and must be made nearby. If the mudbricks are made of reddish sediments, then these must be nearby. And if there are a lot of these mudbricks, there must have been a lot of this type of sediment nearby, either as a renewable or finite source. Since the Upper Alluvium is excluded, two possible sources remain:

1. The contemporary Çarsamba channel, levée and adjacent overbank sediments
2. The Pleistocene sands, silts and clays, which are interbedded with the marls.

Observations from this season confirm that many of the mudbricks (and some of the clay balls) are made from overbank silts. These have the characteristics of sediments deposited from standing water temporarily ponded behind the levées of a meandering channel. This represents a sedimentary environment in which the average conditions are weakly oxidising, and is expressed in the pale buff and yellow colour of the sediments. The mudbricks of Building 56 are made from sediments of this type.

For the redder materials we need a more strongly oxidising environment. This could occur if these contemporary overbank sediments were exposed for prolonged periods, but this would not be in agreement with a mainly wetland landscape. As suggested

above, any small areas of raised land, which could produce sediments of this type, would have been at a premium for cultivation. For this scenario to work there would have had to be larger areas of exposed dry sediments, maybe along the margins of abandoned channels. Alternatively, was there an increase in the amount of silts and sands accumulating near the east mound from Level V11 onwards? This could explain the observed changes in mudbricks, clay balls and pottery at about this time, to the use of more silt and sand-rich fabrics.

Another possibility is that these redder sediments were being sourced from the Pleistocene siliclastic sediments which are interbedded with the marls. Tim Astin (above) has previously observed mudbricks with water-laid bedding, and several such observations of “natural” mudbricks were made this year (for example Building 53, Figures 193a and 193b). As outcrops of this material are almost absent, it not easy to make a direct match (and hence the need reference material from boreholes) but evidence of sand extraction from beneath the marls is already known from KOPAL (Boyer et. al, 2006a).

What is apparent from the above is that there remains considerable uncertainty about the fine detail of the Çatalhöyük landscape. It is not yet possible to use the existing sedimentary model to answer the provenance questions posed by the current studies of the “clay”-based materials. This needs to be addressed.

Towards this, a series of exploratory percussion cores were taken this year to examine the lateral facies variation with the established Çarsamba stratigraphy (see Coring Report, this volume). Is it possible to re-interpret the existing sediment data to better account for the sources of these materials, now that many are seen to be more silt than clay-based? This work will be expanded in 2008 and will link with the current petrographic and mineralogical work to accurately match these materials to the Çatalhöyük landscape.

## References

Atalay, S.(2003) Domesticating Clay: Engaging with 'They': The Social Life of Clay Balls from Çatalhöyük, Turkey and Public Archaeology for Indigenous Communities. Unpublished Doctoral Dissertation, University of California, Berkeley, Department of Anthropology.

Boyer, P., Roberts, N. and Baird, D. (2006). Holocene Environment and Settlement on the Carsamba Alluvial Fan, South-Central Turkey: Integrating Geoarchaeology and Field Survey. *Geoarchaeology*, 7, 675-698.

Boyer, P., Roberts, N. and Merrick, J. (2006a) KOPAL excavations at Çatalhöyük 1996-2000. In: I.Hodder (ed.) *Excavating Çatalhöyük: Reports from the 1995-1999 seasons*. *Catalhöyük Project vol 3*. (pp551-570). Cambridge: McDonald Institute for Archaeological Research / British Institute of Archaeology at Ankara Monograph.

De Ridder, N. A. 1965. Sediments of the Konya Basin, Central Anatolia, Turkey. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 1, 225-254.

Kadir, S and Karakas, Z. 2002. Distribution and origin of clay minerals in Konya Neogene sedimentary basin, Central Anatolia, Turkey. Turkish Journal of Earth Sciences, 11, 161-176.

Matthews, W.(2005) Micromorphological and microstratigraphic traces of uses and concepts of space . In I. Hodder (ed.) Inhabiting Çatalhöyük : reports from the 1995-9 seasons . Çatalhöyük Research Project Volume 4: McDonald Institute Monographs/British Institute of Archaeology at Ankara.

**Preliminary sediment coring to clarify “clay” sources and potential land-use around Çatalhöyük / Delgi Projesi – Chris Doherty (1), Michael Charles (2), Amy Bogaard (3)**

(1) Research Laboratory for Archaeology and the History of Art, Oxford University, (2) University Sheffield (3) University of Oxford

**Background**

In order to address the proposed clay materiality themes (mudbrick/plaster and clayballs/pots – see Doherty, this volume), there is a need first to define which "clays" are in use and where they occur. From a more general land-use perspective, there is a need for detailed local mapping of soils and sediments with a view to better understanding of potential cultivation, grazing areas etc. around the site.

**Özet**

Kille yapılmış malzemeyi (kerpiç/sıva ve kil topraklar/çamnak çömlek – bakınız Doherty, bu sayı), anlayabilmek için hangi tip kilin kullanıldığını ve bu kilin kaynağının nerede olduğunu anlamamız gerekir. Daha geniş bir alanın kullanımı perspektifinden yaklaştığımızda, yerel kaynakların ve toprak çeşitlerinin bir haritasını çıkarmak, tarım ve hayvancılık için kullanılan alanları anlayabilmemiz için gerekli olur. 207 yılında yapılan delgi işlemlerinin ana amaçlarından birincisi yerel toprak ve diğer kaynakların sistematik bir grid içerisinde genel planını çıkarıp gelecek yıllarda daha büyük ölçekte bir çevresel harita çıkarabilmek; ikincisi, bu toprak ve kaynakların yapı malzemesi olarak ve küçük buluntuların yapılmasındaki rolünün, ayrıca tarım ve hayvancılık için kullanılan diğer alanların nasıl kullanıldığının anlaşılmasıyla ilgili bilgilerin sağlanması.

The sedimentary stratigraphy proposed by the KOPAL team (Roberts et al. 1999; see also Boyer et al. 2006) argues for waterlogged "backswamp" conditions (corresponding with clay and silt deposits – the ‘Lower Alluvium’) throughout the Neolithic occupation, with an onset of drier conditions (buff and reddish coloured oxidised sediments – the ‘Upper Alluvium’) at the Neolithic-Chalcolithic transition. The spatial extent of this reconstruction is ambiguous, since it is based on excavation and coring in the immediate vicinity of the site, but it is argued that ‘backswamp’ conditions covered much or all of the alluvial fan. It has led to an ‘extreme’ model of distant (c. 12+ km) cultivation (e.g. Rosen and Roberts 2005).

This reconstruction is at odds, however, with the mudbrick evidence, as reddish sediments are in use from Level VII (cf. Matthews 2005). These drier non-backswamp sediments are silts rather than clays, and their colour suggests predominately oxidising (i.e. relatively dry) conditions. The sheer weight of mudbricks argues for production very close to site. Similar arguments could be made with regard to crop harvest transport, manure spreading etc. The non-backswamp mudbricks indicate the presence of relatively large volumes of drier silty deposits near site.

The implication is that extrapolating the balance of wet and dry ground from the KOPAL trench (located on the northern edge of site) to the alluvial fan in general is not valid. Buff-red oxidised silts were evidently available during the Neolithic despite not being observed at the KOPAL trench until later.

A simple solution to this problem is that a mosaic of different sediment types existed rather than a homogeneous Lower Alluvium throughout the Neolithic occupation followed by the Upper Alluvium in the Chalcolithic. In sedimentary terms, the Çarsamba system would comprise a series of sedimentary facies which varied over a relatively short distance. Indeed, an expression of this scale of variation is seen in the modern soil map (de Meester 1970). In order to clarify local soil conditions, a new program of higher resolution coring and environmental interpretation is required.

#### **Sedimentary coring in 2007**

The aims of initial coring in 2007 were to 1. provide an outline plan of local soils/sediments that could be scaled up in future seasons across a systematic grid to build a comprehensive environmental picture at a higher resolution; and 2. provide information on local soils/sediments in terms of their suitability for construction/fabrication materials, cultivation and other aspects of land use. Coring was designed to target the two major soil groups identified by de Meester (1970) as being in the immediate vicinity of the site (Figure 197) as well as to provide some additional information about conditions between the two mounds. In future seasons, coring can be extended out to encompass the other soil groups identified by de Meester (variation lies primarily to the south-east of the site).

#### **Methods**

Ten cores were taken at c. 100 m intervals along a c. 1 km transect, positioned to take advantage of the deep soundings on each mound (Figure 198). The transect runs approximately east-west and was chosen to include the current Carsamba river, as the general facies relationships of the modern channel are equivalent to those of its Holocene precursor.

Each location was tied into the site grid with a total station by Cordelia Hall and Dave Mackie. Each core was taken to a depth of c. 8 m with a percussion corer operated by a team associated with the Dept of Geology at Selçuk University. The cores were extracted in 50 cm sections at 1 m intervals; drill 'scrapings' were collected from each 1 m interval to gain an impression of the sequences not covered by the cores. Field observations and photographs were taken before the cores were wrapped in cellophane and placed in plastic guttering; the cores have been transported for further analysis in Sheffield and Oxford.

Since the percussion drilling system used did not permit the recovery of continuous cores, the initial aims of sedimentary recording were to:

- i) determine the approximate depth at which the marl facies were intersected
- ii) evaluate the extent of lateral facies variation.

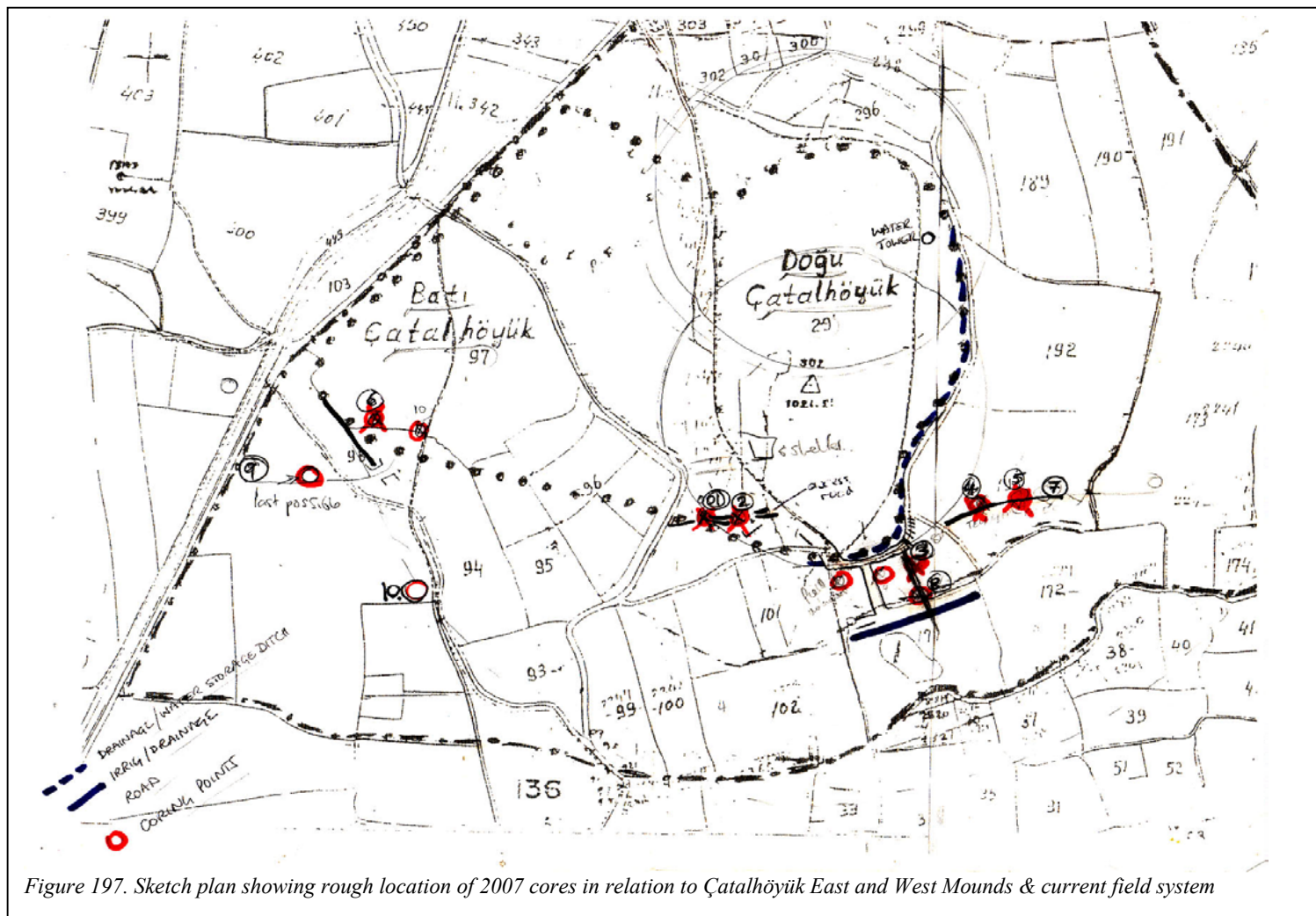


Figure 197. Sketch plan showing rough location of 2007 cores in relation to Çatalhöyük East and West Mounds & current field system



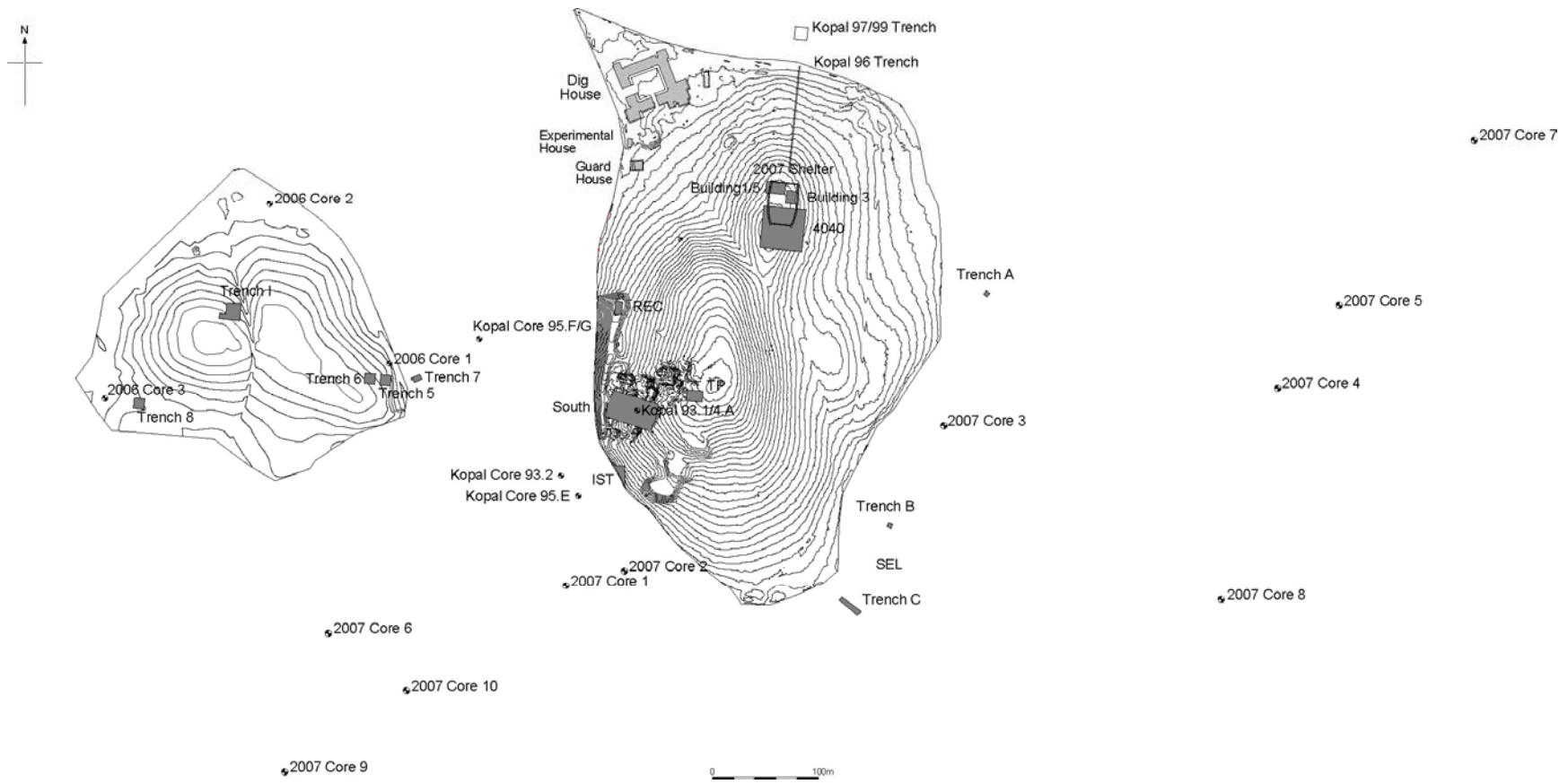


Figure 198. Location plan showing of all cores and sedimentary investigations 1993 – 2007

## **Results and discussion**

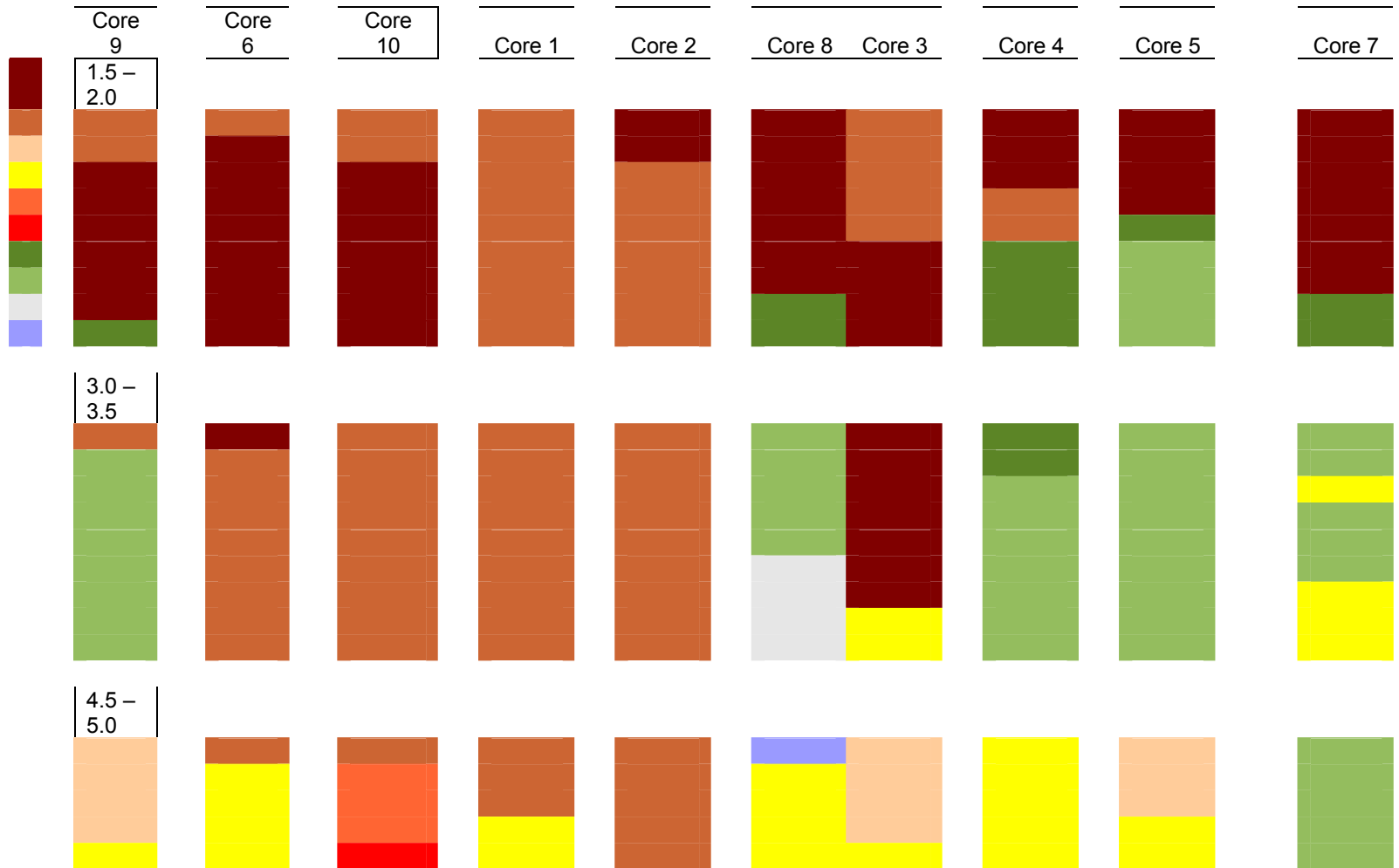
Full laboratory analysis of the cores is forthcoming, but some preliminary observations are given here. A schematic sedimentary description of the cores is given in Figure 199.

The depth to marl is relatively uniform (see Figure199), with only minor variation east-west along the transect. Marl was not intersected in borehole 3 but this is probably due to the non-continuous sampling and will be checked in the next field season.

Except where intersected by the Çarsamba channel, the depth to marl appears to be shallower than expected from previous reports. The lower part of the 1.5 to 2 meter percussion cores of boreholes 4, 5, 7 and 8 show transitions to marl facies, and this may be incipient in core 9. If confirmed by laboratory analysis, this would suggest the presence of localised surface outcrops of marl just south of the site at the time of initial occupation.

**Key**

- clay
- silty clay
- silt
- sand
- sand+clay
- gravel
- clay + marl
- olive marl
- grey marl
- sandy marl



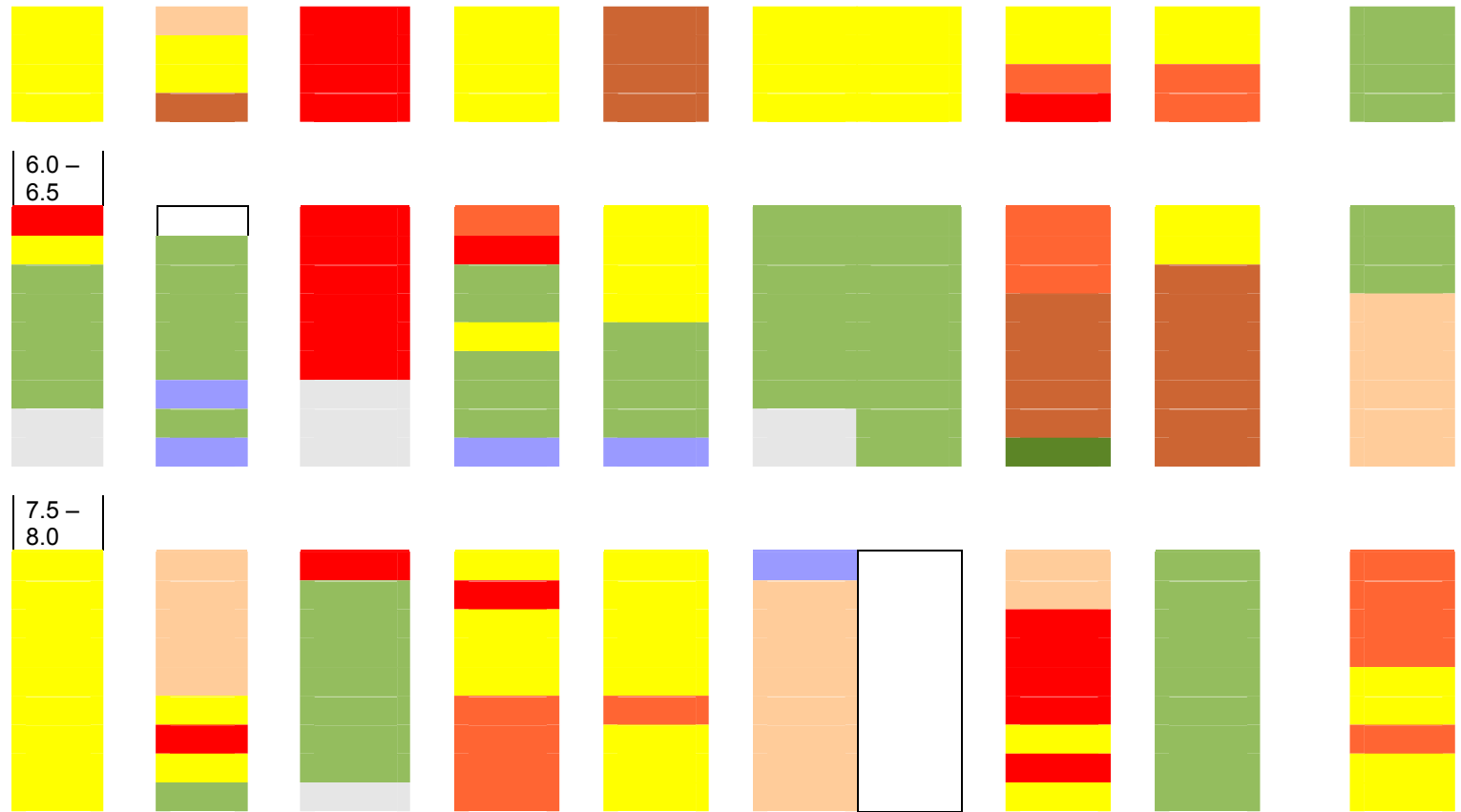


Figure 199: schematic sedimentary description of the cores

The marl consists of impure (olive-green) and purer (greyish white) facies, the latter being the less common type. These facies are laterally impersistent. The marls are inter-bedded with sands, silts and gravels. This indicates deposition at the margin of the former Lake Konya. The inter-bedded facies have developed due to fluctuations in the lake level, with the corresponding migration of the shoreline position.

These sandier facies may have been near the surface at the time of occupation. This is also suggested by their recognition as raw materials for some of the post-Level VII mudbricks. The inter-bedded permeable silt and sand facies would have implications for the balance of wet and dry areas around the site. The sandier facies would have drained more quickly following flood events.

### **Conclusions**

Though these observations are preliminary, they confirm that a mosaic of different sediment types existed near the surface at the time of the Neolithic occupation. More extensive coring around the site will add much needed detail to our understanding of potential local environmental conditions and land use practices.

### **References**

Boyer, P. Roberts, N. & Baird, D. 2006. Holocene environment and settlement in the Carsamba alluvial fan, South-Central Turkey. *Geoarchaeology* 21(7): 675-698.

De Meester, T. 1970 *Soils of the Great Konya Basin, Turkey*. Wageningen: Centre for Agricultural Publishing and Documentation.

Matthews 2005 *Micromorphological and Microstratigraphic Traces of Uses and Concepts of Space* Chapter 19. In I. Hodder, (ed) *Inhabiting Çatalhöyük: Reports from the 1995-1999 Seasons*. Cambridge: McDonald Institute Monographs.

Roberts, N., S.Black, P.Boyer, W.J.Eastwood, H.I.Griffiths, H.F.Lamb, M.J.Leng, R.Parish, J.M.Reed, D.Twigg, H.Yiğitbaşıoğlu 1999. Chronology and stratigraphy of Late Quaternary sediments in the Konya Basin, Turkey: Results from the KOPAL Project. *Quaternary Science Reviews* 18, 611-630.

Rosen, A. and Roberts, N. (2005) *The nature of Çatalhöyük: People and their changing environments on the Konya Plain*. in I, Hodder, (ed) *Çatalhöyük perspectives: reports from the 1995-99 seasons*. Cambridge; McDonald Institute for Archaeological Research, pp 39 – 53

### **Interpreting Chronology at Çatalhöyük (Neolithic East Mound) – Alex Bayliss (English Heritage), Shahina Farid Çatalhöyük Research Project**

Since 1993, Ian Hodder (1996; 2000; 2005a-c; 2007) has directed new excavations on the site. In 1999 the first sounding to reach natural ground at the bottom of the tell was completed, and the new excavations have enabled much more detailed work to be undertaken, including the application of a full range of modern scientific techniques which were not available in the 1960s.

Radiocarbon dating initially demonstrated that the deposits (from Level XII to Level II) spanned around 700 years from c 8200 BP to c 7500 BP. These measurements were made before the need for calibration of the radiocarbon timescale was discovered. Calibration only became available for this period in 1993, and suggested that the tell was occupied for around more than a thousand years from c 7400 – c 6200 cal BC.

Refining the dating of the site has been a key objective of recent research. Dendrochronology of charred structural timbers provided relative dating, which has been tied to calendar time by radiocarbon wiggle-matching (Newton and Kuniholm 1999). Experimental work has also been undertaken on the luminescence dating of mudbrick (Parish 1996), and there have been several programmes of AMS radiocarbon dating (Cessford 2001; Götürk et al 2002). The first synthesis of these data was produced by Craig Cessford (2005), using Bayesian statistics to integrate the excavated sequence of levels and archaeological phases with the scientific dates and represents our current understanding of the chronology of the East Mound.

This project will seek to build on this work to produce a more refined chronology for the structural sequence, artefacts, and environmental evidence from the site. The production of a precise and accurate chronology is not an end in itself, however, but is fundamental to addressing many of the existing research priorities at Çatalhöyük. In turn, the existence of a more precise and robust chronology will reveal further research directions which are currently beyond the horizon of our expectation.

Further research on the chronology of the East Mound is timely for a number of reasons.

First, since Cessford's pioneering study, the practicalities of the application of Bayesian statistics in deeply stratified archaeological sites have become more apparent (Sidell et al. accepted; Higham et al 2005; Bruins et al 2005). After more than a decade of routine applications in England, the paramount importance of sample taphonomy, and of sample selection within the framework of the prior information available from stratigraphy, has also become clear (Bayliss and Bronk Ramsey 2004). The exceptional depth of the East Mound sequence and the quality of the recent excavations will allow us to push forward the cutting edge of this new radiocarbon revolution.

The potential of the resultant chronologies to resolve long-standing research priorities, and to shift the focus of future research agendas is only just beginning to be explored (Whittle et al. submitted). The theoretical focus of the Çatalhöyük project demands that it should be at the centre of these developments.

As the wider excavation project moves into a second phase of post-excavation analysis, a renewed dating programme will also be able to consider a revised set of research questions. Specifically, the new excavations allow the later use of the mound, and how this differs from the earlier deposits, to be considered. It will also be possible to examine difference across a larger area of the settlement. This study will utilise the potential of the 1960s archive to contribute to the wider project aims. The first dating programme understandably concentrated on material from the new

excavations, but it is now time to regard the entire site archive as a resource for achieving the research objectives of the project.

The objectives for this new phase of scientific dating, subject to funding, can be summarised as follows:

- Is there a shift from a long-term house-based social structure in the earlier part of the east mound sequence to shorter-term alliance-based power structures? If so, when did this change occur and how long did it take?
- When did the series of changes in material culture, settlement organisation, and symbolism occur? Were they contemporary or did they occur at different times? Can the pace of change tell us something about the causes of change?
- Was there increased specialisation and trade later? What was the scale and rate of these increases? When did Çatalhöyük become a city?
- How central were ancestry and the past to the symbolic life of the people of Çatalhöyük? At what scale were traditions reinforced or reinvented?
- Is there a shift from a gathering/herding subsistence base to a mixed agricultural base over time? When were cattle domesticated? What is the pace of this change?
- To explain the chronology of the site and its significance to visitors and the wider public.
- To demonstrate the potential of the single-context recording, intensive sampling strategies, and chronological modelling employed by the present project to address much more ambitious questions about the past than has been possible previously.

The dating of the East Mound at Çatalhöyük will be undertaken using the well-established techniques of AMS radiocarbon dating (Aitken 1990) and Bayesian statistical modelling (Buck et al 1996; Bayliss et al 2007). This approach allows the probability distributions of the calibrated radiocarbon dates to be refined by their relative sequence known through archaeological stratigraphy. All modelling will be undertaken using the program OxCal (v4.0) (Bronk Ramsey 1995).

The potential for this methodology to provide a precise and accurate chronology for the site is outstanding. The depth of well-recorded stratigraphy provides an unprecedented group of deposits whose relative ages are known, and the recovery of artefacts from the recent excavations by an extensive programme of sieving and scientific analyses mean that samples are plentiful.