Excavations at Sissi II

Excavations at Sissi

Preliminary Report on the 2007-2008 Campaigns

Excavations at Sissi, II.

Preliminary Report on the 2009-2010 Campaigns
Excavations at Sissi, II.

Preliminary Report on the 2009-2010 Campaigns

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Simon Jusseret

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*Charlotte Langohr*

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1. Excavations at Sissi, 2009 and 2010

Introduction

Jan Driessen

1. Introduction and acknowledgements

During the summers of 2009 and 2010, the Sissi project conducted its third and fourth seasons of excavations on the Kefali or Bouffos hill (Sissi-Vrachasi-Mirabello-Lassithi) in eastern Crete. In 2009, the excavations lasted from July 6th to August 14th, while in 2010 the excavations ran from June 15th to July 24th with restoration by N. Nikakis continuing throughout the autumn and winter. As before (Sissi I), the excavations at Sissi were carried out by the Universities of Louvain and Leuven, under the auspices of the Belgian School at Athens. We are especially grateful for the support and advice of the Greek Ministry of Culture and Tourism, in particular Mrs. Villy Apostolakou and Vasso Zografaki of the 24th Ephorate of Prehistoric and Classical Antiquities at Agios Nikolaos. Lina Manousogiannaki represented the Greek Archaeological Service during both campaigns. P. Iossif of the Belgian School at Athens provided valuable administrative assistance.

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Area supervisors during 2009-2010 were Prof. I. Schoep (KULeuven) for Zone 1, F. Carpentier (KULeuven) for Zone 2, F. Gaignerot-Driessen (Paris IV) for Zone 3, Dr. Q. Letesson (UCL-FNRS) for Zone 4, Dr. M. Devolder (UCL-FNRS) for Zone 5 and Dr. S. Jusseret (UCL-FNRS) for Zones 6 and 7. Dr. C. Langohr (UCL-FNRS) was in charge of the apothiki, assisted in both seasons by F. Liard (UCL) and in 2010 by I. Kritikopoulos (U.Toronto). Draughtsperson during both campaigns was H. Joris (U. Hasselt), assisted in 2010 by C. Kolb (U. Cincinatti). P. Haeghüzeller (UCL-WBI) directed topography and GIS, whereas N. Kress (UCL) took care of field measurements in all zones apart from zone 1 where this work was done by P. Baulain (Paris IV). Photography (including cane photography) was largely the work of L. Manousogiannaki (helped by N. Kress) and G. McGuire (2010) whereas aerial photography in 2010 was again done by C. Gaston (Paris). INSTAPEC photographer Chr. Papanikoloupoulos again took care of object photography. Site artist was R. McGuire (2010). H. Fiasse was computer specialist in 2009. The anthropological team directed by Dr. I. Crevecoeur (2009, now CNRS, U. Bordeaux) comprised Dr. A. Schmitt (CRNS, U. Marseilles, 2009-2010), Dr. A. Civetta (2010), C. Dalberra (2010) as well as A. Gilon (UCL, U. Bordeaux, 2009-2010). The environmental team directed by Dr. V. Isaakidou (U. Sheffield, fauna) further comprised A. Livarda (U. Oxford, palaeobotany), R. Veropoulidou (U. Saloniki, shell) and C. Tsonka.
1. Excavations at Sissi, 2009 and 2010. Introduction

(U. Sheffield, stone tools). They were assisted by L. Polain (UCL, 2009-2010), P. Baulain (Paris IV, 2009-2010), C. Di Giovanni (Paris-ASAS, 2009), V. Vanderlinden (ULB, 2009) and M. Haynes (Paris Sciences Po, 2010). Dr. T. Carter (McMaster, 2009) studied the obsidian tools and A. Summers the loomweights of the 2008-2009 campaigns. Object conservation during both seasons was the work of A. Nikakis whereas N. Nikakis took care of site conservation (see below, chapter 10).


As before, we received many visitors during the excavations, who we thank for their advice and support: H.E. the Belgian Ambassador to Athens and Mrs. Pierre Vaesen, Baron and Baroness Philippe and Marion Lambert, State Minister and Viscount Etienne Davignon, State Minister Antoinette Spaak, Prof. D. Haggis, Prof. A. Farnoux and the Dreros team, Profs J. and M. Shaw, Prof. J.A. MacGillivray, Dr. C. Macdonald, Prof. B. Koehl, Prof. and Mrs H. Matthlés, Prof. D. Panagiotopoulos, S. Beckman, Dr. S. Müller and the Malia survey team, Prof. M. Pomadere, the Prof. J.-C. Poursat family, Prof. G. Cadogan, E. Oddo, Prof. J. Rutter, Prof. V. Watrous and the Gournia excavation team, Prof. J. Papadatos, Prof. M. Xanthopoulou, I. Venieri (Ministry of Culture), E.-E. Toubakari (Conservation Department), Prof. C.J. Knappett, Dr. B. Molloy, the ASCS summer tour and a series of local visitors, students and enlightened tourists (see ‘visitors’ on www.sarpedon.be). We also briefly appeared in the ‘Finding Atlantis’ documentary of the National Geographic Channel.

2. Demining operations

We were aware that, because of its strategic qualities, Italian forces had used the Kefali hill as a look-out post during World War II. The hill may even have formed the frontier between the Italians and the Germans on Crete1. Traces of now destroyed gun posts still exist especially on the northeast point of Kremasma, the flat plateau west of the Kefali. When the Italians were ousted by the Germans, they left some of their weaponry behind. In earlier campaigns occasional hand grenade fragments and bullet casings were encountered, especially on top of the hill, in zones 3 and 4. The discovery of a life mortar grenade in zone 6 during the 2009 campaign halted all work in this zone (see Chapter 7). After its removal, it was decided to invite a specialised section (TENX) of the Hellenic army to demine the hill before the 2010 campaign. This work was done by two teams directed by logachos N. Reppas in April-May 2010 and was partly financed by the Belgian School at Athens and partly by the Greek Ministry of Defence thanks to the intervention of the Greek Embassy in Brussels and the Belgian Embassy in Athens for which we are very grateful. Apart from a few more fragments of shrapnel, barbed wire, a mess kit and several dozen bullet casings2, no other ammunition was found so that the hill was declared safe for further work (figs 1.1-2).

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1 As shown on the map on Kreta-wiki (http://www.kreta-wiki.de/wiki/Geographische_%C3%9Cbersicht, consulted on 15.11.2010).
2 As visible on Figure 1.1., almost all bullet casings have their bullet end folded over with pliers once the powder was removed, probably by locals after the war.
Excavations at Sissi. Preliminary Report on the 2009-2010 Campaigns

Fig. 1.1. Military material including bullet casings and a mess kit found during demining operations on the Kefali hill (J. Driessen)

Fig. 1.2. Close-up of bullet casings produced in Czechoslovakia in 1938. To the left Czech (Sellier & Bellot) 8MM Mauser pre-war bullet casing-SB; to the right Czech 8MM Mauser pre-war bullet casing-P131 (G. McGuire)

3. History of Occupation on the Kefali at Sissi (figs 1.3-1.4)

During the last two seasons, considerable progress has been made in the different zones where work started in 2007. Detailed reports follow in this volume but some of the results may be highlighted. This is, of course, a preliminary assessment which will need correction once the material is properly studied.
Fig. 1.3. Topographical plan of the Kefali hill at Sissi (P. Haciğüzeller; data collected by N. Kress and P. Baulain)
Fig. 1.4. AERIAL VIEW OF THE SETTLEMENT ON THE KEFALI HILL AT SISSI AFTER THE 2010 CAMPAIGN (C. GASTON)
3.1. Prepalatial

As mentioned before (Sissi I: 24), an EM I-II settlement may have existed immediately to the northeast of the Kefali site, in Kharkoma Bay, with submerged walls seen by British explorers Hood, Warren and Cadogan in the 60s and confirmed by the archaeological service and local informants but this has now entirely disappeared. Tests during the recent construction of a villa on the hill east of the Kefali did not yield any architectural remains. The pottery collected in the 60s remains unstudied but it is likely that the earliest burial structures on the north slope of the Kefali, especially Burial Structure 1.11-1.12 (see Chapter 3), which date to EM IIA, were contemporary to this Kharkoma Bay settlement. There are only a few EM IIA (Sissi I: fig. 1.9) and perhaps EM IIB sherds (from Zone 5) from the Kefali itself, hence real settlement on the hill may only have started in EM III/MM IA. Some of the stray finds from the top of the hill include stone axes (fig. 1.5) (which may be Prepalatial if not earlier) and fragments of stone vases (Sissi I: fig. 6.19).

![Fig. 1.5. Stone Axes found on the surface of Zones 4 and 5 (Chr. Papanikolopoulos)](image)

At a more advanced stage of the Prepalatial period, in EM III/MMIA, the cemetery seems to be extending and more house tombs are built. In general, it may be remarked that in contrast to some other contemporary funerary sites such as those in the Messara, Archanes, Mochlos or Petras, the tombs at Sissi have very little objects and no valuables at all. It is also obvious that the pottery encountered in the tombs is of less good quality than the contemporary sherds found in the settlement. If this is not a result of taphonomic processes (seeping through seawater, for example), it may either suggest that the tombs thus far excavated belong to a part of the population with a lower status or that the pottery encountered in the tombs was especially produced for funerary practices.

Redeposited sherds of this phase have also been found in the east part of Building CD (Zone 4, cf. chapter 5.2) and in early levels throughout Building E (Zone 5, cf. chapter 6) and it is possible that one or more structures already existed on top of the hill, on the spot where the main building would be located in later periods. The nature of this occupation remains unclear, however.

3.2. Protopalatial

The cemetery stayed in use during the entire MM II period but whereas some bodies seem to have been deposited within existing or even newly constructed burial buildings during MM IIA, most of the MM IIB depositions happened within pithoi and were often inserted within earlier structures which may no longer have been roofed (cf. chapter 3). Outside the ancient tombs, however, several MM II deposits have been cleared, illustrating activities that seem to be related to the funerary domain.

MM II or Protopalatial occupation has been increasingly attested on top of the hill. Apart from a redeposited fire destruction deposit in Zone 2 (Building BB, Sissi I: 107), MM IIB destruction deposits were identified in several places beneath Building CD (cf. chapter 5). Mostly these were not fire destruction deposits in contrast to those at Malia which seems to have suffered seriously at the end of MM IIB. The nature of this occupation still needs to be clarified but it would perhaps present a good origin for the fine column base found in Zone 5 (Sissi I: 146, fig. 7.11).

From tests during 2010, it appears that the MM II occupation on the hill may have been more extensive than that
of later periods, with well-preserved remains on the flat terrace to the north of Building CD (cf. chapter 5 – Zone 8). During this phase, there may also have been settlement at the southwest foot of the hill (cf. chapter 7) and on the northeast tip of Kremasma, the flat hill west of the Kefali.

### 3.3. Neopalatial

During MM III or early in LM IA, a megalithic wall – surely in part defensive – was added to the southwest side of the hill (cf. chapter 7 for the excavation and fig. 8.2 for the pottery) but the cemetery seems to have been abandoned and there are as yet no clear traces of occupation on the hill till, it appears, a slightly more advanced stage of LM IA. Then, one or more new buildings seem to have been constructed on top of the hill (Zone 3-4; also Zone 6) and different buildings, interpreted as workshops, on the middle terrace to the northwest (Buildings BA-BB-BC, see chapter 4). By this stage, the megalithic wall seems already to have been given up. The nature of the Neopalatial occupation on top of the hill remains unclear but the presence of foundation deposits may be noted (Sissi I: fig. 6.26-6.27). Moreover, an extensive cup deposit (cf. chapter 6 and, for the pottery, chapter 8 – annex) found in the open area immediately to the south of where the main Neopalatial building may have been located, suggests communal consumption. Some of the outer walls of Building CD (fig. 1.6) may actually date to this period and several rooms, or parts of these, may belong to Neopalatial constructions. There was also a paved road with a drain along the southeast façade during this phase.

![View on the Kefali hill from southwest. The façade of Building CD follows the contour of the hill (G. McGuire)](image)

The massive deposits of LM IA pottery encountered in several places in Zone 2 (especially Building BC) but also as fill in Building CD, suggest a destruction during this phase. Afterwards, occupation continued at a smaller scale on the middle terrace, with some spaces already being abandoned. A deposit of pumice associated with a triton shell fragment found in Building BC may tentatively suggest a link with the Santorini eruption, as do perhaps the two intramural burials of children found in this building (cf. chapter 4). Stratified pumice layers exist also in the immediate vicinity of the Buffo hill. During 2010 we found traces of a fire destruction that can perhaps be dated to LM IB (cup rhyta) in room 2.12 of Building BC but also in a test within the east façade of Building CD. Afterwards, occupation seems to have stopped on the middle terrace.
3.4. Final Palatial

Quite a number of LM II-IIIA1 sherds have been identified, especially from open area 5.10 immediately south of Building CD and from the scarp, cut by road works, to the south of the hill, but thus far they cannot be associated with architectural remains.

3.5. Postpalatial

The top of the hill, zones 3, 4 and 5, carries what may have been the most important building(s) on the site. As suggested by the preliminary pottery studies (cf. chapter 8) by C. Langohr, we may well be able to help in the ceramic definition of successive key moments of Late Minoan history since mature LM IIIA2 (Zones 5-6), late LM IIIA/early IIIB (Zone 5) and mature LM IIIB (Zones 3-4) deposits seem to be preserved. As far as we can tell, the major reoccupation of the hilltop started in LM IIIA2 (if not before), which is also suggested by a potential bathroom bowl foundation deposit (fig. 5.24, cf. chapter 5.3) found beneath the west façade in its northern extension. Judging from the primary deposit found in open area 5.10 (fig. 8.12), at least part of the building (rooms 4.15-4.18) may have suffered a destruction which seems to be contemporary to the major destruction of the palace at Knossos. The building complex excavated as Zone 6 (Building F) may have been abandoned at the same time.

The entire west part of the summit of the hill is constructed upon during LM IIIA2-B but at the moment we are still uncertain whether we are dealing with entirely independent buildings to the south and north of an open area (5.10) or a large, single complex with different wings. I would opt for this second possibility in view of the presence of larger rooms with column or pillar bases in the north wing and their absence from the south wing. The same open area 5.10 was used to install pits during LM IIIA-B and some ritual use is not excluded. During LM IIIA2-B1, the two wings may have been complimentary but the south wing (Zone 5 – Building E) suffered a destruction partly by fire early in LM IIIB and was given up whereas the north wing (Zones 3-4 – Building CD) continued until its destruction in the advanced LM IIIB period. Building CD underwent several architectural modifications (blocked doorways) before its final destruction but at present we cannot yet state when these actually happened – in LM I already, at the time of the LM IIIA2 destruction, or later, early in LM IIIB or shortly before the final destruction. The spaces thus far cleared in Zone 5 are related to storage and domestic industries, those in Zone 3-4 add representation and cult.

Fig. 1.7. View of Building CD from East: East façade and Neopalatial road (J. Driesen)
During the mature LM IIIB phase, the main access to Building CD seems to have been from a court-like area via a very large threshold into hall 3.1. Retained on its east side by the earlier, Neopalatial façade, the court-like area formed a space of approximately 100 m². A large block located more or less opposite the threshold to hall 3.1 could have been a support for a porch. The hall itself (as discussed by F. Gaignerot, chapter 5.2) is provided with two fine column bases and is of very large size. It could have held at least 40 people seated on wooden benches around its walls (fig. 1.8). Surprisingly, all original accesses apart from the main entrance to this hall were blocked before the final destruction.

The general plan of the area here shows some surprising resemblances with the somewhat later building complex (LM IIIC) on the Kefala at Vasiliki. In fact, the coupling of two halls with double supports and a shrine as seen at Vasiliki seems already to be announced by the remains at Sissi where we have also found a double pillar hall (4.11) more to the south of the columnar hall and a shrine (3.8) in between the two spaces. The nature of the final destruction is still enigmatic: it may be observed that, despite the shallowness of the earth cover, the state of the conservation of the archaeological remains is surprisingly good and many floor deposits are intact, suggesting that the end came suddenly. Earthquake is probably the most likely reason but it does not explain why the site was abandoned for good. Perhaps voluntary destruction on enemy approach also remains a possibility. For now there are no traces of any later occupation till Italian soldiers used the hill as a gun post during World War II.

As a postscript, I may briefly return to the toponym Sissi (cf. Sissi I: 23). Prof. V. La Rosa (pers. com. 27.11.2010) suggests a connection between the name and Francis of Assisi, an Italian Saint (+1226), founder of the Franciscan
Order. The same order was responsible for the foundation in the 13th c. of the nearby monastery of Fraro near Latsida. It may be reminded that the first mention of Sisi (sic) is in a document of 1391 and concerns the church of Ag. Ioannis.

4. Conclusions

The Kefali site at Sissi was never a very large settlement: although habitation may have extended beyond the hill during the Protopalatial period, this gradually retracted first to the hill (Neopalatial), then to the summit only and ultimately to the northern part of the summit of the hill. Several features in the material culture of Sissi show a great resemblance with Malia. Still, preliminary studies of its pottery assemblages show that a few of the vase types are different from the usual vessels encountered in contemporary contexts at Malia. This may illustrate at least some independence. Moreover, the architecture of the LM IIIA-B occupation seems of superior quality and more monumental than that at Malia. Preliminary pottery studies suggest a slightly later date for its destruction (advanced rather than early LM IIIB). Is it possible that the site, after having been subordinate to Malia throughout the Early, Middle and Late Minoan I periods, eventually outshined its previous superior and became the prime site of the area during the mature LM IIIB phase? If this is so, its strategic location and easy defense may have been the reason.

5. References

2. GIS on Site: A View from Kefali Hill

Piraye Hacıgüzeller

1. Introduction

Since the beginning of the excavations in 2007, geographical information systems (GIS) technology has been an active part of the information collection and recording process at the Kefali Hill. Following four years of intense GIS use during the excavations at Sissi, this report aims to question how GIS made a difference at the excavation and reporting stages. More specifically, the idea below is to look beyond the obvious and now well-covered usefulness of the technology in terms of database management, digital cartography and spatial data analysis (see Conolly & Lake 2006: 164-182; McCoy & Ladefogoed 2009; Wheatley & Gillings 2002) and focus rather on how GIS affected excavation practices on site and made a difference at the reporting stage. Certainly an overview along these lines is not possible without providing a picture of the technical aspects of GIS use which is the reason why such a picture is also provided below even though this is not the main focus.

Why exactly does the question about the difference made by GIS technology in the Sissi Archaeological Research Project (SARPedon) matter? The reasons are twofold. Firstly, SARPedon – including a GIS-aided trajectory from its inception – is an experience-enriched context affording a more thorough questioning of the issue. Importantly, however, the account below is a provisional one and the aim is to improve this initial account by future interviews with the archaeologists and to present the results in the final publication on the Sissi excavations. A second reason is the ever-increasing importance of this particular question in archaeology. The active role of varied (technological) media in the process of creating knowledge has recently been under close scrutiny in archaeology (e.g. Yarrow 2008; Webmoor 2005; Wickstead 2009; Witmore 2007) following a broader interdisciplinary trend (e.g. Cosgrove 1999; Grint & Woolgar 1997; Latour 1999; Law 1991; Pickering 1995; Knorr-Cetina 1999). Along with this ‘re-materialisation’ tendency of social sciences (see Anderson & Tolila-Kelly 2004; Anderson & Wylie 2009; Hicks & Beaudry 2010; Latour 2005; Thrift 2008) that echoes within archaeology, a more traditional but related point of view has been questioning the epistemological foundations of GIS applications since its introduction into archaeology in the early 1990s (see Gaffney & van Leusen 1995; Huggett 2004; Llobera 2010; Lock 2009; Wheatley 1993). It would, in fact, appear today that there is an apparent difficulty to think of an archaeological excavation project without a GIS component while we (as archaeologists) are far from arguing that using information systems in archaeology is a well-established field within the discipline (Llobera 2010). Being more specific about the latter part of this conundrum we can say that archaeologists – despite the two decades of intense GIS use – are dealing with three major types of uncertainties about GIS. In terms of technicalities it is not always clear what should be expected from the technology. Nor is it clear how to fulfil technical expectations when they exist. And, thirdly, how GIS technology ‘affects’ (i.e. makes a difference in) the way in which archaeologists practice their job (i.e. excavate, conduct research, collect and represent information, conserve archaeological remains etc.) is a much under-theorised ethnographical issue.

It is within this particular context that use of GIS technology in SARPedon is considered further below. The main focus is the third uncertainty mentioned which has attracted the least attention so far in the archaeological literature despite its significance (see, however, Wickstead 2009). Regarding the first two uncertainties, we can briefly say that from the very beginning of the excavations in 2007 on the Kefali Hill, there was a clear view of how to put GIS technology to use. It would be in a two way process where GIS would act as a platform to manage, store and merge spatial information collected in various formats and also to ‘feed’ this information back to the

1 Doctoral research fellow at the Université Catholique de Louvain (Wallonie-Bruxelles International Fellowship).
2 The GIS project at Sissi was directed by P. Hacıgüzeller with the valuable assistance of P. Baulain and N. Kress as topographers. N. Kress’s views on certain issues related to topography are greatly acknowledged.
3 For ethnographical accounts on archaeological practice see, for example, Edgeworth (1990); Holtorf (2002) and Yarrow (2006).
4 ArcGIS 9.2 (Esri®) has been used as the GIS software in SARPedon.
team members (see Sissi I: 11-16; see also below). Speed was important; the aim was to materialise digital spatial information collected on site relatively quickly (i.e. within a day) in the form of printed-out maps which would above all accelerate practices of collecting information at high precision and accuracy. There was considerable success in accelerating collection of high precision and accuracy spatial information in expected and unexpected manners as presented below.

2. GIS at Sissi: Four Types of Use

One way of using GIS technology on site has been gathering various formats of spatial data in a single digital environment. This is a function GIS technology typically affords. Note that the number of TPS data points collected so far on the Kefali Hill is 58,215 (within the 2.5 hectare fenced area defined as the archaeological site). Each of these points has been integrated into the GIS database and is identifiable by a unique ID number that is recorded by the trench supervisors in their notebooks too. The numbers have allowed the supervisors to retrieve and visualise spatial information stored in the GIS database easily. Specifically, trench supervisors would ask the GIS specialist to produce maps tailored according to certain needs (planning, controlling accuracy, attaching in the notebooks, visualising location of certain objects in a certain stratigraphical unit etc.) and it would at times be through these ID numbers that trench supervisors would communicate what they wanted on these maps. In addition to TPS points there are also a large number of photographs and hand drawings geo-referenced and stored in the spatial database in the form of – in ArcGIS terminology – a ‘raster catalogue’. Archaeologically relevant features on these images have been ‘vectorised’ as points, lines and polygons. As such, geo-referenced images and GIS spatial features (including TPS points and other vectorised features) comprise the spatial database of the Kefali Hill.

Note that during the 2007 and 2008 campaigns a large part of the spatial information was collected with the total positioning system (TPS) equipment (Leica TC 370). In these two early campaigns, however, since there was only one TPS device on site, its use had to be restricted to measuring location of archaeological objects and architectural features (that included creating two-dimensional point clouds for stone-by-stone planning, see below). From 2009 onwards, thanks to a second TPS device (Trimble VX Spatial Station) provided by Couderé Geoservices, TPS-based data collection practices became much more frequent. The equipment started to be used then not only to measure location of archaeological objects and architectural features but also to measure ‘zembil’ elevations and to roughly plot boundaries of ‘zembils’ and varied deposits. The practice of taking several TPS measurements prior to stone-by-stone drawings continued in 2009 and 2010. These measurements were printed out as a two-dimensional point cloud which then was used as a much accurate spatial reference for architectural planning (see fig. 2.1). After planning, these print-outs were scanned again, geo-referenced in the GIS platform and had all the newly added (or spatially altered) features on them integrated into the GIS database by automatic vectorisation.

The second type of GIS use was creating thematic maps on demand (of the site director, trench supervisors, and specialist). These maps were used for a variety of reasons such as architectural recording (see fig. 2.1), examining artefact distributions in certain stratigraphical units (sometimes in relation to architectural features), locating certain deposits in relation to architectural features, examining wall alignments, checking accuracy of existing spatial registers, providing visitors with up-to-date general site plans etc.

5 For the description of the term ‘raster catalogue’ see: http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=Raster_data_organization
6 For the Trimble VX Spatial Station provided by Couderé Geoservices, see: http://www.coudere.be/ Ned/Productdetail.asp?ProdID=177&SubID=54&HooIdID=13
7 Such practices of recording in 2007 and 2008 were being conducted by means of manual planning or levelling instruments.
8 For (semi-)automatic raster to vector data conversion with ArcGIS software see: http://www.esri.com/software/arcgis/extensions/arcscan/index.html
Thirdly, GIS has been used as an analytical component. Specifically, the analytical potential of the technology was made use of in order to create a digital elevation model (DEM) of the site (fig. 2.2). It is on the basis of this DEM – created by interpolating thousands of the TPS points collected for this purpose – that a topographical map of the hill was produced.

And, fourthly, GIS was used at the reporting stage. Note that both in Sissi I and the present volume a considerable part of the digital images has been prepared using GIS software. In the process of reporting, several GIS thematic maps were created provisionally in order to be reviewed by trench supervisors. On the basis of these reviews, content and – to a more limited degree as visual consistency was sought – style of these maps were edited by the GIS specialist. In some cases, however, it was the trench supervisors themselves who edited the maps directly within the GIS platform after the first provisional version (see below).
3. GIS at Sissi: A ‘Performative’ Account

Returning to our initial question: how did GIS make a difference for SARPedon? How did creating such a GIS-assisted excavation project and these four types of use affect the varied practices of excavations at the Kefali Hill and reporting that followed? What did GIS ‘do’ for the excavations at the Kefali Hill? In short, how did GIS ‘perform’ at the Kefali Hill? Below, I try to answer these questions with respect to the four domains of GIS use at Sissi accounted above.

Starting with the first two modes of use – formation of the integrated GIS database and creation of GIS thematic maps – one could say that in many cases this kind of GIS use made the existence of a certain feedback loop possible that involved archaeologists, materials on site, topographers, TPS equipment, computers, GIS software, a GIS specialist and printed-out representations of the site. This was a positive loop in which archaeological remains on site were re-presented again and again in and through a variety of intellectual media which eventually led to an accumulation of spatial data in the GIS database. Specifically, those materials deemed archaeologically relevant (see Lucas 2001: 10) first got represented in the digital memory of the TPS equipment or digital camera, or through manual drawings; later this information got transported to the computer of the GIS specialist where it was positioned as part of a standardised space (i.e. geo-coded world, see Pickles 2004; Thrift 2004); at certain cases new textual information was attached to this spatial information (e.g. adding notes or other textual information about the TPS points) and/or certain spatial features were selectively re-presented (i.e. ‘vectorisation’ of certain features seen on the images and plans). Part of the digital information in the spatial database was then made stable, tangible and mobile again as the representation of the Kefali Hill in paper format (i.e. printed-out maps (fig. 2.1) or rectified photographs (fig. 2.3)).

These papers ‘fed’ archaeologists excavating on site back a ‘purified’ (after Thrift 1996: 5-6) version of the archaeological information they deemed relevant at the first place. This representation then played a role in collecting further digital information on site or assisting manual drawings starting the feedback loop again. GIS made a difference in the described process in several ways. First of all, it was GIS technology that afforded this very feedback loop as well as the practices that comprised it, the speed in which the loop occurred, and accuracy and precision of the spatial data circulating therein. Importantly, the loop and its qualities were an expected outcome of GIS use for the SARPedon team; it had been anticipated in 2007 prior to the excavations at the Kefali Hill.

What I want to underline here also are the more subtle and unexpected outcomes of GIS use for the project that also happened in relation to the practices that formed this loop. Firstly, I think it was important that every time archaeologists received a map of a certain area there were more and more spatial features on the map. Witnessing this particular phenomenon may have been a direct affirmation for the archaeologists regarding the accumulation of spatial information in a certain technological body. Put differently: every bit of information archaeologists collected was being added onto a large body of data already amassed in the spatial database and archaeologists
were being confronted with the existence of this practice day in day out. Being aware of this constructive process perhaps may have had a positive effect on the archaeologists and stimulated spatial data collection on site.

Secondly, archaeologists on site experienced that whenever they asked for maps with certain objects, architectural features, trench borders and/or TPS points (with specific ID numbers as explained above) they received these maps relatively fast (mostly within a day). Without GIS technology, such speed would certainly not be possible. The speed in which such demands were faced strengthened the feeling in the team that the information in the GIS database was easy-to-retrieve. And, a possible consequence of this feeling was the thought that when needed during the post-excavation stage the information in the spatial database would also be easy-to-retrieve. As Webmoor (2005: 57) suggests for the archaeological maps, the traditional designed function of (digital) cartographic media for archaeologists is to ‘transform’ data collected on site into a transportable medium that may be brought back from the ‘field’ to facilitate interpretations (cf. Latour, 1999 on the concepts of ‘circulating reference’ and ‘inscription’). Accordingly, I would argue, witnessing the fact that the spatial data kept in the GIS database was easily retrievable during the excavations may have been an affirmation for the archaeologists that the GIS spatial database would fulfill its traditional designed function at the post-exavication stage.

As mentioned earlier, the ideas presented here should be supported further at the post-exavication stage through interviews conducted with the archaeologists about GIS use. Yet, provisionally it is arguable at this point that these two outcomes of GIS use during the excavations in the project enhanced spatial data collection on site. This certainly does not mean that without GIS, team members would not be collecting satisfactory amounts and of quality spatial information. Rather, it means that the very existence of GIS technology and all the practices that it afforded have augmented spatial information collection on site in various manners carrying the quality and quantity of the spatial information of the project beyond ‘satisfactory’ levels.

Regarding the third mode of GIS use, the analytical component of GIS technology at Sissi was the least performative during the excavation process. Although a digital elevation model (DEM) of the site was created and employed to render the contours of the topographical map of the Kefali Hill, this digital model certainly did not make a difference for the team members and their daily routine in any way. Note that such three-dimensional models are also possible to render with CAD technology (see Eiteljörg II et al. 2003). And, this actually points to the fact that CAD software could be used just as well as GIS technology during excavations. This observation may be significant as a future reference for other excavation projects considering the use of digital information systems in a similar fashion, especially since CAD software is generally speaking cheaper than GIS software. Also note that using CAD instead of GIS during the excavations is certainly not an obstacle to adopt GIS at a later stage; that is when an analytical toolkit becomes necessary. This is because the data exchange between CAD and GIS software becoming increasingly easier with recent software developments (Eiteljörg II et al. 2003: 21-26).

The fourth type of GIS use in the Sarpedon project has been the preparation of final maps at the reporting stage. As mentioned earlier, this was a process in which several provisional digital maps have been created using GIS technology in order to allow trench supervisors to review these maps and report back about needed edits. Rather significantly, this process was far from ideal as GIS technology performed as an agent mangled with a process of inequality: some of the trench supervisor and specialists were more knowledgeable about, experienced in and/or familiar with GIS technology to such a level that they could directly use the GIS files to edit or sometimes even create their own images. Others, however, had to depend almost fully on the GIS specialist to create such maps and perhaps did not fully concord with what they would have done themselves given the chance. In many cases they edited the image file created through GIS software with various image editing software (such as Adobe Photoshop) where the range of editing possibilities were rather restricted. This particular quality of GIS as a technology leading to inequality (i.e. unequal opportunities to learn and use the software and, as such, to access the information stored) is severely overlooked in archaeological literature while being pointed out by geographers since the mid-1990s (e.g. Leszczynski 2009: 582; Pickles 1995). Theorising, discussing and dealing with this ethical issue about use of GIS (and other digital media) is becoming ever urgent in archaeology.

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9 Here it is important to be clear about what the acronym GIS refers to, a potentially confusing topic (Chrisman 1999; Gold 2006). In this volume the acronym refers to a technology that affords three main sets of practices: displaying complex cartographic information, allowing sophisticated data management and fostering spatial analysis (Maguire et al. 1991: 13-14). Computer-aided design (CAD) technology, on the other hand, affords only first two of these practices listed (Eiteljörg II et al. 2003).
4. Conclusions

GIS technology has been used in four main manners in SARPedon: to create a comprehensive spatial database, to produce sophisticated cartographic outputs during the excavations, to act as an analytical tool kit and to prepare final plans for reporting. In this report, after summing up these uses, I tried to provide a preliminary account of how these uses of GIS technology may have affected excavation practices at the Kefali Hill and the process of archaeological reporting.

The excavations at the Kefali Hill have been substantially GIS-aided from the very early days onwards and GIS enhanced spatial data collection in various manners which is in fact the major conclusion of this report. GIS technology did not only speed up spatial data collection processes, or enhanced data accuracy and precision as expected through its technical qualities. The technology also increased the amount and quality of spatial data collected in more subtle manners two of which I briefly recounted above. The analytical component of GIS was left idle on site which allows us to confidently put forward that CAD technology would be as satisfactory for the project as GIS while excavations are going on. Finally, at the reporting stage, GIS may have been experienced as causing inequality: while in theory it provided equal access to archaeological spatial information stored in its database, the interpretation and manipulation of that data were unequally restricted by related experience, knowledge and skill structured through various personal histories.

Perhaps it is clear already from what is stated above that cartographic outputs of GIS (i.e. thematic maps) did not have a significant effect on the interpretation process while archaeologists were excavating at the Kefali Hill. It is important to try and account for the occurrence of this particular phenomenon as a final note, especially because such an account would underline the intrinsic qualities of GIS technology.

GIS is a representational technology (see Elwood 2010: 46) meaning that it easily affords a project which understands the world as ‘out there with all its reality’ and as something to be brought ‘over here’ through representations (Anderson & Harrison 2010: 6). The aim in such representational practices is to provide strong explanations of the ‘real world’ which is considered as a pre-existing, independent from human subjects (Ingold 2000: 157-158; Latour 1988). As Latour (1988: 159) puts it: the need to represent (or explain) emerges from the wish to act at a distance. Following this line of thought, it is no wonder then that ‘being-there’ (i.e. on-site) archaeologists did not need cartographic representations of the Kefali Hill to rely on for their interpretations most of the time. It was only when distance between archaeologists and architectural remains manifested itself that representational outputs of GIS became a significant media for archaeological interpretations. The ‘distance’ mentioned here can be theorised in varied manners. In certain cases, for example, there was a distance between archaeologists and architectural remains because the area under question was relatively large and as such not immediately observable; in such cases archaeologists used GIS representations for interpretations (e.g. to check the alignment of walls on top of the hill, Zones 3, 4 and 5). Also, there was (and will be) distance between archaeologists and archaeological remains during the post-excavation stage where archaeologists had (and will have) no physical contact with the remains that have been backfilled during which cartographic outputs of GIS acted (and will act) as interpretative resources (see Herva 2010a: 86-87; 2010b: 232; Webmoor 2005). And finally, despite the fact that GIS has not been used in such a manner yet (as there was no particular demand), it could very well be that for the 2011 campaign, GIS outputs become part of interpretative practices more actively by creating transformed representations of the Kefali Hill. That is, GIS can be used for creating visually complex spatial patterns of the archaeological remains on the hill (e.g. object density maps, metric integration of architectural remains (cf. Hacıgüzeller & Thaler forthcoming)) that are representations of certain qualities of archaeological materials not immediately observable by archaeologists (see Latour 1999; see also Llobera 2010)\[10\].

\[10\] Note that in such a case, our conclusion about interchangeability of GIS and CAD technologies during the excavations would become invalid as CAD technology is incapable of creating such analytically ‘transformed representations of reality’ (see above).
5. References


The cemetery of the settlement on the Bouffos is located on the lower part of the north and north-east slope of the hill. As is the case at Mochlos, the cemetery was laid out on different terraces that followed more or less the contours of the hill. All structures so far discovered are rectangular with different compartments and can be defined as house-tombs, a type of tomb that is frequent in East Crete in the Early and the Middle Bronze Age (Mochlos, Pseira, Palaikastro, Petras etc.) (Soles 1992; Schoep forthcoming). The cemetery was separated from the settlement by a substantial terrace wall that runs along the upper part of the north and north-east slope, effectively separating the realm of the dead from the realm of the living. The discovery of funerary structure 9.1-2, situated immediately north of the Neopalatial houses in Zone 2, has demonstrated that the cemetery is not restricted to the north-east slope of the hill as thought initially but extended also over the lower part of the north slope. All activity in the cemetery can be dated between EM II A and MM IIB and so far there is no evidence for later activities. Because none of the funerary structures have so far been completely excavated, it is at present not possible to identify the limits of the individual tombs and the following discussion therefore focuses on compartments. The discussion of the compartments in the report will be structured according to the terrace on which they were found.

1. Upper Terrace (Zone 1)

1.1. Compartments 1.11-1.12 and 1.24

The excavation of compartments 1.11-1.12 started in 2008 and was continued in 2009, when more jar burials were uncovered. Excavations to the east of 1.11-1.12 in 2010 have shown that the latter compartments probably formed part of a larger structure on this terrace that extended to the east (1.24) and perhaps also to the north (fig. 3.2). Apart from scant traces of a north-south wall, the compartment to the north has all but disappeared as a result of erosion. Remnants of a packing layer in a cavity in the bedrock in the south-east corner of what must originally have been the compartment suggests an identical construction date to compartments 1.11 and 1.12. The north wall of 1.11-1.12 extends beyond the east wall of 1.12 to form the (badly preserved) north wall of compartment 1.24 (fig. 3.1). At present, the south limit of 1.24 has not been established but the compartment so far was devoid of human remains. Three complete EM III handmade cups suggest that this compartment, which was built at the same time as 1.11-1.2 i.e. in EM IIA, was reused in EM III.

1 See general plan of site in Chapter 1 (fig. 1.3 and 1.4)
2 Also participated in the 2009 and 2010 campaigns: L. Verhulst (KULeuven, 2009-2010), N. Calliauw (KULeuven, 2010), J. Dancsers (KULeuven, 2010), S. Lozano Rubio (UMadrid, 2010), R. Ballis (UAthens, 2010), R. Rogge (KULeuven, 2010), S. Déderix (UCLouvain, 2009-2010), C. Dalberra (Université de Bordeaux, 2010), P. Paulain (Paris IV-Sorbonne, 2009-2010), S. Rooms (KULeuven, 2010), A. Civetta (Université de Provence, 2010), K. Quintelier (KULeuven, 2010), M. Vrachnakis (2010) and Y. Milidakis (2010).
3 The secondary pottery deposit in 1.1 can be dated to MM IIB on the basis of fragments of a straight-sided cup in style écossais (Schoep 2009: 50-51).
3. The Cemetery at Sissi

Fig. 3.1. PLAN OF CEMETERY (P. HACIGÜZELLER)
The pottery in compartments 1.11-1.12 dates to EM IIA and the EM IIA date of this structure is confirmed by the date of the sherds in the packing layer laid out to level out the uneven bedrock (fig. 3.3). The walls were constructed in medium-sized to large irregular stones on top of this packing layer. The walls curve in towards the lower course, which is especially clear in the case of the west wall of 1.11. The uppermost preserved course of stones consists of relatively large stones that were placed in such a way that the more regular flattish side of the blocks faced outwards, thus giving the upper course of the west wall the appearance of an outside wall. Considering the large amount of medium sized stones that were recovered from inside 1.11-1.12, it is possible that the higher part of the walls was also constructed in stone. The south wall presents itself as a double wall. A sounding to the north of the north wall of 1.11-12 has shown that the bedrock here is considerably higher and that the floor of the compartments was constructed in a hollow in the bedrock. Since there is no sign of any doorway entry into 1.11-12, it is probable that access was gained from above. It is not clear at present whether the larger tomb of which compartments 1.11-1.12 formed part also continued to the south and west because excavation here was stopped at the MM I-II level.
3. The Cemetery at Sissi

1.2. Compartment 1.11

The west compartment 1.11 (fig. 3.2) revealed the disturbed primary burials of four individuals, including one adolescent. Anthropological analysis has allowed identification of pairs of long bones on the basis of metric and morphological criteria. A large-bodied and robust individual is best represented (fig. 3.4, in red) but his remains are scattered over the entire compartment. The second most complete individual is less robust (fig. 3.4, in green) and was found on top of the former. All bones, even the smallest ones such as hand and foot bones, are well represented and thus we are dealing with primary burials (table 3.1). However, the fact that certain bones of the individual rendered in green on the plan were grouped together suggests post-depositional reorganisation, perhaps at the time of deposition of new individuals. Two more individuals, more slender, one of which was less than 20 years old, are represented by a limited number of bones.
Fig. 3.4. PLAN OF HUMAN REMAINS IN COMPARTMENT 1.11 (L. CREVECOEUR)
On top of and underneath the human remains were found large flat fragments of a terracotta container, which can only have belonged to a larnax or a large tub. There is limited evidence for the use of larnakes in tombs in EM II elsewhere.  

Two jars along the north wall of the compartment to the north of these remains contained the remains of perinatals (09-01-0316-OB001 and 09-01-0325-OB002). A tripod jar with horizontal handles and a double pierced lug was found lying on its side immediately north of the skulls (fig. 3.5). Careful excavation of the contents of the jar revealed only few bones that were concentrated at the bottom of the jar. Numerous bones were, however, found around it. Their position suggests decomposition inside the jar, after which the contents of the jar spilled. A second tripod jar, which appears to have been broken at the time of deposition or was broken by stones that had fallen on top of it, was sitting in the north-west corner of the compartment with a lid resting against it (09-01-0325-OB003) (fig. 3.6). At the bottom of this jar were found, in a much eroded state, perinatal skull fragments, rib fragments and a humerus diaphysis. A lid (09-01-0325-OB003) was also found underneath the second jar in the north-west corner of the compartment.

1.3. Compartment 1.12

Compartment 1.12 (fig. 3.2) contained the primary inhumation of a male individual placed along the north wall as well as four jars with the remains of perinatals in the south part of the compartment 09-01-0275-OB001-004. These jars can be dated to EM IIA: a side-spouted jar with T-rim and hatched butterfly motif, a hole-mouthed jar with rolled rim and two tripod jars with horizontal handles and double pierced lug. Beside these four burial containers, a fine tumbler (08-01-0281-OB001) in buff clay with red-brown paint and a lid were found in the east compartment.

The preservation of the human remains in the jars differs considerably. Although in some cases the identification of individual bones is problematic, there can be no doubt about the human nature of the remains. The remains in the jar against the south wall of 1.12 were concentrated in the middle and the higher part of the jar whereas in the bottom part nodules of a fine white-grey-yellow sediment were found. The anatomical preservation of the perinatal was exceptional (several long bones, fragment of skull and hand bones) and the flesh clearly decomposed in a filled-up space, i.e. inside some sediment or material placed inside the jar.

The male adult along the north wall of 1.12 (fig. 3.2) was laid out on top of a packing layer that leveled out the uneven bedrock. The bones were in anatomical connection but had been slightly disturbed after decomposition of the body. The skull was found in the north-east corner of the compartment but the mandible was found further to the west, close to the wall. The right tibia and fibula were found in loose anatomical connection. In addition, several hand bones could be identified and it is clear that we are dealing with a primary burial that was disturbed. The alveolar bone resorption in the molar tooth region suggests that the adult was advanced in age and most teeth show signs of intensive wear. The pelvis was too fragmentary to identify the sex of the skeleton with certainty but its morphological characteristics seem to suggest a male.

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Fig. 3.6. **LID (09-01-0325-OB003)** (CHR. PAPANIKOLOPOULOS)

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6 For this tumbler, see Schoep 2009: 55, fig. 3.10.
3. The Cemetery at Sissi

![Diagram of Compartments 1.11-1.12 and 1.17]

**Fig. 3.7.** Compartments 1.17 (P. Hacigüzeller and I. Crevecoeur)

### 1.4. Spaces 1.17, 1.18 and 1.29

Spaces 1.17, 1.18, and 1.29 are situated in the south part of the cemetery, on the upper terrace of the north-east slope. To the south of 1.29 and 1.18 the bedrock crops up and this area seems to have functioned as open space, in which some pottery deposits (cups, juglets) was found.

### 1.5. Space 1.17

Compartment 1.17 to the south of 1.11-1.12 (fig. 3.1) reveals a complex stratigraphy that testifies to the intensive use of this area in MM I-IIA. In the north-east corner of 1.17 and against the south wall of 1.11-12 a horizontally placed pithos was found (fig. 3.7). To the east, 1.17 is defined by a wall abutting onto the exterior face of the south wall of 1.11-1.12 and to the south and west by walls that were constructed on top of a pebble floor. The exact chronological relation between these walls and the pithos is at present not clear (does the pithos cut the pebble floor or vice versa?).

The pithos contained the remains of a woman of advanced age, as suggested by the alveolar resorption around the molars and the traces of wear on the teeth. The woman had been inserted into the pithos head first and the body was found in contracted position (fig. 3.8). The skull, however, was found in the centre of the pithos rather than at the bottom. The presence of fragments of the top vertebra (atlas-) and the axis, which form the joint connecting the spine and skull in the region of the mandible, suggests that the head was moved after decomposition. The face of the skull was missing but was found immediately beneath one of the stones of a later wall constructed over the pithos and it seems likely that the skull was disturbed at this moment. The left side of the thorax was in anatomical connection but the right half had slid down along the south side of the pithos, as a result of the decomposition of the body in a void.
Excavations at Sissi. Preliminary Report on the 2009-2010 Campaigns

Fig. 3.8.  **FEMALE BURIAL IN PITHOS (I. CREVECOEUR)**

No grave goods were found in the pithos but an unusual looking pedestalled bowl was found over the lower part of the skeleton (fig. 3.9). The lower half of the pithos was supported by a circular arrangement of stones underneath which an earlier as yet unexplored burial level was encountered.

Fig. 3.9.  **PITHOS IN SPACE 1.17 BEFORE EXCAVATION (I. CREVECOEUR)**
3. The Cemetery at Sissi

The pithos was crushed by the construction of a later thin wall, which ran over the former and then turned south (fig. 3.9) and which was associated with a floor of large pebbles (fig. 3.10 A & B). On the latter were found the remains of two individuals but since the south limit of this compartment has not yet been found the exact number of individuals cannot be determined. The bones were badly preserved and fragmentary. A pelvis and associated bones of the lower limb (tibia, femur and foot bones), small hand and foot bones as well as a radius and ulna were found in anatomical connection. A humerus and left ulna to the south of the latter were also found in anatomical connection. The evidence suggests that we are dealing with primary burials that were disturbed after decomposition. A small fragment of burnt bone that was fired white on the outside but black on the inside was found in the middle of the deposit. The pottery associated with these burials is MM IB-IIA in date, as suggested by the presence of wheel-made straight-sided and carinated cup fragments. The floor of large pebbles associated with this burial had sunk slightly where it ran over the broken pithos.

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7 Concentrations of burnt bones were found in 1.30-1.31 (see infra).
1.6. **Space 1.29**

The south wall of 1.17 forms the north limit of 1.29 and its south limit was originally formed by a wall constructed on top of the bedrock that had all but eroded away (fig. 3.1). Its east limit consists of the continuation of the east wall of 1.17 but its west limit is not clear. Three pithoi were found in space 1.29, one of them lying against the south face of the south wall of 1.17 and thus post-dating the latter and the floor of small pebbles on which it is sitting (fig. 3.11)\(^8\).

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**Fig. 3.11.** BURIAL PITHOI IN SPACE 1.29 (A. SCHMITT)

The southernmost pithos (2 on fig. 3.11) was positioned on top of a pebble surface made up of rather large pebbles (apparently at the same level as the floor of large pebbles further north, see 1.17) and was supported by a circular arrangement of stones. The human remains in and around this pithos suggest that it had been used on several occasions. Upon the deposition of a new individual, remains of a previous burial were taken out and deposited along the east side of the pithos (see the position of the long bones in fig. 3.12). While the skull and mandible of a child were left in the pithos, the long bones were taken out and placed to the east of the pithos. These bones were overlying the east wall of space 1.29, suggesting that the latter was no longer functioning as a wall by then. The last burial in pithos 2 was placed on its right side in a contracted position with hands folded in front of torso (fig. 3.13). Study of the bones (table 3.2) allowed the identification of a MNI of four individuals including one child (aged between 4 and 8.5 years).

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\(^8\) The south wall of 1.17 was built at the same time as the east wall of 1.20, a small room filled with redeposited pottery (but no bones); both were constructed on top of the same floor of small sea-pebbles.
3. The Cemetery at Sissi

Fig. 3.12. *Pithos 2 in space 1.29 with human bones alongside (A. Schmitt)*

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<td>Fibula</td>
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Table 3.2. *Inventory of anatomical parts in and along Pithos 2*
The pebble floor on which the south wall of 1.17 is constructed continues to the west into space 1.18, where another horizontally placed pithos was found (fig. 3.14). The pithos was covered by an extensive deposit of redeposited material (mainly pottery but also stone vase fragments, obsidian blades and loose bones), which appears to have been laid out over an area covering 1.18-north and 1.18-south as well as the west part of 1.29 and perhaps even part of 1.11-1.12 and 1.18 (fig. 3.1). The burial pithoi, just like the three pithoi found in 1.29 (see supra), predates the deposition of this extensive deposit, an event that appears to have taken place in MM IIA (fig. 3.15A). A lot of the pottery is quasi-complete but broken and typologically the pottery consists mainly of cups, juglets and shallow bowls (‘lekanes’) (fig. 3.15A,B). Post-dating this fill there was some additional burial activity (primary inhumation laid out on top of it and a badly preserved pithos burial).

The west wall of 1.18, which separates 1.18 from 1.20, is constructed on top of the pebble floor and thus post-dates the latter and probably predates the extensive secondary deposit. At the same time, the pebble surface covers the south-east corner of an earlier compartment (1.23).
3. The Cemetery at Sissi

1.8. Compartment 1.20 and 1.28

Compartment 1.20 to the west of 1.18 is separated from the latter by a shared wall that was constructed on top of a pebble surface. Compartment 1.20 revealed several layers of redepositioned pottery, with the pottery lower down dating to EM III and/or MM IA and the pottery higher up dating to MM II. Presumably the higher levels can be connected with the large redeposition of material in MM IIA (see supra). To the west of 1.20, the outline of another (as yet unexcavated) compartment can be made out on the surface.

The south wall of compartment 1.20 turns out to be the continuation of the north wall of compartment 1.23 (fig. 3.1), which is also the south wall of compartment 1.22. Both compartments contain several burials but have not yet been excavated. The pottery associated with the lowest level inside the south-east corner of 1.23 seems to suggest a construction date in EM II for this compartment but with reuse in MM I-II. Associated with the latest period of use (1.28) was the skeleton of a child between 2.5 and 5 years old, which was covered by fragments of an oval-
mouthed amphora (fig. 3.16). It seems that the vase was already broken when it was used to cover the body. The bones, which are badly preserved and show traces of old breaks, show that we are dealing with a primary burial of a child in contracted position.

Fig. 3.16. CHILD BURIAL IN SPACE 1.28 (A. SCHMITT)

2. Middle terrace

2.1. Compartment 1.13

Compartment 1.13 measures 1.5 m by 1.5 m and its north and south limit are known (fig. 3.17-18). The east limit is defined by the bedrock but its west limit can at present not be identified. The uneven bedrock was levelled by means of a pebble floor on which no remains were found. Sherds on top of this floor suggest an EM II date for the use of this pebble floor. The human remains were found at ca. 10 cm above the pebble floor and two concentrations of bones can be noted (fig. 3.17). Excavation of this deposit was started in 2007 and the present account does not include the bones that were transported to the Ayios Nikolaos storeroom in 2009. Very little pottery was associated with these burials but the extent sherds suggest a MM IB/II date.

9 Other compartments that have been excavated on this terrace are 1.1, 1.2, 1.3 and 1.4 (see Crevecoeur & Schmitt 2009; Schoep 2009).
3. The Cemetery at Sissi

Fig. 3.17. **COMPARTMENT 1.13, LEVEL WITH BURIALS (A. SCHMITT)**

Fig. 3.18. **COMPARTMENT 1.13, EARLIER PEBBLE FLOOR (A. SCHMITT)**
A MNI of four individuals (table 3.3), three adults and a child represented by a couple of long bones and teeth suggesting an age between 5 and 9 years old, can be identified. The first individual is represented by part of the lower body and a left tibia and fibula (Figure 3.19). The bones were not in anatomical connection but their orientation is nevertheless coherent. Three more coherent anatomical units can be attributed to a second individual: the right upper limb, (n° 1, 21, 22), the left lower limb (n° 23, 38, 39), a right femur and a right fibula (n° 37 and 40). On the basis of these data it is possible to suggest that the body was oriented east-west, with the head towards the east, and was lying on its right side. Two fore-arms (n°32, 46, 47, 63) that are parallel to one another (in green) and oriented east-west probably belong to the same body. On account of their spatial proximity and the same degree of wear of the upper and lower teeth (in pink), the frontal part of skull 67 can be associated with mandibule 68.

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Table 3.3. **INVENTORY OF ADULT ANATOMICAL ELEMENTS AND MINIMUM NUMBER OF INDIVIDUALS FROM COMPARTMENT 1.13**

The number of carpals, phalanges, vertebrae, ribs, scapula and hip bones is very restricted and that tarsal bones are completely missing. However, such bones are very fragile and it cannot be excluded that differential preservation is a factor.

The anatomical position of the upper and lower limbs as well as the presence of some phalanges and metacarpals suggests that decomposition of at least some of the individuals took place in compartment 1.13. These primary depositions were, however, disturbed after decomposition of the body. The fact that parts of a single bone had been displaced over smaller or larger distances suggests that these interferences with the bones took place after the bone had dried out and had become very fragile and thus some time after its decomposition. It would seem that this compartment received several successive interments.
3. The Cemetery at Sissi

3. Lower terrace with structures 1.6, 1.7, 1.8, 1.15-1.16

This terrace situated between the modern fence and the outcrop of bedrock to the south was taken up by a row of structures, of which 1.6, 1.8 and 1.7 were excavated in 2007 and 2008 (fig. 3.1). Compartments 1.6 and 1.7 were used for primary inhumation. Compartments 1.15-1.16 and the area to the south of 1.7 and 1.15-1.16 seem to have been subjected to several episodes of deposition of pottery and loose bones, without any evidence for primary burial. Excavation will continue in this area next year.

3.1. Compartments 1.15-1.16

Compartments 1.15-1.16 are situated to the east of 1.7 and are separated from one another by a N-S dividing wall. The west wall of 1.16 is constructed against the east wall of 1.7 and a wall of large blocks seems to form the east limit of 1.15. The latter blocks are sitting on top of an earlier wall of smaller blocks, thus suggesting different phases of use. The northern wall of compartments 1.15-1.16 has eroded away and to the south no clear limit has (so far) been found, although it is likely that a south wall existed somewhere between 1.15-1.16 and the bedrock further south (the distance is too great for this space to have formed a single compartment) (fig. 3.1). Both 1.15 and 1.16 contained secondary depositions of pottery, probably made at different times as the pottery lower down is handmade and the pottery from the higher levels is wheel-made.

3.2. **Spaces 1.30-1.31**

Excavation of spaces 1.30 and 1.31 (fig. 3.20) is incomplete and what follows is a preliminary interpretation of the stratigraphy. Space 1.30 is delimited to the east by a double wall, which appears to be the continuation of the east wall of 1.15 and to the south by an outcrop of bedrock (fig. 3.1). So far, no west wall has been identified with certainty but the west wall of 1.16 seems to continue all the way to the outcrop of bedrock in the south. The area to the west of this potential wall is space 1.31, and that to the east is 1.30. Pottery and human bones were found in both spaces but the bones were more numerous in 1.31 whereas pottery was denser in 1.30 (fig. 3.20).

Fig. 3.20. **Spaces 1.30-31 (A. Schmitt)**
Space 1.30 revealed an extensive deposit of pottery in primary position (fig. 3.21). The pottery is mostly complete and consists of jugs, dishes, plates and cups (carinated and straight-sided). Some of the cups were clearly stacked and the same holds for some of the dishes and plates (fig. 3.22). Besides the carefully placed pottery, the deposit contained numerous human bones that were not in anatomical connection, fragments of burnt mudbrick and charcoal as well as animal bones (pig and hare). Some of the pottery appears to have been broken *in situ* by fallen stones. The human bone material consists of selected bones, such as arm and leg bones as well as skulls, and was clearly a secondary deposition. Since some of the bones were found in between and amongst the pottery, it seems likely that they were deposited at the same time. A preliminary study of the material suggests that the deposit dates to MM IIA. The preliminary study of the bones suggests an MNI of 16 adult individuals in 1.30 and 1.31 (table 3.4). In addition, a lower molar and some phalanges of the hand and foot were also recovered. Small and short bones (carpals, phalanges, tarsals, spine etc.) are missing.
A layer of densely packed small stones and pottery (comprising complete and semi-complete shapes), especially jugs and cups, as well as loose bones was found to overlie the north part of spaces I.30 and I.31 (fig. 3.20). Noteworthy amongst the bone material is a concentration of grey/black burnt bones, fired at a temperature above 300° Celsius, which can only be reached by putting bones directly in the fire. This deposit was also found to cover 1.15 and 1.16 (see supra) and to extend further west along the south limit of 1.7, although it does not seem to have extended over 1.711. An oblique line of NW-SE stones could have functioned as some kind of retaining wall for this secondary deposit. Similarly, a line of stones over 1.15-1.16 could also have functioned as some sort of retaining wall for this deposit.

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Table 3.4. **INVENTORY OF ANATOMICAL ELEMENTS AND MINIMUM NUMBER OF INDIVIDUALS IN SPACE 1.30-1.31**

### 3.3. **Compartment 1.10**

Compartment 1.10 (fig. 3.1, fig. 3.24 A & b) is situated to the west of compartment 1.9, in which a secondary deposition of a MNI of 11 was excavated during 200812. Compartment 1.10 shares its north wall with compartment 1.9, suggesting that they were constructed at the same time. It is possible that compartments 1.9-1.10 formed part of a larger structure that extended northwards. A handmade straight-sided cup (08-01-1104-OB001) was found leaning against the north face of the north wall of 1.9-1.10. Upon removal of the cup, a human bone (part of a femur) appeared suggesting that this space also formed a compartment, the walls of which have eroded away. The pottery from 1.9 was not diagnostic, consisting of small, worn sherds. In 1.10, a couple of handmade, straight-sided cups were found, suggesting a date in EM III-MM IA. This would coincide with the date of the handmade cup to the north of the north wall of 1.9-1.10.

Compartment 1.10 (ca. 1.70 m x 1.20 m) revealed two concentrations of bones, one in the east part and one in the west. On top of the bedrock a packing of small stones and earth (but no sherds) functioned as a floor level. In the east part of the compartment a layer with small pebbles was noted to have been laid out on top of an earlier level, suggesting that these pebbles were used to mark different episodes of deposition. The fact that the bones in the lower level show signs of old breaks supports the hypothesis of two layers of deposition.

Individual 1 (fig. 3.24B) was placed on a floor along the west wall in a contracted position on its left side. Individual 2 is better represented and was placed on his front, his lower limbs bent and folded under the chest. The third individual was placed on the floor along the east wall and is presented by parts of the lower limbs. On top of the latter a fourth individual, an adolescent, was lying on his right side with legs contracted and arms bent at the height of the head. A perinatal is represented by some long bones and ribs that retain some anatomical connection. Of the sixth individual, the sacrum, a fragment of the hip bone and the right femur were found in anatomical connection, suggesting that the adult would have been oriented east-west with the head in the south-east corner of the compartment. A left humerus and radius in loose anatomical connexion belong to

individual 7. Individual 8 is represented by tarsal bones of the right foot in anatomical connection with four metatarsals and four metatarsals of the left foot. We may observe a recurring orientation of the bodies of the adults and the adolescents in the east part of the compartment, the head being placed in the south-east corner and the legs in a contracted position or under the ribcage.

On the basis of the skull fragments 12 individuals can be identified (fig. 3.23). As the 12 recovered skull fragments do not match the teeth and bones of the small children from this compartment, a MNI of 20 individuals may be suggested. Of the children three died before the age of 1 and five before the age of 5. Figure 3.23 gives an overview of the different body parts and their representation. Because of the poor preservation of the epiphyses of the long bones, skulls and the scarcity of teeth, it was not always possible to distinguish between adults and adolescents (fig. 3.23). The number of mandibles, clavicles and long bones is systematically lower than 12, varying between 6 and 11. Only five mandibles provide information as to the age of the skeletons. A pair of clavicles, a left humerus, a pair of radius and ulna, a pair of ilium and a left femur suggest the presence of at least one adolescent. A total absence of carpals and tarsals and an almost complete absence of metacarpals, metatarsals and vertebrae as well as phalanges may be noted.  

13 Neither the phalanges of the hands and feet nor the vertebrae of C3 to L5 figure in the graphical representation since their state of preservation did not allow more specific attribution.
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Fig. 3.23.
COMPARTMENT 1.10, INVENTORY OF BONES (A. SCHMITT)
3. The Cemetery at Sissi

Fig. 3.24. A & B COMPARTMENT 1.10 (A. SCHMITT)
4. **North Slope (Zone 9)**

4.1. **Structure 9.1-2**

The cemetery was found to extend further west than previously envisaged and the lower terrace of the North Slope seems to have comprised several small structures (Figs. 3.1 & 3.25) and one larger structure, which is perched on the edge of this terrace overlooking the sea. This structure consists of at least two compartments, 9.1 (north) and 9.2 (south). The walls are double-faced, the exterior face consisting of rather large blocks and the interior face of small stones. The south wall of this structure seems to have been robbed but before this happened, a pottery dump was placed against the outside of this wall.

![Image](image1.jpg)

**Fig. 3.25.** **House Tomb in Zone 9 on North Slope (L. Manousogiannaki/N. Kress)**

![Image](image2.jpg)

**Fig. 3.26.** **House Tomb in Zone 9: North compartment 9.1. from South (A. Schmitt)**
Excavation in 2010 focused on the north compartment, 9.1, which measures 4 m by 3.5 m and contained the remains of eight individuals. A wall, built of small stones with orientation N-S and parallel to the east wall of the tomb, divides compartment 9.1 into two parts, A and B (fig. 3.25). Seven individuals were found in part B (east, fig. 3.26), one in A (west). The first individual was found in a pithos in the north-east corner of this room. This pithos had been disturbed by the burial of individual 4, a woman in contracted position (fig. 3.27), hands placed under the head and knees drawn up to the chin. The deposition of this woman (individual 4) in turn disturbed individual 5, who was lying on his right side oriented NNE-SSE and was partly truncated. On top of individual 5 a pebble floor was laid out on which individual 2 was deposited in a contracted position. Although individual 2 was probably the last one to have been buried in this room the skull is missing. To the south of and facing individual 4 a second female of advanced age (individual 3) was deposited. She was lying on her back, hands in front of her face and legs in a contracted position with heels under thighs. A layer of fine gravel covered the bodies of both women (individual 3 and 4).

Of individual 8 in the middle of compartment B, oriented E-W, were found the left upper limb, some ribs and some vertebrae. The anatomical position of these bones suggests a primary burial that was disturbed by the later positioning of individual 3. Individual 6 (fig. 3.28) was placed orthogonally onto individuals 3, 4 and 5 (oriented NNW-SSE). He was placed on his left side in a contracted position, hands under the head (fig. 3.29). The soil under the skeleton contained gravel and the outline of a pit was identified to the west, while pebbles mark the north-east limit of the inhumation. On top of his feet, two flared bowls, for which good parallels exist at MM IB/MM IIA Myrtos Pyrgos (Carl Knappett pers. comm.), as well as a fragmentary brc were found. Individual (7) is a secondary burial of skull, hip bone and long bones in a pit in the south-west corner of the compartment, covered by a lamp and a fragmentary tripod cup.

![North-east part of compartment 9.1, showing individuals 4 and 3 near east wall](image-url)
Fig. 3.28. North-East part of Compartment 9.1, showing individual 6 (L. Manousogiannaki/N. Kress)

Fig. 3.29. North-East part of Compartment 9.1, bowls placed over feet of individual 6 (I. Schoep)

5. References

- Schoep 2009 = I. Schoep, The excavation of the Cemetery (Zone 1), in Sissi 1, 45-55.
4. The Excavation of Zone 2
The 2009-2010 Campaigns

Frank Carpentier

1. Introduction

Zone 2 consists of an area located on the relatively large, flat terrace about midway up the northwest slope of Kefali Hill. It houses several sizeable LM I structures in an otherwise apparently sparsely occupied area, contrasting with the densely built summit. So far, three constructions were identified in the area: Buildings BA, BB and BC, located in grid squares AS-AT 72-75, AU 74, AP-AQ 74-76 and AR 73-75 (figs. 1.3 & 1.4). Building BA was presented in an earlier preliminary report (Sissi I: 96-112), Building BB is yet to be excavated and Building BC is presented here. Built in several phases, the 98.83 m²-large structure comprises seven spaces varying in size, shape and context (fig. 4.1). Building BC was first identified and cleared of vegetation at the end of the 2008 campaign (Sissi I: 107-8). Unlike Building BA, it was left untouched by the soundings carried out in the 1960s (Davaras 1963: 405; 1964: 442) and it became the focus of excavations during the 2009 and 2010 campaigns. In terms of architecture and size, Building BC bears a significant degree of similarity to Building BA, although its plan and context are markedly different. Constructed on a different angle than BA, Building BC follows the curvature of the terrace wall that skims its west and north walls, although those of the southernmost space seem to be in line with the orientation of Building BA. Evidence for different construction phases and changes in function can be recognised (cf. below).

2. Building BC, spaces 2.6 and 2.7

Space 2.6 and subsidiary space 2.7 were delineated by exterior walls to the southeast (B21, 09-02-0289-FE001) and northeast (B22, 09-02-0289-FE002) and interior walls to the south (B27, 09-02-1202-FE001), southwest (B25, 09-02-0296-FE002) and northwest (B23, 09-02-0296-FE001) (fig. 4.1). A small interior wall (B28, 09-02/1229-FE001) separates the two spaces, creating a rectangular subspace of 2.58 m². The walls have all been constructed in similar fashion: large amorphous field stones are generally placed with their longitudinal axis in line with the respective wall trajectory. Two-skin construction using smaller stones occurs mostly for interior walls. One of the large boulders of the south wall, close to the northeast end, has shifted and pivoted about 1 m north-westwards into space 2.6, revealing roughly cut bedrock that seems to have formed the fundament of the exterior walls. Bedrock integration into the architecture has been attested elsewhere in Sissi and Crete.

A smooth-surfaced grey limestone threshold (09-02-0293-FE001) was integrated into the northeast wall and is situated close to the east corner of the building. Wall B25 appears to include a former entry towards space 2.8, at the abuttal with wall B23. Wall B25 creates a recess which could have served for storage or as an entry to neighbouring space 2.9. The area formed by spaces 2.6 and 2.7 was littered with vast amounts of mostly incomplete, sometimes eroded, LM IA utilitarian pottery, animal bones – often found in small concentrations –, shell, charcoal, pumice, mudbrick and obsidian, as well as pieces of stalactite, one of which had a naturally formed anthropomorphic shape (09-02-0293-OB003).

1 KULeuven Research Fund PhD candidate.
3 Neighbouring Building BA features a bedrock floor and wall (Sissi I: 99-100); the architectural integration of bedrock has been reported in Zone 1 (Sissi I: 53-4, 59-62, 70-1, 77, 85) and to a much larger extent in Zone 5 (Sissi I: 139-146, 148-9, 151, 153); the use of bedrock in Minoan architecture has been attested elsewhere (Wallace 2005: 239; Poursat 1996: 36; Soles 1992: 211).
4 For an assessment of the pottery, see C. Langohr, this volume, chapter 8.
Fig. 4.1. Architectural plan of Building BC, inset showing Zone 2 (P. Hacigüzeller)
A few complete vessels were retrieved, the most striking being a well-preserved pyxis (10-02-2212-OB001) that contained the remains of a perinate (cf. below) found close to wall B25. Other finds included complete recipients such as conical cups (fig. 4.2, k, l), a miniature vase fragment (fig. 4.2a)), six terracotta loomweights (fig. 4.2d, e, i, j, 09-02-0293-OB005, 10-02-1297-OB001) and three stone loomweights (09-02-0296-OB001 (fig. 4.2f, g, 09-02-1219-OB001), a bronze bent needle or hook (fig. 4.2e), lithic tools (fig. 4.2m, 09-02-0291-OB001, 09-02-0296-OB002, 09-02-1222-OB001-002, 10-02-1260-OB001, 10-02-1297-OB005-006), a pierced stone (fig. 4.2b) and a pierced pumice fragment (fig. 4.2h).

Fig. 4.2. **OBJECTS FROM SPACES 2.6 AND 2.7 (CHR. PAPANIKOLOPOULOS)**

Considering the possibility of a passage towards space 2.10 (cf. below), Wall B28 may have acted as a screening wall that would have shielded 2.10 from 2.6, which had a direct access to outside. In any case, if 2.7 should be perceived as a detached, rather than part of a composite space, its dimensions restrict the range of potential functions. Besides storage, a passageway of some sorts would be one of few possibilities. Another remarkable feature is the recess created by the difference in locations of Walls B25 and B27 respectively, while following the same orientation. Such an alcove may have been used for storage (shelved or otherwise). Alternatively, it may have been related to the way space 2.9 (cf. below) was used. The impressive northwest wall of space 2.6, B23, features the typical inner small stone lining only on its northern face, which may be seen as a remnant of the architectural history of Building BC in two phases. The massive wall structure may also refer to a former exterior wall function. In its connections with other walls too, B23 consistently appears to be the earlier one. Provided construction occurred in two phases and that enough time elapsed in between, the screening function of wall B28 may be a relic from the time a major entrance was located here which provided access from outside to space 2.10.

It would seem that, at least in its last stages of use, the space functioned as a dumping area probably while other parts of the building (notably space 2.8 and possibly spaces 2.10 and 2.11) were still in (intermittent) use. The blocking of the doorway into space 2.8 from the south and another suspected blocking in Wall B23 between space 2.7 and 2.10 may imply that the discontinuation of this part of the building closely preceded or coincided with its use as a refuse pit. Whether or not this cessation should be associated to the perinate burial attested here, is as yet
unclear. In any case, space 2.6 contained more dumped material than other spaces in Building BC, with the possible exception of space 2.9 (cf. below). More research is needed to discern what the original function of the spaces was. In any case, the presence of the large threshold suggests that space 2.6 was the location of the primary entrance of Building BC. It may also have been the only room from which space 2.8 could originally be accessed.

The last verifiable episode to take place in space 2.6 was the burial of a perinate in a large, intact pyxis (10-02-2212-OB001), provided it was preceded rather than followed by blocking up. The ellipsoid vessel had been put on its side, more or less parallel to wall B25 and with the opening towards it (fig. 4.12). Several sherds seem to have been placed on top of the pyxis to seal and protect it. Their presence, combined with the covered mouth facing the wall had been quite effective, as – even though buried by LM I waste – the pyxis itself had not been completely filled with sediment. It is one of two intramural burials attested in Building BC, the other having been found in adjacent space 2.8 (cf. below). An anthropological report of the burials is presented at the end of this chapter.

3. Building BC, space 2.8

Space 2.8 borders spaces 2.6 and 2.9 (fig. 4.1) and at some point featured a passage (09-02-0296-FE004) towards 2.6, which was later closed by a blocking (09-02-0296-FE003). An additional entrance (09-02-1212-FE001) may have existed to provide outside access through a narrow doorway in the southwest corner. This conflicts with the position of the basin which means the entrance may have been blocked when it was installed or the basin was filled in (cf. below). This wall (B24, 09-02-1201-FE001) continues further southwards, forming the south wall of 2.9. The room is further delimited by B25 to the northeast and B26 (09-02-1201-FE002) to the southeast.

All over space 2.8 a fill was found consisting of LM IA sherds of utilitarian ware, abundant charcoal, animal bone, shell, ash, obsidian, pumice and stalactite. It also included many fieldstones, increasing in frequency towards the south wall, which they once probably were part of. Many objects were found in the fill: four conical cups (fig. 4.3c, d, 10-02-2205-OB001, 10-02-2207-OB001), a large terracotta spout (10-02-2227-OB001), a lamp fragment (fig. 4.3a), three tripod cooking pots (09-02-1243-OB003, 09-02-1201-OB002-003), four terracotta loomweights (fig. 4.3f, g, h, 09-02-1254-OB001) and two in stone (fig. 4.3e, 10-02-1288-OB001), seven lithic tools (fig. 4.3k, j, 09-02-1201-OB001, 09-02-1255-OB001, 09-02-1206-OB001), including one in pumice (10-02-126-OB001) and a large schist fragment (10-02-1280-OB001), two triton shell fragments (fig. 4.3b, 09-02-1202-OB001), a fragment of stone bird’s nest bowl (09-02-1243-OB001) and a relief appliqué showing a marine (bivalve) shell (fig. 4.3j).

Fig. 4.3. Objects from space 2.8 (CHR. PAPANIKOLOPOULOS)
A large and completely preserved basin (10-02-2201-OB003) was found in situ (fig. 4.4a). Located in the west corner of space 2.8, it was resting on a thin layer of decayed bedrock. The basin has a hole at its base, draining out parallel with Wall B24, but no indications could be found as to what the basin drained into. A fragment of a large terracotta spout, found close by, may once have been part of the installation. Such basins are generally related to the processing of liquids (Platon & Kopaka 1993: 71-73).

In the northwest corner a platform (10-02-1233-FE001) (fig. 4.4b) is located of which the surface consists of pumice. It is lined with medium-sized (0.25-0.50 m) field stones and it may have stood in connection with the container. The platform, 1.24 m by 1.28 m (1.59 m²) in size, roughly takes up about one fourth of the room and the pumice layer would have had insulation, heat-resistant, water absorbent and abrasive qualities.

At some point, the room started to be used for discarding waste. The platform was covered with various refuse materials including brick fragments suggesting building debris. A fragment of a large triton shell in the north corner appeared to be surrounded with more pumice and could perhaps be interpreted as a ritual deposit (fig. 4.4c) which—given its stratigraphical position—preceded most, if not all of the posterior dumping. Large amounts of field stones scattered throughout the fill, but more densely distributed towards Wall B 23 may indicate either more building debris or perhaps gradual collapse, interspersed with refuse.

Fig. 4.4. Aerial view of space 2.8, featuring the large basin (a), pumice-covered platform (b) and ritual deposit (c). Note the infant burial in the south corner (N. Kress/L. Manousogiannaki)

Sometime during or after this filling event, of which the duration is difficult to estimate, another pyxis burial was either dug into the fill or got covered by it. No traces of a pit could be identified. The pyxis, of smaller size but otherwise similar to that in space 2.6 (cf. above), was crushed in situ by stones. During a final phase, space 2.8 was used as a food preparation area and yielded a hearth and four large Neopalatial vases including two tripod cooking pots, with much ash around them (fig. 4.5). Two of the vases were lying on their side, one was found slightly tilted while a fourth one stood in upright position. Regardless of their respective positions, all had been cut away at the same, horizontal level, probably by recent agricultural work.
4. The Excavation of Zone 2

4. Building BC, space 2.9

Space 2.9, formed by Walls B27, B21, B24 and B26, is the smallest fully enclosed space of the building and lacks a clear entrance system (fig. 4.1). In the north corner of the room, stands a roughly circular, *amnouda* trough or mortar (09-02-1235-FE001) (fig. 4.6). It has a flattened upper surface and a hollow (diam.: 0.23 m, depth: 0.13 m) which could have contained 3.64 L. The southeast wall (south part of B21) is less massive and may have been added later to close space 2.9.

As all other spaces, space 2.9 was found filled to the brink with dumped material including many stones, perhaps wall collapse or debris clearing. As elsewhere, the fill included coarse sherds (mostly Neopalatial), charcoal, shell, bone, pumice, mudbrick and obsidian, as well as three complete cups (09-02-1233-OB001, 09-02-1238-OB001 and 09-02-1241-OB001) and a stand (fig. 4.6). A lithic tool (09-02-1232-OB002), a stone hammer or pestle (09-02-1237-OB001) and a complete pig mandible (09-02-1232-OB001 (fig. 4.6)) were also found.

Space 2.9 may have been accessible from above either via a ladder or simply via a trap-door. The sandstone trough or mortar suggests an industrial use of the space\(^5\).

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The pig mandible occurred at a level which corresponds with the level used for cooking in adjacent space 2.8, but there is no further evidence to relate the two. The continued filling eventually obscured the wall separating spaces 2.6 and 2.9.

5. Building BC, space 2.10

Space 2.10 (fig. 4.1) has only been partially preserved, and the northeast (B32, 09-021246-FE001) and northwest (B31, 09-02-1247-FE001) exterior walls are no longer complete. The surfacing bedrock bears traces of rough trimming, also observed for wall B21 (cf. above), and this may indicate where the northwest wall once stood. The inner lining of smaller stones that characterises exterior walls in Zone 2 continues for 0.11 m after the larger stones of wall B31 cease to do so, indicating its original course. The larger stones may have been removed by the Italian occupation forces when they constructed a shelter immediately to the north. To the southwest, a partitioning wall (B29, 09-02-1245-FE002) separates 2.10 from adjacent space 2.11. The north part of this wall may be interpreted as a wall end for a doorway, 0.85 m wide, since the opposing bedrock shows a parallel cutting. Wall B23 forms the southeast limit of the space and may originally have been an exterior wall (cf. above).

Likely to have been largely square in shape, 2.10 was connected to space 2.11 and possibly to 2.7, before a later blocking closed off the latter passage. Space 2.10 comprised several permanent furnishings: a rectangular ammouda bench (09-02-1248-FE001) (fig. 4.7) was installed approximately in the middle against wall B23. The bench measures 1.41 by 0.43 m by 0.20 m, slightly lower than the wall it adjoins. Two terracotta tiles (fig. 4.7) were placed in front of and aligned to the bench, forming a rectangular platform (09-02-1248-FE002) of 0.71 x 0.46 x 0.04 m. The dimensions of the two tiles are roughly identical and are reminiscent of those attested in Building BA (Sissi I: 96, 98), although, their configuration differs considerably. The purpose of this installation is, as yet, unclear. Finally, a smoothly surfaced limestone base, perhaps used to support a column (09-02-1251-FE001), is located almost equidistantly to walls B29 and B31. It is, however, very close to where the original wall B32 would have stood. Similar bases were found in spaces 2.11 and 2.12 and the three are roughly aligned (cf. below).
The absence of an exterior northwest wall is probably the reason why little earth cover was preserved here. Nevertheless, quite a number of LM I sherds were collected, as was charcoal, bone, shell, pumice, mudbrick, stalactite and obsidian. On or near the floor level were also found a few remarkable objects. These included a cut piece of stone, perhaps an architectural fragment (09-02-1248-OB002), three lithic tools (09-02-1250-OB002-003, 09-02-1252-OB002), a terracotta loomweight fragment (09-02-1251-OB001), cooking pot fragments (10-02-2217-OB001), an ogival cup (09-02-1248-OB001), a conical cup (09-02-1252-OB001) and a small marble or highly crystalline limestone figurine (09-02-1250-OB001(fig. 4.8)), 5.6 cm long, 3.3 wide and 1.7 cm thick. Preserved is a finely carved and polished upper torso and a conically shaped head. The bottom part shows an old and weathered fracture line, implying a long use life prior to deposition. Through its material, stylised shape and facelessness, the figurine shares some properties with that of the Cycladic or ‘cycladicizing’ corpus (cf. below).

Fig. 4.8. **Figurine from space 2.10 (CHR PAPANIKOLOPOULOS)**

The figurine, found on the floor level, dated to LM I. It is one of two figurines found in Building BC, since the nearby space 2.11 yielded another example. A third, much simpler limestone figurine was found on top of the hill.

6. **Building BC, space 2.11**

Space 2.11 (fig. 4.1), to the south of the previous space, was probably accessible from it. Its northwest wall B32 is in all probability missing (cf. above). It is delimited further by wall B29, separating it from 2.10, wall B23 which may originally have been an exterior wall and southwest wall B30. The latter was originally built as an

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6 Q. Letesson, this volume, chapter 5.
exterior wall, hence the inner stone lining but at some point, the space to the south (2.12) became enclosed. A flat roughly rectangular stone sits on the floor on a line with the northwest end of B29 and halfway in between walls B29 and B30. This too is probably a column base (09-02-1252-FE001), similarly aligned as those attested in 2.10 and 2.12.

Again, the relatively shallow sediments explain the low number of finds. Most material here consisted of pottery fragments and small bits of charcoal, shell, bone and pumice. Objects were few too, with a fragment of a terracotta loomweight (09-02-1245-OB001), a lithic tool (09-02-1252-OB002), a miniature stand 09-02-1253-OB001) and a highly crystalline limestone or marble figurine (09-02-1252-OB003 (fig. 4.9)).

The figurine, which is quite weathered, differs from its counterpart found in 2.10 in that it is slightly smaller, at 4.6 cm long, 2.8 cm wide and 1.4 cm thick. It has a tapered upper torso and head which seems to include some rough facial features (i.e. a protruding mouth; especially visible in profile) but is overall more rudimentary and less balanced in shape than the figurine from 2.10. Its head, attached to the torso by a massive neck, appears to tilt slightly backwards and does not have the conical form observed in the other figurine. The tapered bottom part and indicated mouth are stylistic features that have been noted for the indigenous Cretan varieties of the Cycladic corpus (Branigan 1971: 65, 68) to which it may be related.

The occurrence of such figurines is atypical but not unheard of for Neopalatial contexts on Crete (Pieler 2004: 82; Branigan 1971: 60-1, 67, 69). Similar figurines have been found at Malia (Detournay et al. 1980: 101). A possible explanation for their deposition in a LM I domestic context in Sissi may perhaps be looked for in a household ritual use (Carpentier, in prep.). In any case, as was the fate for all other spaces of Building BC, space 2.11 fell into disuse and was consequently used as dumping grounds for discard and debris.
4. The Excavation of Zone 2

7. Building BC, space 2.12

Although excavation is as yet unfinished, space 2.12 (fig. 4.1) seems to have been a later addition to Building BC. In terms of construction and solidity, its walls rank among the best in Zone 2. Only B30, which it shares with space 2.11, retains the typical building style on account of its earlier construction. The southeast wall (B33, 10-02-1268-FE001) has a slightly different orientation than that of wall B23, which – intentionally or not – aligns space 2.12 with the overall topography of the area as dictated by the nearby terrace wall and therefore also with Building BA (see fig. 4.1). Perpendicular to the latter, the southwest wall (B34, 10-02-2215-FE001) of space 2.12 was built in the same manner as B33 and it too exhibited the same deviation to the alignments set by walls B22, B25, B29, B30 and B31, making it correspond with the curvature of the terrace wall and the main orientation of the walls of Building BA. No northwest wall was found, either because there was none or because it had suffered the hypothetical fate that saw the rest of the northwest wall (B32) of Building BC being recycled. Yet, given the observation that all walls of space 2.12 have been built in a different fashion, one could wonder as to why the larger and closer rocks of for instance walls B23, B29 and B31 have not been taken instead.

The solid construction of the walls of space 2.12 would have allowed for a roof or perhaps a second storey even without a northeast wall. A flat-topped, limestone column base (10-02-2211-FE001) located midway between the ends of walls B30 and B34 would have provided the support. A longitudinal concentration of charcoal stretched for about 1.50 m southwards from the column base and this may represent either the remains of a column or perhaps a fallen beam. A small square niche (0.47 by 0.48 m) was left there where walls B30, B33 and B23 meet. Filled with large sherds, it may have served as a storage space or closet. A patch of a floor of small and medium-sized pebbles (10-02-2234-FE001) was found close to the northwest end of wall B30.

In contrast to the other rooms, space 2.12 preserved a thick fire destruction deposit 7 (fig. 4.10).

Fig. 4.10. **Destruction deposit in space 2.12 (N. Kress & L. Manousogiannaki)**

This comprised also a dense scatter of LM I sherds, (burnt) bone, pumice, shell, stalactite and charcoal. The objects found here are abundant, amongst which a large number of diagnostic pottery fragments, including several cup rhyta, and – pending further study – a vitrified cup (10-02-2234-OB002), two terracotta loomweights (fig. 4.11b, 10-02-2234-OB001), a stone loomweight (fig. 4.11a), a stone vase fragment (fig. 4.11), two stone axes (fig. 4.11e, 10-02-1271-OB001), a small stone with drilled hole (fig. 4.11c) and a completely preserved stone “blossom bowl” (fig. 4.11g) (Warren 1969: 14-17) of which the lid (fig. 4.11f) may have partially survived.

7 The remains of the burnt column/beam, a vitrified cup and the presence of salvageable, undamaged objects (Schiffer 1987: 95) favour an in situ destruction event.
8. The Intramural burials by I. Crevecoeur\textsuperscript{8}, A. Schmitt\textsuperscript{9} and A. Civetta\textsuperscript{10}

8.1. The Inhumation in space 2.6

On the last day of the 2009 field campaign, a pyxis lying on its side was found in space 2.6. Two thirds of it was filled with sediments (fig. 4.12). Large sherds had shielded the opening from the fills that covered the container entirely. The exceptional preservation of the vessel enabled it to be moved to the laboratory in toto where the excavation of its contents was carried out under ideal circumstances. The extraordinarily well-preserved perinatal remains were located at the bottom of the sedimentary fill and the presence of strict anatomical connections (tibia-fibula) suggests primary deposition although it has been subject to some minor perturbation. With the anatomical logic preserved, it was clear that the perinate had been put on its belly, with the lower limbs bent against the pyxis wall and oriented upwards. The left upper limb was bent and rested parallel to the base while the head was oriented downwards. An exception could be formed by the grouping of small, light bones on the surface of the soil that had gathered inside the pyxis and the position of the right upper limb. Two main hypotheses exist as to why these bones were dislodged:

1. The presence of water inside the pyxis at different stages of sedimentation. This would have caused the small bones to float and redeposit upon the retreat of the water. Concretions visible on the parts of the pyxis that were left uncovered by infill suggest this process.

2. The presence and activity of necrophageous animals or insects. During the excavation of the vessel contents, cavities and channels with diameters of up to 1 cm were observed, littered with tiny excrement nodules. These seem to be associated with an ant nest.

The estimated age at which this immature individual passed away is 3 (+/- 3) months, based on the development stage of the deciduous tooth buds.

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4. The Excavation of Zone 2

Fig. 4.12. LEFT: PYXIS BURIAL IN SITU (B. DECREAENE), RIGHT: THIRD STAGE OF CONTENT EXCAVATION (I. CREVECOEUR)

8.2. Inhumation in space 2.8

The human remains were those of an infant whose age at the time of death is estimated to be somewhere in between 3.5 and 6.5 years old (Moorrees et al. 1963). The corps was oriented northwest-southeast and was positioned on its right side, turned slightly on its belly and with the lower limbs hyperflexed (fig. 4.13). The upper left limb, wedged in between both lower limbs, was in extended position with the forearm pronounced. The right upper limb was bent; the right hand rested to the south of the individual’s head, its palm oriented towards the face. Preservation of the osseous remains is mediocre; in fact the epiphyses of the long bones, elements of the vertebrae, the phalanges, carpal and tarsal bones have not been preserved. On the other hand, the surviving bone material is well conserved, apart from that of the right hemi-thorax and left scapula. The skull had its left lateral side facing upwards. The temporomandibular articulation was maintained, but with the cervical vertebrae missing, it proved impossible to ascertain whether the skull was still in primary position. The configuration of the bones is complete, and the connections of the lower limbs are generally preserved except for the left shoulder and elbow which are both dislocated. The left humerus, initially in postero-lateral position, had turned onto its anterior side, following the configuration of the right part of the body on which it rested. The left forearm has undergone slight movement to the west, a result of the decomposition of the lower left limb. A void is situated where the softer parts have perished. The right humerus, left in an unstable position after decomposition, has pivoted on its anterior side due to the pressure of the corps lying on top of it. All observed movements have taken place within the original body volume. The hyperflexion of the lower limbs could be related to the form and size of the container. Decomposition of the corpse occurred when the pyxis was in the same position it was found in (on its side). This is strikingly similar to the perinatal burial found in space 2.6, where the container was of the same type and set in a similar fashion. It is highly likely that the pyxis and its contents were in their original position. On the other hand, the lack of significant movement of the osseous remains beyond the initial volume taken up by the corpse, suggests that the infant had been either partly or completely wrapped or inserted in a perishable cover such as textile (bag, cloth) or that the burial pit was filled in rapidly.
9. Conclusion

On present evidence, Building BC presents itself as a Neopalatial domestic structure which underwent different structural changes. Although similar in size to neighbouring Building BA, its internal spatial configuration is very different. The building seems originally to have consisted only of the northwest spaces, with or without 2.12, which could have been a later addition, and 2.7, which may originally have screened an entrance. Depending on whether or not space 2.6 was roofed, this function for 2.7 may have been retained in a second phase, when the east spaces were added (2.6-2.9). In a later phase, a doorway leading south from 2.8 seems to have been blocked, whereas even later, a doorway between rooms 2.6 and 2.8 may have been abandoned. In a final phase, only the west part may have been used while the east part was used as a dumping ground. On present evidence, all phases happened within the Neopalatial period. The ogival cup and cup rhyta found in the west part may suggest a final destruction date in LM IB. The northwest exterior wall (B32) was not found although remains of a pebble floor in space 2.12 and surfacing bedrock may indicate its former foundation. It is, however, not entirely impossible that no west wall ever existed because of the almost identical position of the column bases in rooms 2.10, 2.11 and 2.11. The three potential columns seemingly on an axis, may indicate a (seasonally) open structure (fig. 4.14).
Although generally domestic in character, Building BC includes some exceptional features. The pumice-covered platform in space 2.8 must have served specific types of activities, possibly related to the large basin with drainage hole. The area seems to have been abandoned over a longer period of time, with intermittent reuse attested. The more important part of the building seems to have been the northwest set of rooms, particularly space 2.10, which was outfitted with a bench and a terracotta tile installation. Two figurines found on the floor level of 2.10 and 2.11 may bear testimony to a (regional) household cult.

With its domestic character, (semi)permanent additions for specialised activities and overall size, Building BC bears several similarities with its contemporaneous neighbour Building BA both of which exhibit features witnessed at the house-workshops as witnessed at Malia (Poursat 1996).

10. References

- Davaras 1963 = K. Davaras, in *Κρητικα Χρονικα* 17 (1963), 405.
5. The Excavation of Building CD

5.1. Introduction

Following the 2007-2008 campaigns, the presence of a large Postpalatial building in Zones 3 and 4 on top of the Buffo hill at Sissi has been established (Gaignerot-Driessen & Letesson 2009: 113-114). The first two years of exploration have also made it clear that the site preserved traces of an earlier occupation (spaces 4.1-4.3, see Letesson 2009: 132). The 2009 and 2010 excavation campaigns concentrated on defining the limits of the building and on the investigation of its rooms and spaces to the latest level of occupation. In addition, a few, limited tests were conducted, in the hope to clarify the earlier phases. The remains on top of the hill cover an area of approximately 750 m² (figs 5.1 and 5.2).
Even if further work is required to clarify the situation in zones 3 and 4, some preliminary considerations can already be proposed. It is now clear that most of the remains in the western part of the summit belong to the LM IIIB phase. The builders may have taken advantage of a preexisting structure (probably Neopalatial) of which the extent is currently still difficult to assess. It is also evident that the top of the hill was already occupied in the Middle Minoan period if not earlier, as attested by several walls and deposits discovered at various locations. This introduction presents a tentative picture of these two broad periods. Further and more detailed information on more specific issues can be found in the following chapter.

Fig. 5.2. STONE-BY-STONE PLAN OF BUILDING CD AND SURROUNDINGS (P. HACIGÜZELLER)
1. Early occupation on the top of the hill

At present, because investigations have been limited to a few localized soundings, we only have scant knowledge of the early occupation(s) on the top of the Buffo hill (fig. 5.5).

As noted in the first preliminary report, some walls in the eastern part of zone 4 (D4-8 and perhaps D21) seem to form a coherent structure (rooms 4.1-4.3) the date of which still needs confirmation (Letesson 2009: 132) (fig. 5.2). In 2010, a wall, parallel to D2, was discovered and this probably also belongs to this early building. It circumscribed rooms 4.2 and 4.3 to the south. Even if supplementary tests are still necessary, the pottery unearthed is mostly EM III-MM I with some MM II and Neopalatial intrusions.

Elsewhere, parts of walls that clearly predate the Postpalatial building were discovered. In room 4.5, 4.14, and within a sounding opened to the north of room 4.9, these earlier structures were clearly associated with Middle Minoan destruction deposits (figs 5.25-29, 5.70a-b, and 5.81-83). The activities attested by the material found in these deposits are mostly related to food processing and consumption, drinking practices (especially room 4.5) and storage. However, the type of occupation or the extent of the building(s) concerned remain particularly elusive. Nevertheless, it is likely that the paved street equipped with a drainage channel ran down the hill towards the northeast at the same period (see the discussion on area 8.1 below) (figs 5.79 and 5.80).

This carefully built street – the only one found on site so far – testifies to a considerable level of architectural elaboration and clearly led to the summit of the Buffo. It is therefore plausible that the top of the hill was already the setting for a major building or at least a focal area during the Middle Minoan period, contemporary with the latest use of the cemetery on the North Slope (see chapter 3).

In its western part, the street was covered by a very clear fire destruction level (see space 8.1 below). The same

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1 A preliminary analysis of the pottery suggests a MM IIB date; for a fuller description of these see chapter 8.
type of layer was also encountered in room 4.6 (Letesson 2009: 134-136) and in a test made at the corner of façade walls D3 and D55 (see below). Even if sporadic evidence for a fire destruction has been encountered throughout the building (e.g. in space 4.4 – Letesson 2009: 132, room 4.9, and 4.11 – see below), such a thick and compact layer of burnt mud-brick, charcoal and fragments of charred wood was not really found elsewhere. On the basis of a preliminary study of the sherd material, it has tentatively been dated to the Neopalatial period when the destruction of some architectural structure(s) is attested by heavy stone tumble often found in close relation to this burnt layer. At this period, the street went out of use.

During the Postpalatial period, the debris of this destruction was probably cleaned away from the western part of the summit and most likely leveled out in its eastern part. The former would have seen a new building, probably partly using earlier walls that were still standing, while the latter was most likely transformed into an open air area².

2. The Postpalatial building

Even if a definite impression and a full description of its possible sub-phases require a complete architectural study, coupled with supplementary soundings – both major goals of the last excavation campaign in 2011 – a tentative reconstruction of Postpalatial building CD is proposed here (fig. 5.4)³.

Fig. 5.4. BUILDING CD (POSTPALATIAL PHASE) (Q. LETESSON)

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2 This could explain why evidence for fire destruction was relatively scarce in the west part and more present in the eastern part.
3 Fig. 5.4 represents what building CD may have looked like at its apogee, when most of the rooms and spaces were functional and interconnected, whereas fig. 5.5 shows all the doorways that were blocked before the final destruction.
At the time, building CD probably covered an area of about 450 m² and counted at least 20 ground floor rooms and spaces. Because of its size and location, it was almost certainly the major and central building of the Postpalatial settlement of Sissi. To the east, this large building probably faced an open air area, perhaps some sort of a court circumscribed and/or retained by the earlier facade walls D2, D3 and D55. One of the main accesses of the building, through space 4.4 – probably a porch – connected the open area with the large hall 3.1 (fig. 5.4). In the south facade, two other entrances have been tentatively reconstructed but excavation is not yet completed. A first entrance would give access to room 4.15 from where the western spaces could be reached. A second entrance would lead into space 4.18 which, for the time being, is considered as a transition space, perhaps also a porch (fig. 5.4). To the south, an open area may have formed another court (Zone 5, cf. chapter 6). Yet another entrance may have existed to the north of the building, into room 4.9 (see below). This last area requires further exploration, however, since the doorway seems to have been blocked at some stage and it is not impossible that this opening belonged to an earlier – perhaps Neopalatial – phase.

A preliminary architectural study of the building suggests the presence of three different sectors in building CD (fig. 5.5).

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4 There is also good evidence for the existence of an upper floor which probably did not cover the entire ground floor area. As will be mentioned below, some steps found in room 4.14 may have led to this upper floor, most certainly a combination of roof terrace and operational rooms.
5. The Excavation of Building CD

The first sector (in orange) has the main hall 3.1 as its focus. The latter was indeed more than a simple domestic space (see below). Its size, location, and architectural elaboration plead in favour of a more specific set of functions that likely implied the gathering of people. Even if some industrial activities were probably also conducted within room 3.1, they were mostly carried out in the rooms that surrounded the hall, together with other domestic practices. Room 4.14, for example, produced a considerable amount of lithic tools closely associated with a work platform, room 4.8 was concerned with grinding activities and most likely cooking and food processing, and room 4.9, a small storeroom filled with vessels, also showed clear evidence of cooking activities. The second sector (in blue) shows quite a similar internal organization. The large room with pillars (4.11) obviously formed its central part and this too has several annexes. The later were probably used for storage (3.2, 4.17) and industrial activities (3.2, and 4.12-4.13). Room 4.11 could also have been used for gatherings. It had a central hearth and showed clear evidence of maintenance activities, such as cooking. Moreover, it stood in close connection to room 3.8, clearly a shrine (see below). The last sector (in green) probably served as an auxiliary zone for the two other sectors and mostly hosted rooms for various domestic activities.

A complete functional interpretation of building CD still requires further study but it is already clear that it formed a self-contained architectural unit. For the time being, it is hard to ascertain the social organization that the hypothetical sectors mentioned above materialized within the fabric of the building. But unlike Quartier Nu at Malia, which was occupied during approximately the same period (Driessen et al. 2008), building CD does not show a spatial distribution of the finds which would allow an identification of relatively independent social groups sharing the same structure. It is therefore more plausible that a single group occupied the main building at Sissi. Still, along with a residential function, building CD could also have served as the focus for a larger social group (perhaps the entire local community) as is suggested by the close spatial and visual relation that seems to have existed between the open area – probably a public or semi-public space – and the major hall 3.1.

3. References


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5 See the descriptions of rooms and deposits below for further details.

6 It has been suggested (J. Driessen, pers. com.) that Building CD would have been organized spatially following a gender differentiation.
5. The Excavation of Building CD

5.2. The Excavation of Zone 3

Florence Gaignerot-Driessen

During the 2009 and 2010 campaigns, work in Zone 3 focused on two significant rooms (3.8 and 3.1) of the building located on the summit of the hill and both already touched in 2007 and 2008 (Gaignerot-Driessen 2009). Excavation revealed a LM IIIB shrine (Room 3.8) and a large Hall (Room 3.1) to the North, presenting successive phases of occupation (figs. 5.1-5.5).

1. The shrine (Room 3.8)

Room 3.8 (internal dimensions: 2.6 m E-W x 3.3 m N-S; 8.58 m²) is located immediately to the East of Room 3.4 and to the South of Room 3.1 (fig. 5.1). Two small square spaces (3.9 and 3.10) of ca. 1 m² each without entrance are situated to the North of Room 3.8 and separate it from the South wall (C 18) of Room 3.1 (fig. 5.8). They were found empty, apart for some pebbles, small fragments of shell and a crab pincer found in space 3.9. A triangular stone (ca. 0.6 m x 0.33 m) with a polished flat surface sits close to the centre of the North wall (C27) in Room 3.8. In the narrow, 0.20 m wide space between the stone and the wall were found three kalathoi (09-03-0514-OB004-5 and 09-03-0516-OB001) in situ with a lithic tool (09-08-0514-OB006) in one of them (09-03-0516-OB001), while two other very similar kalathoi (09-03-0514-OB002-3) were found in front of the triangular stone to the West. (fig. 5.7). Moreover, fragments of a sixth one (09-03-0511-OB001) were one meter further to the South. One of the kalathoi (09-03-0514-OB002) most likely fell from the mouth of a snake tube (09-03-0514-OB001) lying to its West (figs. 5.7-9). At the very end of the 2008 campaign, a first tube (08-03-0515-OB001), without handles but with small horns of consecration, had already been recovered slightly further to the South (Gaignerot-Driessen 2009: 125 and fig. 6.16). To the East of the triangular stone and against wall C 27 were found, from West to East, a lamp handle (09-03-0514-OB007), a large triton (09-03-0514-OB008) and an inverted high conical cup (diam. base: 0.6 m; h: 0.9 m) (09-03-0514-OB009) (fig. 5.7). In front of this collection of objects, to the South and following a semi-circular arrangement, were a discoid object made of schist (09-03-0514-OB010), a fragment of triton (09-03-0516-OB002), a jug, a stirrup jar and a fragmentary vase (09-03-0514-OB011-13) (fig. 5.8 and fig. 8.3b). In this area, traces of burned earth as well as burned pottery were encountered. A deer antler tine (09-03-0506-OB001) (fig. 5.9), a stone vase fragment (09-03-0506-OB002) and several joining pieces of a shallow everted bowl (09-03-0506-OB003) were also recovered from Room 3.8 (fig. 5.6).

Apart from the triangular stone, Room 3.8 shows a series of other architectural features (fig. 5.8). A low, oblique bench (C29) runs against the East wall (C9) whereas an empty space in the North-east corner may have been used as a pot stand. The vases found broken but complete in the North part of the room may have fallen from this bench. To the South, against the West wall (C14) of Room 3.8 was a gourna with two circular depressions (C27) with, in front of it, four lithic tools and two bases of conical cups. Fragments of bone and shells were found scattered around the gourna and may constitute the rest of offerings prepared in this area. A bit further North, more lithic tools were collected and an accumulation of small stones against wall C14 may suggest another installation. A low wall (C28), on the same line as the gourna, divides the room in two parts. South of it, the foot of a goblet (09-03-0513-OB001), a lithic tool and a vase (09-03-0515-OB003) were recovered (fig. 5.6).

A small sounding under this deposit produced a stony level including a short LM IIIA kylix foot (09-03-0516-OB003) attesting an earlier occupation. A large piece of conglomerate forms an N-S line with the triangular stone which was carefully wedged with small stones at its base. A superficial cleaning of the North-west access to Room 3.8 stopped on an earlier fill.


2 I Thank Dr. V. Isaakidou for this identification.
5. The Excavation of Building CD

Fig. 5.6. DISTRIBUTION OF FINDS IN ROOM 3.8 (P. HAcigüzeller)

Fig. 5.7. DEPOSIT IN THE NORTHEAST PART OF ROOM 3.8 FROM SOUTH: 1: 09-03-0514-OB001; 2-3: 09-03-0514-OB002-3; 4-5: 09-03-0514-OB004-5; 6: 09-08-0514-OB006; 7: 09-03-0516-OB011; 8: 09-03-0514-OB007; 9: 09-03-0514-OB008; 10: 09-03-0514-OB009; 11: 09-03-0514-OB010; 12: 09-03-0514-OB011; 13: TRIANGULAR STONE (F. Gaignerot-Driessen)
Fig. 5.8. **Room 3.8: General View (L. Manousogiannaki)**

Fig. 5.9. **Finds from Room 3.8 (Chl. Papanikolopoulos)**
The finds made in this room (two snake tubes, six kalathoi, a deer antler tine, three conical cups) (fig. 5.9) and their arrangement as well as the architectural features observed (triangular stone, bench) (figs. 5.7-8) suggest that this space was used for religious activities and formed a shrine containing ritual equipment organized around the triangular stone which may has been used as an offering table or a platform (Gesell 1985:47-54 and Chart VI, 147). It however difficult to call this stone an altar since no traces of burning were visible on it (Bretscheider in print 2011). The situation rather echoes the offering table found in the northeast corner of the bench sanctuary at Gournia (4 by 3 m): four snake tubes were upright around it and a fifth one was standing on top of it (Gesell 1985: 72). One crucial element that seems to be missing and would have made the identification as a LM IIIB shrine secure is a goddess figure with upraised arms. One could argue that before the site was destroyed and abandoned, the idol was carried out in time. There are many examples, however, that show that such figures usually are attested in larger numbers: at Vronda (Gesell et al.1991, 1995), Karphi (Gesell 1985: 81), Halasmenos (Tsiropoulou 2009: 124-127), Kephala Vassilikis (Eliopoulos 1998: 307-309), to mention the closest sites where their presence is attested, a number of complete or fragmentary examples were recovered within LM IIIB to LM IIIC shrines as well as fragments scattered in their proximity or coming from pits or dumps. Oddly enough, after four campaigns of intensive excavations at Sissi, not even a small fragment of a goddess with upraised arms has been recovered. Given the situation in other contemporary sites located in the area, the absence of goddesses with upraised arms at Sissi perhaps needs a more convincing scenario than simply presuming they were taken away before the destruction. Indeed, ritual equipment commonly connected to goddesses (snake tubes and kalathoi) was actually stored or on display in the context of Room 3.8 which was clearly not domestic, while other snake tubes were recovered elsewhere, one in Room 5.13 (Zone 5; 09-05-0974-OB002; see Devolder in this volume), probably fallen from an upper floor, and another one in Room 4.11 (Zone 4; 09-04-0742-OB001; see Letesson in this volume), close to the entrance of Room 3.8. If it is accepted that Room 3.8 is a shrine without containing figures with upraised arms, then perhaps the identity of the figures themselves needs to be questioned. Sissi is indeed not the only site where the female figure with upraised arms seems to be missing from contexts where other ritual equipment has been recovered. Examples such as Aghia Triada (building H), Karpfi (Room 58 in the Priest’s House), Kommos (Room 4 in the House Shrine), Kephala Kondrou, Katsamba and Koumasa (Gesell 1985:41-42, 74-75, 81-82, 102) can be compared to the case at Sissi. Tsiropoulou (2009) recently suggested that the sets of figures and snake tubes found in the LM IIIC shrine at Halasmenos were votive offerings representing different clans or gene in a context of regional competition. Their absence at Sissi from a clear religious context then suggests that these figures with upraised arms were not the image of a divinity (Prent 2005: 181) but should rather be seen as representations of the worshippers themselves.

The singularity and importance of the Sissi shrine is also underlined by another fact: Room 3.8 is not an isolated, free-standing structure similar to other LM IIIA2-B and LM IIIC ‘town’ shrines. On the contrary, it is included into an important architectural complex located on the summit of the hill and adjacent to the main room (3.1) of the building, although not communicating with it. In a recent synthetic article, B. Hallager (2009) claims that domestic shrines did not exist on Crete during the period in question. Reconsidering the examples of rooms dedicated to a religious function in residential buildings as listed by Gesell (1985: 47), she opposes their identification as domestic shrines. This, she argues, is because of a lack of cult objects other than snake tubes and the latter are assumed to be movable (Katsamba, Kommos, Kephala Khondrou); in other cases such as Knossos, she finds the context too dubious or interprets the finds as dumps or storage places for cult equipment (Palaikastro, Karphi) (B. Hallager 2009: 110-116). Her arguments do not seem to hold for Room 3.8 at Sissi and its interpretation as a shrine since the type and number of finds as well as the architectural features appears typical for a religious context. Moreover, their contextual association clearly indicates that the space was neither a dump nor a simple storage place for cult equipment. B. Hallager’s (2009: 121) claim that no room solely dedicated to the purpose of worship can be found in LM IIIA2-IIIC Crete seems no longer tenable because of the Sissi evidence. It may be added that even for Eliopoulos (2004: 82) the shrine at Gournia ‘is not an isolated, single-room public shrine’ and rather ‘belonged to a larger building context’. The exact function of the shrine at Sissi however depends on a better knowledge and understanding of the whole building. In this regard, the excavation of the large room 3.1 could perhaps shed some light.

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3 This hypothesis will be further explored in a forthcoming article by the author.
2. The hall (Room 3.1)

For its size and position, Room 3.1 is the main and central space of the building located on the summit of the Kefali hill. In 2007, when the East part of the room was excavated, a monumental threshold (1.80 m long) as well as a possible wine or olive press (C5) and a ceramic deposit were found (Gaignerot-Driessen 2009: 115-121). During the 2010 campaign, the rest of the room was excavated so that the size of the LM IIIB hall became clear (external dimensions: 9 m E-W by 8.62 m N-S; 77.58 m²; internal dimensions: 7.90 m E-W by 7.50 m N-S; 59.25 m²) and the presence of two axially placed column bases (fig. 5.10).

The threshold in the East wall C1 and the two column bases are located on a central E-W axis at relatively regular intervals (threshold-East Column base: 2.44 m; East Column base-West Column base: 2 m; West Column base-West Wall D27: 2.44 m). The West base (C33) consists of an irregular, roughly circular block (max. diam.: 0.66 m) of which the base is wedged by small stones (fig. 5.14). The East base (C29) is perfectly circular with a dressed and polished cylindrical surface, and the lower unworked part of the stone being embedded below floor level. The careful work on C29, very similar to e.g. a Neopalatial example from Kato Zakro (Shaw 2009: 83 and fig. 146, 277), in comparison with base C33 suggests it was reused. Moreover, fragments of a small stirrup jar (10-03-0544-OB001) were buried at its base, perhaps as a foundation deposit (fig. 5.11). A similar practice was already noticed elsewhere during the excavation of the building: a stirrup jar was found in 2007 at foundation level of the monumental threshold, and a deposit of shells, pebbles, bones, four miniature jugs, a tripod leg and a spout were found in space 3.7 (Gaignerot-Driessen 2009: 121-123), moreover, a vase covered with pithos fragments on which fragments of a triton shell were found and containing an inverted conical cup formed a foundation deposit to the West of Wall D11 (Letesson 2009: 133-134 and figs. 6.26 and 6.27, 133). Finally, in Room 3.1 a vase (10-03-0547-OB001) was left against the first course of Wall D22, at its eastern end (fig. 5.12). Around base C29, a few lithic tools (10-03-0524-OB001-6) (fig. 5.10) and some fragments of obsidian blades were recovered. Along Wall D22 and to the North of base C29, a tool made of pumice (10-03-0527-OB001) (fig. 5.13) was found.

Fig. 5.10. ROOM 3.1: DISTRIBUTION OF FINDS (P. HACIGÜZELLER)
5. The Excavation of Building CD

Fig. 5.11. **Room 3.1: Base C33 with fragments of 10-03-0544-OB001 from east (F. Gaignerot-Driesen)**

Fig. 5.12. **Room 3.1: 10-03-0547-OB001 in wall D22 from south (Th. Claeys)**

Fig. 5.13. **Lithic tools from Room 3.1 (Chr. Papanikolopoulos)**
Evidence for destruction by fire was observed around the column bases, perhaps of the wooden columns, but no traces of ash which could suggest the presence of a hearth were recovered between the bases. A fragmentary clay surface (fig. 5.14) was, however, recognized between the bases slightly above floor level where there were also large fragments of two tubular vessels with one open end and one perforated domed end (10-03-0536-OB001 A-B) (fig. 5.16), perhaps fallen from above. These pots which have not yet been restored, may have been used as chimney pots to evacuate the smoke for a potential fire place between the two columns. The use of a portable hearth would explain the absence of ash from the clay surface. Large fragments of a pithos with guilloche decor (10-03-0531-OB007) (fig. 5.15) were also found in the area between the two column bases and Wall D22. Fragments of two other as yet unidentified vases (10-03-0531-OB005-6) were also recovered from the destruction layer in Room 3.1. It must be noted, however, that, in comparison with the Eastern part of the room excavated in 2007, the rest of Room 3.1 was almost empty (fig. 5.10). Room 4.9, which contained prestige vessels, was maybe the Hall’s pantry (see Letesson in this volume and Langohr, fig. 8.4 in this volume).

![Fig. 5.14. Room 3.1: Fragments of 10-03-0536-OB001 A-B and fragmentary clay surface between bases C29 and C33 from west (F. Gaignerot-Driessen)](image1)

![Fig. 5.15. Room 3.1: Fragment of pithos 10-03-0531-OB007 (F. Gaignerot-Driessen)](image2)
5. The Excavation of Building CD

A doorway between Room 4.8, where a fragment of the pithos from Room 3.1 was recovered (see Letesson in this volume), and Room 3.1 was found blocked in wall D22. On removal, a 1 m long stone threshold contemporary with the column bases was uncovered (fig. 5.17). Along Wall D22, a patch of fallen plaster was found. The other doorways to the South-East and to the North-East were also found blocked.

In the South-west corner of room 3.1, a carefully constructed bin (C31) measuring 1.04 m by 0.58 m was found (fig. 5.10 and 5.18). It contained 10 lithic tools of different size and shape (10-03-0533-OB001-7, 11; 10-03-0540-OB001-2), as well as two fragments of millstones (10-03-0533-OB008-9) possibly reused as grinding stones (fig. 5.13). To the East next to the bin were sitting two slabs (C34): one is a fragmented ammouda (0.40 m by 0.40 m max.) with a circular depression, the other an irregular sideropetra block (0.29 m by 0.35 m) (figs. 5.10 and 5.20). We assume these slabs to be connected to the lithic equipment found in the bin and to be respectively a worktop and a seat. A semi-circular stone structure (C30) (diam.: 0.55 m; depth: 0.15 m) built against Wall C18, to the West of the South-east entrance into Room 3.1, may have been used as a pot stand (figs. 5.10 and 5.20).
Fig. 5.18. Room 3.1: Bin C31 with lithic tools from North (J. Lorang)

Fig. 5.19. Installations C31 and C34 from above in Room 3.1 (L. Manousogiannaki)
The South-west quarter of the room is covered with a well-preserved pebble floor that seems to belong to the same phase as the column bases (figs. 5.19-21). A similar floor was also found in Room 4.8 in 2009 (see Letesson in this volume). The excavation of the rest of the room revealed a thick layer of white-greenish local clay, in which the two column bases were set.
North-east of the *gourna* (C6) found in 2007 next to the platform (‘press’) C5 against the northeast corner, another *gourna* (C35) was found in 2010 (fig. 5.17). Pieces of pumice, two fragments of obsidian blades (10-03-0545-OB003 and 7), two loom weights (10-03-0545-OB003) and the base of a miniature goblet in quartz (10-03-0545-OB004) were also recovered from this area (fig. 5.10). Against Wall C1, between the platform and Wall D22, the floor was paved with large stones, probably used in connection with the platform. It is worth noting that the floor level of the platform and the two *gournes* (21.47 m asl) in the eastern part of the room against Wall C1 is about 0.20 m lower than the level of the pebble floor, thresholds and column bases (21.66 m asl) in the western part. It is not unlikely that the platform already belonged to an earlier phase of the building but was preserved and reused during the LM IIIB period. This would have implied the digging out of the area of the platform up to the mouth of the two *gournes* and would explain the difference of level recorded here. South of column base C29 the foundations of a N-S running wall forming an angle with Wall C18 were found at lower level, appearing slightly lower and at the eastern limit of the pebble floor (fig. 5.10). The pottery recovered from the fill appears Neopalatial. It may be noted that the west part of Wall C18 is less regular and slightly differently oriented from this point onwards and preserves one more course than the eastern part. This may suggest that the eastern part of Wall C18 formed a later addition.

The evidence of the floor levels and wall construction seems to suggest that, during LM IIIB, an existing earlier room with a pebble floor may have been enlarged to create a Hall, also incorporating an earlier installation (“the press”). At this stage, a bin, a pot stand, two stone thresholds and two column bases flanking a possible fireplace may have been added (fig. 5.21). These different architectural characteristics confirm the importance of Room 3.1 and it clearly appears that serious efforts were made during LM IIIB to incorporate this Hall at Sissi. The location of the room on the very top of the hill, the two stone thresholds, the two stone column bases, and the axial arrangement of the space all give a monumental aspect to Room 3.1. From the North, a line can be drawn that goes through the column base of Room 4.8, the threshold in Wall D22 and the column base C29 in Room 3.1. Entering the Hall from the East, the threshold in Wall C1 lined up with the two column bases which must also have had a visual impact on any visitor.

Fig. 5.22. GENERAL VIEW OF ROOM 3.1 FROM NORTH (L. MANOUSOGIANNAKI)
3. Conclusions

An interesting parallel for Room 3.1 can be found at LM IIIIC Kephala Vassilikis, where a large rectangular room with internal dimensions 7.50 m by 5 m (E6 or the ‘Hall of the Hearth’) presents a similar axial plan with two column bases flanking a clay hearth and a stone-lined pit built against the North-west corner as at Sissi (Eliopoulos 1998: 305). Room E3, or the ‘Hall of the Altar’, is adjacent to the North but does not directly communicate with Room E6. Benches and a platform run along all of its walls; in the middle of the room is a low, table-like stone construction with an unworked stone incorporated in its northern end and interpreted as a baetyl by the excavator (Eliopoulos 1998: 306-307). Only some fragments of a figure with upraised arms were found in E3. Snake tubes, a votive pinax, cups, kalathoi and figures with upraised arms were, however, recovered to the South of the ‘Hall of the Hearth’, in Rooms E4 and E5 (Eliopoulos 1998: 307-309). The so-called ‘Temple complex’ at Kephala Vassiliki hence shares several characteristics (architecture and finds) with the Sissi building, even if at Sissi the religious function seems thus far restricted to Room 3.8.

Despite the proximity of the shrine, there is nothing to suggest a religious function for Room 3.1. The installation ("press") in the North-east corner as well as the bin and working slabs in the South-west corner suggest that domestic industrial activities were performed in Room 3.1. The size, location, organization and finds of Room 3.1 clearly show, however, that it was more than an ordinary domestic space. The Sissi Hall seems indeed to reflect a message of power and seems to have been designed to, occasionally at least, allow the gathering of an important number of people.

The nature of the building and the existence of the Hall in particular may have some impact on an attempt of interpreting Room 3.8. Above, I argued that Room 3.8 was an example of a domestic shrine. This designation is perhaps no longer appropriate, because it creates confusion between social and architectural characteristics. Taking the cult evidence on LM III Crete together we should perhaps no longer consider a distinction between on the one hand public and on the other hand domestic shrines but between independent structures and rooms incorporated into a residential building. Room 3.8 is an incorporated shrine, which does not imply it was a private one. It is, at the moment, too difficult to know which level of social structure is reflected by the building on the summit of the hill, its Hall and its Shrine: does it result from the initiative of a single individual, of a household or of a kinship group (see Mazarakis-Ainian 1997: 393)? Perhaps Room 3.8 at Sissi may for the moment being be called a ‘communal incorporated shrine’.

4. References

- Gaignerot-Driessen 2009 = F. Gaignerot-Driessen, Le bâtiment du sommet de la colline. La fouille de la Zone 3. in Sissi I, 113-128.


• Prent 2005= M. Prent, Cretan Sanctuaries and Cult. Continuity and Change from the Late Minoan IIIC to the Archaic Period, Brill, Leiden-Boston (2005).


5. Building CD

5.3. The Excavation of Zone 4

Quentin Letesson

The 2009 and 2010 campaigns in Zone 4 had two major objectives. The first was to define the limits of Building CD. The second was the excavation of its rooms and spaces down to their latest level of occupation (mostly LM IIIB). Deeper tests were also conducted within certain rooms and around the building. The following chapter is divided in two parts. First, the limits and some of the internal spaces of the building will be examined and several tests discussed. Secondly, the excavation of surrounding areas will be presented.

1. The Building on the Summit

As in 2007-2008, work in the area was divided in two zones. Excavation in Zone 3, under the supervision of Florence Gaignerot-Driessen, was mostly concerned with the central part of the building, namely rooms 3.1 and 3.8 (see above, figs. 5.1-5.5). In Zone 4, work focused on the northern and western facades (walls D55, D61-65), on spaces surrounding the major central room 3.1 to the north (4.5, 4.8, 4.9 and 4.10), west (4.7) and south (4.14), as well as on the south-southwestern parts of the building (4.11-4.13 and 4.15-4.18) (fig. 5.1).

1.1. The façades

Even if we require a complete architectural study for a detailed description of the walls circumscribing building CD, they nonetheless deserve some preliminary remarks. Most of these walls were already roughly delineated in the two first campaigns (Gaignerot-Driessen & Letesson 2009: 113; Letesson 2009: 130, fig. 6.22, 132, 134 and 136-137) but, in 2009 and 2010, the northern and western modern terrace walls were carefully cleaned to reveal the alignment of Minoan façades.

The northern façade is ca. 30 m in length and can be subdivided in three parts: D55, D61 and D62 (fig. 5.2). D55 runs on a NE-SW axis and is perpendicular to the fine facade wall D3 to which it is structurally connected. It is especially well preserved in its southwest part where its masonry recalls that of D3 (small to medium-sized stones constituting the inner face of the wall and larger blocks on the outside). Further to the northwest, the alignment of D55 is slightly different and the wall badly preserved. It was probably partly destroyed or ploughed away when the hill was under cultivation. As noted during the two first campaigns, it seems plausible that during the latest phases of the building, the northeast part of Zone 4 constituted an open-air area (Letesson 2009: 132-133), some kind of a terrace delimited or supported by walls D2, D3 and D55. A 2.50 m² test, opened at the corner between D3 and D55, came upon a clear fire destruction layer and underneath, along D55, revealed a shattered storage vessel whose entire lower part still contained burnt seeds, probably lentils (fig. 5.22-23). As in the western part of the street (area 8.1, see below), this fire destruction level is tentatively dated to the Neopalatial period. D61 forms the northern limit of rooms 4.5 and 4.8. This part of the northern wall is fairly well built with small to medium-sized stones. At the northwest corner of room 4.8 it makes a recess with D62, to the north of rooms 4.9 and 4.10. Both of these features will be discussed below, in the description of the rooms with which they are associated.

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1 Postdoctoral Fellow FRS-F.N.R.S. (Université Catholique de Louvain), Team: M. Anastasiadou (UMarburg, 2010), A.-M. Avramut (UViena, 2009), Th. Claeys (UCL, 2009), T. Daroczi (UHeidelberg, 2009), T. Gomré (ULyon, 2010), K. Jacobson (2009, 2010), N. Kress (UCL, 2009-2010), B. Lambrechts (KUL, 2009), S. Lannoye (UCL, 2010), G. Metaxarakis (2009-2010), M. Pietrovito (UViena, 2010), N. Rouvroy (UCL, 2009-2010), E. Stevens (Bryn Mawr, 2010), R. Vandam (KUL, 2009). I am very grateful to Carl Knappett who kindly corrected the English and to Alexandra Livarda for the preliminary but precious information concerning the results of the soil flotation of rooms 4.8-4.10.

2 The fire destruction level found in room 4.6 in 2008 (Letesson 2009: 134-136) could be contemporary. Nevertheless, the total absence of any diagnostic material precludes any precise dating of this context.
5. The Excavation of Building CD

Fig. 5.22. **Test in the corner between walls D3 and D55 from west** (Q. Letesson)

Fig. 5.23. **Lower part of a storage vessel (10-04-1730-OB001) with burnt seeds** (Q. Letesson)
Running on ca 25 m, the western façade, made of conglomerate and \textit{sidheropetra} boulders and stones of various sizes, shows typical recesses. It seems to have been built directly on bedrock. In its northern part (D48 and 49), it is well preserved and carefully laid out. Unfortunately, further south (D63-65), its alignment is somewhat harder to follow and distinguish from the modern terrace wall. The situation is especially confused in the southwest corner of room 4.7 (feature D31). Below the lowest course of D63, a so-called ‘bathroom bowl’, typical of LMIIIA1/2, may have been intentionally placed which could give a \textit{terminus post quem} for this part of the western façade (fig. 5.24).

In all likelihood, the southern limit of building CD was contiguous to the large open space 5.10 (see below) and constituted by the walls D51, D52 and D56 (see rooms 4.15-4.18 below for further description).

Unfortunately, the southeastern area of the building is still unclear and its limit presumably lies under the dump area of the two first seasons, to the east of rooms 4.12 and 4.13.

### 1.2. Room 4.5

Room 4.5 (2.90 m E-W x 2.10 m N-S; 6 m$^2$) is located to the east of room 4.8 (figs 5.1-5). This small space is bounded by the north façade (D61), wall D12 to the east, D11 to the south and wall C1 to the west. This area was briefly investigated during the 2008 campaign and a foundation deposit was found between C1 and D11 (Letesson 2009: 133-134, figs 6.26-27). After a thorough cleaning, excavation in this area mostly limited itself to the west part of room 4.5. The roots of two carob trees were chopped off while excavating but their large stumps were left in place. Most of the material that was found concentrated between these stumps seems to have been redeposited, presumably in one single fill\(^4\) (fig. 5.25-26).

Preliminary pottery analysis indicates a MM II date for the material, as exemplified by several drinking vessels: MM II handled conical cups (or ‘tasses tronconiques’, see Poursat & Knappett 2005: 290; 10-04-1667-OB002, 10-04-1667-OB003, 10-04-1667-OB004, 10-04-1667-OB006, 10-04-1671-OB001, 10-04-1671-OB003), hemispherical cups (10-04-1678-OB002, 10-04-1678-OB004) and carinated cups (10-04-1667-OB005, 10-04-1678-OB001, 10-04-1678-OB004), some with a fine lustrous black slip (10-04-1671-OB002, 10-04-1671-OB007).

A small limestone figurine (ht. 5.6 cm) was discovered close to the northwestern tree stump and is part of the

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3 \textit{Sidheropetra} (ironstone) is a local Greek word for a greyish to dark blue kind of hard limestone (Shaw 2009: 19).

4 Some vessels were mended with sherds that came from top to bottom of this fill indicating a one-time event. It is nonetheless possible that this deposit was strongly disturbed by the roots.
same deposit (fig. 5.25-27). It looks like a roughly worked pebble and resembles two similar figurines found in Zone 2 in 2009 (see above chapter 4, figs 4.8-9). At the same period, in Quartier Mu, a set of highly stylized stone figurines was found fallen from the upper storey in room V5 (Poursat 1992: 33, fig.22). Similar to our example, they only represent the upper part of the body, with the head and torso but are taller (ca. 14 cm) and much more carefully carved.

**Fig. 5.25.** DEPOSIT IN SPACE 4.5: FIGURINE CLOSE TO TREE STUMPS FROM SOUTH (Q. LETESSON)

**Fig. 5.26.** DEPOSIT IN SPACE 4.5: CLOSE-UP (Q. LETESSON)

5 Poursat insists on the fact that these are quite different from Cycladic figurines.
Part of a strainer (10-04-1667-OB001), an obsidian blade (10-04-1667-OB007), half of a plate (10-04-1684-OB001), sherds of a large container in a red fabric with double-axes and ropes in relief decoration (10-04-1689-OB002), as well as fragments of bones and shells, were also uncovered in the fill. The latter also produced two ‘champagne cup’ feet, however, and could therefore hardly be earlier than LM II-III. In the southwest corner of the room, some densely packed stones could have formed a small feature (fig. 5.28). Some 30 cm below, in the southwestern quarter of the room, part of a homogeneous MM floor deposit was discovered (figs 5.28-29). It contained two fragmentary MM II handled conical cups (10-04-1723-OB001 and 10-04-1723-OB002), part of a tripod platter (10-04-1723-OB004), an obsidian blade (10-04-1725-OB001), some obsidian flakes (10-04-1720-SA005, 10-04-1723-SA005), as well as a substantial amount of shells, bone and pieces of charcoal.

Fig. 5.27. **LIMESTONE FIGURINE FROM DEPOSIT IN SPACE 4.5 (CHR. PAPANIKOLOPOULOS)**

Fig. 5.28. **MM DEPOSIT IN SOUTHWEST PART OF SPACE 4.5 FROM SOUTH (Q. LETESSON)**
Between the upper fill and this floor deposit, only a few small and rolled sherds were found in a sandier yellowish soil. This layer probably resulted from a progressive fill of the earlier floor. At the level reached at the end of the 2010 campaign, wall D11 was still going down. The lower part of C1 was made of small to medium-sized stones, a type of masonry that contrasts with the larger blocks of its higher courses. Strangely enough, in room 4.5, the inner face of wall D61 is only one course high (fig. 5.28). This may imply that it is actually later than D11 and C1 and may even be modern (terrace wall), but further investigation is required to draw a more definite picture. Just to the west of the MM floor deposit, the upper course of a NW-SE wall started to appear (fig. 5.28). Its relation to the aforementioned stone feature in the southwest corner is unclear but its orientation is different from the surrounding walls. Together with the MM floor deposit, this wall shows the existence of a Middle Minoan occupation on the top of the hill.

1.3. Room 4.7

Located just to the west of room 3.1, room 4.7 measures some 23 m² (4.10 m E-W x 5.60 m N-S). Its northwest corner is delimited by two façade walls (D49 to the north and D63 to the west). D27 formed its southern limit and D17 its eastern one. Unfortunately, its northeast corner shows a far more complex situation and was probably disturbed by a sounding conducted by C. Davaras in the 60’s (fig. 5.48). It is therefore difficult to have a better picture of wall D42 from which the northern part is lost. It could have been a partition wall within room 4.7 or have formed its northeastern limit. Originally, the room must have been accessible from the south through a 1 m wide opening between D27 and D17. This door was found blocked with small-sized stones and was probably turned into a small niche. Another blocked entrance may have existed in wall D17, leading to the northwest corner of the large room 3.1. As mentioned above, the way D42 was connected to neighboring walls is particularly unclear.

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Some other evidence of MM occupation has been found in room 4.14 and in a test north of room 4.9 (see below), as well as during the 2007-2008 campaigns in the eastern part of Zone 4 (rooms 4.1-4.3, see Letesson 2009: 132).

In the first preliminary report this artificial hollow was mistakenly interpreted as an Italian gun-post from WWII (Letesson 2009: 137).

Some stones running perpendicularly to D42 could have formed a very badly preserved wall (provisionally labeled D43) connecting D42 with D17, but this requires further investigation.

This is corroborated by the rough-hewn block that forms the eastern end of wall D27.
but it is tempting to propose that it may have formed the western limit of a small transitional space leading either north to room 4.10 or south to room 4.7, or even simply to both. It is worth noting that the only floor level securely identified in the room was precisely located in the area circumscribed by walls D42, D17 and Davaras’s test\(^\text{10}\). It was made of trodden earth and showed a strange line of flat pebbles carefully laid out along D42 (fig. 5.30). At the centre of the southern part of the room, a stone with two small cavities (D59; ca. 0.6 x 0.5 m) could have been a rudimentary column base (fig. 5.31-35).

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10 The silty yellowish soil that covered this area is very similar to a layer excavated in rooms 4.8-4.10 and interpreted as a fill (see below).
Generally, the excavation of the area and the reading of its stratigraphy were complicated by the presence of a widespread tumble of medium-sized stones mixed with decayed mud-bricks and mud-brick fragments whose density was particularly high in the southern part of the room (figs. 5.30-31). Throughout the room, an unusual amount of plaster fragments, some painted, was found. Usually they appeared in chunks, with several fragments on top of one another and between the stones of the tumble. It is therefore more likely that they came from wall coatings rather than from a plastered floor on the upper storey. The fact that they were found in larger patches along walls D49, D63 and D27 seems to corroborate this hypothesis (figs 5.32a-b).

Fig. 5.32. A & B: WALL PLASTER DEPOSIT ALONG WALL D49 IN SPACE 4.7 (Q. LETESSON)

Nevertheless, in 2009 a very large plaster surface was also found in the southwest corner of the room (fig. 5.33a). When it was properly excavated the next season, it turned out that it was actually constituted of several layers of plaster – locally up to six – probably stacked there (fig. 5.33b). The nature of such a heap remains uncertain but it is most likely intentional\(^\text{11}\).

Once the plaster was removed, a patch of floor surface was discovered that probably corresponded to the level on which D59 was lying (fig. 5.34) as well as to the area east of D42. Unfortunately, this floor level, probably too damaged by the collapse of the neighbouring walls, was not recovered elsewhere. To the west of the plaster stack, the tumble was particularly dense (fig. 5.35). Its eastern side was first considered as the western wall of the room (D31) but plaster fragments were found beneath it (fig. 5.34) corroborating the tumble hypothesis.

\(^{11}\) A parallel could be tentatively drawn with the fresco stack in the ‘House of the Frescoes’ in Knossos (\textit{PM} II: 431-467). It could perhaps also have formed an installation that would have been re-plastered through time but this seems less plausible.
Fig. 5.34. Patch of floor surface below plaster stack in space 4.7 (Q. Letesson)

Fig. 5.35. Area with tumble in southwest corner of space 4.7 from south (Q. Letesson)
Throughout the room, some 10 cm below the tumble, a harder surface of trodden earth was found. Very few finds were made on this level apart from a smashed *pithos* (09-04-1646-OB001) and two lithic tools (09-04-1646-OB002-003), just to the west of D42 (fig. 5.36). On the other side of the latter, just above the tumble, a complete stirrup jar (09-04-1627-OB001, fig. 5.38) was also found. The floor level to the east of D42 produced a broken grinding stone (09-04-1645-OB001), a lithic tool (09-04-1645-OB002) and a tripod cooking pot (09-04-1645-OB003) totally crushed by wall collapse (fig. 5.37). It is also worth mentioning that while the topsoils of room 4.7 were excavated, a Neolithic axe (fig. 1.5) was collected.

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**Fig. 5.36.**  
*Pithos in situ in Room 4.7 from north (Q. Letesson)*

**Fig. 5.37.**  
*Tripod cooking pot in situ in Room 4.7 from north (Q. Letesson)*
1.4. Room 4.8

Room 4.8 (4.50 m E-W x 2.60 m N-S; 11 m²) is located to the north of room 3.1 and to the west of room 4.5 (figs 5.1-5). It is circumscribed by the northern façade D61 (badly preserved in the eastern part of the room), C1 to the east, D22-C3 to the south, and D23 to the west. In 2009, most of the room was excavated (fig. 5.39), and in 2010, the northern baulk and the modern terrace wall were finally removed to reveal the alignment of D61 and get a better picture of the eastern limit of the room.

Fig. 5.38. Stirrup Jar 09-04-1627-OB001 from Room 4.7 (Chris Papanikolopoulos)

Fig. 5.39. Room 4.8 at the end of the 2009 campaign from south (Q. Letesson)
Originally, wall D22 was interrupted by a fine *sidheropetra* threshold (figs. 5.1, 5.17 and 5.21). This doorway between room 4.8 and large room 3.1 was found blocked. It is also possible that in one of the latest phases of the building, an opening existed in D23, connecting room 4.8 to room 4.9 (see below).

The stratigraphy of room 4.8 was particularly clear and interesting. Below the superficial layers, a silty yellowish soil, quite different from the type of earth usually found on the hill, was encountered throughout the room. The same layer was also identified in rooms 4.9 and 4.10 and was interpreted as a fill. For that matter, sherds of a *pyxis* (09-04-0722-OB001) were found in this layer on both sides of wall D23. In room 4.8, this yellowish fill also produced, from top to bottom, the sherds of the same closed vessel (09-04-0732-OB001) indicating that it probably happened as a one-time event, similar to that in room 4.5. In the southwest corner of the room the fill contained an unusual amount of pumice lumps. Further to the north, it also revealed a fragment of a serpentine vessel (10-04-1744-OB001), part of a small bronze object (10-04-1744-OB002), a lithic tool (10-04-1744-OB003) and a fragmentary quern stone (10-04-1744-OB004). Underneath this layer, a floor made of trodden clay appeared. It was probably laid out subsequently to a rough leveling of the progressive accumulation of debris of daily use on the pebble surface that was found below. This clay floor can be associated with a heavily burnt area delimited by some stones – presumably a hearth – in the western part of the room which also produced a loomweight (09-04-0744-OB001). Through flotation, a soil sample of the area revealed some rodent bones and charred plant remains. Along D22 and close to its doorway, a particular feature (D30, for its location see fig. 5.2) was also identified and could be related to the latest occupation of room 4.8. It was constituted by a thick slab (ca 0.40 x 0.43 m), on top of which a quern stone (09-04-0747-OB001) was originally lying upside down together with the lower part of a storage vessel (04-09-0729-OB001) (fig. 5.40). It presumably worked as an industrial installation. Many shells were also found in the area.

Already protruding at various spots through the clay surface, a pebble floor was finally reached in the whole room (figs 5.39-41). It was covered with a thin layer of ashy earth and was constituted by several layers of pebbles. A fine column base (max. diam. 0.35 m), embedded in the pebble floor, was found in the middle of the room (fig. 5.39). The pebble floor produced a loomweight (09-04-0751-OB001), two stone vase fragments (09-04-0751-OB002 and 09-04-0795-OB001), a small and fragmentary terracotta piece with one smooth side that may have been part of the inner coating of a hearth or oven (09-04-0779-SA006), a little piece of lead (09-04-0790-OB001), and a pumice artefact (10-04-1753-OB001).

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**INDUSTRIAL INSTALLATION D30 IN SITU IN ROOM 4.8 (Q. LETESSON)**

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12 See also note 10.
13 It seems plausible that the room actually knew a succession of several pebble floors, progressively leveled into a clay surface.
1.5. Room 4.9

To the west of room 4.8, a small room (2.40 m E-W x 2 m N-S; 4.80 m²) labeled 4.9 turned out to be of great interest. Its limits are the northern façade (D62), wall D23 to the east, wall D22 to the south, and D47 to the west (figs 5.1-5). The room was first touched at the very end of the 2008 campaign and more closely investigated the following year when the north baulk was also removed to reveal its full floor area. In terms of access, room 4.9 underwent several modifications. During its later phase, it seems that it communicated with room 4.10 only. Wall D47 showed indeed a 0.75 m wide opening in its upper courses, just to the north of a good ammouda block D37 (fig. 5.45c)\(^\text{14}\). Right in front of this first opening, within wall D23, another doorway which connected 4.9 with 4.8 seems to have been blocked. This modest doorway (ca. 0.70 m wide) was probably contemporary with the acme of the building when all the neighbouring rooms were functional and interconnected (see the description of the LM IIIB deposit below). A blocking made of rubble quite distinct from the surrounding masonry was also found in the northern façade wall D62 (discussed below, fig. 5. 82). It is hard to tell if this rudimentary opening (no threshold or sill) was a door or a window but it was most likely blocked in the latest phases of the building\(^\text{15}\).

Stratigraphically, room 4.9 is relatively similar to 4.8. Once the topsoils were removed, a yellowish and silty layer was encountered. This fill, also covering the upper course of wall D23, produced mixed material with a high concentration of fine and decorated LM I(A)-B-II-IIIA1 pottery (discussed by C. Langohr, this volume). Below, several medium-sized stones, probably representing collapse from the surrounding walls, were removed and revealed a fine destruction deposit resting on a poorly preserved clay floor. With the exception of the material that was unearthed in 2008, it was mainly concentrated in the northern part of the room, along D62 and D23 (figs 5.41-42).

\(^{14}\) It is not impossible that this opening also existed in the earlier phase of the building, maybe as a window.

\(^{15}\) If it was a door, room 4.9 was, at some point, one of the entrances of building CD.
Along with the finds described from the first excavation campaigns (Letesson 2009: 136-137, figs 6.31-32), it produced, amongst others, fragments of two or three *pithoi* (09-04-0731-OB001; 09-04-0767-OB008), several cups, bowls, and jugs probably fallen from a shelf along D62 (09-04-0739-OB003-004; 09-04-0761-OB002; 09-04-0767-OB003-006; 09-04-0767-OB021), part of an incense burner (09-04-0767-OB007), a bronze needle (09-04-0767-OB001), several lamp handles, a stone weight (09-04-0767-OB001), a whetstone (09-04-0767-OB024), a piece of stalactite (09-04-0761-OB001), and multiple lithic tools (09-04-0767-OB009-012; 09-04-0767-OB014-17; 09-04-0767-OB019-20 and 09-04-0767-OB021). A detailed pottery analysis of this LM IIIB deposit is given elsewhere in this volume (C. Langohr, chapter 8).

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16 A terracotta slab found in the southeast corner of the room probably was as a base for one of these storage vessels (fig. 5.44).
Some of the soil samples from this context were processed through flotation and already provide some exciting preliminary results. In 09-04-0721-SA004, quite a few charred plant remains, including olives, barley, grapes, lentils, and other fruits/nuts were found. In the same sample there were also some bones and shells. Furthermore, in the outlet of the drain flowing from room 4.9 to 4.10 (see description of the latter below), another sample (09-04-1610-SA004) revealed material that was probably washed away from the floor of 4.9. It contained fish bones, crab remains, sea urchins and a variety of charred plant remains, including legumes, such as lentils, grapes and olives. Even if these soil samples and the material that they produced are currently still under study, it can be tentatively argued there is evidence of consumption and/or food preparation in room 4.917.

Close to the walls surrounding the room the remains of a plaster floor were identified. In some places, the latter also covered the lower part of walls D22 and D23. The same plaster coating was also used in relation with the drain opening under wall D47. This plastered surface is probably all what is left of an earlier floor which was destroyed, cleaned and leveled to create the latest clay floor of the room18. While cleaning the latter, a rudimentary gourna (max. diam. 0.30 m) was also found (fig. 5.44). It was centrally located in the room and embedded in what seems to be a pebble floor that started to appear underneath the clay floor, like in room 4.8. This hypothetical earlier floor showed obvious traces of burnt material and ashes (fig. 5.44) but remains to be investigated further. A terracotta spindle whorl was also found close-by (09-04-1607-OB001).

17 Some small rodent bones were also found in the second sample, perhaps mice that were attracted in the ‘kitchen’ area.
18 Quite a few plaster fragments were also found at the outlet of the drain within room 4.10 (see below).
Just underneath the *ammouda* block D37, wall D47 showed the outlet of a built-in terracotta drain coming from room 4.9 (fig. 5.45c). Some 0.40 m below, the drain flowed into a drainage channel made of thick upright slabs the southern part of which still extends into the baulk (fig. 5.45c and 5.46). This carefully built gutter runs E-W and probably ran through wall D48 (fig. 5.45a).

It seems that the terracotta drain continued to flow into the room at a later stage. At the time, several large *pithos* sherds may have been used to guide the water flow. At this level, many plaster fragments (probably coming from room 4.9) were found at the outlet of the drain in 4.10. Furthermore, a slight change in the nature of the soil within the room may have indicated the later channel that probably crossed the room diagonally (fig. 5.47) towards the northern end of D48. The latter showed a gap in its masonry that presumably worked as the outlet of the channel (fig. 5.45a).

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19 See Shaw 2009: 137-139.
20 See Shaw 2009: 86-90 for other examples of stone drainage channels in Minoan architecture.
21 Being some 0.20 m higher, this gap could hardly be related to the stone gutter.
Fig. 5.47. **HYPOTHETICAL LATER CHANNEL WITHIN SPACE 4.10 FROM SOUTH (Q. LETESSON)**

Stratigraphically, room 4.10 revealed two destruction deposits. Below and partly mixed with the yellowish fill which was also encountered in rooms 4.8 and 4.9, a first deposit was probably constituted by material fallen from an upper floor, a roof terrace and/or shelves along the walls. This deposit rests on a thick layer of roof or ceiling material (*lepidochoma* and small fragments of flat stones) mixed with ash and flecks of charcoal. It produced notably half of a stone mortar (09-04-0739-OB002), a triton shell (09-04-0759-OB002), a tripod vessel (09-04-0774-OB001), a large *lekane* (09-04-0783-OB001), the rim, handle and shoulder of a large storage vessel (09-04-0783-OB002), the upper part of a stirrup jar (09-04-0783-OB003), and the sherds of a painted globular jar (09-04-0789-OB001) (fig. 5.48a-b and 5.49a-b).

22 This deposit could also come from a simple fill, like in room 4.9. Nevertheless, the state of preservation and fresh breaks of the ceramic material (see figs 5.48a-b) points towards the hypothesis presented here.
Below the ceiling material, a much harder layer was reached (fig. 5.47). It showed quantities of pebbles and fragments of plaster. Once excavated, it produced a second destruction deposit with many flakes of charcoal\(^{23}\), bone and plaster fragments, little stones, but also a large number of crushed conical cups (09-04-1630-OB001, 09-04-1630-OB006-007, 09-04-1630-OB013, 09-04-1630-OB016-017) in a very loose and silty earth (fig. 5.50). Once removed, this thick layer revealed the aforementioned stone gutter.

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\(^{23}\) Parts of a charred branch (09-04-1622-OB001) and plank (09-04-1622-OB002) were also found in the deposit.
1.7. **Room 4.11**

Room 4.11, the second largest room in Building CD after room 3.1 also deserves to be identified as a hall, although less monumental than room 3.1, discussed above (figs 5.1-5). This large trapezoidal room (5.25 m E-W x 6.50 m N-S; ca 34 m²) is located to the west of rooms 4.12 and 4.13, in the southern part of the building. It is bounded by wall C11 to the west, C8 to the north, D38 (of which the northern part was using the bedrock) and D34 to the east, as well as D35 to the south. The room had at least two distinct entrances and a more hypothetical third one. The latter, in the southwest part of the room, would have connected 4.11 with 4.17. The two other entrances are located to the northwest and to the southeast. The first, a 1.45 m wide opening between walls C11 and C8, connected room 4.11 with a transitional space that ultimately led to sanctuary 3.8, discussed above, as well as rooms 3.2, 3.3 and perhaps even 3.6. The second, marked by a fine *sidheropetra* threshold (0.75 x 0.22 m; ht. 0.20 m), preceded by a step made of smaller stones, opened out to space 4.18 (figs 5.59 and 5.76). The most distinctive feature of the room is definitely formed by the two pillar bases (D29 and D32) aligned on its N-S axis (fig. 5.1-5 and 5.51). Both are similar *ammouda* blocks (0.46 x 0.46 m; ht. 0.40 m) wedged into place on the bedrock by some smaller stones (fig. 5.52). In its southern face, D32 shows two large cavities that seem natural (fig. 5.53). Even if one could hypothesize that they may have been intentionally carved, their potential function would nonetheless remain particularly elusive. Lying on the bedrock to the northeast of the pillar base D29 was a *sidheropetra* column base (max. diam. 0.38 m; ht. 0.12 m) (fig. 5.55). It is either fallen from the upper floor or simply reused, as a seat or a pot stand, similar to other stone slabs found in the room. Against the north wall C8 is also a fine *sidheropetra* slab D66, 0.40 x 0.20 m, which at first looks like a threshold stone, but may also be reused as a small work platform or, most likely, as a special seat (fig. 5.51).

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24 This opening may have been blocked at a later stage.
25 To the east of it, a flat square slab of the same material (ca 0.20 x 0.20 m; ht. 0.07 m) was perhaps part of the threshold but could also have supported a wooden post framing the door.
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Fig. 5.51. General View of Room 4.11 from East (J. Driessen)

Fig. 5.52. Room 4.11: Pillar Base D32 from North (J. Driessen)

Fig. 5.53. Room 4.11: Pillar Base D32 from South (Q. Letesson)
Between the two pillar bases, a roughly triangular area of hard reddish soil was isolated during excavation (figs 5.51 and 5.54). Just around it, the earth contained ashes, flecks of charcoal, many bones, as well as some terracotta fragments that may have been part of the inner coating of a hearth (09-04-1632-SA005). Samples from this hearth/cooking area were taken for archeo-environmental and micromorphological analysis and are currently under study.

While excavating room 4.11, it was particularly tricky to find a clear floor level throughout the room. Quite quickly, the bedrock, most likely used locally as a floor surface, was reached at various spots in the room. Unfortunately, elsewhere it was especially difficult to define a clear occupation level. Nevertheless, after the removal of a thin but very hard layer of mud-brick fragments, decayed mud-bricks and sherds, a good LM IIIB destruction deposit was discovered over the entire room (discussed in detail in chapter 8, this volume). Most of the material seems to have been crushed on the floor, probably when building CD was destroyed, but some objects, a little bit higher up in the stratigraphy, could also have fallen from an upper floor or from shelves during the same event (figs 5.55-56).

Fig. 5.54. **HEARTH WITHIN ROOM 4.11 FROM EAST (Q. LETESSON)**

Fig. 5.55. **GENERAL VIEW OF LM IIIB DESTRUCTION DEPOSIT IN ROOM 4.11 FROM EAST (L. MANOUSOGIANNAKI/N. KRESS)**
In the northwest part of the room, close to the opening between C11 and C8, a snake tube (09-04-0742-OB001), relatively similar to those of sanctuary 3.8 was found (see Driessen-Gaignerot, this volume). Next to the latter, sherds of a large *pithos* (09-04-1625-OB008) that probably originally contained pumice lumps was also unearthed together with a globular painted stirrup jar (09-04-0757-OB001), two fragments of a terracotta drain or gutter (09-04-0742-OB006, 09-04-0762-OB003) and a fragment of a hypothetical circular hearth in terracotta (09-04-0762-OB003), a small bronze needle (09-04-0757-OB003), two obsidian blades (09-04-0742-OB003, 09-04-757-OB002), several stone tools (09-04-0768-OB002-003, 09-04-0770-OB001, 09-04-0770-OB003, 09-04-1606-OB001), a loomweight (09-04-0770-OB002), and the body of an animal figurine (09-04-0768-OB001). In the northeast part of the room, the deposit produced two tripod cooking pots (09-04-1625-OB001 and 09-04-1625-OB006), a globular stirrup jar (09-04-1609-OB002), several lithic tools (09-04-0771-OB001-002; 09-04-1625-OB010), two obsidian blades (09-04-1603-OB001, 09-04-1633-OB002), a little pendant (09-04-0771-OB003) made from a polished and pierced shell (fig. 5.57), and a bronze needle (09-04-1633-OB001).
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Fig. 5.58. Obsidian arrowhead 09-04-0793-OB003 (CH. PAPANIKOLOPOULOS)

Around D32 and close to the hearth, other discoveries comprised a goblet (visible on fig. 5.53) (09-04-0793-OB001), another globular stirrup jar (09-04-1614-OB001), a painted storage stirrup jar (09-04-1625-OB001), a pyxis (09-04-1614-OB001), a lid (09-04-1625-OB005), a whetstone (09-04-0793-OB002), an obsidian arrowhead (fig. 5.58) (09-04-0793-OB003), two lithic tools/stone weights (09-04-1625-OB003-004), two possible lithic tools (09-04-1619-OB001, 09-04-1619-OB003), a piece of lead (09-04-1614-OB003), and an obsidian blade (09-04-1614-OB004). Close to the southeast doorway of room 4.11, the upper part of a pithos (09-04-1625-OB007) was found together with a grinding stone broken in two (09-04-1648-OB001) (fig. 5.59), a stalactite fragment (09-04-1628-OB001), an obsidian blade (09-04-1628-OB004), and a fragmentary stone weight (09-04-1628-OB005).

Fig. 5.59. Upper part of a pithos and broken grinding stone in the southeast part of room 4.11 from the north (Q. LETESSON)

In the southwest part of the room, in an attempt to find a clear floor surface, what seems to be an earlier level was touched (compare figs 5.51 and 5.55). It revealed the upper course of an E-W wall (D39)\(^{26}\), to the north of which was found a round stone with a central cavity that may be a gourna. Around the latter, the soil was filled

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\(^{26}\) One could also imagine that D39 was actually the lower course of a light partition wall within room 4.11. The latter would have circumscribed a small transitional space that would have connected 4.11 with 4.17 while concealing the former from the latter.
with sherds and could represent the upper layer of the fill of a pit. Amongst these sherds, the base of a stirrup jar (09-04-1624-OB002), the foot of a ‘champagne cup’ (09-04-1624-OB003), and sherds decorated with circles and dots that may represent parts of a large animal figurine (09-04-1624-OB004) were noticed.

While working on defining the northeastern limit of room 4.11, a 1 m² area covered with stone slabs, some of which it probably represent discarded grinding stones, was cleaned (figs 5.51-5.60). It was located just west of room 3.2 (Gaignerot-Driessen 2009: 121, fig. 6.11) of which probably formed part. It probably constituted a work platform. Some large pumice lumps and sherds that probably belonged to the upper part of a large pithos, found upside down against the platform in 2008, were also found.

Fig. 5.60. STONE PLATFORM AT THE EASTERN END OF ROOM 3.2 FROM SOUTH (Q. LETESSON)

1.8. Room 4.12

Room 4.12 is located just to the east of room 4.11 from which it is separated by wall D34. It is circumscribed by wall D33 to the south and wall D36 to the north (figs 5.1-5.5 and 5.61).

Fig. 5.61. ROOM 4.12 FROM NORTH (Q. LETESSON)

27 It is possible that this area of room 4.11 was filled and leveled to establish the latest floor surface.
As is the case for room 4.13, room 4.12 was only partly investigated and extends further east into the baulk. Its excavated part is about 7 m². Wall D36 is interrupted by a doorway that connects room 4.12 to room 4.13 via a large ammouda threshold (ca. 0.80 x 0.30 m) (fig. 5.61). Another opening may have existed in the south wall D33 towards space 4.18. No clear floor surface could be identified in the room even if the lowest level reached was slightly harder than the upper strata. From the southeast corner of 4.12 comes a gourna (09-04-0777-OB002) associated with an odd terracotta object (09-04-0777-OB001) pierced in its base, perhaps a reused vessel (figs 5.61-62).

At the level where excavation stopped, some scattered finds were made including the sherds of a kylix (09-04-0784-OB001) that could be mended into a profile, a fragment of a lamp (09-04-0784-OB002), part of a fenestrated stand (09-04-0784-OB003), as well as three fragmentary conical cups (09-04-0786-OB001-003).

1.9. Room 4.13

Similar to room 4.12 to the south, room 4.13 was only partly excavated and extends further east into the baulk (fig. 5.2)²⁸. As mentioned, wall D36 with its ammouda threshold forms its southern limit. To the north, the room is bounded by wall D57 and to the west by wall D38 of which the northern part is actually formed by the roughly worked bedrock. Three installations were found in the room. The first one (D44, see fig. 5.2) is located in the corner between D36 and D38 and is bordered to the north by an upright sidheropetra block (fig. 5.63). In this little closet-like space were stored a terracotta slab and a collection of lithic tools of various size and textures (09-04-1613-OB002-003; 09-04-1613-OB005-006) hidden beneath an upside down grinding stone (09-04-1613-OB004). D44 probably worked as a storage space for objects related to grinding activities. Some other lithic tools (09-04-775-OB001; 09-04-1616-OB001) and a particular stone weight (09-04-1613-OB001) were also found nearby. The area also produced a small quantity of shells, including at least two or three murex shells. A little bit further to the north, also along D38, the pierced lower part of a large vessel (09-04-1658-OB001) was found partially surrounded by medium-sized stones (D60) at a slightly higher level than the floor surface (fig. 5.64). The function of such an installation is unclear but the stones may have been placed there in an attempt to stabilize the vessel. The third feature (D40), in the northeast part of the room, is a thick ammouda slab (ca. 0.45 x 0.30 m; ht. 0.12 m) which formed some kind of platform (fig. 5.65). The area around D40 bore traces of destruction that were not found elsewhere in the room: charcoal, collapsed small to medium-sized stones, mud-brick and plaster fragments, as well as pieces of tarazza²⁹.

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²⁸ The part of the room that was actually excavated covers an area of ca. 10 m².
²⁹ See Shaw 2009: 149-150.
Apart from these features, there was no substantial deposit on the floor of the room. Nevertheless, some finds that are worth mentioning were made in the proximity of the *ammouda* platform D40: a small stone lid (09-04-1608-OB001) and two loomweights (09-04-1618-OB001; 09-04-1623-OB003). Some diagnostic sherds were also objectified in the *apothiki* after being mended: the foot and lower part of a red painted *kylix* with horizontal thin lines (09-04-1608-OB002), the rim and handle of a *kylix* with red painted spiral decoration (09-04-1608-OB003) and the rim and upper body of a bell krater with octopus decoration (09-04-1608-OB002).
During the 2010 campaign, a sounding was also opened in room 4.13 in an attempt to localize the assumed continuation of the street level found to the northeast (Letesson 2009: 137-138, fig.6.33; see also the discussion on space 8.1, below, by T. Gomrée). This 1.40 x 3.00 m test was opened within the room and through its eastern baulk (fig. 5.66). The latter was first dug until the level reached in 4.13 and revealed some large stones that may have constituted the eastern limit of the room. In its western half, the test revealed a layer made of densely packed small and rolled sherds that undoubtedly constituted the fill/leveling required for the laying out of the floor surface reached throughout the room. This layer also produced fragments of mud-bricks and plaster, small pumice lumps, pebbles, bone, a boar’s tooth, shells, two cups (10-04-1741-OB001; 10-04-1746-OB002), a small incense burner or firebox (10-04-1745-OB002) (fig. 5.67), a loomweight (10-04-1746-OB003), and the base of a terracotta beehive (10-04-1746-OB001).

![Test opened in room 4.13 and eastern baulk from west (Q. Letesson)](image)

![Firebox 10-04-1745-OB002 from test in 4.13 (Chr. Papanikolopoulos)](image)
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### 1.10. Room 4.14

Located between the sanctuary (3.8) and room 4.6, just to the south of the hall (3.1), room 4.14 (2.80 m E-W x 3.50 m N-S; ca 10 m²) was mostly excavated in 2010 (figs 5.1-5). It is bounded to the east by wall D16, wall C7 to the south, C9 to the west, and C18 to the north. A small gap between C9 and C7, in the southwest corner of the room, may have constituted a small niche. On the other side of the room, bordering room 3.1, it seems plausible that an opening in wall C18 was blocked with rubble, therefore isolating 4.14 from the hall with which it originally communicated. In its northwest corner, the room had two steps (D41) that led up to the doorless spaces 3.10 and 3.9, flanking the shrine 3.8 (see F. Gaignerot-Driessen, above) (fig. 5.68). The lowest step was formed by a large ammouda block (ca. 0.65 x 0.35m; ht. 0.25 m) and packed earth, the second one was built with two flat stones roughly aligned (ca. 0.70 x 0.20 m; ht. 0.18 m). Just to the west of the second rudimentary step, a small area could have formed some sort of a landing. There, along wall C18, a stone with a carved depression – probably a pivot hole – was discovered. It is hard to tell if this stone was in situ but it could attest to the presence of a door. The two steps probably constituted the first flight of a stairway that could have extended above the doorless spaces 3.9 and 3.10 or made a return towards the south, using the thick wall C9 as foundation.

Throughout the room, a floor surface made of trodden earth was quickly reached. Within the floor, some stones appear which were afterwards identified as the upper course of two earlier walls (D45 and D46) (see below). D46 only showed the upper face of one of its blocks, close to D41, and may have been reused as a slab in front of the stairs. On the contrary, more of D45 was already visible and it seems plausible that this part of the wall was used as a work platform contemporaneously with the trodden earth floor surface (fig. 5.69). Close-by, quite a few lithic tools were found (09-04-1653-OB001-006, 10-04-1663-OB002-005). Oddly enough, most of the other finds were concentrated in the east part of the room, along wall D16 while almost nothing was found to the west (fig. 5.69).

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30 It seems unlikely that this could be a blocked entrance but excavation has not entirely finished here.
31 In the first case, the stairs could have been really low and only give access to 3.9 and 3.10 that were probably basement-like spaces. On the other hand, the fact that C9 was reinforced by wall C29 to the west and some kind of a buttress wall (C27) to the east, within room 4.14, might indicate that another flight of steps existed to the south. Of course, these hypotheses are not mutually exclusive.
This deposit produced an unusual number of lithic tools (09-04-1637-OB001, 09-04-1638-OB002-003, 09-04-1650-OB002, 09-04-1654-OB005-006, 10-04-1681-OB001-005, 10-04-1681-OB007, 10-04-1698-OB001-003), a small pendant in semi-precious stone (09-04-1638/OB001), some loomweights (09-04-1644-OB001, 09-04-1654-OB003, 10-04-1661-OB001), the sherds of at least two small stirrup jars (09-04-1650-OB001; 09-04-1653-OB007), a broken grinding stone (09-04-1654-OB002), part of a triton shell (09-04-1654-OB004), a whetstone (10-04-1661-OB002), a possible bone tool (10-04-1681-OB008), a stalactite fragment (10-04-1681-OB006), as well as some feet of tripod cooking pots.

Fig. 5.69. **ROOM 4.14 FROM THE NORTH (Q. LETESSON)**

A 2 m² sounding was also opened in the northwest part of the room, between D41, D45, D46 and C27 (fig. 5.71). Quite quickly, it appeared that D45 and D46 were the remains of earlier perpendicular walls, while the first ammouda step of D41 and C27, already floating, had to be associated with the later trodden earth floor. In the highest layers of the test, the sherds of a low MM II carinated cup (10-04-1679-OB001) were found. The sounding also revealed quite a number of medium-sized stones. Below, a small destruction deposit was reached. It contained the pierced base of an amphora (10-04-1703-OB001) and a large open vessel (10-04-1703-OB002 and 10-04-1711-OB001) crushed beneath the latter (figs 5.70a-b).

Fig. 5.70. **A & B: DESTRUCTION DEPOSIT IN TEST IN ROOM 4.14 (Q. LETESSON)**
In all likelihood, this destruction deposit, as well as the walls D45 and D46, testifies to the existence of an earlier occupation on the top of the hill.\textsuperscript{32}

1.11. Rooms 4.15-17 and space 4.18

These rooms constitute the southernmost wing of building CD (figs 5.1-5). They were only superficially cleaned during the 2010 campaign and will therefore only be briefly described here.

Room 4.15 (2.50 m E-W x 2.50 m N-S; 6.25 m\textsuperscript{2}) is located just to the south of room 3.5. It is bounded by the poorly preserved west façade wall D65, wall C10 to the north, D53 to the east and D51 to the south (fig. 5.72). An opening between D51 and D52 may have formed an entrance. If exact, it would have connected building CD with the large open area that extends to the north of building 5 (discussed in chapter 6, below). In the northeast corner of the room, close to some kind of niche in wall C10, a \textit{sidheropetra} slab that may have been a threshold was found in the alignment of D53. Around it is a concentration of medium-sized stones, perhaps tumble. Close to wall D53 and especially D51, the outline of several large vases can be traced, which will be explored during the 2011 campaign.

\textsuperscript{32} See already n. 6.
Just to the east of 4.15 is room 4.16 (2.20 m E-W x 2.60 m N-S; 5.70 m²) which also revealed a large number of sherds, bone and plaster fragments when the topsoil was removed. This little room is circumscribed by walls D53 (west), D52 (south), C10 (north), and D54 of which the northern part is constituted of roughly worked bedrock (east) (fig. 5.73). Apart from a hypothetical opening towards room 4.15, a doorway connected room 4.16 to room 3.3 to the north. This opening may have been preceded by a step of which the upper part is already visible (fig. 5.73).

The surface reached beneath the topsoil of room 4.17 (2.70 m E-W x 2.20 m N-S; ca 6 m²) is literally covered with sherds. The space is bounded to the west by wall D54, to the south by D52 and D50 to the west (fig. 5.74). To the north, room 4.17 opens onto niche 3.7 where several small jugs were discovered in 2008 (Gaignerot-Driessen 2009: 122-123, fig. 6.14). Further to the east, 4.17 perhaps also gave access to room 4.11.
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Fig. 5.74. **Room 4.17 from south (Q. Letesson)**

To the east of room 4.17 and south of rooms 4.11 and 4.12, space 4.18 is less clearly defined than the three already mentioned rooms (fig. 5.75). To the west, it is bounded by wall D50, to the north by walls D35 and 33.

Fig. 5.75. **Room 4.18 from west (Q. Letesson)**

At the eastern end of D35, a fine *sidheropetra* threshold gives access to room 4.11. Right next to it, sherd of a *pithos* with rope decoration and of an open vessel with octopus decoration, perhaps a krater (09-04-0785-OB001) (figs 5.76-77) were found together with a lithic tool (09-04-0785-OB002) and a pumice artefact (09-04-0785-OB003).
Further east, just before the baulk, an opening may also have existed towards room 4.12. Except for a stretch of wall formed by D56, space 4.18 could have been largely open towards the south. The area could thus have formed some sort of porch, and therefore one of the potential entrances of building CD. The cleaning of the area produced a grinding stone (10-04-1734-OB001), a stone vase fragment (10-04-1734-OB002), and part of a terracotta bull figurine (10-04-1734-OB003).
2. Building CD: Surrounding Areas

Thibaut Gomrée

In order to define the outer limits of Building CD, a series of tests was undertaken at several, specific locations around the building. These have all given the label Zone 8, corresponding to the outside areas of zone 4 (figs 5.1-5).

2.1. Area 8.1

Initially intended as a continuation of the excavation of a paved area discovered in zone 4 in 2008 (Letesson 2009: 138), area 8.1 corresponds to the street located on the southeastern part of zone 4 (figs 5.1). A simple cleaning led to the discovery of some complementary slabs and the existence of a drain running the south side of the street. The connection between the street and façade wall D2 has also been confirmed: despite the fact that not much attention was given to the alignment of some slabs along D2, it turned out that the street and the wall functioned together. This said, it seems that this last aspect was not essential for the builders, as some slabs are well aligned along wall D2, while on other spots, vacant spaces between the two structures were simply filled with earth and small stones. This fact may indicate that wall D2 predates the street. We were, however, unable to define the connection between the street and the entire east part of zone 4 and more tests are needed.

The excavation of the western part of the street began with the removal of a layer of tumble that had already been revealed in 2008. This tumble represents a destruction level with traces of a violent fire. It was composed of roughly-hewn blocks, large stones and much mud-brick. It also contained a fairly well preserved charred beam (fig. 5.78), ca 0.60 x 0.15 m (10-08-5010-SA002). This destruction level rested against walls D14 and D15. The material contained in the tumble dates to MM II- LM I and suggests a Neopalatial destruction. As the surrounding walls D14 and D15 form part of the LM III building, it appears that this tumble derives from another structure (unless this part of the building was a reoccupation of an earlier building?). Beneath the layer of tumble, a gap in the pavement along walls D14 and D15 exists, and at a lower level, some coarse pottery was found which actually passes beneath wall D15. This material has not been studied yet but should predate the façade here.

The pavement in the western part of the street is more irregular and in the southwestern part of the trench, it clearly seems to curve towards the south. It appears then that at this point, the street changes direction, passing either under a later floor of space 4.13, or running alongside the east limit of this latter space. It would not be too daring to think that the western part of the street represented an open area of some form, either a small plateia or an area for outdoor activities.

PhD Student, University of Lyon 2 - IRAA. I would like to thank L. Manousogiannaki and T. Carter for correcting the English translation of the original text and Q. Letesson, N. Kress, K. Jacobson and N. Rouvroy for their help during the excavation.
The drain runs alongside the pavement in an E-W direction. Its layout is quite irregular, composed of stretches that widen and narrow (max. width: 0.40 m; min. width: 0.20 m) (figs 5.79-80). The material recovered from the drain is quite homogenous and dates to the MM II-LM I periods. Since the LM III period is almost absent from the surface of the street, it may be suggested that the street was built in the Protopalatial period, MM II at the latest, then used during the LM I period, but going out of use in LM III; alternatively, the MM II material from the drain might be residual, whereby the street would be Neopalatial. I would incline towards the first hypothesis. Anyway, the street was related to wall D2 further to the north, but, as noted, this wall is earlier than the setting of the street, which means that it could be relatively ancient. Ultimately further work is needed to clarify these chronological phases, particularly in the eastern area of zone 4.

In the middle part of the street the drain runs along a course of blocks belonging to a structure which is not yet fully understood (H1, on top and left of fig. 5.80); before widening further to the east, it first narrows considerably while the drain runs alongside a line of blocks at a lower level. Here, both limits are almost contiguous, leaving only a gap of a few centimeters. Although this gap is sufficient for the flow of water, the area is still difficult to interpret. The possibility that structure H1 represents the remains of a wall cannot be excluded; as for the blocks at a lower level, it is possible that they represent the remains of a threshold or a passage, of which only the lower course is preserved. This would also explain the projection of the pavement in the general layout of the street in this location. To confirm this hypothesis, a structure delimiting this presumed ‘passage’ in the eastern part needs to be found. The answer to these questions probably lays under the southern part of the area, which is still covering the southern edge of the street – or its continuation if an open area existed on this part of the hill…
5. The Excavation of Building CD

Fig. 5.79. General view of street 8.1 during excavation, from south (L. Manousogianaki/N. Kress)

Fig. 5.80. General view of the drain in the street 8.1, from east (T. Gomrée)
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The work conducted in the eastern part of the street was not particularly conclusive: the pavement was rapidly lost down the slope where the bedrock appears directly under the topsoil. However, part of the pottery collected from this area dates to the Early Minoan period.

2.2. Area 8.2

Area 8.2 (ca 11.3 x 2 m) corresponds to a test opened along the eastern façade of Zone 4 (wall D3) and the extension of street 8.1. The objective was to identify the nature of the outside area along the façade, and secondly to check if the street unearthed in 8.1 could be found again in any form further to the east or northeast. Unfortunately, no proper archaeological layers were identified but the test led to the clearing of the lower course of the eastern façade D3. It turned out that this wall was directly built on natural bedrock (a wedging stone is also visible under the corner block of walls D2 and D3). If any surface existed here originally, it is no longer preserved. Still, it is interesting to note that the pottery collected from the lower levels against the façade comprises especially Protopalatial or earlier sherds.

The work in this test also included the dismantling of the modern terrace wall in the northern part of the area, which allowed us to expose the northeast corner of the building. This corner is formed by a substantial roughly trimmed block, almost identical to the one sitting immediately south of it. In front of the corner, beneath the terrace wall, a densely packed level of small stones was reached, more or less at the expected level of circulation. It is not clear whether this represents tumble, a leveling layer or the foundation for a floor surface that is no longer preserved.

2.3. Area 8.3

The north façade of building CD, mostly build of large blocks, shows a stretch north of room 4.9 where the wall is very thin and may present evidence for a blocked door or window (visible in fig. 5.82). Thus far the blocking has not been removed but a test of ca 2.8 m² was made (area 8.3) in front of it to explore the possible existence of a street or court level here. The topsoil of the test contained mainly LM III sherds, some of fine quality. This rested immediately on an archaeological layer which comprised a MM II deposit, with vases broken in situ. One of these vases (fig. 5.81, left) was resting on two stones which turned out to belong to an earlier E-W wall, itself connected with a N-S wall (fig. 5.82). This vase was filled with residues comprising a large number of small bones, sampled for further analysis.

Fig. 5.81. Pottery found in space 8.3, from South. The stones showing belong to an earlier structure (T. Gomrée)
While the excavation needs to be continued, it already shows the importance of the occupation of this area to the north of the building during the Protopalatial period, and this beyond the limit of the LM III complex. It could be seen that this LM III façade actually cut through the Protopalatial deposit which continues beneath, as illustrated by an inverted storage jar and other pots found directly under the façade wall (fig. 5.83).

Vase beneath North façade, with a smaller pot appearing on the left, from north (T. Gomrée)
The deposit unearthed in 8.3 also comprised a miniature jar (10-08-5041-OB001), some conical cups (10-08-5043-OB001 et OB002), two cooking pots (10-08-5043-OB003, 10-08-5043-OB007), a cup (10-08-5043-OB009), a carinated cup (10-08-5045-OB003), and a fragment of decorated *pithos* (10-08-5049-OB001).

3. References

6. The Excavation of Zone 5

1. Introduction

Zone 5, the area on the south-west of the summit of the hill (Trenches BC/BD/BE-76/77/78 and BF/BG/BH/BJ-75/76/77 on the grid in fig. 1.3) was excavated every summer since 2007. Although a preliminary report of the architectural remains and content of the zone discovered during the 2007 and 2008 campaigns was previously published, for the sake of convenience, some aspects are repeated here.

The south limit of the area excavated as Zone 5 is marked by a series of sturdy walls (E1-E5) which mark a sudden rise in level against the south slope of the hill. Here, a large space called the south area was partly excavated (fig. 6.1). A series of pits cut in the bedrock were located, one of which contained EM ceramics. More excavation (in the west part of this open area) and further study of the already excavated material are needed, however. Still, it can already be asserted that part of this south zone contained some of the earliest settlement remains on the site, as will be underlined below. The cleaning of the western terrace wall of the south area revealed a thick layer of medium-sized stones. These formed the fill supporting the south-west part of this area, very likely built in connection with the establishment of Building E.

![Plan of the South Area of Zone 5](image)

A series of accesses lead north from the south area into spaces 5.1, 5.4 and 5.5 of Building E. The entire complex was carefully adapted to local topography, and the spaces follow the natural rise of the hill with a lower (spaces 5.1, 5.2, 5.3, 5.4 and 5.5), middle (spaces 5.6, 5.7, 5.8, 5.9, 5.11, 5.12 and 5.13) and upper (spaces 5.14, 5.15 and 5.16, and open space 5.10) terrace (fig. 6.2). The bonding of the walls confirms the unity of the planning of Building E.

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3 Sissi I: 139-156.
Fig. 6.2. PLAN OF ZONE 5 (P. HACIGÜZELLER/N. KRESS/M. DEVOLDER)
2. **The excavation of Building E in 2009-2010**

The exploration of Zone 5 had different objectives during the 2009 and 2010 campaigns. First, the excavated area needed to be extended to the east and north, in order to find the limits to the building and to clarify its connexion with the structures on the top of the hill in Zones 3 and 4 to the north. Second, within the limits of Building E itself, several spaces had only been superficially investigated before, now needed to be excavated down to floor level. In some cases soundings were conducted in order to clarify the situation and chronology of each space. This would also allow the conservation of the walls.

Beneath the lowest of the three successive floor levels revealed in space 5.2 (08-05-0866-FE024) a red level was reached, similar to the top of a burnt destruction layer. The ceramic content was mixed, but MM II and even some EM sherds were identified. Although burnt mudbricks and charcoal were sampled, it was not a primary destruction deposit. Perhaps the soil and contents were brought in from elsewhere as a fill. This layer was excavated down to bedrock, which supported a wall with a north/north-west orientation, markedly different from the other walls in this building (fig. 6.3).

![Aerial View of Space 5.2, with Bedrock and Older Wall Visible (North to Right) (L. Manousogianni/ N. Kress)](image)

Narrow space 5.4 (3.48 x 1.26 m) connects the open area south with spaces 5.6 and 5.3 within Building E. Here, a large patch of plaster which still bore slight traces of paint was found beneath dense tumble. The plaster seems to have been placed to level the surface of the irregular bedrock (fig. 6.4). Against the west wall (E14) a floor level (09-05-0956-FE051) was found, made of a mixture of pebbles and plaster. It belonged to the last phase of occupation within the corridor. Preliminary study of the pottery reveals a mixed content, with LM III as a *terminus post quem*. Beneath the floor level in the south part of the corridor another destruction layer was found which still needs more exploration since no earlier floor level has hitherto been found (cf. fig. 6.7). On excavation, this layer yielded two well-preserved bronze chisels (09-05-0957-OB001 and OB002) (fig. 6.5) immediately south of space 5.4 and south of wall E14. It seems that this layer continues to the west beneath the lowest pebble floor in space 5.5 (fig. 6.7).
6. The Excavation of Zone 5

Further exploration in this area is still needed but it is likely that, after a destruction in space 5.4, the floor needed relaying during LM III. The walls bordering this corridor also show traces of some remodelling with the access towards space 5.3 to the east and space 5.6 to the north made more narrow (fig. 6.6). This made access to this area less easy and modified the initial layout of the building somewhat (see space 5.6 below).
Space 5.5 to the west of space 5.4 is again quite a narrow room (3.24 x 1.12 m). It is delimited to the east by wall E14 and to the north by wall E15. Its western wall has collapsed to the west, where the limit is, however, clearly marked by a sharp fall in the level of the hill, supported by the western terrace wall. An entrance to space 5.5 existed in its north-west corner, where there may have been built steps or cut in the bedrock or fill, but more exploration is needed at this side. Like space 5.4, it is very likely that space 5.5 was also accessible from the south. On excavation, the stone tumble which formed the surface layer was seen to cover a carefully made pebble floor. Very little material was found on it (a single grindstone and obsidian flake, 08-05-0913-OB001 and 08-05-0911-OB001, respectively). Beneath this latest floor level another pebble floor was traced which yielded an obsidian blade and two obsidian flakes (09-05-0963-OB001 to OB003). As is the case with the successive floor levels in space 5.2, the floors here were basically found empty or had been carefully cleaned before a new floor was laid. This makes the discovery of the two bronze chisels to the south even more surprising in that they were situated right beneath the plaster and pebble floor level in space 5.4.

Space 5.11 is located immediately north of 5.5 and is again quite narrow (2.39 x 1.9 m). It is delimited by walls E15, E14 and E16 and does not show any access from its neighbouring spaces (5.5, 5.6, and 5.13). Its western limit has disappeared down the slope, which makes it possible that space 5.11 was accessed from this side. Apart from a pivot stone found on floor level (09-05-0955-OB002), the only feature visible on this west side is the possible adaptation of the initial wall to the bedrock which appears on the western fringe of the space where the pebble floor stops in a regular line against two slight depressions in the bedrock on both sides of a slight ridge. A large quantity of fragmented murex shell was found on this floor level (see chapter 9).
6. The Excavation of Zone 5

Space 5.11 yielded a thin destruction layer with fragments of burnt mudbricks and charcoal, covering a carefully made pebble floor (fig. 6.8). It also comprised a few objects, including the upper half of a finely decorated stirrup jar (09-05-0955-OB001), perhaps fallen from higher up, as well as a fragment of a stone vase, a cup and metal slag (08-05-0919-OB001, 09-05-0954-OB001 and 09-05-0954-OB002, respectively). When the pivot stone in the southwest corner was collected, traces of an earlier plaster floor level were located but this needs further exploration. Preliminary study of the material suggests a LM IIIA2 or early LM IIIB date for the pottery.

Space 5.6 (2.88 x 2.4 m), which could be accessed from corridor 5.4, marks the passage to the middle terrace of Building E. The bedrock was cut to provide access from space 5.4 (fig. 6.6 and 6.9) but the later narrowing of the doorway was placed on top of the cutting. This modification prolonged wall E10, which is the south wall of space 5.6. This space is further limited to the east by wall E19 and an access towards space 5.7, to the north by wall E20 (against which is set a large platform) and a stepped access towards space 5.12, and to the west by wall E14.

Fig. 6.8. I. Milidakis excavating in Space 5.11. Note the pebble floor and the stirrup jar 09-05-0955-OB001 (M. Devolder)

Fig. 6.9. View of the access between spaces 5.6 and 5.4, from north. The cut bedrock marks the initial end of wall E10, which was later prolonged to the west. The pit is visible in the west part of space 5.6 (M. Devolder)
Beneath a very thick fire destruction deposit, with many burnt mudbricks and remains of charred wood, a floor consisting of bedrock and stamped earth was found (fig. 6.9). In the south-west corner of this space, a pit was found, filled with sherds up to floor level. In the east part of the room were some stones embedded in the floor which may originally have been supporting a higher floor level connected to the rise in bedrock in the southeast corner. It is difficult to say whether a hollow in the rise of the bedrock here is natural or artificial. Its function is uncertain. The objects discovered in the destruction layer of space 5.6 have for the most already been mentioned in the earlier report\(^4\), but while tracing the floor level, a fragment of a stone vase (09-05-0975-OB001) and a donut shaped object, perhaps a weight (09-05-0983-OB001), were found.

To the north, space 5.12 (3.3 x 2.4 m) was accessible from space 5.6 via a step followed by a narrow corridor-like space. To the south, space 5.12 was delimited by the platform set against wall E20, to the east by an access towards space 5.8 and a rise in bedrock, to the north by the bedrock leading to space 5.14 and a step towards space 5.15, and to the west by wall E25 and an access down to space 5.13 via a wooden threshold supported by small-sized stones (fig. 6.10). Space 5.12 was then a key circulation node within Building E.

![Fig. 6.10. SECTION THROUGH THE DESTRUCTION LAYER IN THE ACCESS BETWEEN SPACES 5.12 AND 5.13. THE CHARCOAL LAYER MAY REPRESENT THE BURNT WOODEN THRESHOLD (M. DEVOLDER)](image)

After the topsoil was removed, a thick black layer became visible, suggesting a fierce destruction by fire. Indeed, burnt mudbricks, plaster and tarazza fragments, together with large amounts of charcoal were discovered. A charred horseshoe-shaped feature in wood was traced (fig. 6.11). The orientation of the wooden fibres suggests that this is the result of the burning and collapse of two distinct wooden pieces. A deposit was found in the northwest corner of the space, slightly above and on the floor level, and it is not excluded that the pots had fallen from a shelf during the destruction (fig. 6.12). The deposit included a terracotta loomweight (09-05-0991-OB001), a lithic tool (09-05-0994-OB001), a round sherd, perhaps deliberately cut from a pot (09-05-0994-OB002), a large terracotta vase (09-05-0994-OB003), two champagne cups (09-05-0994-OB004, 09-05-0994-OB005), an one-handle cup (09-05-0994-OB006), a two-handled pot (09-05-0994-OB011), some other cups (09-05-0994-OB007 to OB009 and 09-05-0994-OB012 and OB013), and a kylix (09-05-0994-OB010). This deposit seems contemporary to those found in 5.11 and 5.13, that is, LM IIIA2 or early LM IIIIB.

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\(^4\) *Sissi I*: 150, fig. 7.18.
6. The Excavation of Zone 5

East of space 5.12 and accessible from it is space 5.8. This is bordered to the south by wall E18 and to the north by wall E21 and an access to space 5.9. To the east it is closed off by the bedrock which seems to have been properly cut to follow the alignment of a wall foundation (E17) (and in which a *kernos* had been made\(^5\)) and a possible access towards an open area. Indeed, while pushing the limit of Zone 5 more to the east, it seems an access from this side was possible towards space 5.8. The irregular bedrock had been filled in with earth, up to a higher level towards the east, where a pivot hole right in the axis of the first surmised access towards space 5.8 was found. It cannot be excluded that space 5.8 gave access on this side to an open area, as is also suggested by the excavation

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\(^5\) *Sissi I*: 151, fig. 7.20.
more to the north (see below). Despite its size (3.48 x 4.14 m), space 5.8 did not yield evidence for an intermediary roof support. Surrounded by walls as it was, and because of its position next to open spaces (5.10 almost certainly, but very likely also 5.9 and the area to the east), we are tempted to consider it as a enclosed roofed space. It was here that a lead vase (08-05-0934-OB001) was hidden, found during the 2008 campaign.

Beneath the pebble floor (associated with the lead vase) which covered part of this area and which was also cleared in 2008 another floor level was found. An alignment of stones sits in the middle of the west part of the space, in the axis of the bedrock on which the kernos was found. The amount of shells (many limpets) collected here was quite striking, and in the northeast corner, immediately west of the kernos, a concentration of 16 specimens of Conus mediterraneus shells was found (fig. 6.13). Right next to this shell concentration (discussed in detail by R. Veropoulidou in chapter 9, fig. 9.2), in the south-east corner of the space, a stone mortar was found upside down, with the matching grinding tool found stuck between two of the three legs (fig. 6.13 and 6.14) (09-05-1802-OB003 and OB004, respectively). The mortar seems to have been turned upside down after its use and before the space was relayed. Obsidian flakes and blades (09-05-0995-OB001, 09-05-1801-OB001, 09-05-1805-OB001, OB002 and OB003), stone vase fragments (spout and lid, 09-05-0995-OB002 and OB003, respectively), a terracotta loomweight (09-05-1802-OB001) and two cups (09-05-1802-OB002 and 09-05-1801-OB002) belong to the same context. All this material was on an original pebble floor only preserved in patches here and there, especially in the northwest part of the space. Three pits filled with earth, small stones and sherds were traced in the centre (one) and along wall E21 on the north fringe of the space.

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**Fig. 6.13.** The south-east corner of space 5.8, with the upside down mortar partly excavated (right) and the Conus mediterraneus shell concentration to the left (L. Manousogianaki)

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6 In this zone we reached an irregular level of bedrock and earth, interrupted by pits filled with ceramics, similar to the situation in the area south of Building E. It cannot be excluded that this part of the hill (the area north of space 5.8 possibly including space 5.9), is the continuation to the east of the open area dubbed space 5.10 described below.

7 **Sissi I:** 152-153, fig. 7.21.

8 Evely 1993: 112 and 116, fig. 49.13.
Space 5.13 was first examined in 2008. While cleaning the western limit of Zone 5 north of space 5.11, a dense layer of earth and large stones was found, which had eroded away to the west, and which appeared to be a tumble sealing a thick and heavy fire destruction layer. The western eroded part was excavated carefully in order to gather the material which had been buried in the fire destruction, while the limits of the space were identified. In due course space 5.13 developed into quite a large room (3.96 x 2.24 m) bordered to the north by wall E26, to the east by wall E25 and an access from space 5.12 (fig. 6.10) and to the south by wall E13 (fig. 6.15). Some stones which appear perpendicularly to the south of wall E26 may mark the initial western limit of 5.13 but almost all has eroded away down the slope.

The top layer tumble, consisting of large to medium-sized stones, was clearly distinct (except where the content of the space had eroded away, to the west) from the thick fire destruction layer and it seems that the walls collapsed quite some time after the fire had taken place. Only a grindstone was found in this tumble (08-05-0937-OB001), while the destruction layer appeared to be one of the richest contexts of Building E. The finds were mixed in a dense red-brownish 35-cm-thick layer. Large amounts of charcoal, whether in flecks or in larger portions (from beams or rafters), were found, attesting to the violence of the destruction, together with many fragments of mudbricks, especially in the northeast part of the room. This destruction layer went down to a carefully made floor, consisting of bedrock, plaster, and pebbles.
The nature and distribution of the finds (fig. 6.16) suggests the likely existence of an upper floor since a painted larnax of which large fragments were found (08-05-0952-OB001 and 09-05-0976-OB002) had literally squashed a tripod cooking pot (09-05-0976-OB001). A snake-tube was found nearby the larnax (09-05-0974-OB002). In the eroded western part of the room, an opium-poppy rhyton was discovered together with more fragments of the larnax (08-05-0952-OB003). Four loomweights and a spindle-whorl were also found at higher level, in some cases quite high up (09-05-0965-OB001, 09-05-0968-OB001, 09-05-0971-OB001, 09-05-0977-OB002 and 09-05-0977-OB001, respectively). This material contrasts with the objects found on the floor itself, such as a beaked jug (09-05-0974-OB001), still standing nearby the collapsed larnax and snake-tube deposit (fig. 6.17), the above mentioned tripod cooking pot, a storage vase (08-05-0952-OB002), a large globular cup with straight rim (09-05-0978-OB001), a pulled-rim bowl (09-05-0978-OB002), and perhaps two other clay vases (09-05-0976-OB003 and 09-05-0976-OB004). The deposit also comprised one obsidian flake (09-05-0965-OB003) and three blades (09-05-0968-OB003, 09-05-0968-OB006 and 09-05-0973-OB001), one clay cup (09-05-0974-OB003), one clay jar (09-05-0976-OB005), a bronze and two as yet unidentified metal fragments (09-05-0968-OB004 and 09-05-0968-OB005, respectively), a stone blade (08-05-0939-OB001), three stone grinders (08-05-0952-OB004, 09-05-0968-OB002 and 09-05-0978-OB003), a possible grindstone fragment (09-05-0965-OB002), and a fossil (09-05-0978-OB004). Preliminary study of the pottery of this deposit also suggests a LM IIIA2 or early LM IIIB date.

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9 Sissi I: 154, fig. 7.23 and 7.24.
Northeast of space 5.13, accessed from space 5.12 via a step is space 5.15 which has only been partly excavated. It offers an access from the middle terrace to the upper one, and to space 5.16 and the very large open space 5.10. In it were as yet found no objects but wall plaster appeared in quite large quantities and some of the fragments are painted.

North of this series of roofed rooms the upper terrace is formed by a large, irregular open area which may have served to distinguish between what was excavated as Building E and the large Building CD on the top of the hill. During the excavation of this area, the south façade of this latter building was actually traced.

3. The open area north of Building E

This zone was first recognized in its centre as space 5.10, with 5.16 (though perhaps this was covered) to the west, and an extension of 5.10 to the east and north-west. It is also very likely that space 5.9 on the middle terrace was part of this open area (fig. 6.18).

Space 5.9 was separated from space 5.8 by wall E21 which also has an access between the two spaces. Wall E21 continues further east where there is a pile of stones but it is not clear yet whether these stones initially formed a wall or simply formed a tumble. To the north of space 5.9, there is an outcrop of bedrock, and it is not excluded that this space was in fact part of the large open area dubbed space 5.10, which occupies the north part of Zone 5 and which was first identified in 2009. An obsidian flake and a lithic tool (09-05-1810-OB001 and 09-05-1810-OB002, respectively) were found on what is interpreted as the occupation level. In its northeast corner, many sherds, probably eroded down from the north, together with a grindstone (08-05-0902-OB001) had gathered in a depression in the bedrock.

Space 5.10 is located north of spaces 5.9, 5.14 and 5.15, and distinguished from the latter by a marked rise in the bedrock. Excavations between 2008 and 2010 suggest that this open space extended perhaps further north-west towards the main terrace wall and most certainly to the east in an area excavated as the northeast corner of Zone 5. It seems likely then that the entire upper terrace of Zone 5 was a large open area. That space 5.10 was open is also suggested by the large quantity of snails (R. Veropoulidou pers. com).

Fig. 6.18. PLAN OF OPEN AREA BETWEEN BUILDING E AND THE BUILDING ON THE TOP OF THE HILL (P. HACıGUZELER/M. DEVOLDER)
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The entire upper terrace yielded large quantities of pottery, usually of good quality and little eroded. Most seem to belong to both fine drinking vessels and coarse vessels (whether cooking pots and trays or simple containers) and can be dated to LM III, and quite early in the period as the shapes seem to indicate (cf. chapter 8). Several loomweights, a clay human figurine (10-05-1866-OB001), stone tools and architectural fragments complete the assemblage and some of this material may in fact have some connection to the deposit excavated in the pit in the northeast corner of the open area (see below). The sherds kept on appearing in successive, seemingly artificial layers, suggesting an ongoing process of dumping. Some construction material was also found, including domatochoma and quantities of the small gravel of the type commonly found in tarazza floors. Such finds do not exclude the possibility that the open area between Buildings E and CD was also the place where materials were stored for diverse building operations. Besides these surface finds, two pits were identified in the open area.

When we first explored the south-central part of what later appeared to be a large open area between Building E and the main Building CD in 2008, a heavy concentration of bones and ash was discovered. This was found to be heaped up above a large and deep pit FE081, going down to a level of bedrock, stone slabs and hard earth (fig. 6.19). The pit contained more than 25 kg of pottery of a deposit estimated around 600 litres but also ash, bone (in very large amounts), shell and pumice, together with some architectural elements (mudbricks, plaster and tarazza). The friable, soft brown soil made it easy to trace the borders of the pit. The pottery mainly consists of fine drinking vessels: kylikes, conical, rounded and other shapes of cups were found in large quantities, together with some coarse vessels (mainly cooking vessels with some large storage vase fragments). The material is characteristic of LM IIIA2, with some LM IIIB vessels too and older residual material. The homogeneity of the context and the state of the sherds (in the pit sherds had fresh breaks or were only slightly eroded and mainly dated to LM IIIA2, while on the surface of the open area sherds were described as much worn, and the context was less homogeneous in date) may suggest that the deposit is the result of a single event. Apart from pottery, a fragmentary loomweight was also found (09-05-1831-OB001).

Fig. 6.19. AERIAL VIEW OF THE NORTH PART OF ZONE 5 AT THE END OF THE 2009 EXCAVATION CAMPAIGN, WITH PIT FE081 AT THE CENTRE OF SPACE 5.10 (L. MANOUSOGIANNAKI)

In the northeast corner of Zone 5, a few metres south of the recess of the south façade of Building CD, another pit was identified. Although it has only been partially explored, it seems it had a more complex history. Its south part was discovered first (10-05-1863-FE087), marked by the presence of almost pure ash, which formed a small heap on the surface. To the north of the pit is a very large stone heap and the ash continues underneath although in a less dense and homogeneous manner. These south and north parts will be described independently.

The south part of the pit (10-05-1863-FE087) was excavated first. Around and above the pit, somewhat eroded LM IIIA2-LM IIIB sherds were found, together with three stone grinders (10-05-1842-OB001 and 10-05-1863-OB003 and OB004), a closed vessel (10-05-1842-OB002), a rim fragment of a LM IIIA2 decorated cup (10-05-
6. The Excavation of Zone 5

1842-OB003), a clay loomweight (10-05-1863-OB001) and a bone token (10-05-1863-OB002). These finds were mixed with ash which formed a heap above a large pit which was excavated in five successive layers. This artificial stratigraphy indicated that, on going down, the LM IIIA2 sherds increasingly became mixed with MM II sherds, until at the bottom of the pit MM II material became dominant and LM III sherds intrusive. The upper layer was almost pure ash. The ceramic finds, LM IIIA2 sherds with fresh breaks (kylikes, conical cups, champagne and round/deep cups, cooking dishes, jars, amphorae/jugs but no tripod cooking pots) and a larger clay vessel (10-05-1871-OB003), suggest a single event deposition. Two stone grinders and a clay spindle whorl (10-05-1871-OB001, 10-05-1873-OB001 and 10-05-1871-OB002, respectively) were found in the same deposit. Bone was also collected, together with some mudbrick fragments and pumice, though not in such a quantity as what appeared in the north part of the pit. Going down, the soil was getting browner and harder, and an alignment of stones appeared in the centre of the pit, surrounded by an increasing number of loose stones. These were associated with more and more MM II sherds and at the bottom of the pit handmade was dominant alongside MM II carinated vessels. The presence of burnt bone and charcoal suggests a MM II destruction level on which the LM IIIA2 deposit occurred.

This pit continued to the north and this part was excavated separately because of a dense layer of medium- and large-sized stones which covered it (fig. 6.20). These were found mixed with fresh or somewhat eroded sherds of LM IIIA2-LM IIIB date. Kylikes, shallow-bowls and bell-shaped bowls were well-represented shapes. The stones not only formed a dense layer above the pit, but kept on appearing deeper, mixed with an ashy soil similar though not as pure as in FE087 to the south.

Fig. 6.20. VIEW FROM ABOVE OF THE DENSE LAYER OF STONES COVERING THE NORTH PART OF THE PIT IN THE NORTH-EAST CORNER OF ZONE 5. THE LIGHTER SPOT WITH STONES BUILT ON THE BEDROCK, UPPER LEFT, IS THE SOUTH PART OF THE PIT (FE087) AFTER EXCAVATION (L. MANOUSOGIANNARI).

Plaster, mudbrick and tarazza fragments, a pivot stone and step were found in the pit, finds which suggest its establishment was linked to the cleaning out of a destruction deposit. The discovery amongst the stones of some sandstone ashlar fragments, a feature markedly absent from Building E but better represented in Building CD on the top of the hill10, suggests a destruction in the main building, the clearance of which was dumped in the open area immediately south of it. It may be interesting to note that high numbers of pumice lumps were collected while excavating the pit which reminds one of their massive presence within some rooms of Building CD11. Studies have regularly pointed at its use as an abrasive in craft activities or, in some cases, as roofing material12.

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10  Sissi I: 113, fig. 6.22 and fig. 6.33.
11  That is spaces 3.1 to 3.10, with some spaces producing more than 59% of pumice per liter of soil excavated, Sissi I: 127-128, fig. 6.20.
The excavation of the north part of the pit is still uncompleted but large amounts of stylistically homogenous LM IIIB ceramics of very good quality have already been collected, including decorated high-stemmed kylikes and deep bowls, and plain champagne cups (10-05-1927-OB008 and 10-05-1932-OB007), stirrup jars (both small and transport ones), pithoi and cooking trays fragments. Most sherds were fresh or slightly eroded. Together with these ceramics, two loomweights were found (10-05-1929-OB001 and 10-05-1932-OB001). The most surprising find, however, is the very large amount of stone tools: in total 57 grinders and 4 grindstones were identified, together with two obsidian blade fragments (10-05-1927-OB010 and OB011) (fig. 6.21). Interestingly, the bedrock reached in some parts of the pit indicated a hollow at one spot, as if it had been artificially abraded. Large tarazza plaques also formed the bottom of the pit. The stone tools were mostly encountered between 7 and 70 cm above the bottom of the pit, and it seems more likely that they were dumped at the same time. A very large quern stone discovered amongst the stones on the surface above the pit corroborates this hypothesis.

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13 See the discussion on a similar discovery in neighbouring Quartier Nu at Malia, where Pit 1 has been interpreted as a ceremonial pit, Driessen, Farnoux & Langohr 2008: 197-206.
14 These are 10-05-1927-OB001 to OB003, 10-05-1927-OB005 to OB006; 10-05-1927-OB009, 10-05-1927-OB013 to OB028, 10-05-1929-OB003 to OB028, 10-05-1929-OB0030 to OB037, and 10-05-1932-OB002 to OB006.
In the north-central part of the open area, along the south façade of Building CD, a deposit was found together with stones clearly identified as fallen from the south façade itself (fig. 6.22). Though upper layers were mixed, the deposit appeared homogeneous in date. LM IIIA1/2 ceramics were found in a good state of preservation. Though some fragments of coarse ware (pithoi and other containers) were found, some clearly imports, the deposit mainly consisted of fine drinking vessels. It also comprised a fragmentary bull figurine in stone and a sealstone (10-05-1877-OB001 and 10-05-1982-OB001, respectively) (fig. 6.23). Two obsidian flakes (10-05-1889-OB001 and OB003), a stone grinder (10-05-1889-OB002) and a clay loomweight (10-05-1893-OB001) as well as two objects which have been identified as possible model fragments (10-05-1872-OB001 and 10-05-1893-OB002) (fig. 6.24) were also identified. These objects may have fallen from an upper floor situated above rooms 4.15, 4.16 and 4.17 in Building CD\textsuperscript{15}.

![Fig. 6.23. Fragment of stone bull figurine (10-05-1877-OB001) (Chr. Papanikolopoulos)](image1)

![Fig. 6.24. Clay model (?) (10-05-1872-OB001) (Chr. Papanikolopoulos)](image2)

At the very western limit of the open area, a large LM I conical cups deposit was found (fig. 6.25). It was partly covered with stone collapse from the western terrace wall. On excavation, 89 conical cups were objectified (considering that only the complete ones or with more than 50% preserved with whole profile were allocated object numbers) but tens of others will surely be selected when the deposit is studied. The cups were either found in fragments or better preserved and stacked one into the other. In some cases they still preserved their content, which has been sampled for analysis. It seems that the cups were not stored but deposited as the result of a single event.

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\textsuperscript{15} To be explored more in detail in 2011.
Apart from conical cups, a few other types of cups appear, amongst which a thin-walled plain trefoil-mouthed cup, with a rivet imitating a metal cup (10-05-1906-OB001) (fig. 6.26). It was found inverted on a long bone, and contained burnt material sampled for analysis.

Fig. 6.25. **Conical cups deposit during excavations (M. Devolder)**

![Conical cups deposit during excavations](image)

Fig. 6.26. **Cup 10-05-1906-OB001 (Chr. Papanikolopoulos)**

![Conical cup 10-05-1906-OB001](image)
4. Seal 10-05-1882-OB001

Maria Anastasiadou

A Late Minoan (LM) mottled cream and brown soft stone lentoid (fig. 6.27). The measurements of the seal are: seal faces – 1.80 cm; stringholes – 0.30 cm; maximal thickness: 0.50 cm.

The seal is cut with tools operated freehand. The intaglios are smooth and rather shallow. Their shallowness must be, at least to some extent, due to wear. The piece is worn, as attested by the rounded intaglio edges and one abraded stringhole, possibly abraded by action of the string which has grounded down part of the seal face.

The seal is generally well-preserved. A fine fissure which can be discerned on the seal face and back along the stringhole channel is a result of gluing two pieces together (modern break).

The seal face displays a composition put together from nine elements. In the centre there are two triton shells (Tritonschnecke) arranged tête-bêche. To their right (impression) there is one row of dots (Punktreihe), above which there is a short single-sided fir branch (Tannenzweig, einseitig). In the periphery there are two two-sided fir branches flanking the central composition (Tannenzweig, zweiseitig). Above all these elements there is a figure-of-eight-shield (Achtschild). To the right of the shield there is an element shaped like a three-fingered glove, reminiscent of the fan-shaped motif (Fächer) on CMS II,3 no. 200, and to a lesser extent CMS II,3 no. 17. Under it there is an element in the shape of a three-leaved plant (Dreiblatt).

The piece does not have exact iconographic parallels in Minoan glyptic. However, its lentoid shape places it securely in LM, whereas both the motifs and the composition suggest a more precise LM I dating.

Fig. 6.27. SOFT STONE SEAL 10-05-1882-OB001 (CHR. PAPANIKOLOPOULOS)

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16 Dr. Maria Anastasiadou, Research associate, Corpus der minoischen und mykenischen Siegel, Marburg.
17 Soft stone with parts of steatite? Or steatite? The surface of the seal is rather soapy in texture. Fine splintering on a small part of the seal face would suggest that the piece is not homogeneous steatite. The stone is very seldom encountered in LM soft stone glyptic (Walter Müller, pers. comm.). For steatite and serpentine in Minoan glyptic, see Müller in CMS III, 17–18, 20. I would like to thank Walter Müller for his help with the identification of the material.
18 For freehand engraving, see Anastasiadou 2011: 38-40.
19 The terminology used for the denomination of the devices is adopted from the CMS Seal Database. The German terms are also provided, since the English version of the database is not yet available on the internet.
creatures are met in LM I seals, but not after the Neopalatial period. Triton shells in particular are rare, and when encountered, they are mainly found in MM IIB/III seals and to a lesser extent in LM I examples. Figure-of-eight shields are more common in LM II/III glyptic, but LM I examples are also encountered. On the other hand, rows of dots like the type represented here, that is rows where the dots run along a line with pointy edges, are most common in LM I glyptic where they usually represent spears (spear with dotted shaft/Wurfspieß mit Perlschaft).

Although the composition is unparalleled in LM seals, the organisation of the different elements on the seal face also suggests a LM I dating for this piece. Attested is the combination of various compositionally, and at first glance also thematically unrelated elements in an image. Among these, only two (i.e. the triton shells) display a correlation that ‘bonds’ them to an image; that is they are organised tête-bêche. Moreover, the two-sided branches flank the lower part of the image, creating a kind of border for it. The loose arrangement of many elements ‘floating’ in the field, combined with the tête-bêche tritons contained in the composition, results in a rather playful image which lacks a notional ground-line and a set structure; these features are characteristic of Neopalatial art.

Symbolic devices and marine creatures, such as the figure-of-eight-shield and the triton shell respectively, as well as various plant motifs constitute the repertoire of LM IB palatial pottery. This strengthens the argument of a LM I date for the Sissi seal. Since LM IB fine pottery was used in cultic contexts and its devices have been convincingly shown to have had a symbolic/cultic significance, it is reasonable to suppose a similar significance for the elements engraved on the Sissi seal.

The piece was recovered from a LM IIIA1/2 ceramic context. It must have therefore been an heirloom or a chance find at the time of its deposition.

5. References


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20 Krzyszkowska, 2005: 208. An exception is perhaps the triton shell on the LB II/IIIA CMS II, no. 7, which depicts the shell of the animal used as a ‘tool’ in a cultic (?) context.
22 LM I: e.g. CMS II,7 nos. 218, 219; CMS II,8 nos. 128, 272. LM II and LM III: e.g. CMS II,6 no. 248; CMS II,8 nos. 419, 511, 529; CMS V Suppl. 1B nos. 228, 268; CMS V Suppl. 3 no. 113. LM I (?); CMS VI no. 466 (triton shells?).
23 CMS II,3 no. 153; CMS II,6 no. 37; CMS II,7 no. 60; CMS IV no. 278; V Suppl. 3 no. 354; CMS XI nos. 94, 159, 278. Also see the row of dots on CMS XI no. 123 which does not represent a spear. Rows of dots attached to a line but not representing spears are most often encountered in MM II glyptic, e.g. CMS II,1 no. 335; CMS II,5 no. 39; CMS II,8 no. 59; CMS III no. 227 a; CMS VI nos. 24 c, 24 d.
24 Perhaps somewhat comparable to it are the compositions on CMS II,3 no. 196; CMS VI no. 466.
25 CMS VI no. 466 is another example which shows two pairs of tête-bêche shells.
26 See, for example, the Neopalatial frescoes which do have, however, a coherent subject, e.g. Poursat 2008: 179, fig. 232, 186 and pl. XLVI. See also examples of LM IB palatial pottery with marine decoration, which are characterized by a playful spirit, e.g. Poursat 2008: 267 and fig. 378.
27 Other seals in which triton shells and figure-of-eight shields are combined in an image are CMS II, 8 nos. 128 and 241.
28 See, for example, Müller 1997: pl. 55 ORh 120; pl. 72 SA1 205 (this also has tête-bêche tritons); pl. 80 XBTa 257a, XBTa 255–258 (in these the figure-of-eight shields are combined with marine elements, e.g. the polyps on the edge of the vases).
6. The Excavation of Zone 5

1. Zone 6

1.1. Introduction

In 2009, the excavation of Zone 6 proceeded in grid squares BK-BM 88-89 (fig. 1.3) before being halted following the discovery of an unexploded WW II mortar shell in BM 89. Demining operations carried out in spring 2010 allowed us to further investigate the area during the following summer (see Driessen, this volume). The 2010 excavations took place in the sectors covered by grid squares BL-BM 89-90. The main objectives of the 2009-2010 campaigns were (1) to trace the limits of the building highlighted in 2008 (hereafter Building F), (2) to continue the excavation of spaces 6.1-6.3 (Jusseret 2009: 159-161) and, (3) to explore the area corresponding to grid squares BM 89/90 where standing, megalithic architectural remains were already recorded in 2007-2008 (Driessen 2009: 32, fig. 1.16).

Building F covers a surface of approximately 120 m² and includes eight identifiable spaces (spaces 6.1-6.7, with space 6.4 divided into two compartments, 6.4.1 and 6.4.2) (figs. 7.1 and 7.2). The main part of the building (spaces 6.1-6.3 and 6.6-6.7) is a square construction of about 100 m². The southern and eastern walls are constructed of limestone boulders with rubble backing. To the west, only a plinth made of carefully cut limestone blocks seems to have survived. The northern limit of the building is as yet unclear and is only defined by a discontinuous line of large limestone blocks (fig. 7.2). Adjacent to the south of this main complex is an axial construction oriented east-west including spaces 6.4.1, 6.4.2, and 6.5. The two structures appear separated on the ground floor level. The southern, axial structure is accessed from the west through a central doorway.

Fig. 7.1. ZONE 6 (BUILDING F): A) SCHEMATIC PLAN WITH SPACE NUMBERS INDICATED; B) AERIAL VIEW AT THE END OF THE 2010 CAMPAIGN (C. GASTON)

1 Aspirant F.R.S.-FNRS, UCL. Took part in the excavations: L. Verhulst (2009), M. Hanquart (2009), D. Lauzier (2010), J. Hamacher (2010) and E. Thompson (2010). Thanks are due to P. Kossmann (EfA) and her team from the Neapolis survey for their help in 2010. Our workmen were Manolis Tzanakis (2009) and Michalis Tzanakis (2010).
2 Erratum: space 6.4, as mentioned in Jusseret (2009: 159), should be read as space 6.0.
7. The Excavation of Zones 6 and 7

1.2. **Space 6.1**

Space 6.1 was excavated in 2008 down to a floor level indicated by a patch of tarazza (F14) and a few associated vases (Jusseret 2009). In the southern part of space 6.1, however, no clear floor level could be identified and the south-eastern corner of the space was left unexplored. In 2010, excavation proceeded with the removal of the remaining baulk.

In the southern part of the space was a thin layer of compacted, locally burned earth containing few mudbrick remains and stains of *lepidochoma*. The presence of *lepidochoma* most probably points to the collapse of a roof/ceiling (Shaw 2009: 148, also Gaignerot-Driessen 2009: 121). This thin layer produced a folded disc of lead (10-06-2050-OB002) and a fragmentary lithic tool (10-06-2050-OB001). Below this deposit was an earth floor level (+16.30 m) which should in all probability be linked to F14 (+16.29 m). It is not impossible that the folded disc of lead and lithic tool were initially part of the floor assemblage.
Cleaning of the north-eastern corner of space 6.1 brought to light a new wall (F24) enclosing the narrow space defined by Walls F15, F9, and F12. In 2008, this limited area (0.60 m²) produced three open vessels, probably *in situ*, and a complete triton shell, the latter tightly set in Wall F12 (Jusseret 2009: 160). A sounding made in this narrow space revealed an intriguing set of objects including a bead (10-06-2055-OB001), a sealstone (10-06-2055-OB002), and two terracotta figurines (10-06-2061-OB003, 10-06-2061-OB004) (fig. 7.3). Excavation was halted at a level of rubble (ca. +16.10 m). The particular nature of the finds does not exclude their deposition as part of ritual events, perhaps related to the foundation of space 6.1 (see Herva 2005).

Architecturally three different phases seem discernible within space 6.1. The earliest is represented by Walls F15 and F24. These walls probably belong to the southeast corner of a building of which the layout, date, and function remain to be determined. The second phase is represented by Walls F32 and F33. F32 and F33 run in a northeast-southwest direction and served as foundations for Walls F11 and F9 respectively. The third, and most recent architectural phase, is defined by Walls F9 and F11. It is unfortunately not possible at this stage to assign a date to these architectural episodes.

1.3. **Space 6.2**

Space 6.2 (ca. 3.2 x 3.5 m), located directly east of space 6.1., is delimited by Walls F7-9 and F30-31 (fig. 7.4). F7 and F30 are constructed of worked limestone boulders with rubble backing. To the north, Wall F31 is defined by a single line of rubble set back 0.3 m from the northeast angle of space 6.2. Space 6.2 is accessed from the north through a doorway marked by a limestone slab.

Space 6.2 was found filled with building debris. As already noted in 2008, large amounts of pumice were discovered in the western half of the room. Tumble, burned sediment, baked mudbrick fragments, some plastered with a thin layer of mud, and charred organic material suggest a destruction by fire. In the centre of the space was a stain of whitish clay possibly representing collapsed roofing/ceiling material. In the northern half of the space, construction debris was found resting on an irregular surface possibly corresponding to a badly preserved LM IIIA2/B earth floor. Associated with the surface were pithos fragments (10-06-2107-OB001), a champagne cup (10-06-2107-OB004), cooking vessels, and a limestone slab (F38) (fig. 7.4).

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3 Discussed in detail below by Maria Anastasiadou.
4 In this respect, it is interesting to note that one of the three open vessels found *in situ* in the northeast corner of space 6.1 (referred to as *kalathos* in Jusseret [2009: 160] but now reinterpreted as a pedestal bowl, see Langohr, this volume) finds close parallels in the LM IIIB ritual assemblages described by Gaignerot-Driessen (this volume) in space 3.8 and by Watrous in the House with the Snake Tube at Kommos (see Langohr, this volume, for further details).
1.4. **Space 6.3**

Space 6.3, identified in 2008 and adjacent to space 6.1, was excavated to bedrock in 2010. It is delimited by Walls F11, F12, F18, and F21 and covers a surface of ca. 8 m² (fig. 7.5a).

Wall F21 is constructed of cut limestone blocks and probably represents a plinth or *krepidoma* (fig. 7.5b). This plinth may originally have supported a wall in ashlar masonry but nothing is preserved. That F21 was meant to be visible from the east is suggested by the apparent absence of architectural remains in grid squares BL-BM 88. This evidence possibly points to the presence of an open area west of Building F but this needs further exploration.

Space 6.3 produced evidence for an earth floor level (+16.63 m) covering the whole space with the exception of the north-eastern corner where tumbled was found to overlie the bedrock (+16.60 m). On the floor were resting a stone weight, two lithic tools, and the LM IIIA2 amphora excavated in 2008 (Jusseret 2009:161). The floor also had a *gourna* found in 2008 (F16). F16 was set in the south-eastern corner of the space and was partly covered by Wall F11 (fig. 7.5d). In the southwest corner of space 6.3, associated with the earth floor, is a platform shaped like a quarter-circle\(^5\) and lined with three cut blocks, two of them of *ammouda* (fig. 7.5c). The centre of space 6.3 is occupied by a stone base (F23), 0.22 x 0.24 m (fig. 7.2a). The floor packing consists of a relatively loose and reddish silty layer, ca. 10-20 cm thick. Associated with the packing were a fire-cracked lithic tool (10-06-2049-OB001), a bronze or copper ring (10-06-2062-OB001) and strips of bronze or copper. The packing was found resting on a layer of rubble. A stratigraphic test of 0.90 m by 1.30 m was made in the southeast corner of space 6.3 (fig. 7.5d). This test produced fragmentary EM to MM II pottery and also brought to light the badly preserved remains of an earlier *tarazza* floor below the rubble. The remains of *tarazza* were found resting on the bedrock (+16.04-16.25 m).

These finds altogether suggest that space 6.3 functioned as an industrial area during LM IIIA2. To accommodate these activities, the room was levelled with packing material and a new wall (F11) was constructed directly on top of Wall F32. Little can be said of the previous function(s) of the space until a more detailed analysis of the pottery is carried out.

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\(^5\) A similar platform is described for Room AD2 (Building AD or House of the Foreign Pottery) at Pseira and is interpreted as a pressing installation (McEnroe 2001: 46-47).
Space 6.4 is delimited by Walls F10 and F26-28 and covers a surface of approximately 7 m² (fig. 7.6). Walls F27 and F28 incorporate a mixture of rubble and megalithic masonry, with blocks reaching 1.40 m in length. Space 6.4 was probably accessed from the west through space 6.5, although it is not impossible that a doorway existed in the southeast corner of space 6.4.2 before being blocked at some stage of the building’s history (fig. 7.6). A poorly preserved rubble wall, F29, divides space 6.4 into two axial compartments connected by a narrow doorway: spaces 6.4.1 (north, ca. 0.70 x 2.70 m) and 6.4.2 (south, ca. 1.00 x 2.90 m).
7. The Excavation of Zones 6 and 7

1.5.1. Space 6.4.1

A layer containing eroded and fragmentary pottery was found immediately below the topsoil. Among the few associated finds was the fragmentary base of a stone vase (calcite?, 10-06-2065-OB001). The upper layer was found overlying collapsed building debris including tumble, plaster, mudbrick fragments, and clay architectural elements, some with impressions of ceiling beams. In the lower part of the deposit, beneath tumble, were LM IIIA2/B sherds.

1.5.2. Space 6.4.2

The eastern end of space 6.4.2 produced a deposit of at least ten cups, five of which were found inverted, mixed with animal bones (fig. 7.7a). In the central and western part of space 6.4.2, two stirrup jars (10-06-2083-OB001, 10-06-2084-OB001), fallen upside down, and a badly damaged and heavily burned stone lid (10-06-2066-OB002), were found smashed under fallen rubble (figs. 7.7b-d and 7.8). Associated pottery is LM IIIA2/B and consists mainly of drinking vessels (cups, kylikes). In the southwest corner of space 6.4.2 was a large storage vessel (10-06-2086-OB001) set in a rubble platform (F36) (fig. 7.7e). Various lithic tools and a quern (10-06-2070-OB001) were found nearby, which suggests that the vessel may have originally contained cereals and pulses. Collapsed construction debris (rubble, mudbrick, clay architectural elements) and traces of combustion (burned sediment, charred organic material) suggest a destruction by fire. The finds from space 6.4.2 include evidence for food preparation (animal bones, storage installation, quern), perhaps associated with ritual activities (drinking vessels including kylikes, inverted conical cups, stirrup jars, kernos at the entrance of the complex formed by spaces 6.4 and 6.5; see below and Gesell 1985: 61-62, Cucuzza 2010: 139-141).
Fig. 7.7: **SPACE 6.4.2:** a) DEPOSIT OF CUPS AND BONES IN THE EAST PART, EXCAVATION IN PROGRESS; b) AND c): STIRRUP JARS (b: 10-06-2084-OB001, c: 10-06-2083-OB001) FALLEN UPSIDE DOWN AND SMASHED BY TUMBLE; d) CRUSHED AND HEAVILY BURNED STONE LID (10-06-2066-OB002) AMIDST TUMBLE; e) STORAGE VESSEL SET IN RUBBLE PLATFORM (F36) IN THE SOUTHWEST CORNER (ALL PHOTOS S. JUSSERET)

Fig. 7.8: **DECORATED STIRRUP JAR (10-06-2084-OB001) FROM SPACE 6.4.2 (PRELIMINARY DRAWING H. JORIS)**
1.6. **Space 6.5**

Space 6.5 is located directly west of space 6.4 and covers a surface of ca. 5 m² (2.20 x 2.20 m). It is bordered by Walls F18, F21, F26, and F39. Space 6.5 is accessed from the west through a central doorway marked by a threshold consisting of three slabs of *sideropetra* (F37) (fig. 7.9). To the right of the entrance, immediately outside space 6.5, was found a large stone slab with depressions or *kernos* (F19) (fig. 7.9). Space 6.5 had very few finds and mainly produced fragmentary and eroded MM to LM I pottery. A stratigraphic test was opened in the eastern half of the space and excavated to bedrock. At least four superimposed and poorly preserved pebble and earth floors could be identified at ca. +16.85, +16.77, +16.74, and +16.55 m. Resting on the lower floor (ca. +16.55 m) was a burned deposit containing mudbrick fragments, clay architectural elements, burned bones, and charcoal. Below the lower floor, in the central part of the sounding, two cavities had been carved in the bedrock and filled with dark brown earth containing a few eroded sherds. In the southern part of the test, bedrock was levelled by rubble.

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6 Immediately below ground surface was discovered a WW II Italian mortar shell. The 45 mm shell was meant to be fired from a Brixia Model 35, the standard light mortar used by Italian troops during World War II. This find, together with the numerous bullet cases, hand-grenade fragments, and other metal objects brought to light during the previous campaigns as well as the 2010 demining operations, seem to confirm the presence of Italian machine gun nests on the Buffo as remembered by local informants (Driessen 2009: 25, this volume).
1.7. The seal

Maria Anastasiadou

The seal is a lentoid of dark olive green schist/serpentine (10-06-2055-OB002)\(^7\). The measurements of the seal are: seal faces – 1.50 \(\times\) 1.60 cm; stringholes – 0.20 cm; maximal thickness: 0.60 cm (fig. 7.10a-b).

The intaglios are smooth and regular with U-profiles, which rules out freehand engraving\(^9\). The tools used would have been operated by fast motion, either produced by the horizontal spindle to which they were attached or, most likely, by hand\(^10\). If operated by hand, the tools would have been applied to the stone with a constant backwards and forwards rotary or linear movement, which generates fast motion\(^11\).

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\(^7\) For these stones in Minoan glyptic, see Müller in CMS III: 18-20. I would like to thank Walter Müller for his help with the identification of the material.

\(^8\) Along the stringhole channel.

\(^9\) For freehand engraving, see Anastasiadou 2011: 38-40.

\(^10\) The lines have tapering exits which could, but need not suggest the use of wheels operated with a horizontal spindle. Such exits are a result more of the curvature of the seal face and less a result of the technique. The centred-circles would have either been produced by a toothed/cup drill operated by fast backwards and forwards rotary motion produced by hand, or with the help of a bow; or less likely, if the tools were operated with a spindle, the device would have been created in two separate operations: the central dot opened by a solid drill and the surrounding circle by a tubular drill (for these tools, see below footnote 11). It is more likely that the seal was cut with hand manipulated files and drills because it belongs to a group of soft stone seals which display ornamental compositions created by lines and most often, single centred-circles (for this group, see below). Such compositions are not encountered on hard stone seals, where the appearance of centred-circles is much more limited than in soft stone pieces (for examples of hard stone seals with centred-circles, see CMS VI no. 99 c, which is one of the few hard stone examples with ornamental compositions of this kind; CMS III no. 230 b; CMS VI no. 103 b). It therefore seems reasonable to suppose that such seals were cut in soft stone workshops using the hand tools that were available there, e.g. fast moving files and drills, to create effects similar to those found on hard stone seals, e.g. regular and smooth intaglios.

\(^11\) For the tools possibly used for engraving this seal, see Evely 1993: 151, fig.64 SAW, DRILL solid, tubular, shaped bit, 80 fig.34 toothed; CMS II2, xvi-xvii fig.1; Betts 1989: 10. For engraving resulting from manipulation of hand tools in a constant backwards and forwards rotary or linear movement generating fast motion, see Anastasiadou 2011: 40-43 (Vertical Pressure Technique). For details of the operation of the tools on the horizontal spindle, see Anastasiadou 2011: 43-44 (Mechanical Spindle Technique, with bibliography). For a detailed discussion of the method used for creation of centred-circles on soft stone seals, see Anastasiadou 2011: 44-46 (Vertical Pressure Technique versus Mechanical Spindle Technique). For the difficulty in differentiating between the intaglios cut in the Vertical
The piece is moderately worn. Apart from a small missing part on one edge, along with which a part of the composition is lost (modern), the seal is generally well preserved with only some areas of light damage.

The seal face displays an ornamental composition comprising centred-circles and motifs composed of lines placed around a blank centre. From left to right (impression)\textsuperscript{12}, there is a centred-circle (\textit{Punktkreis})\textsuperscript{13}, two lines at a slight angle\textsuperscript{14}, a diamond lattice (\textit{Rautengitter}), a centred-circle (its largest part chipped away), two lines forming an angle\textsuperscript{15} and fine straight hatching ‘behind’ them (\textit{gerade Schraffur}), a sort line, and an X (\textit{Kreuz}).

The piece is dated to MM III/LM I on stylistic grounds. The first seals with ornamental decoration displaying regular centred-circles are encountered in EM III\textsuperscript{16}, but the motif becomes especially favoured on soft stone glyptic from MM II onwards, often being combined with devices composed of lines and, in particular, lattices\textsuperscript{17}. Stylistically, the piece belongs to a group of mainly schist/serpentine seals which have convex seal faces and bear compositions created by lines/bands and, most often single, centred-circles\textsuperscript{18}. These seals are mainly lentoids but some discoids, cushions, amygdaloids and buttons can also be seen as belonging to the same development\textsuperscript{19}. They date to MM II/MM III-LM I and are characteristic of the transition from the Protopalatial to the Neopalatial period. Among these, the best stylistic parallel to the piece in question is the button \textit{CMS} II,2 no. 149 from Malia which is reported to come from a MM IIB context. However, since the lentoid shape is characteristic of the Late Minoan period, the Sissi seal is better placed in MM III/LM I.

\section*{2. Zone 7}

\subsection*{2.1. Introduction}

In 2009, two small tests were opened at the southwest foot of the Kefali hill where the remains of an L-shaped wall constructed of megalithic,"cyclopaean" masonry (hereafter Wall G1) were previously identified (Driessen 2009: 31-32) (fig. 7.11a-b).
The wall was first identified in the beginning of the 1990s by Driessen and Müller (Driessen 2009: 24; Müller in Blackman 1997: 110). The massive size of the blocks and the position of the wall across what is today the easiest path to the top of the hill led to speculate about the date and function of Wall G1. The 2009 test was designed to elucidate these issues and assess the presence of earlier remains on the site of the megalithic structure. Our efforts were concentrated in two sectors located respectively in the outer and inner areas defined by Wall G1 (fig. 7.11a).

Wall G1 consists of two 7 m-long stretches forming a right angle. It is made of roughly dressed blocks of
blue conglomeratic limestone, undoubtedly local. The wall was apparently erected against sterile regolith (see below). Two courses are visible on its western face, with a maximum height preserved of ca. 1.50 m. The southern face shows one to two courses, with a maximum height preserved of ca. 0.70 m. Interstices between courses are locally filled with stones of smaller dimensions. Dimensions of the blocks range from 0.40 to 2.50 m. The largest stones were selected for constructing the angle of Wall G1, accentuating its monumental character. It is probable, however, that structural considerations mainly dictated this choice (McEnroe 1982: 12-13). The largest block, ca. 2.50 x 1.15 x 0.45 m, is estimated to weigh 3.5 tons. It is not impossible that this block, as well as other heavy elements, were lifted into place by use of a ramp (see below and also Loader 1998: 62; McEnroe 2001: 37). Similar stones forming a line parallel and immediately next to the modern asphalt road about 30 m west could suggest the presence of other structures within the valley.

2.2. Outer sector

Excavation was carried out in the area delimited by Wall G1 and the southern cliff of the Kefali, where vegetation clearing revealed a MM IIIB-LM IA pottery deposit (discussed by Langohr, this volume) (fig. 7.11a). There was no obvious stratigraphy in the deposit and this at least partly results from root disturbance. The material found is eroded and mainly consists of conical cup fragments mixed with cooking pot debris. Associated finds include a terracotta loomweight (09-07-3000-OB002) and slab (09-07-3000-OB004), a stone vase fragment (09-07-3000-OB003), and a ledge-rim bowl/tumbler with light-on-dark decoration (09-07-3000-OB005). Several joining sherds suggest that the assemblage initially originates from a destruction layer which, we suspect, might have been located in the inner sector of Wall G1 (see below). In any case, this deposit seems to rest against the wall and provides a date for its abandonment.

2.3. Inner sector

A test of 4 m by 3 m was made in the angle of Wall G1 where altered bedrock was reached at a depth of ca. 2 m below ground surface (fig. 7.11a). The land surfaces rise gradually from west to east and from south to north, with elevations comprised between +7.42 and +8.47 m. A schematic section illustrating the main stratigraphic units encountered in this sector is given in fig. 7.12.

**Fig. 7.12.** Schematic section across Wall G1. 1. Megalithic masonry; 2. Topsoil-slopewash; 3. Tumble; 4. MM IIIB/LM IA earth floor levels; 5. Stone packing (EM II-LM I); 6. EM III-MM III construction debris; 7. Tumble; 8. Sterile regolith
Below the topsoil/slopewash sediments was a succession of three superimposed earth floors (ca. +7.75, +7.70, and +7.60 m, respectively), all associated with MM IIIB/LM IA pottery. Associated with the uppermost floor (ca. +7.75 m) were open vessels (09-07-3011-OB001, 09-07-3011-OB003, 09-07-3011-OB004), a fragment of an amphora (09-07-3011-OB002), and sherds of a pithos decorated with three horizontal ropes\(^{20}\) (09-07-3012-OB001). In the north corner of the trench, white plaster fragments, apparently resting on the floor surface, were found under the tumble which included a fragment of *ammouda* (fig. 7.13).

Beneath this highest floor was a layer of packed earth containing fragmented cups and scattered remains of coarse ware pottery. This compact unit was found resting on a second floor (ca. +7.70 m) on which were discovered an inverted MM IIIB/LM IA carinated cup (09-07-3014-OB005) and a smashed (conical?) cup (09-07-3014-OB006). Below this floor was a deposit containing various MM IIIB/LM IA drinking vessels including conical cups (09-07-3015-OB002, 09-07-3015-OB003, 09-07-3015-OB004) and two bowls (09-07-3015-OB001, 09-07-3015-OB005). It is not impossible that some of these vases were initially resting on a third, underlying floor level (ca. +7.60 m). The surface of this lower floor was strewn with few, isolated, pottery sherds. Below this surface was a compact layer containing a mixture of coarse, domestic vessels and fine, decorated cups preliminarily dated to no later than LM I. Associated finds include a fragmentary potter’s wheel (09-07-3017-OB002). Below this layer was a 20 to 40 cm-thick stony packing containing large amounts of mixed EM II-LM I pottery. The stony packing also produced a range of complete and fragmentary vessels including a fine, shallow, bowl (09-07-3021-OB001), a cup (09-07-3020-OB008), and the rim fragments of a pithos with rope decoration\(^{21}\). A layer of collapsed building material was excavated below the stony packing. Associated pottery is preliminarily dated to EM III-MM III and includes (carinated) cups, bowls, jars, cooking tripod feet and sherds of a MM straight-sided cup decorated in white-on-dark with a semi-radiating motif placed below the rim (09-07-3022-OB001) (fig. 7.14)\(^{22}\). Large plaster fragments, some

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\(^{20}\) Christakis’s (2005: 25, fig.27) Ropes 1 or 3.

\(^{21}\) Christakis’s (2005: 25, fig. 27) Ropes 6 or 7, providing a chronology consistent with the associated EM II-LM I pottery.

\(^{22}\) According to Walberg (1983: 46-47), similar semi-radiating motifs are found at Malia on vases inspired by the style prevalent at Knossos and Phaistos or imported from these locations. The motif appears to belong to phase 3 of the MM “provincial style” (corresponding to the Classical palatial Kamares phase) and is typically found in east-central Crete. The cup of Sissi has a parallel found in a stratigraphic test opened against the eastern façade of Building 7 at Palaikastro (MacGillivray *et al.* 1992: 136, fig.14, n.2). The example of Palaikastro, like that found at Sissi, corresponds to a straight-sided cup. MacGillivray *et al.* (1992: 133) assign it to “a type
bearing traces of red paint, were found mixed with building debris. Reddish and grey clay fragments mixed with small (river?) pebbles were also discovered and may represent collapsed roofing and/or ceiling material (Shaw 1977: 230-231; Shaw 2009: 147-147, 153-155). Building debris was found immediately above a sterile layer interpreted as weathered bedrock.

Fig. 7.14. ZONE 7: MM CUP FRAGMENT WITH WHITE-ON-DARK DECORATION (09-07-3022-OB001) (CHR. PAPANIKOLOPOULOS)

We provisionally interpret the above evidence as follows. A domestic building probably occupied the site of Wall G1 as early as EM II. We cannot exclude that some elements of Wall G1 already formed part of this building. Ceramic evidence suggests that this building remained occupied during the Protopalatial period, possibly until MM III when it suffered substantial damage. Cleaning operations and subsequent building activities probably occurred during MM IIIB/LMIA with a stony packing laid out over collapsed debris. The compactness of the stony layer, together with its gentle northward dip, raises the possibility that this debris also served as a ramp to lift megalithic blocks of Wall G1 into place. In the southern part of the trench, the top of the stony layer was found at ca. +7.60 m. Any block hauled up to this level would easily be pushed on top of the first course of Wall G1. Three successive earth floor levels suggest a relatively intense occupation of the area during MM IIIB/LMIA after which it was given up. The MM IIIB/LMIA pottery deposit excavated against the southern face of Wall G1 (see above) should probably be related to these activities.

3. General conclusion

In Zone 6, the 2009 and 2010 excavation campaigns allowed us to better understand the spatial extent, chronology, and function of Building F. It is now clear that the main occupation phase of the building can be attributed to the LM IIIA2 period. It is, however, likely that at least some parts of the complex were already occupied earlier, perhaps even in the Prepalatial period. During LM IIIA2/B, space 6.3 appears to have functioned as a working area with industrial activities probably involving the treatment of liquids. A major collapse of Building F occurred during LM IIIA2/B, with traces of destruction by fire in spaces 6.2 and 6.4.2.

manufactured at Knossos and quite common in deposits of the MM IIIA period there”. No good parallels could, however, be found for the dotted semi-circular pattern framing the semi-radiating motif of Sissi.
Excavations in Zone 7, on the other hand, provided new information related to the date and function of the “cyclopean wall” of Sissi. A detailed study of the pottery is, however, necessary before any definitive conclusion can be drawn. We suggest that the site of Wall G1 was already occupied by a domestic structure during the Prepalatial period, perhaps as early as EM II. It is not impossible that this construction remained in use until the end of the Propalatial period when the structure suffered damage. At some point during the Neopalatial period (MM IIIB/LM IA), a stony packing was deposited over collapsed building debris and three successive earth floors were laid. Tumbled stones and plaster fragments found resting on the upper floor represent the only evidence for associated architectural remains. Excavation of the outer sector of Wall G1 moreover suggests that destruction and subsequent cleaning activities also occurred during MM IIIB/LM IA. In the current stage of excavation, it seems reasonable to suggest that the present appearance of Wall G1 should be assigned to MM IIIB/LM IA. The absence of later in situ material also suggests that the wall was given up during, or shortly after, MM IIIB/LM IA.

The excavation of Zone 7 did not provide convincing evidence that Wall G1 was ever constructed as part of a defensive system. Instead it seems that the construction was always associated with residential structures. However, Wall G1 probably fulfilled several other functions, including that of a retaining wall. The megalithic construction of Wall G1 would moreover be adapted to support a two-storey building. It is not impossible either that the megalithic structure acted as a kind of “prestige artefact” for the residents of the Kefali.

4. References

- Gaignerot-Driessen 2009 = F. Gaignerot-Driessen, Le bâtiment du sommet de la colline. La fouille de la Zone 3, in Sissi I, 115-128.

23 As suggested for the Protopalatial megalithic wall running along the eastern flank of Hill I at Petras (Tsipopoulou 1999: 186).
7. The Excavation of Zones 6 and 7

Ce chapitre présente quelques dépôts remarquables de poterie dégagés durant les campagnes de 2009 et 2010 sur le Bouffo à Sissi et relatifs aux périodes d’occupation néo-palatiale (MM III-MR I), palatiale finale (MR II-IIIA2) et post-palatiale (MR IIIA2-B) du site. Les observations proposées ici sont le résultat d’une étude préliminaire de la céramique collectée et seront donc précisées et sans aucun doute ajustées par les campagnes d’étude à venir. Cette analyse préliminaire comprend essentiellement des données d’ordre typologique et stylistique, des éléments de datation relative et un premier échantillon de comparaisons de poteries découvertes sur d’autres sites crtoïdes et hors de Crète. Ce dernier permet de replacer la communauté sissiote au sein d’un contexte chronologique et géographique élargi, en ce qui concerne sa consommation de céramique. Toute considération détaillée et liée aux caractéristiques technologiques, descriptions des fabriques et recettes de pâtes de ces ensembles n’intègre pas cette analyse. Cela dit, un programme d’analyses pétrographiques de la céramique MR I-IIIB de Sissi a été amorcé, mené sous la conduite de Drs F. Liard. Dans ce sens, un Appendix réservé à un premier examen des fabriques de coupelles coniques MR I et MR III découvertes dans des dépôts des zones 2 et 5 du site est proposé à la fin de ce chapitre. La présente étude macroscopique procède en deux temps, en s’attachant d’abord à deux ensembles de poterie néo-palatiale, puis à plusieurs dépôts majeurs de céramique palatiale finale et post-palatiale.

1. La période néo-palatiale

1.1. Zone 2 – Bâtiment BC

1.1.1. Pièces 2.6 et 2.8.

De gigantesques dépôts secondaires de céramique commune ont été dégagés au sein des pièces 2.6 et 2.8 du Bâtiment BC au cours des fouilles de la zone 2 en 2009 et 2010 (cf. F. Carpentier, chapitre 4). Ces ensembles sont extrêmement homogènes et à plus d’un titre (familles de fabriques, typologies des formes, traitements de surface). Il s’agit essentiellement de poterie de nature domestique, liée à la préparation et la consommation de nourriture. Elle est le plus souvent montée dans une fabrique de couleur orange à orange rosée ou orange rougeâtre, et généralement non décorée. On compte, en ce qui concerne la vaisselle à boire en céramique semi-fine, de très nombreuses coupelles coniques, dont la plupart présente un profil clairement tronconique et compact, et des tasses au profil en S munie d’une anse de section ronde ou plate et dont la base présente souvent sur sa face inférieure une dépression circulaire modelée par le doigt du potier (fig. 8.1.a, c). La surface du vase est laissée sans traitement ou totalement couverte d’un engobe sombre. Toutefois, la présence de quelques tessons décorés en foncé sur clair de bandes et de spirales permet de suggérer une datation MR IA. Cette dernière est corroborée par les dépôts de...
8. La céramique MM IIIB-MR IIIB de Sissi

céramique MR IA récemment dégagés des fouilles du Quartier Pi à Malia, qui montrent une même prédominance
de la coupelle conique de profil compact et de la tasse au profil en S (appelée aussi «tasse galbée»), dont les
caractères typologiques et stylistiques sont clairement similaires (fig. 8.1.b)\(^3\). En ce qui concerne les formes en
céramique semi-grossière à grossière, on observe l’omniprésence de la marmite tripode à anses horizontales, mais
aussi l’utilisation de cruches, amphores, plats à cuire, jarre pithoïdes et bassines (fig. 8.1.d). Excepté quelques
traitements monochromes, les rares traces de décor consistent en de simples motifs incisés (bande ondulée
sous le bord de marmites tripodes: fig. 8.1.e) ou modelés (décoration en forme de corde sous le bord des jarres
pithoïdes).

Fig. 8.1. ZONE 2. PIÈCES 2.6 ET 2.8. DÉPÔTS SECONDAIRES/?REM EN S, 1. TASSE AU PROFIL EN S (09-02-1203-
OB001) ; 2. TASSE AU PROFIL EN S PROVENANT DE LA PIÈCE 10 DU QUARTIER PI À MALIA (4029.13) ; 3-4.
ÉCHANTILLONS DE LA CÉRAMIQUE RETROUVÉE DANS LA PIÈCE 2.6 (09-02-1226) ; 5. MARMITE TRIPODE, DÉCORATION INCISÉE
(09-02-1243-OB003) (C-D : C. LANGOHR ; B : L. MANOUSOGIANNAKI ; A, E : Chr. PAPANIKOLOPOULOS)

1.2. Zone 7

Dans l’angle interne du mur mégalithique dégagé en contrebas de la colline, sur son versant sud-ouest, après
le prélèvement de couches superficielles perturbées, on atteint un niveau archéologique mixte, où semblent se
mêler un important remblai, peut-être dragué d’une zone supérieure de la colline, et un dépôt de destruction
vraisemblablement in situ, vu le dégagement de poteries complètes, brisées (cf. S. Jusseret, chapitre 7). La quantité
impressionnante de vases à boire collectée pourrait bien s’insérer dans un environnement MM IIIB, ou de la
transition MM IIIB-MR IA (fig. 8.2). Le bol conique à bord plat et horizontal, proéminent vers l’extérieur, décoré
en clair sur sombre d’arcs concentriques pendants sous le bord (fig. 8.2.e) est tout à fait similaire à un exemplaire
knossien, daté par P. Warren de la transition MM IIIB-MR IA (Warren 1991 : fig. 8E, pl. 78I).

\(^3\) Je remercie vivement M. Pomadère, directrice des fouilles de l’Ecole française d’Athènes du Quartier Pi à Malia, de m’autoriser à
publier cette poterie encore inédite.
2. **Les périodes palatiale finale et post-palatiale**

2.1. **Zones 3 et 4 – Bâtiment CD**


2.1.1. **Pièce 3.8**

Une partie du mobilier en céramique retrouvé dans la pièce 3.8, interprété comme un espace cultuel, a déjà été présentée et analysée plus haut (cf. F. Gaignerot-Driessen, chapitre 5.2, fig. 5.9). Aux objets en céramique peut-
être plus directement liés à l’exercice du culte (supports tubulaires à serpents et à cornes de consécration, vases ouverts), viennent s’ajouter quatre grands conteneurs en céramique semi-grossière : deux vases à étrier, dont l’un est décoré de tentacules d’octopus stylisées, une cruche et un autre grand vase de stockage incomplet (fig. 8.3). Leur entreposage dans ce sanctuaire suggère l’utilisation de certains liquides ou la consommation de denrées à des fins rituelles. Par ailleurs, la variété des fabriques dont atteste chacun de ces conteneurs est particulièrement intéressante. La confirmation de leur importation depuis une ou plusieurs régions extérieures à celle de Sissi par des analyses pétrographiques pourrait indiquer l’usage de produits spécifiques dans ce contexte particulier.

Fig. 8.3. BÂTIMENT CD. SANCTUAIRE 3.8. DÉPÔT DE DESTRUCTION PRIMAIRE MR IIIB. A. 09-03-0515-OB001 ; B. 09-03-0514-OB011 ; C. 09-03-0514-OB013 ; D. 09-03-0514-OB012 (C : C. LANGOHR ; A, B, D : CHR. PAPANIKOLOPOULOS)
2.1.2. Pièce 4.9

Dans la pièce 4.9, un remblai mixte, mélant particulièrement de la céramique fine et décorée MR I(A)-B-II-III A1, recouvre un dépôt de destruction primaire. Plusieurs poteries complètes mais brisées le composent, vraisemblablement en place, stockées dans ce petit espace, et renversées sur le sol lors la destruction du complexe (fig. 8.4). L’analyse de cet ensemble suggère une datation MR IIIB avancé.

Fig. 8.4. BÂTIMENT CD, PIÈCE 4.9. DÉPÔT DE DESTRUCTION PRIMAIRE MR IIIB AVANCÉ. A. COUPELLES CONIQUES (09-04-0767-O8005, 08-04-0716-O8001, 09-04-0739-O8001, 09-04-0767-O8003) ; B. BOLS CONIQUES À BASE SURRÉLEVÉE (09-04-0767-O8004, 09-04-0767-O8006) ; C. COUPE À CHAMPAGNE (09-04-0752-O8003) ; D. TASSE BASSE (09-04-0767-O8021) ; E. CRUCHE À COL CYLINDRIQUE (09-04-0739-O8003) ; F. CRUCHE À COL ÉTROIT ( ? « TYPE IV HYDRIA ») (09-04-0739-O8004) (CHR. PAPANIKOLOPOULOS)
Les coupelles coniques sont typiquement de grandes dimensions et présentent un profil évasé, caractéristique de la phase MR III (fig. 8.4.a ; diam. bord 0,09-0,14). La coupe à champagne est typique de la vaisselle à boire en céramique fine de Sissi au MR IIIB (fig. 8.4.c). Parallèlement à la poterie montée dans une argile fine orange-rouge, ce vase montre une fabrique très épurée de couleur chamois et un traitement de surface sans décor mais soigneusement lissé, ce qui lui confère un aspect luissant. Coupe à champagne et kylix réalisés dans ce type de fabrique sont particulièrement nombreux dans les dépôts contemporains collectés sur le site. L’origine de leur production reste à déterminer dans le cadre de notre programme d’analyses pétrographiques.

La tasse basse munie d’une petite base surélevée bien dessinée et d’une anse saillante de section ovale présente un traitement de surface gras (fig. 8.4.d). Bien que ce dernier semble clairement répondre à une forte exposition aux flammes durant la cuisson, il ne s’agit pas à proprement parlé d’une fabrique grise et donc de cette catégorie de poterie spécifique appelée « Grey Ware ». En effet,brisée, la tranche de cette poterie laisse apparaître une fabrique de couleur rouge. De plus, la surface n’a pas reçu le poli habituel qui lui donne cette apparence particulièrement brillante et typique du « Grey Ware », une classe de céramique souvent présentée comme une influence continentale quand il s’agit de petits conteneurs (jarre piriiforme, vase à étier, etc.)


Les deux bols coniques à base surélevée et bord horizontal proéminent, montés dans une argile semi-grossière de couleur orange-rouge et laissés sans traitement de surface (fig. 8.4.b), représentent un type de vase découvert dans d’autres contextes sur la colline. Six exemplaires ont été trouvés sur le sol du sanctuaire 3.8, dans la zone centrale du complexe CD, tandis qu’un autre spécimen se trouvait dans la pièce 6.1 du bâtiment fouillé en zone 6 (fig. 8.5). Ce type de bol se rapproche de ce que l’on appelle communément le kalathos, bien que ce dernier affiche généralement un profil moins conique, dépourvu de pied, et est muni d’anes horizontales ou verticales, respectivement fixées sous ou sur le bord. J. Rutter a attiré mon attention vers un vase similaire retrouvé dans la « House of the Snake Tube » à Kommos, dans un contexte MR IIIB (Watrous 1992: 95, n° 1651, pl. 42). Réalisé dans une argile semi-grossière et peint d’une bande au bord, ce bol conique reposait in situ, sur le support tubulaire à serpent qui a donné son nom au bâtiment. F. Gaignerot-Driessen propose la même reconstitution dans le sanctuaire 3.8 (chapitre 5.2). Des contextes MR IIIB de La Canée et de Knossos ont fourni des bols coniques en céramique semi-grossière et non décorés comparables, mais pourvus de pieds bien plus élevés (« pedestal bowl/ brazier » ; La Canée : Hallager & Hallager 2003 : 243, n. 463, fig. 51 :15, pl. 77 [77-P 2027] ; Knossos : Popham 1970 : 191, fig. 1B-C ; Hatzaki 2007 : 233, fig. 6.24 :2-3). Ceux-ci portaient des traces de brûlé et ont incité leurs inventeurs à parler explicitement de lampes ou de brûleurs à encens. Dans le cas de Sissi, il pourrait également


5 Je remercie L. Girella d’avoir attiré mon attention sur ces différents points. Ce spécialiste a par ailleurs suggéré que le « Grey Ware » n’est qu’un des aspects d’un phénomène plus large et propre à la période charnière entre le MR IIIB et le MR IIC, celle de la finition et circulation d’objets métalliques en Égypte et en Méditerranée orientale qui affichent de claires ressemblances avec les produits du continent européen, particulièrement la région de l’Italie actuelle (Girella 2009 : 305).

6 Cette tasse provient d’un contexte HR IIIB de l’Agora d’Athènes. Bien que le traitement de surface diverge, avec ses engobe et fines lignes peintes rouge-brun, elle présente des caractères morphologiques très semblables à la tasse de Sissi (coupe très peu profonde, petite base surélevée, anse horizontalement proéminente, lèvre légèrement évasée vers l’extérieur).

7 Les six exemplaires complets retrouvés dans la pièce 3.8, renversés au pied des supports tubulaires ou contre le mur nord, ont été directement conditionnés afin d’être envoyés en laboratoire pour procéder à des analyses de résidus, potentiellement conservés sur la face interne de ces vases. Dès lors, aucune photographie ou dessin de ces poteries n’a pu être réalisé à ce jour, excepté en situ (cf. Gaignerot-Driessen, ce volume, fig. 5.8 et fig. 5.9, pour un exemple incomplet).
s’agir d’un récipient utilisé à une fin spécifique. En effet, son association dans la pièce 4.9 à de la poterie fine décorée prestigieuse et, dans l’espace cultuel 3.8, à des supports tubulaires à serpents et à cornes de consécration souligne d’autant plus le caractère grossier, peu raffiné de ces vases. Outre le fait qu’il puisse s’agir de bols destinés à recevoir de la nourriture ou quelques offrandes, je rejoins la proposition de J. Rutter d’y voir des lampes ou des réceptacles pour brûler des aromates. Ainsi, posés sur le haut pied des supports tubulaires, ces lampes ou brûleurs à aromates/encens permettent sans danger d’éclairer et/ou de parfumer la pièce qui les abrite.

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La cruche à base plate, profil légèrement caréné et col cylindrique et concave est décorée de fines bandes horizontales de la base au col et d’une bande peinte au bord (fig. 8.4.e ; ht. 0,14). Des traits verticaux viennent s’ajouter sur l’épaule, opposés à l’attache de l’anse. Ce type de cruche est connu dans les contextes crétois MR IIIA2, notamment à La Canée et Episkopi-Ierapetra (respectivement Hallager & Hallager 2003 : 29, pl. 61, 91e :1 [71-P 0817/1336/1367/1369] ; Kanta 1980 : fig. 57 :8). B. Hallager souligne que la décoration simplifiée de ce type de cruche, par un unique ensemble de bandes, pourrait être caractéristique d’un stade avancé de la phase MR IIIA2 (Hallager & Hallager 2003: 222). Sur le continent, la forme FS 114 constitue le parallèle le plus proche, mais ses petites dimensions (ht.: 0,08-0,09) concordent moins bien avec l’exemple de Sissi. Retrouvées dans des contextes HR IIIA2 et HR IIIIB dans les régions de Corinthie et d’Attique par exemple, elles sont décorées de bandes peintes qui varient en épaisseur et le plus souvent munies d’une base en anneau et non plate (Mountjoy 1999: resp. 220, n° 125, fig. 70 et 544, n° 216, fig. 197). Enfin, des exemplaires de cruches à col cylindrique décorées de bandes horizontales d’épaisseur égale ont été trouvés à Rhodes (Benzi 1992 : 50, 51, 442, pl. 142 [Lardhos 8, 9]). Elles sont datées du MR IIIA2/B, bien qu’un stade ancien du MR IIIIC ne soit pas exclu pour le second vase, d’après M. Benzi. Le premier vase est particulièrement comparable à l’exemplaire de Sissi, avec sa panse légèrement biconique et sa base plate et étroite.

La cruche à col étroit décorée de murex stylisés est une des plus intéressantes poteries découvertes à Sissi (fig. 8.4.f). De profil globulaire, elle est dotée d’un haut col cylindrique étroit parachevé par un bord en forme de disque auquel est fixée l’anse de section ovale qui rejoint l’épaule. Elle pourrait s’apparenter à la forme FS 120 de l’HR IIIIB. Sa fabrique fine, beige clair et lustrée, et la décoration de coquillages murex stylisés (FM 23), souvent attribuée ou liée aux productions de l’atelier de Zigouries, vont également dans le sens d’une importation du continent. Un exemple rhodien, décoré du même motif marin, constitue une comparaison valide (Benzi 1992: 52, pl. 68c, pl. 159b [T 38/1]). Quelques détails morphologiques et décoratifs peuvent encore être relevés. Les fines lignes concentriques peintes sur la surface plate du bord discoïdal qui cerne l’ouverture de la cruche rappellent les nervures sculptées en creux sur le bord plat du Vase des Moissonneurs d’Aghia Triada, un rhyton piriforme. La partie inférieure du vase de Sissi étant manquante, une terminaison conique, à l’instar des rhytons piriformes, ne peut donc être exclue. Cependant, les rhytons piriformes ont plus généralement une large ouverture, et non un haut col cylindrique et étroit (Koehl 2006: fig. 6-7). Les exemples de poterie munie d’un tel col et d’une embouchure peinte de fins cercles concentriques sont rares. Deux parallèles satisfaisants sont représentés par des rhytons en forme d’hydrie conservés au British Museum et provenant de Ialysos (Forsdyke 1925: fig. 210

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8 J. Rutter, commentaire personnel sur une étude à paraître.
9 Je remercie J. Rutter d’avoir attiré mon attention sur ce détail.
8. La céramique MM IIIB-MR IIIB de Sissi

[A 881], pl. 13 [A 880]). Ces vases portent par ailleurs la même décoration de murex stylisés sur la panse, cette dernière étant également dotée de deux petites anses horizontales qui font défaut sur la cruche de Sissi. Le rhyton de type IV en forme d’hydrie identifié par R. Koehl, avec son col étroit et une base plate percée, constitue donc un parallèle pertinent (Koehl 2006: 58-59, 217-218, fig. 42). Quatre des six exemplaires répertoriés par Koehl portent une décoration de murex stylisés (provenance: Episkopi-Ierapetra [Kanta 1980: 154, n. 1]; Argos [Deshayes 1966: pl. 81 :5-6]; British Museum [Forsdyke 1925: 157-158, pl. 13, [A880], fig. 210 [A 881]). Tous proviennent de contextes MR IIIB ou HR IIIB1. Enfin, un rhyton en forme de cruche découvert dans une tombe HR IIIB à Ialysos et considéré comme une importation probable d’Argolide indique un dernier parallèle intéressant (type 1 : Koehl 2006 : 84, n° 75, pl. 8). En effet, décorée de nombreux motifs, elle porte celui du murex stylisé, mais surtout, son embouchure est obturée par un disque d’argile percé en son centre et peint de cercles concentriques. Dans un registre quelque peu différent, R. Koehl m’a rendue attentive à un vase de Kos dont la base présente des perforations multiples et devait fonctionner comme une sorte d’arrosoir (Koehl 2006: 10, fig. 4). Ce vase, simplement décoré de bandes horizontales sur toute la surface de la panse, est pourvu d’un col cylindrique étroit, tandis que son embouchure est également fermée par un disque d’argile percé en son centre et auquel vient se fixer une haute anse de section ovale.


Enfin, un objet intrigant provient du même dépôt. Il s’agit d’un fragment en céramique tubulaire et renflé, s’apparentant à un manche (fig. 8.6.b). La fabrique est semi-grossière et l’objet est recouvert d’un engobe clair et peint de bandes horizontales. Il fait penser aux quelques exemplaires de torche de l’Âge du Bronze découverts en Egée, regroupés et étudiés par V. Karageorghis, particulièrement un exemple conservé au Musée de Rhodes et deux spécimens trouvés à Enkomi, dans des contextes d’habitat CR IIIA (Karageorghis 1999 : 511-512, fig. 13, 16 b-d)10.

Fig. 8.6. BÂTIMENT CD. PIÈCE 4.9. DÉPÔT DE DESTRUCTION PRIMAIRE MR IIIB AVANCÉ. A. COUVERCLE (09-04-0723-OB005) ; B. TORCHE ? (09-04-0767-OB023) (CHR. PAPANKOLOPOULOS)

Ce dépôt de la pièce 4.9 est très clairement daté de la période MR IIIB, particulièrement de la seconde moitié de cette phase chronologique, et s’accorde ainsi avec les autres dépôts de destruction déjà découverts préalablement au sein du complexe sommital de Sissi. Cet espace restreint, de 2 x 3 m, jouxte la grande salle à double piliers (3.1), avec laquelle il ne communique cependant pas directement, mais via les espaces 4.10 et 4.7 (Cf. Q. Letesson, chapitre 5.3). Mis à part les vases découverts dans sa portion orientale, la grande salle 3.1 était pratiquement vide lors de sa découverte (Cf. F. Gaignerot-Driessen, chapitre 5.2). Il est envisageable que de nombreux vases à boire et conteneurs de prestige, ici sélectivement présentés, étaient stockés dans la pièce 4.9 en attendant leur utilisation lors de repas ou de cérémonies tenus occasionnellement dans ce grand hall, servant alors d’espace de réception. L’usage suggéré de torche et de lampes pourrait avoir été associé à la pratique de telles activités.

10 A nouveau, je remercie J. Rutter d’avoir attiré mon attention vers ces objets.
2.1.3. Pièce 4.11

La pièce 4.11 est une grande salle de plan trapézoïdal pourvue de deux piliers centraux disposés longitudinalement. Elle communique avec le sanctuaire 3.8 par une ouverture réalisée dans son angle nord-ouest. Un important dépôt de sol en place a partiellement été dégagé dans cet espace, très près de la surface moderne et parfois directement étalé sur le rocher qui affleure en plusieurs endroits (fig. 8.7).

Fig. 8.7. BÂTIMENT CD, PIÈCE 4.11. DÉPÔT DE SOL MR IIIIB AVANCÉ. A. VASE À ÉTRIER DE STOCKAGE (09-04-1625-OB013) ; B. VASE À ÉTRIER GLOBULAIRE (09-04-0757-OB001) ; C. VASE À ÉTRIER GLOBULAIRE (09-04-1609-OB001) ; D. VASE À ÉTRIER GLOBULAIRE (09-04-1614-OB001) ; E. GOBELET (09-04-0793-OB001) ; F. PYXIDE (09-04-1614-OB002) ; G. SUPPORT TUBULAIRE 'À SERPENTS' (09-04-0742-OB001) (A : C. LANGOHR ; B-G : CHR. PAPANIKOLOPOULOS)
Un exemplaire de support tubulaire à serpents a été collecté dans cette vaste salle (fig. 8.7.g). Associée à ce même dépôt, la présence de quatre vases à étrier décorés est particulièrement remarquable. Il s’agit tout d’abord d’un vase à étrier de transport piriforme, décoré du motif de l’octopus réduit à sa plus simple évocation par plusieurs lignes ondulées, sur la panse et sur l’épaule (fig. 8.7.a). Ses caractères morphologiques et stylistiques diffèrent de l’exemple découvert dans la pièce 3.8. Par contre, ils s’apparentent clairement à ceux d’un exemplaire découvert dans une tombe à Episkopi-Ierapetra (Xanthoudides 1920-1921 : fig. 2). La fabrique ne semble pas locale. Le second est un vase à étrier globulaire pourvu d’une base en anneau (fig. 8.7.b). Il est décoré de deux grandes fleurs minoennes sur l’épaule et d’arcs concentriques à rayons dans les interstices situés entre le bec et l’étrier, tandis que des chevrons parallèles alternant avec des arcs concentriques sont organisés en frise juste au-dessus du diamètre maximum de la panse. Le reste de la surface du vase est décoré de bandes qui encadrent des groupes de fines lignes horizontales. On propose d’y voir une production crétoise MR IIIB. Le troisième vase à étrier, de profil globulaire et muni d’une base plate, est incomplet (fig. 8.7.c). Il est décoré du motif de l’octopus déployant plusieurs niveaux de tentacules superposés, tandis que la partie inférieure de la panse est peinte d’une série de bandes et fines lignes horizontales. Le corps de l’octopus est cerclé de pointillés, ce qui constitue généralement un caractère tardif, MR IIIB2-C. Il semble que le faux-bec de ce vase, non conservé, était toutefois perforé, vu les traces d’arrachement laissées à l’emplacement de sa base, ce qui est moins fréquent aux MR IIIB2-C, quand les faux-becs sont plus généralement pleins. Le dernier vase à étrier présente un profil légèrement surbaissé et une base modélée en anneau (fig. 8.7.d). La décoration florale à l’épaule, disposée symétriquement de part et d’autre d’un panneau de zigzags superposés (FM 75), peut être rapprochée du motif FM 18, MR IIIA2-B. Les espaces entre le bec et la base des anses sont décorés de triangles élaborés, ornés d’arcs concentriques (FM 71).

Cet ensemble comptait également un vase ouvert incomplet, s’apparentant à un gobelet, monté dans une argile très fine de couleur rose-châtaigne, dont la surface a été soigneusement lustrée (fig. 8.7.e). Sa base, pleine et plate, a été perforée avant cuisse. À La Canée, ce type de gobelet, sans anse, est bien connu dans les contextes MR IIIB, essentiellement MR IIIB2, bien que peu commun (Hallager & Hallager 2003 : 234, fig. 50 :3, pl. 69). Leurs bases présentent aussi une perforation mais, contrairement à l’exemple de Sissi, le pied et la base ne sont pas pleins. Le bol est plus conique, mais le traitement de la surface, lissée et sans décor, concorde. Les dimensions convergent également, avec un diamètre au bord légèrement supérieur à la hauteur du vase. B. Hallager avait déjà pointé un exemple comparable à Malia, dans la Maison Lambda (van Effenterre & van Effenterre 1969 : 126-127, Λ60, pl. LXV). Celui-ci est monté dans une argile fine beige clair et porte des traces de « vernis noir » sur la face interne et une bande peinte sur le bord externe. Le pied est également percé, tandis que le bord n’est pas droit comme les exemples de Sissi et La Canée, mais évasé vers l’extérieur.

Enfin, un pyxide complète ce dépôt de la pièce 4.11. Pourvue d’une épaule anguleuse sous laquelle sont fixés des tenons, elle est décorée en clair sur sombre de trois bandes horizontales (fig. 8.7.f).

2.2. Zone 5

Plusieurs niveaux primaires de destruction ont été découverts sur les sols des pièces 5.11, 5.12 et 5.13 du bâtiment E, dans la zone 5 (Devolder 2009 : 153-154, fig. 7.23 ; Langohr 2009 : 175, fig. 9.19). Les dépôts de poterie qui les constituent suggèrent que ces niveaux représentent un seul et même événement qui prend place à la fin du MR IIIA2 ou au début du MR IIIB. Il s’agirait donc d’une destruction antérieure à celle qui met fin à l’occupation prestigieuse du bâtiment CD. La réutilisation du bâtiment E ou son abandon à l’état de ruines pendant la phase MR IIIB reste à éclaircir. Cependant, aucun dépôt primaire distinctement lié à un stade avancé de la phase MR IIIB n’y a été mis au jour jusqu’à présent. Une évidence, particulièrement mise en lumière par les campagnes 2009 et 2010, est que la vaste zone qui s’étend au nord-est du bâtiment E et jusqu’aux façades sud du bâtiment CD a été utilisée comme une aire ouverte, probablement dès le début de la période palatiale finale. D’importants dépôts secondaires de poteries y ont régulièrement été déversés, notamment de la vaisselle à boire en céramique fine, et souvent décorée, qui se sont accumulés et superposés tout au long du MR II-III A1, MR III A2, et jusqu’au MR IIIB avancé.

2.2.1. Pièce 5.11

La couche de destruction dégagée au-dessus du sol en galets de cette petite pièce n’a fourni que très peu de matériel en place. L’objet le plus remarquable est sans doute la partie supérieure d’un vase à étrier de transport, probablement tombé depuis l’étage, vu l’absence aux alentours de sa seconde moitié (fig. 8.8). Sa fabrique, dans une argile beige clair comportant de nombreuses inclusions de couleur noir et gris foncé, est caractéristique des productions crétoises de ce type de vase. Il affiche une décoration peinte généreuse à l’épaule, qui se développe jusqu’à la zone de son diamètre maximum. Deux spirales antithétiques surmontées de deux boucles élaborées sont adroitement dessinées en-dessous de l’étrier, tandis que deux boucles similaires se dégagent de part et d’autre du bec. Les vases à étrier de transport MR IIIA2-B qui présentent une décoration plus complexe à l’épaule que de simples bandes ou lignes ondulées semblent appartenir à une production de Crète centrale plutôt que de Crète occidentale (Haskell 2004: 155). Sur la base de ce vase, le *terminus ante quem* de l’occupation de cette petite pièce ne peut être plus précisément daté que du MR IIIA2-IIIB.

Fig. 8.8. **Pièce 5.11. Vase à étrier de transport décoré, 09-05-0955-OB001 (CHR. PAPANIKOLOPOULOS)**

Quelques parallèles stylistiques valables peuvent être proposés avec deux vases à étrier de stockage découverts dans le Quartier Nu à Malia (n° inv. 90.0554.015, 90.0554.019)\(^{12}\). Il est tout particulièrement intéressant de noter que ces deux vases maliotes ont été identifiés comme des productions de la Crète centrale-sud, dans le cadre d’un programme d’analyses pétrographiques\(^{13}\).

2.2.2. Pièce 5.12

Le dépôt de destruction dégagé dans l’angle nord-ouest de la pièce 5.12, sur le sol et légèrement au-dessus de celui-ci, est riche en vases à boire complets. M. Devolder suggère l’effondrement d’une armoire dans ce coin de la pièce (Cf. M. Devolder, chapitre 6). On dénombre notamment deux coupes à champagne, deux tasses globulaires à bord droit très légèrement évasé vers l’extérieur, deux coupelles coniques, l’une au profil évasé, la seconde au profil plus compact, un kylix, un bol de profil ogival (ou sorte de « pulled-rim bowl » ?) et une jarre globulaire à large col court et anses latérales horizontales (fig. 8.9).

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\(^{12}\) Ce matériel encore inédit m’a été généreusement présenté par J. Driessen et A. Farnoux, directeurs des fouilles du quartier Nu.

\(^{13}\) C. Knappett, « LM III Quartier Nu - Pottery Fabric Studies », étude pétrographique à paraître. Il s’agit également de la même fabrique utilisée pour la grande maquette à maison retrouvée dans le quartier Nu (Driessen et Farnoux, à paraître).
8. La céramique MM IIIB-MR IIIB de Sissi

Fig. 8.9. PIÈCE 5.12. DÉPÔT DE DESTRUCTION DANS L’ANGLE NORD-OUEST DE LA PIÈCE. A. KYLIX (09-05-0994-OB010) ; B. COUPE À CHAMPAGNE (09-05-0994-OB005) ; C-D. TASSES GLOBULAIRES À BORD DROIT (09-05-0994-OB006 ET 09-05-0994-OB007) ; E. BOL OGIVAL / ? « PULLED-RIM BOWL » (09-05-0994-OB012) ; F-G. COUPELLES CONIQUES (09-05-0994-OB008 ET 09-05-0994-OB009) ; H. JARRE GLOBULAIRE (09-05-0994-OB011) (CHR. PAPANIKOLOPOULOS)
Il s'agit d'un ensemble de poteries de nature domestique de très bonne facture, habilement tournées et bien cuites. L'incendie qui a accompagné la destruction de cette partie du bâtiment E a sérieusement altéré ces vases qui présentent une surface brûlée de couleur grise. Le traitement de surface d'origine est par conséquent en grande partie effacé. Quand il a été conservé, celui-ci montre un processus simple mais soigné, c'est-à-dire un lissage minutieux de la surface, parfois l'application d'un engobe et d'une bande peinte au bord (09-05-0994-OB007 et 09-05-0994-OB010) et peut-être un revêtement monochrome (09-05-0994-OB012). L'examen macroscopique préliminaire de ces vases à boire suggère l'utilisation d'une fabrique homogène, semi-fine à semi-grossière, de couleur rouge-orange. La jarre globulaire à col large et court, et anses latérales horizontales, présente une fabrique plus grossière. Le kylix fait exception puisqu'il est monté dans une argile fine de couleur chamois. On est tentée de dater ce dépôt de la phase MR IIIA2, bien qu'un stade ancien du MR IIIB n’est pas exclu.

2.2.3. Pièce 5.13

Une épaisse couche de destruction comblait également la grande pièce voisine 5.13. Découverte en 2008, une partie du mobilier pris dans cette couche, et sans doute en partie tombé depuis l’étage, a déjà été présentée, notamment la larnax et le rhyton en forme de pavot, probablement lié à la phase MR IIIA2 (Devolder 2009 : 154, fig. 7.23 ; Langohr 2009 : 175, fig. 9.19). Les autres vases de ce dépôt, prélevés en 2009, comprennent une cruche à large col et long bec horizontal, un bol ogival ou sorte de « pulled-rim bowl », une large tasse globulaire à bord droit légèrement évasé vers l’extérieur, et un support tubulaire à serpents (fig. 8.10).

De très bonne facture (fabrique bien cuite, parois fines, profil élégant), ces vases affichent à nouveau un traitement de surface très effacé. Il semble que la cruche et les deux vases à boire ont reçu un revêtement monochrome lissé, et une bande peinte au bord pour la tasse globulaire. La cruche à large col et bec horizontal proéminent est une forme commune au MR IIIA, bien que son utilisation se poursuive au MR IIIB. Les exemplaires découverts dans les tombes MR IIIA1-B de Mochlos (« collar-necked jug ») offrent de pertinents parallèles, décorés de motifs MR IIIA1
ou traités dans la technique de décoration trempée (Smith 2010 : 70, fig. 33-34, pl. 11-12, [IIB 607, IIB 611]). Le support tubulaire à serpents se distingue des autres spécimens découverts à Sissi par les protubérances horizontales superposées, fixées par deux de part et d’autre du support. Le grand bol ogival ou « pulled-rim bowl » (diam. bord 0,135) et la tasse globulaire à bord droit présentent une fabrique tout à fait similaire, parfaitement comparable aux vases à boire découverts dans la pièce 5.12.

Ces dépôts de poteries des pièces 5.12 et 5.13, technologiquement, typologiquement et stylistiquement analogues, attestent d’une vaisselle domestique de haute qualité, associant vaisselle de table et vaisselle de cuisinette (une marmite tripode complète l’ensemble de la pièce 5.13). Plus surprenante est la présence d’un support tubulaire à serpents, d’un rhyton en forme de pavot et d’une larnax peinte dans la pièce 5.13, mais l’hypothèse de l’existence d’un mobilier de nature davantage cultuelle entouré à l’étage est dans ce cas convaincante (cf. M. Devolder, chapitre 6).

2.2.4. **Extension Nord-Est – “lakkos” 087**

L’immense dépôt prélevé de la fosse/« lakkos » 087 contenait un matériau céramique mélangé à une couche cendreuse, intimement collée à la surface des fragments de poteries. Il s’agit d’un contexte homogène, tel que fouillé dans les couches (artificielles) #10-05-1871, #10-05-1873, #10-05-1875. Une première analyse de ce large ensemble montre l’omniprésence claire d’une vaisselle fine de service. De la poterie fine et décorée compose en partie le dépôt, mais on note la prédominance d’une vaisselle de haute qualité technique, non décorée ou monochrome, et présentant un traitement de surface particulièrement soigné. Le comblement de cette fosse est prélipairement attribué à la phase MR IIIA2, et donc précéderait la construction et l’occupation du bâtiment CD, et peut-être aussi la dernière occupation du bâtiment E.

Il est particulièrement intéressant de noter que les niveaux prélevés au nord de cette fosse (#10-05-1927, #10-05-1929), en direction de l’espace 4.18 du bâtiment CD, mais aussi les couches archéologiques contigües, qui se superposaient à l’ouverture de la fosse (notamment les couches #10-05-1839, #10-05-1863, #10-05-1914), contiennent un matériau céramique stylistiquement et chronologiquement homogène, clairement MR IIIB. Il semble donc que ces dépôts ont été répandus à cet endroit après le comblement du « lakkos ». Un échantillon de cette vaisselle à boire de qualité, décorée ou non, est présenté dans la fig. 8.11. Le dégagement de ce dépôt n’est pas encore achevé, mais on compte déjà plus de 30kg de céramique, pour plus de 2000 tessons. On dénombre essentiellement des kylix à pied haut, des bols profonds et des coupes à champagne, mais aussi des exemples de tasses, bols peu profond à anses horizontales, rhyton conique, couvercle de pyxide, petit vase à étrier décoré. En ce qui concerne la céramique plus grossière, les vases à étrier de transport décorés du motif de l’octopus, les plats à cuire et des fragments de pithos sont prépondérants. Comme déjà énoncé, la poterie fine MR IIIIB avancé de Sissi présente deux types de fabriques, l’une de couleur chamois, l’autre de couleur rouge à rouge-orange. Toutes deux sont bien épurées et affichent un traitement de surface soigneusement lissé, laissé sans décor ou couvert d’une décoration peinte en foncé sur clair, plus rarement en clair sur sombre. Plusieurs parallèles stylistiques peuvent être faits avec la vaisselle à boire MR IIIIB2 découverte dans les grandes fosses dégagées au square Aghia Aikaterini à La Canée, où l’on retrouve les mêmes types de motifs : demi-cercles concentriques alternés, arcs concentriques alternés, fleurs minoennes, motif en S emboités (« quirks »), etc., qui ornent notamment les bols profonds et kylix (Hallager & Hallager 2003 : fig. 49, pl. 49). La comparaison avec le matériel prélevé dans les grandes fosses qui bordent le quartier Nu à Malia est tout aussi saisissante (Driessen, Farnoux & Langohr 2007 : 200-202, pl. XXXIIIb-c). Celle-ci tient également du fait que, sur ces deux sites, la poterie qui constitue ces immenses dépôts jetés à l’extérieur des bâtiments est typiquement de la vaisselle à boire de prestige, particulièrement fragmentée mais affichant des cassures fraîches. Elle représente sans doute les reliques de cérémonies spécifiques ou de repas communautaires, mais au cours desquels lebris délibéré de cette vaisselle de haute qualité et son dépôt dans le sol pourrait constituer le point focal de la cérémonie (Driessen, Farnoux & Langohr 2007: 203-204).
Dans la zone ouverte qui s’étend au nord du bâtiment E, plus précisément le long de la façade sud du complexe CD, un important dépôt primaire de poteries a été dégagé, qui semble se distinguer des grands ensembles de vaisselle brisée jetés successivement aux alentours. En effet, plusieurs vases sont peu fragmentés et peuvent être facilement remontés. Ils font partie d’un lot homogène, probablement MR IIIA1-début IIIA2 (fig. 8.12). M. Devolder suggère que ce mobilier était entreposé à l’étage des pièces 4.15, 4.16 et 4.17 (Cf. M. Devolder, chapitre 6).

2.2.5. Extension Nord
Particulièrement nombreuses, les coupelles coniques et les tasses en forme de cloche qui composent ce dépôt présentent une importante homogénéité en ce qui concerne leurs fabriques, profils et quelques caractères technologiques. En effet, une fabrique de couleur rouge-brun bien épurée semble utilisée pour les deux types de poterie (fig. 8.12.a-d, f, i). Le profil des coupelles est évasé mais conserve une apparence compacte, avec le bord droit ou même légèrement incliné vers l’intérieur. La base de tasses en cloche est typiquement surélevée et bien
dessinée (fig. 8.12.i, ligne inférieure). Tant les coupelles coniques que les tasses en cloche présentent des parois assez fines, tandis que la surface extérieure, laissée sans décor, semble avoir été soigneusement lissée à l’aide d’un chiffon humide ou parfois d’un ustensile aiguisé. Quelques kylikes à une anse, souvent de section plate, complètent ce dépôt (fig. 8.12.e, i [ligne supérieure, 1e tesson à gauche]). Le pied est court et typiquement percé. Le bord, horizontal et légèrement projeté vers l’extérieur, est élégamment modelé à l’aide d’un outil, tandis que la surface du vase est entièrement engobée, et soigneusement lissée afin de donner un aspect luisant. Ces particularités vont dans le sens d’une datation ancienne, MR IIIA1 et début MR IIIA2. La pyxide montre une décoration peinte en clair sur sombre particulièrement intéressante. L’organisation en panneaux de motifs abstraits et géométriques trouve d’intéressantes comparaisons à Palaikastro au MR IIIA2 (Bosanquet & Dawkins 1923 : fig. 79 ; Sackett & MacGillivray 1992 : fig. 22 :4). Enfin, l’anse en forme de grande boucle qui devait être fixée à un bol et servir de louche (fig. 8.12.h) est typique de la phase MR IIIA2 (MacGillivray 2007 : 155). Les poteries utilitaires ou de cuisine en faïence plus grossière qui font partie de ce dépôt attestent également d’une facture particulièrement soignée, notamment par leurs parois fines et un traitement de surface bien fini, lissé.

Il est à noter que la céramique contenue dans les couches #10-05-1874, #10-05-1877, #10-05-1889 et #10-05-1892, mêlées à ce dépôt, est davantage fragmentée et que les tessons présentent une pellicule cendreuse collée à la surface. Il pourrait s’agir d’un seul et même ensemble, stylistiquement et chronologiquement identique, qui était entreposé au même endroit avant la destruction du bâtiment (aux étages des pièces 4.15, 4.16 et 4.17), mais qui a connu des processus de dépôt différents (dépôt primaire de destruction in situ, dépôts secondaires après déblaiement/nettoyage). Une fois étudié et publié de manière exhaustive, il est probable que ce dépôt primaire puisse être très clairement attribué à l’occupation palatiale finale de Sissi et atteste d’une phase antérieure à la destruction finale du bâtiment E de la zone 5, au MR IIIA2 ou début MR IIIB. Il constituait alors un excellent ensemble de comparaison pour la séquence céramique crétoise directement antérieure à la destruction finale du palais de Knossos.

3. Références

- Devolder 2009 = M. Devolder, The Excavation of Zone 5, in Sissi I, 139-156.
- Girella 2009 = L. Girella, Patterns of Exchange and Mobility: the Case of the Grey Ware in Middle and Late Minoan Crete, SMEA 51 (2009), 279-314.
• Karageorghis 1999 = V. Karageorghis, Notes on Some ‘Enigmatic’ Objects from the Prehistoric Aegean and Other East Mediterranean Regions, AA (1999), 501-514.
• Rutter 1979 = J.B. Rutter, Stone Vases and Minyan Ware: A Facet of Minoan Influence on Middle Helladic Laconia, AJA 83 (1979), 464-469.
• Xanthoudides 1920-1921 = S. Xanthoudides, Λαξευτός μυκηναϊκός τάφος Ἐπισκοπῆς Ίεραπετρού, AD (1920-1921), 157-162.
Annex. Macroscopic analysis of three Neopalatial and Postpalatial conical cup assemblages

Preliminary Remarks on Late Bronze Age semi-fine fabrics at Sissi

Florence Liard

The potential of technological approaches to pottery for exploring social identities, negotiations and transformations is now widely appreciated in Minoan studies (Day 1987; Day et al. 2006). The macroscopic description of ceramic fabrics is one among these means of inquiry, supplementing traditional study of typological and stylistic development. Visual examination of clay colour and texture, inclusion nature, size, shape, and sorting afford insights into the technical choices and constraints inherent in pottery manufacture. It is also considered as a preliminary inquiry for petrographic determination of pottery provenance, interconnections and technology. They are the key entry point to the study of craft organization, patterns of pottery exchange and consumption, which in turn lead to the broader themes of socio-economic organization, political structures, social order and practices.

The present aim is to restore a fabric-based sequence in order to stress the technological changes that the conical cup type – the Late Bronze Age pottery hallmark – registers between the Neo- and Postpalatial periods at Sissi. Continuities and innovations in clay recipes will provide the guidelines for a large-scale microscopic investigation of the pottery systems in the Postpalatial Malia Plain. The latter is dedicated to shed new light on this region of Crete at that time of unprecedented disruptions throughout the Aegean world.

1. Presentation of the three assemblages

Three Late Bronze Age stratified deposits discovered during the 2010 Sissi excavation campaign contained a substantial number of semi-fine plain drinking vessels. With their distinctive variety in clay-paste composition, color, hardness, texture and surface treatment, these assemblages provide the opportunity to analyze coexisting and evolving traditions of cup manufacture, supply and use at Sissi throughout the second half of the 2nd millennium BC. These variations tally with potters’ traditions (Day 1987) and/or consumers’ demands (Knappett 1999; Berg 2004: 79-80), and they are embedded in both functional requirements and social/symbolic value (Boileau & Withley 2010).

The term ‘conical cup’ is actually a misnomer, or at least is it to be taken in a wider sense as defined by Betancourt (Shaw et al. 2001: 47). We focus on a category of plain handleless, palm-sized cups that are more or less conical in shape, the ovoid and semi-globular being possible variations, and that lack offset rims or appendages.

Two Neopalatial deposits (1, 2) and one early Postpalatial deposit (3) are under scrutiny. They are admittedly different in nature, but each of them is understood as reflecting one specific event punctuating the history of Sissi.

1.1. MM III/LM I destruction deposit, zone 2

The large fill in rooms 2.6 and 2.8 (zone 2) is likely to result from the one-time re-deposition of a Neopalatial destruction context. Fragments show abraded fractures, albeit several cross-joins are to be found. The nature of the material suggests a kitchen or household context: the semi-fine repertory was mixed with several coarse domestic shapes like cooking pots, tripods, amphorae and jars. The conical cups are most often taller than they are broad, some showing a faintly S-shaped profile. They break down in two main fabric categories owing to the

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1 The petrographic program aims at unravelling elements of human and natural context of the Malia Plain at the end of the Late Bronze Age (exploited geological resources, technological choices, regional workshops, trade networks and consumption practices). They will help to better understand the changes that the ceramic mechanisms encounter with the collapse of the palatial systems. For that purpose, diverse functional categories of pottery are to be taken into account - cooking, drinking, transport, and storage vessels. Typologically diagnostic sherds will be selected for sampling from homogeneous deposits from the main domestic habitation building (zones 3, 4 and 5) and from the presumed workshop area (zone 2) on the Bouffos Hill.
predominance of either sand and quartz (fabric IIa) or mudstone (fabric IIb) inclusions. The former have a gritty feel, the latter are soft and soapy at the touch. Some fine, densely-packed pale examples are also attested in a levigated calcareous clay (fabric III). The conical cups from zone 2 lack routinization in manufacture: attempts at relating cup profiles and heights to base diameters or to specific fabric groups come unstuck. The Group II paste tinges range from light pinkish to deep orange. It is still unclear whether those variations are due to differential firing conditions of a single type of raw clay, or to the mixing of calcareous and red raw clays in different ratios. Indeed, clay-mixing is recognized as a routine process in Cretan potting traditions from the Early Bronze Age up to the present (Betancourt 2008: 45). The lesser presence of phyllite is also worth stressing, as it seems yet to be the main lithoclast in the semi-fine to coarse Sissi fabric-range through the Bronze Age.

These cups can be compared to the ‘early LM IA’ examples at Kommos. They are also similar to the Knossian conical cups which lack any uniformity during the MM IIIIB ceramic phase (Hood 1996) and even, to a lesser degree, in the LM I period. The interest of distinguishing MM IIIIB from LM IA examples among local assemblages has been underlined in a recent contribution (Knappett & Cunningham 2003: 107-111), but the current study is too preliminary to allow such precision. The admixture of MM III pottery in early LM IA deposits is frequently reported (Shaw et al. 2001: 92) and might also be attested here. It is better to state that the conical cups from zone 2 predate the island-wide homogeneity which is asserted for (mature) LM IA.

1.2. LM I conical cup deposit, zone 5

The conical cup deposit is located against the Terrace Wall in zone 5, to the North of Building E. It is distinguishable in its huge number of mass-produced conical cups, some of them being intact and still stacked one into the other. Some (fragmentary) examples of eating and cooking vessels are also attested, as well as some other types of cups. This densely-packed set must have been discarded in one go. Two types of cup production are identified: the early Neopalatial pastes have survived (fabrics II and III), but the vast majority of the material is made of a compact deep red phyllitic fabric (Ia) or of its lighter-coloured variation (Ib). Once again, it remains unsure whether such a range of hues is due to specific temperatures of firing of the same non-calcareous clay, or to a standardized technique of tempering applied to diverse clay bases made of differential ratios of calcareous material and red raw clay. An experimental analysis conducted by C. Knappett has outlined the darkening of the local terra rossa clay in firing it at 900°C and 1100°C respectively (Poursat & Knappett 2005: 36). Moreover, the seemingly non-calcareous Mirabello cooking fabrics have long been argued to be low-fired and exclusively based on red clay beds, whereas they have more recently been requoted as “low-calcareous” pastes (Whitelaw et al. 1997: 270; Haggis 2005: 179). The case of the Palaikastro Postpalatial conical cup production is also worth mentioning: local fabrics are represented by red and buff-coloured pastes that share a similar suite of inclusions deriving from the local tectonic unit (quartz, limestone, phyllite). The striking difference in paste colour is recognized as the result of limestone combining with iron particles during clay-firing, which inhibits the development of high concentrations of red iron oxides in buff fabrics; the same clay has broken down into red fabrics under strongly oxidizing conditions liberating high concentrations of iron oxides (Doherty 2007: 161).

Putting aside these variations in clay recipes, the LM I conical cups from zone 5 are standardized in size and shape. They indicate a low degree of labour investment and a quite consistent level of technical competency, putting forward the idea of a mass-production at the start of different solutions to clay assemblage and/or firing4. Indeed, the “phyllitic” examples are broader than they are tall, they exhibit a conical profile and straight rims. They seem to conform to the island-wide unified LM IA (Knappett & Cunningham 2003: 162) or ‘late LM IA’ (Shaw et al. 2001: 66-67) conical cup manufacture which has been defined in other parts of the island. It could be postulated that ‘efficiency and competition seem to be concerns for the potters; the producers may be independent, working

2 P. P. Betancourt has indeed subdivided LM IA assemblages into a tripartite scheme, showing a markedly gradual improvement in standardization of shapes and manufacture towards the end of the Neopalatial period (Shaw et al. 2001: 89).
3 Albeit the labour-input per pot varies from site to site and from region to region. For example, C. Knappett has noted that conical cups produced at Malia and Myrtos Pyrgos in LM I are more uniform than those from Knossos. Such a difference may be due to the higher number of drinking cups needed at Knossos for consumption events (Knappett 1999: 416).
4 Standardization can be characterized as achieving a relative degree of homogeneity in a product or production process (Rice 1991). This homogeneity refers to shape and size primarily, but also to fabrics (Knappett 1997).
at a large scale, in workshops clustered in and around a central side. This we may term centralized production\(^5\). However, subsequent petrographic fabric analysis and classification are still needed to confirm these preliminary observations.

### 1.3. LM IIIA2 refuse deposit, zone 5

The Postpalatial “lakkos” (FE081) extends southwards of the aforementioned conical cup deposit, in the open area between Building E and hilltop Building CD. Noteworthy are the good quality and state of preservation of the ceramics. The pit includes well-sieved and decorated buff rytha, stirrup jars and kalathoi. Some fragments of cooking trays, tripods and other plain utilitarian vessels are noted too. But the assemblage consists mainly in vast amounts of red or buff well-fired, nicely finished footed drinking vessels, as well as bowls and low everted cups. Fresh breaks are very common. It is similar in composition to the Malia-Quartier Nu “favissae” (Driessen \textit{et al.} 2008) which also include large quantities of well-finished kylikes and champagne cups.

Contamination of the lakkos by earlier (LM IIIA1-2) intrusions may be possible from the south façade of the main Building CD and from the nearby “North-East Extension” pit (FE087). Chronological and spatial divisions between the lakkos and the pit remain ambiguous. Such accumulations could correspond to a succession of depositions, each of them sealing off the debris deriving from the clearance of an earlier specific event or occupation. In any case, the conical cups described here come from a FE081 lens which is dated to LM IIIA2. Up to now, it is preferable to state that the evidence is too scanty to define some ceramic textural and composition features for the LM II-IIIA2 (early) period specifically. This prevents any closer study of the evolution of potting choices from the Neo- to the Postpalatial period as has been conducted at Palaikastro (Macgillivray \textit{et al.} 2007).

Neopalatial fabrics I, II and III are conserved among this assemblage of cups, but the lakkos sees the introduction of new and (already) well-mastered potting practices: large semi-globular cups with a beveled S-shaped bottom are present, as well as everted low cups that lack any shaped base. The recipients are hard-fired and thin-walled, most often burnished and eventually slipped in surface. They are made of a dark red levigated clay (fabric IV). Dark brown rounded inclusions represent the main but infrequent semi-fine temper. The appreciable rate of very fine-grained red coloured iron oxides is to be underlined, rendering obvious an oxidizing firing.

It is tempting to conclude that the surviving Neopalatial conical cup fabric recipes reflect less coherent technological choices in raw material assemblages and modes of firing. In the current state of knowledge, the changes between LM I and LM IIIA2 are more dramatic than between MM III and LM I. The Postpalatial conical cups encounter the rise of new technological profiles\(^6\): they are highly standardized, they show a moderate time investment (clay-sieving, high firing, nice surface finish). This evolution is undoubtedly inherent to the general trend of better quality potting during LM IIIA or succeeding immediately to the LM IB destructions (Arvanitakis 2007). The trend is registered at Knossos as well as in other (secondary) centres (Hatzaki 2005: 85, 107-112). The present focus on diachronic changes registered for one same type of vessel allows to state that such an evolution is not (solely) dictated by functional purposes. This could rather indicate demands of consumers that are different from the Neopalatial period; the idea of craftspeople working under (restricted) elite sponsorships would be worth investigating. It is to be noted that the conical cups do not reproduce the same coexistence of, or concurrence between, buff and non-calcareous series of production as attested among the LM IIIA2 kylikes and champagne cups. However, once again, further observation and analysis are necessary before any link to distinctive modes of production or any interpretation in terms of socio-economic organization can be made.

### 2. Regional pottery production in context

Conical cups are traditionally considered as a type of vessel designed for individual consumption of liquids against a framework of larger social gatherings. But as outlined elsewhere, the nearly absence of pouring vessels

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\(^5\) This conclusion has been made for the Protopalatial red wares at Malia Quartier Mu and makes use of the anthropological concepts as defined by C. Sinopoli (Knappett 1997: 309-310, quoting Sinopoli 1988: 580-597).

\(^6\) The concept of ‘technological profile’ is designed to restore the link between finished product and execution of techniques, by evaluating the particular combination of labour investment and standardization of production. It is suggestive of certain production modes, either administered, centralized or non-centralized in nature (Knappett 1997: 306ff).
within some of the Cretan deposits (Knappett & Cunningham 2003 : 115) added to the low resistance of the cups to permeability (Lewis 1983; Wiener 2006: 11) may suggest that Minoan conical cups were not primarily destined for drinks but for food. A small percentage of conical cups could also have been used as lamps, but these rather come from habitation contexts (Evershed et al. 2000: 38-39). Given the large accumulations of cups at Sissi and the low quantity of jug finds in the Neo- and Postpalatial deposits of zone 5, we will consider here that these accumulations are more generally connected to conspicuous consumption events, be it for drinks (Hamilakis 2002) or for food (as suggested at Ayia Irini: Schofield 1999). The original aim of focusing on this vessel type was to study a conceivably ‘local’ production at Sissi.

Petrographic tests have put forward the evidence that coarse wares circulated on a wider regional and inter-regional scale than hitherto suspected (Riley et al. 1981; Riley 1983: 284); this is likely to be the case even for purely utilitarian cooking vessels (Day 1989: 139-140). In contrast, the homogeneous and single-event deposition of conical cups has often been considered as a plausible clue for mass-consumption, and thus mass-production, which may imply the use of raw material available in the vicinity. Indeed, it must have been the cheapest, most easy and quickest way to manufacture the plain little cups hundreds of time, and to have them at hand immediately thereafter. Gillis has suggested an unavoidably local mass-production for the conical cup type (Gillis 1989: 131, 145-150). This has been petrographically validated in some (Neopalatial) cases but rejected in (Postpalatial) others. The results obtained from our macroscopic examination satisfy the idea that the Maliote potters could have found the ceramic constituents among the regionally outcropping geological resources, and that they assembled these in different manners. However, microscopic analysis of fabric composition is still required before this hypothesis can be ruled out.

The coastal plain of Malia is topographically defined by limestone reliefs, the Selena to the South, the Trapeza to the West, the Anavlochos to the East (Müller 1996: 921). They result from erosion of the successive tectonic nappes overlying the so-called Phyllite/Quartzite Series (of Permian-Triassic age)10. The latter provided the base for the deposition of sediments through the plain during the late Tertiary and Quaternary eras. The Arcovouno plateau constitutes an internal topographic and sedimentation barrier dividing the Sissi basin from the Malia bay (Creutzburg et al. 1977).

The Malia bay is covered by a scattering of marine sands and terra rossa. A ridge of limestone and ‘ammouda’ sandstone (fossil dunes) boards the seashore (Higgins & Higgins 1996: 206-207). Diverse clay resources must have been available round the place and exploited by Minoan potters. Geological reports have been published by the French archaeological mission11 while C. Knappett has more recently validated experimentally the similar composition between ceramic production at Protopalatial Malia Quartier Mu and the red alluvial clay outcrops that are located 1 km to the South of Sissi (Poursat & Knappett 2005: 17).

The Sissi basin is largely covered by Pliocene marly limestones. Two ancient river beds belt the Bronze Age settlement and are responsible for the deposition of distinctive brown clays and alluviums towards the coast (Creutzburg et al. 1977). The so-called ‘argile verte de Sissi’ is also mentioned by the French team but lacks any precise description (van Effenterre 1980: 79). A similar greenish clay outcrops down the northwards cliffs of the Selinari Gorge. According to local informants, this bed has been exploited for roofing material at the beginning of the last century, albeit C. Knappett suggests that ‘the closest possible source [of buff calcareous clays] is just to the...
west of Chersonisos’ - 11 km further to the West of Malia. ‘Here there are very extensive clay deposits of very high quality, which have been exploited in the present’ (Poursat & Knappett 2005: 10-11).

Finally is it worth noting that whereas the Eastern zone of Milatos has been described by van Effenterre as ‘marginal and isolated’ (van Effenterre 1980: 74), Wroncka has stressed the importance of both Sissi and Milatos in Bronze Age regional pottery manufacture (Wroncka 1959: 538-539).

3. Macroscopic description of the semi-fine conical cup fabrics

For the sake of consistency, the macroscopic analysis is based on the process that has been dictated for the Sphakia survey (Moody et al. 2003: 48-51). These are the nomenclature, criteria and general structure of recording fabric information which are now accepted as standard devise in most macroscopic examinations of survey and excavation material (Moody et al. 2003: 46-48. Haggis 2005: 167-176. Barnard 2003: 3-12). The most distinctive factors chosen for the paste categorization are the calcareous v/s non-calcareous clay composition, and the suite of inclusions visible in the matrix. The firing temperature is only used as a subdividing factor within one same group. The following descriptions have been made during the 2010 excavation campaign and form a preliminary analysis of the ceramics.

3.1. Fabric group I: compact phyllite-tempered fabrics

3.1.1. Fabric Ia: deep red fabric (fig. 8. 13)

![Fabric Group Ia, Deep Red Densely-Packed Phyllitic Fabric (#10-05-1920) (Fl. Liard)](image)

- **Colour:** 10R 5/6 to 10R 5/8. The deep red to dark reddish-brown hues suggest the use of a non-calcareous clay.
- **Texture:** the densely-packed appearance of the sherds may be due to a lesser concentration of inclusions within the matrix. Some poorly preserved examples are foliated in surface. Sherds are medium to soft at the touch, they do not produce any “clinking” sound when shocked, all arguments dealing with a low temperature of firing.
- **Inclusions:** semi-coarse silver grey and purple phyllite flakes are common, rounded in profile, equidimensional or elongate, of approximately 1 to 2 mm in size (or even coarser). White sub-angular calcareous (limestone?) particles and angular quartz crystals are of same occurrence and modal size. Dark brown/purple mate inclusions are sparser, sub-angular to sub-rounded in shape, 0.5 to 2.0 mm in size, and have a water-worn appearance. Their identification remains unsure.
The bimodal distribution of the suite of inclusions is clear for some cups, with respectively 1-2 mm phyllite and light inclusions, 0.5-1.0 mm dark/purple particles, but it remains difficult to ascertain for others. The consistency of Group I is rather the result of an (almost) exclusive presence of phyllite, calcareous, quartz and dark purple aplastic components that are imbedded in a fine red groundmass.

Surface treatment: thick bottom and walls, unsmoothed base edges give a rough aspect to the cups and yields to a mass-production. Some of the Postpalatial examples are self-slipped on the interior, something that can more rarely be said for the Neopalatial examples.

3.1.2. Fabric Ib: lighter-coloured variations (fig. 8.14)

A full description would replicate the one provided for Ia. Nature, concentration and size-range of inclusions, thick walls and unsmoothed base edges are similar to Ia. The main difference lies in the colour of the clay, varying mainly from deep to very pale brown and orange (10R 6/4 to 2.5YR 6/4).

3.2. Fabric group II: sand/mudstones-tempered (buff) fabrics

The fabric group is distinctive in (1) its suite of inclusions that includes very fine mudstone-like pellets or iron oxides whereas group I sees the prevalence of semi-coarse phyllite, calcite and quartz, (2) a bimodal repartition of aplastic components within the groundmass, (3) a porous matrix. Two subgroups are distinguished here, whereas efforts to set a rigorous description of Fabric IIa kept on revealing a continuum with the lower-fired and smoother IIb. Some similarities can also be drawn between IIa and the densely-packed Group I: “intermediary” examples display a sandy aplastic fraction (sub-group IIa) that could represent a deliberate addition to a naturally phyllitic clay (group I). Finally, even the IIa subgroup lacks homogeneity, as the Neopalatial cups from zones 2 and 5 show specific relative ratios of tempers.

A preliminary account is presented here, while the need could arise for reclassification with future analyses.
3.2.1. Fabric IIa: sand-tempered well-fired fabric (fig. 8.15)

![Fabric IIa](image)

**Fig. 8.15.** FABRIC GROUP IIa, SAND-TEMPERED WELL-FIRED (BUFF) FABRIC (#10-05-1888) (FL. LIARD)

- **Colour:** 10R 6/4 to 2.5YR 6/4. Mainly buff pastes among which tan, light orange or pinkish variations are common. Few examples may extend to dry orange and deep pink hues.

- **Texture:** the most representative examples are fairly gritty at the touch due to protruding silts. Microscopic planar voids are visible at the break; their orientation is relatively parallel to the vessel walls. It has been concluded from firing experimentation that non-calcareous clay shrinkage is induced by high temperature (1100 °C tested) and deforms voids into planar profiles (Poursat & Knappett 2005: 17). The typical “clinking” sound also reinforces the idea of a high-firing.

- **Inclusions:** fine tempers exhibit a constant 1 mm modal size. When present, coarser grains induce a bimodal distribution of the inclusions, although this coarse component remains unavoidably scarcer than silty particles within the matrix.
  - When present, the coarse fraction is 1 to 2 mm in size; some larger grains are occasionally observed. The most distinctive feature is the rarity of purple/gray phyllite flakes in IIa. Coarse fraction is mainly composed of frequent light bluish to white (sub-)angular inclusions, with common darker elements exhibiting either grey/purple hue (mainly in Neopalatial Zone 2) or both of reddish/purple and grey/purple hues (mainly in Neopalatial zone 5). It remains unsure whether this variation is related to a higher temperature of firing rendering inclusions darker, or to specific choices in raw materials.
  - Fine fraction reproduces the same suite of inclusions transposed to the <1 mm size-range. Phyllite is excluded. The white calcareous grains appear to be most common, at the sides of rounded and finely-grained red-orange concentrations (< 0.5 mm). They are likely to be identified as very fine mudstones or iron oxides.
3.2.2. **Fabric IIb: “biscuit” mudstone-tempered fabric (fig. 8.16)**

**Fig. 8.16.** FABRIC IIIb, "BISCUIT" MUDSTONE-TEMPERED (BUFF) FABRIC (#10-02-1287) (FL. LIARD)

- **Colour:** 10R 6/4 to 5YR 6/8. Pinkish to orange buff fabrics, very rare bright colours. A few “biscuit”-fabric examples from Neopalatial zone 2 extend this panel to pale buff tinges. Group IIb also includes scarce deep pink cups from Neopalatial zone 5. They are likely to betray a higher firing than the buff-coloured ones.
- **Texture:** soft at the touch, smartly smoothed surfaces. Thumping sound is produced by shocking sherds and prompted us to the name of “biscuit” fabric. Closer examination allows to discern a fairly porous matrix with abundant fine rounded voids; they are almost invisible with the naked eye. The aforementioned remark on void shrinkage under heat also reinforces the hypothesis of a rather low-fired fabric. Deep pink examples exhibit a more crumbly, powdery texture which can even cover fingers with sherd dust. This is quite contrasting from the harder and grittier IIa sub-group and could also corroborate the idea of a weak firing.
- **Inclusions:** bimodal distribution of the aplastic component is quite clear:
  - Fine fraction is 0.5 mm to microscopic size. Common reddish grits can be almost indiscernible from the groundmass; their identification as mudstones or iron oxides remains unsure. Dark and white chalky particles are rare.
  - Coarse fraction (2 to 4 mm) exhibits the suite of inclusions as described in IIa, with ratios varying from cup to cup. Angular to sub-angular light gray crists, sub-rounded water-worn dark purple inclusions, rounded limestone (?) grains. Fewer elongated to rounded purple laths with shiny flat surfaces are identified as phyllites, which colour is particularly pale. The chalky texture of limestone could be indicative of the temperature of firing, as calcareous components don’t withstand more than 850-900 °C.
3.2.3. Fabric group III: fine pale buff fabric (fig. 8.17)

This group remains sparse at Sissi. It may actually be a variation of group I, although the prevalent very fine fraction allows few macroscopic observations.

- **Colour**: 2.5YR 7/4 to 2.5YR 8/4. Yellowish-orange to white pale buff, uniform in colour. The firing tests undertaken by C. Knappett on Neogene clay bed samples from the Chersonisos area pinpoint different behaviours according to firing. Pale orange buff under 900 °C, this calcareous clay changes markedly in a greenish yellow buff tinge at very high temperatures (1100 °C) (Poursat & Knappett 2005: 11). In the case fabric III samples derive from a similar local clay bed as experimented (Viannos Formation, Middle Miocene), the colour observed could stem from a medium temperature of firing (900 °C).

- **Texture**: densely packed, similar to group I. The medium softness also points to a relatively low temperature of firing.

- **Inclusions**: the uniform fineness and purity of the clay could be the result of a levigation process. When present, sizes of particles vary widely from cup to cup, but it seems from far to be limited to (sub-) angular purple to dark irregular inclusions in a few to rare occurrence. The granulometry of these grains is semi-coarse (0.5-2 mm). They are likely to betray tempering, what would meet the observation of local “semi-coarse buff with phyllite” at Protopalatial Malia-Quartier Mu (Poursat & Knappett 2005: 13).
3.2.4. **Fabric group IV: “levigated” well-fired red fabric (fig. 8.18)**

![Fabric group IV, levigated well-fired red fabric (#10-05-1927) (F. Liard)](image)

This subgroup could belong exclusively to the Postpalatial period, while it could betray the lengthening and improvement of earlier technological choices in selection of the clays (Ia) and firing conditions (IIa).

- **Colour and texture**: 2.5YR 5/8 to 2.5YR 6/8. The dense and compact deep red clay which is typical of subgroup Ia turns out to a fine levigated fabric with “clinking” sound and harder feeling at the touch. The well-fired Postpalatial drinking cups are smartly finished, especially at their (narrow) base, and burnished in surface.

- **Inclusions**: the fine fraction is from far prevalent. It is almost exclusively composed of iron oxides concentrations. They are fairly difficult to identify with the naked eye because of their very small size (<0.5 mm) and tinge similar to the groundmass. Very few coarser calcareous grits (1 mm) and dark purple/brown rounded particles may be scarcely present. They are well-imbedded in the body of the cup.
APPENDIX: List of conical cups taken as diagnostic samples

<table>
<thead>
<tr>
<th>Num. sample</th>
<th>Num. zembil</th>
<th>Typology</th>
<th>Part of vase</th>
<th>Category of fabric, tinge</th>
<th>Zone (deposit)</th>
<th>Chronology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>10/05/1920</td>
<td>Conical cup</td>
<td>lower profile</td>
<td>Fabric Ia, deep red</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>2.</td>
<td>10/05/1895</td>
<td>Conical cup</td>
<td>profile</td>
<td>Fabric Ia, deep red</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>3.</td>
<td>10/05/1909</td>
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<td>lower profile</td>
<td>Fabric Ia, deep red</td>
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<td>LMI</td>
</tr>
<tr>
<td>4.</td>
<td>10/05/1895</td>
<td>Conical cup</td>
<td>profile</td>
<td>Fabric Ia, deep red</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>5.</td>
<td>10/05/1909</td>
<td>Conical cup</td>
<td>profile</td>
<td>Fabric Ia, deep red</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>6.</td>
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<td>Conical cup</td>
<td>profile</td>
<td>Fabric Ib, orange pinkish buff</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>7.</td>
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<td>lower profile</td>
<td>Fabric Ib, light brown</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>8.</td>
<td>10/05/1895</td>
<td>Conical cup</td>
<td>profile</td>
<td>Fabric Ila, orange pinkish buff</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>9.</td>
<td>10/05/1888</td>
<td>Conical cup</td>
<td>lower profile</td>
<td>Fabric Ila, pale pinkish buff</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>10.</td>
<td>10/05/1888</td>
<td>Conical cup</td>
<td>profile</td>
<td>Fabric Ila, deep orange</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>11.</td>
<td>10/05/1888</td>
<td>Conical cup</td>
<td>profile</td>
<td>Fabric Ila, red pinkish buff</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>12.</td>
<td>10/05/1895</td>
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<td>profile</td>
<td>Fabric Ila, pale pinkish buff</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>13.</td>
<td>10/05/1895</td>
<td>Conical cup</td>
<td>profile</td>
<td>Intermediary to fabrics Ib and Ila, pale pinkish buff</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
<td>14.</td>
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<td>lower profile</td>
<td>Fabric III, pale buff</td>
<td></td>
<td>LMI</td>
</tr>
<tr>
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<td>LMI</td>
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<tr>
<td></td>
<td>Date</td>
<td>Type</td>
<td>Fabric Description</td>
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<td></td>
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<tr>
<td>16</td>
<td>10/02/1287</td>
<td>Conical cup profile</td>
<td>Fabric IIb, pinkish</td>
<td>MMIII/LMI</td>
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<td></td>
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<tr>
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<td>10/02/1287</td>
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<td>Fabric IIa, reddish orange</td>
<td>MMIII/LMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>10/02/1287</td>
<td>Conical cup lower profile</td>
<td>Fabric IIb, pinkish buff</td>
<td>MMIII/LMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>10/02/1287</td>
<td>Conical cup lower profile</td>
<td>Fabric IIb, pinkish buff</td>
<td>MMIII/LMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
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<td>Conical cup profile</td>
<td>Fabric III, pale buff</td>
<td>MMIII/LMI</td>
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<tr>
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<td>10/02/1287</td>
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<td>Intermediary to fabrics Ib and IIa, reddish orange</td>
<td>MMIII/LMI</td>
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<td></td>
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<tr>
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<td>10/02/1285</td>
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<tr>
<td>24</td>
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<td>Intermediary to fabrics Ib and IIa, pale brown</td>
<td>MMIII/LMI</td>
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<tr>
<td>25</td>
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<td>Fabric Ia, deep red</td>
<td>MMIII/LMI</td>
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<td></td>
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<tr>
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<td>Conical cup lower profile</td>
<td>Fabric IIa, bright orange</td>
<td>MMIII/LMI</td>
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<tr>
<td>27</td>
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<td>Fabric IIa, bright orange</td>
<td>MMIII/LMI</td>
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<td>28</td>
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<td>MMIII/LMI</td>
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<td>29</td>
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<td>Fabric IIb, deep pink</td>
<td>MMIII/LMI</td>
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<tr>
<td>30</td>
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<td>Conical cup profile</td>
<td>Fabric III, pale buff</td>
<td>MMIII/LMI</td>
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<td></td>
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<tr>
<td>31</td>
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<td>MMIII/LMI</td>
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<td>Fabric III, pale buff</td>
<td>MMIII/LMI</td>
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<tr>
<td>34</td>
<td>10/05/1927</td>
<td>Conical cup Bottom</td>
<td>Fabric IV, brown orange tan</td>
<td>LMIIIA2</td>
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<tr>
<td>35</td>
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<td>Fabric IV, brown red tan</td>
<td>LMIIIA2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>10/05/1927</td>
<td>Conical cup Profile</td>
<td>Fabric IIa, orange buff</td>
<td>LMIIIA2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>10/05/1927</td>
<td>Conical cup lower profile</td>
<td>Fabric Ia, dark reddish brown</td>
<td>LMIIIA2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>10/05/1927</td>
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<td>Fabric Ia, dark reddish brown</td>
<td>LMIIIA2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>10/05/1927</td>
<td>Conical cup profile</td>
<td>Fabric Ia, dark reddish brown</td>
<td>LMIIIA2</td>
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<td></td>
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<td>42</td>
<td>10/05/1903</td>
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<td>Fabric IIa, orange ochre</td>
<td>LMIIIA2</td>
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<tr>
<td>43</td>
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<td>LMIIIA2</td>
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<td></td>
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<tr>
<td>44</td>
<td>10/05/1877</td>
<td>Conical cup lower profile</td>
<td>Fabric IV, bright orange to dark orange (overfired)</td>
<td>LMIIIA2</td>
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<tr>
<td>45</td>
<td>10/05/1877</td>
<td>Conical cup bottom</td>
<td>Fabric IIa, orange buff</td>
<td>LMIIIA2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. References

Annex. Macroscopic analysis of three Neopalatial and Postpalatial conical cup assemblages

9. Bio-archaeological Assemblages and Ground Stone Artefacts

Methodological framework and preliminary results

Valasia Isaakidou
Alexandra Livarda
Christina Tsoraki
Rena Veropoulidou

1. Introduction

Integral to the excavation on the Kefali hill at Sissi has been the systematic collection of ecofacts, including animal and fish bones, plant remains and marine and land molluscs, aiming at a holistic understanding of Bronze Age society and economy. The on-going dialogue and excellent co-operation between the excavators and the bio-archaeology team (V. Isaakidou co-ordinator and zooarchaeologist since 2007, A. Livarda archaeobotanist since 2009 and R. Veropoulidou marine and land mollusc specialist since 2009) has led to the appreciation that the animal, plant and mollusc evidence are not merely additional data; in these early stages of analysis the contextualisation of the results has already provided valuable contributions to the understanding of site formation processes, use of space and organisation of life at prehistoric Sissi.

The information assembled from these lines of evidence endeavours to shed light on various issues: what did people choose to cultivate, breed, farm and collect and why? What were the constraints and strategies employed to accommodate their subsistence needs? What agricultural and farming methods did they use and why? How different or similar were the habits of the Sissi inhabitants to their contemporaries living in other parts of the island, and hence, what were their connections and influences? The study of food preparation and consumption practices can go even further to allow insights into how people perceived and organised their space and which activities they chose to perform in internal or external/public spaces. Several other activities/practices are also investigated as ecofacts may be deposited in ritual contexts as offerings and used as raw materials for the manufacture of artefacts with practical, decorative or symbolic functions. In particular, the study of shell and animal bone objects and their manufacturing by-products allows insights into the chaîne opératoire of their production and use. Through such analyses aspects of craft specialisation, spatial organisation of production, consumption and deposition and associated processes of creation of social identities and reproduction in Bronze Age Crete can be explored.

It is in this context that particular attention is being paid to ground stone artefacts (i.e. grinding and pounding tools, stone axes, ornaments and vases), which, with a few exceptions (e.g. Blitzer 1995; Bevan 2007), have received little analytical, methodological and theoretical attention in Cretan archaeology so far and even less integration with such related datasets. Their study (by C. Tsoraki ground stone specialist since 2010) apart from providing insights into the nature, technology and organisation of daily and craft activities, adds a valuable dimension to the contextualisation and study of bio-archaeological material, as these tools were actively employed to transform such natural materials into useful substances and objects.

2. Sampling strategy and on-site methods

To be able to provide answers to these and many more research questions that arise from the study of all datasets, the bio-archaeology team had to ensure that a bank of all potential information would be available. To do so, a carefully planned strategy was devised to achieve a good representation of all types of data. Rather than collecting samples from a selection of potentially rich contexts, such as ash deposits or visible concentrations of various ecofacts, relying on the excavator’s personal judgement, a systematic sampling strategy was suggested. It is only this method that allows controlled detection of both presence and absence patterns across space and time, and thus, reliable identification of potential activity areas with a high level of confidence.
A systematic soil sampling strategy meant that in addition to the recovery of large, visible to the naked-eye, bone, shell and occasionally plant fragments, during excavation, soil from the centre of every excavation unit (‘zembil’) should be collected and processed by flotation. Collection of soil from the corners of the units was not favoured in order to avoid contamination, especially when the unit boundaries were not clear. The protocol adopted for soil sampling largely follows the one devised by G. Jones and P. Halstead (University of Sheffield) for the excavation at Paliambela Kolindrou, Northern Greece, one of the few projects in Greece applying systematic and intensive soil sampling. The volume of soil samples is dictated by the dimensions of the excavated units, but 45 to 60 lt prior to dry-sieving is the standard volume from large units. The soil from small pits is collected in its entirety whereas in the case of large pits the aim is to take a sample from each stratigraphic layer. Maintaining a strategy for processing large deposits and detailed sub-sampling of these features was considered necessary in order to retrieve a wide diversity of material from as many contexts as possible. All information regarding associated finds is carefully recorded and the excavators of each trench have been marking the exact location of the collected samples on the site plan. This enables us to explore spatial distributions of bio-archaeological remains within buildings and across the entire site.

In the case of destruction layers with visible concentrations of bio-archaeological material, such as storage deposits, an even more detailed sampling strategy is employed with smaller but more frequent soil samples from smaller areas, taking also into account the potential presence of storage vessels and their spatial relationship with sampled deposits. The rationale is to allow exploration of different accumulations of bio-archaeological remains, their association with other artefactual datasets, such as pottery and grinding tools, and identification of different crop processing activities within buildings.

The flotation procedure has been carried out successfully with the assistance of several project participants under the supervision and co-ordination of Quentin Letesson (2007 and 2008) and Alexandra Livarda (since 2009). Processing is being conducted with a modified version of a York style flotation machine (French 1971) (fig. 9.1). The floated material is collected in a stack of two brass sieves with apertures of 1 mm (coarse flot) and 0.25 mm (fine flot) respectively, while the heavier fraction (heavy residue) is retained in a mesh with 1 mm aperture. All samples are left to dry under shade in order to ensure that the preservation condition of the charred remains is not affected by the direct sun light of the Cretan summer. Washing and organisation of shells and animal bones has been carried out with the aid of Laetitia Polain, who also helped in the preliminary scanning of animal bones, and Irene Kritikopoulos.

Fig. 9.1.  Flotation at Sissi (Valasia Isakidou)
3. **Material processing and analysis**

Processing of the different types of bio-archaeological samples is a time consuming process and it would not have been made possible without the valuable contribution of several students participating in the excavation under the supervision of the bio-archaeology team. In the early stages of analysis sorting of the heavy residues resulted in the recovery of bigger and heavier plant remains, small mammal bones, small bones of larger animals, neonate bones, fish bones, snails and other molluscs, but also beads, obsidian and other small artefacts. This material, together with the flots and any hand-picked ecofacts, is then submitted for the next stage of the analysis to the specialists.

3.1. **Shell analysis**

The study of the molluscs required building up of a reference collection of contemporary marine fauna from the area, as well as the use of identification keys to assist taxon/species identification. Quantification of the specimens involves calculation of the Number of Identified Specimens (NISP), the Minimum Number of Individuals (MNI), the Number of Intact specimens (NI) and the Number of Fragments (NF). Each item is observed both macroscopically and microscopically for their condition (i.e. weathering, state of preservation) and presence of evidence for human processing (butchery or other marks of modification), recording relevant variables that will allow detailed taphonomic and processing analysis of the material. Presence, absence, fluctuations and relative abundance of different species are compared between deposits to explore spatio-temporal differences. Finally, density of shells is calculated according to NISP and MNI per 1 m$^3$ in order to compare densities of shell assemblages between Sissi and other sites and to enable statistically valid comparisons.

Shell artefacts also are observed macroscopically and microscopically in order to identify methods of manufacture and wear related to use and/or post-depositional processes. In particular, artefacts are recorded according to basic form and structures, while their plan and longitudinal sections are measured (length, width, thickness, as well as measurements of additional features, such as perforations and projections). Other variables recorded to describe artefacts include the presence of projections, incisions, surface treatment (polish or grinding) and indications of manufacture (facets, score-marks, cuts, shape of perforation). Recording of variables and subsequent analysis of collected data are undertaken using a database (Ostreadb), which was especially designed and constructed by Rena Veropoulidou and used for similar analyses and study of other assemblages. Documentation of the material also includes digital photography of specimens.

3.2. **Animal bone analysis**

Standard zooarchaeological methods are employed (Isaakidou 2004) based, in the first instance, on the macroscopic and low magnification examination of the animal bones. For species identification atlases and modern reference skeletal material are used. A range of variables are recorded for selected specimens, including taxon/species, body part, taphonomic markers, such as state of preservation and scavenger (dog/rodent) attrition, location and morphology of butchery marks and other evidence of processing for food (e.g. fragmentation patterns and signs of burning) or processing for artefact manufacture (e.g. whittling, grinding), age data, measurements, pathologies and sex. Quantification follows the method devised by Halstead (in press) to provide counts of Number of Identified Specimens (NISP) and counts of Minimum and Maximum Anatomical Units (MinAU and MaxAU respectively). Statistical analysis of the resulting datasets is conducted using SPSS.

3.3. **Archaeobotanical analysis**

Analysis of the archaeobotanical material involves sorting of all the coarse and fine flots under a powerful stereoscope in order to retrieve all plant parts, to assess their state of preservation and to record charcoal volumes. Morphological criteria are used for the identification of the plant species, based on modern reference material and several identification manuals and floras of the area. Quantification of all material is conducted with a variety
of methods. In each sample the minimum number of individuals (MNI) is counted on the basis of the minimum number of characteristic plant parts. However, calculation is conducted twice according to both the apical and bottom/embryo ends of grains, seeds and fruit/nut stones for each species. A standardisation of the calculation method for each species will be assessed according to the quantification results at the end of all excavation seasons, when all the material will be collected. At present it is expected that in the case of cereals embryo ends will provide the most accurate MNI. All plant fragments are also counted and examined to investigate patterns of fragmentation and possible pre-depositional processing activities. Calculation of the density of plant remains is vital in order to investigate depositional rates and processes. Statistical analysis using various programmes (e.g. CANOCO and CANODRAW cf. Ter Braak & Smilauer 2000) and the spatial and temporal representations of the plant remains with ArcGIS are used for the final study and the contextualisation of the archaeobotanical data.

3.4. Ground stone analysis

The methodology, database and statistical analytical methods have been designed for and applied to other prehistoric Aegean ground stone assemblages (Tsoraki 2008). All ground stone artefacts, unworked nodules and waste by-products are recorded in detail according to a series of quantitative and qualitative attributes as follows:

- Metrical attributes, such as length, width, thickness, weight, inner and outer diameter and dimensions of use-faces, for both complete and incomplete objects;
- Petrology, including information on raw material characterisation, grain size and textural characteristics (conducted at a macroscopic level);
- Typology, drawing upon the work of specialists in mainland Greece and Crete (Warren 1969; Runnels 1981; Dierckx 1992; Evely 1993; Blitzer 1995), Anatolia and Near East (Wright 1992) and other areas (Adams 2002);
- Technology (reduction sequences, manufacturing techniques and wear, presence of cortical/weathered surfaces);
- Attributes that relate to the use history of these artefacts, such as the number of use-faces, degree and type of wear combined with macroscopic characterisation of wear patterns, modification of working surface and fragmentation patterns;
- Qualitative attributes (colour, degree of finish);
- Contextual attributes (horizontal and stratigraphic position).

The analysis draws upon the concepts of chaîne opératoire and object biographies to study the life-history of ground stone objects from raw material procurement to manufacture, use, recycling and discard. Emphasis is placed on raw material procurement strategies, the selection and use of rocks for different object categories and on rock properties. The study of raw material variability addresses questions relating to their selection for the production of specific object types. Statistical analysis of collected data combined with detailed temporal and spatial analysis of the material will shed light on the organisation of a wide range of daily and craft activities at Sissi.

4. Some preliminary results

The analysis of bio-archaeological remains and artefacts and ground stone objects are still at a very early stage of analysis. The preliminary assessment of all the evidence, however, has started delineating the emergence of a very interesting picture for the Bronze Age habitation at Sissi.

The study of shells is advanced to include about a quarter of the total bulk material excavated between 2007 and 2010. In total, 3295 shells from 229 units were sorted and recorded in detail from all excavated areas, revealing a moderate state of preservation with most specimens being moderately to highly worn probably as a result of post-depositional processes. The majority of specimens belong to 48 different marine species (mostly gastropods, few bivalves, one sea-urchin, and one crab) and only a few to ten terrestrial snail species. While the taxonomic richness of the assemblage is high, the number of individuals is distributed unevenly across all identified species: three congeneric species of limpets that inhabit the same ecological niche and were probably gathered indiscriminately make up 48.3 % of the total MNI, while top-shells make up 18.5 % of the total MNI. This low diversity shows
that shell gathering was specialised and focused mainly on some particular species for food consumption (mainly limpets and top-shells, sporadically urchins and crabs). These are the preferred molluscs for food in Crete during the Bronze Age and Sissi inhabitants seem to follow the same dietary ‘rules’. Metrical data show a great dispersion of sizes (from 5 mm to 43 mm, average 25 mm), but 66.7 % of limpets and top-shells are medium and large, an indication that people chose specimens with enough meat for consumption. Murex was also found at Sissi; their preservation state is consistent with purple-dye manufacture but their low number is puzzling.

Of particular interest was the concentration of 16 specimens of *Conus mediterraneus* shells (fig. 9.2) in a corner of Room 5.8 in Zone 5 (Building E), which is one of two molluscs that occur in the Aegean Sea and are considered inedible1. They are usually perforated, ground down and occasionally filled with lead; sometimes they are beach-worn, presumably collected dead from beaches. Such finds are usually interpreted as pendants or gaming pieces (Reese 1983). The *Conus* found in Room 5.8 were neither worked nor beach-worn. Careful analysis of their state of preservation shows that they were gathered alive. Gathering *Conus* requires diving and good knowledge of their habitats. Therefore, people invested time and effort to acquire them alive. Taking into account the good preservation and the amount of shells, they arguably represent consumption debris. This is also supported by the presence in the same context of considerable amounts of other shells (limpets and top-shells) that are certainly rubbish from several food consumption events and artefacts such as a mortar, a kernos and conical cups, all of which can be related to food preparation and/or consumption. *Conus* flesh, however, is toxic and it seems highly improbable that it would have been consumed as an ordinary food. Therefore, it is possible that people either extracted and used *Conus* venom or consumed the toxic flesh as a special food or ingredient. Full study of the assemblage is required in order to draw more reliable conclusions.

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1 The mollusc is venomous; there are recorded cases of human deaths, resulting from the bite of molluscs, but none known from the Aegean. There are many medical uses of this venom nowadays (Nikol 1964).
As well as preliminary scanning some assemblages were analysed in greater detail. First, all animal bones from the Funerary Area were scanned. Animal remains are very rare from tomb deposits. The rock-shelters examined to-date yielded a number of complete hare bones. A number of features (colour, absence of butchery marks, completeness of individual elements and possible presence of near-complete skeletons) suggest that hare bones are recent intrusions (fig. 9.3). Thus, in common with other funerary contexts recently and currently explored, the Sissi cemetery does not provide any evidence either for funerary offerings of meat joints or carcasses, nor of the deposition of remains of funerary meals involving consumption of meat. This observation poses problems on previously postulated practices and resulting inferences for Minoan funerary rituals (cf. Hamilakis 1998).

Additionally, faunal remains from three deposits from the habitation area excavated during the 2008 field season were studied in detail: an LM I (B?) deposit from Room 2.1 (‘Artisanal Area’), an LM II-LM IIIA1 waste/refuse deposit from Room 5.10 (units #903 and #907) and a few specimens from an LM IIIIB late destruction deposit from the Hilltop Building CD (table 9.1). Observations are only preliminary, as individual contexts yielded too few specimens for a statistically reliable sample (cf. Van der Veen & Fieller 1982). A total of 213 specimens (NISP) were recorded representing 238 MaxAU and 216 MinAU. The presence of butchery marks on 12 % of the specimens and fragmentation patterns imply that we are dealing essentially with food consumption debris. Their state of preservation was moderate, some 14 % of all specimens displaying eroded surfaces. No burning was observed on recorded specimens. Carnivore attrition does not appear to have had a serious effect on the assemblages recorded: it is quite low (6.5 % of the total MaxAU). The low incidence of gnawing is interesting in the case of the LM IB deposit in which articulating elements were also identified, both implying rapid deposition and lack of subsequent disturbance. Species representation is comparable with that observed in other Bronze Age
east Cretan sites, with emphasis on ovicaprids. The rarity of cattle and their small size are of great interest, as the same characteristics have been observed at FN-EM I Kephala Petra (Isaakidou in prep. A) and Priniatikos Pyrgos, but not in contemporary Knossos (Isaakidou 2004; in prep. B), where average body size is consistently large throughout prehistory. It is not possible at this stage to provide a definite explanation for this pattern, but it may be due to selection of larger individuals at the palatial centre due to better fodder provision, function (i.e., their use as draught animals) or ideological reasons. Further analytical exploration is envisaged to address these questions on a regional scale.

<table>
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<th></th>
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<th>LMII-LMIIIA1</th>
<th>LMIIIB LATE</th>
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<td>21</td>
<td>3</td>
<td>48</td>
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<td>44</td>
<td>8</td>
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<td>22</td>
<td>3</td>
<td>31</td>
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<td>33</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>BADGER</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>127</td>
<td>17</td>
<td>216</td>
</tr>
</tbody>
</table>

Table 9.1. MINAU COUNTS BY SPECIES AND PERIOD OF SPECIMENS RECORDED IN 2009 (DEPOSITS EXCAVATED IN 2008)

The study of archaeobotanical material requires specialised laboratory facilities and equipment, and therefore, only an initial scanning has been carried out to-date on site, since the permit for their transfer is still pending. Yet, the array of plant remains is intriguing, including various cereals, legumes, fruits, nuts and wild species. The 502 soil samples that have been collected to-date across the site indicate spatial variability, with substantial quantities of archaeobotanical material being concentrated in certain rooms and buildings. A prominent example is in Zone 4, where barley, wheat, lentil, vetches and other legumes, as well as various fruits and nuts, contributed to the variety of available foods in the so-called ‘kitchen’ room. Discard of weeds from cereal processing was observed in the same area, the analysis of which will provide significant information on agricultural regimes (e.g. Jones et al. 2010, Bogaard et al. 1999). Another area with a significant presence of plant remains appears to be Zone 2, although it appears that plant foods are mainly remnants of snack consumption, such as olive stones and grape pips. Further analysis of the material is scheduled to provide the detailed level of analysis that is necessary to address issues on the social and economic organisation of the site through time and space. Similarly, only a preliminary assessment of the ground stone assemblage has been conducted so far, which, nevertheless, indicated its substantial size and its variability in terms of both the range of raw materials exploited and object types represented (tools, ornaments, stone vases), highlighting the importance of ground stone artefacts in interpretative reconstructions of past life at Sissi.

With the completion of the individual studies of each line of evidence, these will be combined together along with the final stratigraphic and contextual information, advancing a more integrated approach to archaeological practice that will serve to highlight the vast potential of moving away from the compartmentalisation of the discipline.

5. Acknowledgements

The authors would like to thank Quentin Letesson for his help in the environmental team and Stavroula Micha for organising flotation in 2007; Charlotte Langohr for her help in the organisation of the bio-archaeological material in the apothiki and her patience with our requests and queries; Pierre Baulain for all his systematic work on the flotation machine; Laetitia Polain for supervising and processing of all bio-archaeological material; Irene Kritikopoulos for assistance with shell washing. Emily Stevens, Maria Anastasiadou, Marco Pietrovito and all the students of the 2010 campaign worked diligently on heavy residue sorting, flotation and organisation of the archaeobotanical, shell and animal bone materials. Trench supervisors Frank Carpentier, Isabelle Crevecoeur, Maud Devolder, Florence Gaingerot-Driessen, Simon Jusseret and Quentin Letesson kindly provided crucial information and guidance for understanding the archaeological contexts of bio-archaeological datasets. Last but
not least, we would like to thank Jan Driessen for entrusting us with the study of the bio-archaeological and ground stone material and for his excellent collaboration.

6. References

Η παρακάτω τεχνική έκθεση αναφέρεται στις εργασίες στερέωσης των τοιχοδομών στον αρχαιολογικό χώρο Σισίου που έλαβαν χώρα τα έτη 2009 – 2010. Οι εργασίες πραγματοποιήθηκαν από τον συντηρητή έργων τέχνης και αρχαιοτήτων Νέαρχο Νικάκη υπό την επίβλεψη και τις οδηγίες του Αλέξανδρου Νικάκη, πρώην υπεύθυνου εργαστηρίου συντήρησης της ΚΑ΄ Εφορείας Κλασικών και Προϊστορικών Αρχαιοτήτων.

1. Αρχαιολογικός Χώρος

Ο αρχαιολογικός χώρος Σισίου εκτείνεται σε χαμηλό λοφίσκο. Η βόρεια και η βορειοδυτική πλευρά του βρέχεται από τη θάλασσα. Δυτικά και ανατολικά ακουμπά σε παλιές κοίτες ποταμών. Τοποθετείται στο χώρο κυρίως ανατολικά και βορειανατολικά του σύγχρονου οικισμού και σε μικρή απόσταση από αυτόν.

1.1. Δομικά Υλικά

Ο εν λόγω οικισμός ήταν κατασκευασμένος τόσο από εγχώρια δομικά υλικά, όσο και από υλικά προερχόμενα από γειτονικές περιοχές. Σε αυτά περιλαμβάνονται υποκύανος και γκρίζος ασβεστόλιθος, ψαμμίτες, κροκαλοπαγή, κροκάλες, πορολιθικά και λοιπά πετρώματα. Επίσης βρίσκονται, κυρίως στο εσωτερικό των λιθοδομών, μικρά αμορφά τμήματα από πηλό, ελάχιστα σε αριθμό, καθώς και όστρακα αγγείων και πιθαριών, όστρεα και όστρακα θαλάσσιων οργανισμών και οστά. Ως συνδετικό υλικό είχε χρησιμοποιηθεί αργιλόχωμα της περιοχής. Επίχριση εμφανίζεται σε ορισμένους τοίχους, αλλά το σωζόμενο μέρος του είναι ελάχιστο. Επίσης επίχρισμα παρουσιάζεται και στο δάπεδο ορισμένων δωματίων, αλλά με ελάχιστα σωζόμενα μέρη. Οι τοίχοι αποτελούνταν κατά κύριο λόγο από αργιλοθοίλιθο, εξαιρουμένων των γωνιόλιθων που είχαν υποστεί μικρή επεξεργασία μορφοποίησης. Το πάχος τους ποικίλει, ανάλογα με τη χρήση τους. Η τοιχοδομή στηρίζεται σε μεσαίες έως και μικρές σκληρότητας βράχοι, αλλά και σε καστανόχρωμο χώμα με προσομείξεις, συμπεριλαμβανομένης ψυκτικής ικανότητας.

1.2. Κατάσταση Διατήρησης του Χώρου πριν τις Εργασίες Συντηρήσεως

Η μικρή απόσταση του αρχαιολογικού χώρου από τη θάλασσα τον καθιστά ευάλωτο στις καιρικές συνθήκες, όπως την αλατονέφωση, τον αέρα και τη βροχή. Η αλατονέφωση από τη θάλασσα μεταφέρει διαλυτά άλατα, τα οποία εισχώρησαν στους πόρους της πέτρας. Η εναλλαγή υγρασίας μετέβαλε τον όγκο των αλάτων, με αποτέλεσμα την ανάπτυξη πιέσεων στα τοιχώματα των πόρων της πέτρας και εν τέλει τη διάσταση της συνεπώς αποτελεσματικής φοράς πιέσεων στην υπόγεια κατάσταση. Παράλληλα οι βόρειοι και βορειοδυτικοί άνεμοι πνέουν στη περιοχή προκαλούσαν σε μεγάλο βαθμό φαινόμενα όπως τη συστολή — διαστολή των λίθων αλλά και την εναλλαγή φάσεων από την υγρή στη στερεή κατάσταση. Το γεγονός δε ότι το συνδετικό υλικό αποτελείται από χώμα είχε ως αποτέλεσμα τη χαλάρωση των τοιχώματος, λόγω της εκπλυσής του από τα όμβρια ύδατα με κίνδυνο κατάρρευσης του.
Οι κάθετες επίσης ήταν ο κίνδυνος διάβρωσης από τα φυτά, είτε μικρά, είτε μεγάλα, ιδίως όσον αφορά τους λίθους. Από τη μία, η μικρή χλωρίδα με την επανάδοση των καρπών της στις κοιλότητες ή στις ρυγμές των λίθων προκαλούσα αργή αλλά σταθερή διάβρωση τους και από την άλλη οι ρίζες των μεγαλύτερων φυτών διέσχιζαν στις ίδιες μικρορηγματώσεις και προκαλούσαν μέχρι και σχάση – διάσπαση του ιώδους του λίθου. Εκτός αυτού, υπήρξε μετατόπιση μέρους της λιθοδομής λόγω της αυξήσεως του ύψους των ρίζων από τα παρακείμενα θαμνοποιητή και δενδροφυτεία φυτών και την προσθήκη τύπου εξαιτίας της ζωτικότητας του πολυώνυμου υλικού (χώμα). Ακολούθησε η νέκρωση τους στη συστηματική τόσο της λιθοδομής όσο και των ιώδων των λίθων μετέτρεπαν τις ρήγματα και τις προκάλεσαν μέχρι και σχάση του λίθου. Αποφασίζεται από τη μίνια το χόμων και κάθενας πάνω στις ίδιες τις ποδοδομίες είχα ολόκληρη αποτελέσματα.

Στο παραπάνω προβλήματα δεν πρέπει να παραβλέπουμε και την εισχώρηση των αργίλων στις ρηγματώσεις των λίθων. Το φαινόμενο που παρουσιάζονταν ήταν η θετική μεταβολή του ύψους τους κατά την ύγρανσή τους και η κονιορτοποίηση κατά την ζημαρία τους. Κατά την ζημαρία ασκούνταν πίεσες στις επιφάνειες της ρηγματώσεως με αποτέλεσμα την απομάκρυνσή τους. Ακολούθησε η πλήρωση των κενών, μετέτρεψαν σε μόρια μικρά θηλαστικά και έντομα. Τέλος η ανάπτυξη δέντρων και δέντρων πάνω στις ίδιες τις ποδοδομίες είχε ολόκληρη αποτελέσματα.

1.3. Επεμβάσεις Καθαρισμού - Στερέωση

Η προστασία των οικοδομιμέτων από την επίδραση των έντονων καιρικών φαινομένων που επικρατούν στην περιοχή κατά την διάρκεια των χειμερινών κυρίως και, συνεχής διάβρωση από την χλωρίδα και όλων οι υπόλοιποι παραγόντες που συνεισέρχονται στην καταστροφή των θυσιών και των ιώδων των λίθων επέβαλε τη λήψη δραστικών συνδετικών μέτρων, όπως τη στερέωση των αρμών (αρμολόγηση).

Τέθηκε στη χρήση αρχικά στόχος να προηγηθείτε στοιχείων, επεκτάσεων και αποπνεύσεων των εργασίων σε κάθε ανακατασκευή χώρου, προκειμένου να ανοίξτε στην καταστροφή των γενικών και των ιώδων των λίθων επέβαλε τη λήψη δραστικών συνδετικών μέτρων, όπως την κατασκευή των αρμών (αρμολόγηση).

1.4. Σύσταση και Αναλογία Κονιόματος Αρμολόγησής

Κατά την διάρκεια των στερεωτικών εργασιών εφαρμόστηκε κονίαμα για την παρακείμενη της επιπλέον αρμάτη υλικά: ασβεστολιθική ύμημη, μαρμαρόσκονη και τριμμένη κεραμίδι (κουρασάνη), καθώς και το συνεπές και συνεπής υλικό: ασβεστίς και λευκό τσιμέντο.

Η προστασία των οικοδομιμέτων από την έντονη επιδράση των έντονων καιρικών φαινομένων που επικρατούν στην αποικία προκαλεί αργή αλλά σταθερή διάβρωση τους και από την άλλη οι ρίζες των μεγαλύτερων φυτών διείσδυαν στις ποδοδομίες κατά την ζημαρία τους και την επικρατεί η διασπασμάτωση των λίθων και την προσβολή της συνεκτικότητας των τοίχων. Στο τελικό στάδιο της αποσύνθεσης τους δημιουργούνταν κενά με κάθετες αντικαταστάσεις των ποδοδομίων. Τέλος η ανάπτυξη δέντρων και δέντρων πάνω στις ίδιες τις ποδοδομίες είχε ολόκληρη αποτελέσματα.

2 Χρήση κενών από μικρά θηλαστικά και έντομα, εναπόθεση σπόρων κ.τ.λ.
3 Μάλισ, Λατώ, Ψέαρα, Χρυσοκάμπο, Αρχάδης Κοράλλη, Μεσελέρο, Ουσσέλιο Λαππάσου, Ιεράπετρα και άλλοι.
1.5. Προετοιμασία Κονιάματος – Μέθοδος Εφαρμογής

Σαν πρώτο βήμα είχαμε τον καθαρισμό του παλαιότερου συνδετικού υλικού (αργιλόχωμα) από τις τοιχοδομές (Εικ. 10.1-2). Με την βοήθεια εργαλείων αφαιρέθηκαν τα χαλαρά υλικά των παλαιότερων αρμών. Βέβαια σε πολλά σημεία, όπου το συνδετικό υλικό είχε μεγάλη συνοχή, λόγω της μη έκθεσής του στα καιρικά φαινόμενα, χρειάστηκε πιο δραστική μέθοδος απομάκρυνσής του από τους αρμούς. Το βάθος καθαρισμού του παλαιότερου αρμού πούκαλε ανάλογα με το πόσο μας επέτρεπε να εισχωρήσουμε η διάταξη των λίθων στη λιθοδομή. Κατά βάση όμως είχαμε μια εισχώρηση της τάξεως έως και οχτώ (8) εκατοστών, όπου αυτό ήταν δυνατόν, και επίσης στα σημεία που μας επέτρεπε η τοιχοδομή είχαμε μια αναστάλημα κατανομή κατανομή του νέου κονιάματος και να μην υπάρχουν σημεία ρήξης του. Με τη χρήση σκούπας καθαρίστηκαν καλά οι αρμοί, έτσι ώστε να απομακρυνθούν όλα τα υπολείμματα του χώματος και να μην υπάρχει τίποτα ανάμεσα στο κονίαμα και τους λίθους.

Δεύτερο βήμα ήταν η παρασκευή του κονιάματος. Όπως προαναφέρθηκε κατά την προετοιμασία του κονιάματος, αρχικά αναμειχθηκαν πολύ καλά τα αδρανή υλικά με το λευκό τσιμέντο και στη συνέχεια προστέθηκε το διάλυμα...
ασβέστη και το νερό. Το μείγμα αναδεύτηκε για αρκετή ώρα, έως ότου γίνει απόλυτα ομοιογενές και πυκνό και παρέμεινε στη λεκάνη για 10 περίπου λεπτά πριν την εφαρμογή του. Ακολούθησε δεύτερη ανάδευση σύντομης χρονικής διάρκειας.

Τρίτο βήμα ήταν η διαβροχή του αρμού και των γύρω λίθων με αρκετό νερό, για την αποφυγή της απότομης απορρόφησης του νερού του κονιάματος. Πρόκειται για ένα σημαντικό στάδιο, διότι η σκόνη αποτελεί αρκετά σημαντική στην ένωση του κονιάματος με τους λίθους. Από την άλλη η μη διαβροχή των λίθων τόσο μετατρέπει σε μια «αντλία» απορρόφησης όλου του ύδατος του κονιάματος, με αποτέλεσμα την απόστομη έξοδο του. Το συγκεκριμένο πρόβλημα παρατηρείται κυρίως τους καλοκαιρινούς μήνες, όπου η ξηρασία σε συνδυασμό με αυτή του χώματος και των λίθων προκαλεί την απόστομη και τελικά προβληματική στερεοποίηση του κονιάματος μεταξύ τους τα μέγιστα.

Τέταρτο βήμα ήταν η εφαρμογή του κονιάματος στους αρμούς (Εικ.10.3), εργασία που πραγματοποιήθηκε με το χέρι. Το κονίαμα τοποθετήθηκε και πιέστηκε στους αρμούς έτσι ώστε να πληρωθούν εντελώς τα κενά. Όπου δεν μπορούσε να φτάσει το χέρι, λόγω συγκεκριμένων καταστάσεων, γινόταν χρήση εργαλείων. Η πλήρωση των αρμών με κονίαμα επιβάλλεται διότι προσφέρει ισοκράτηση των πιέσεων από εξωγενείς παράγοντες και εξαλείφει τα αδύναμα σημεία της κατασκευής. Ταυτόχρονα δεν επιτρέπει την απόστομη και ανάπτυξη συνεπώς καταστάσεων, μεταξύ των οποίων και νεφελώδων καταστάσεων. Βέβαια υπήρχαν και εξαιρέσεις, όπου η σχεδόν απόλυτη αποφυγή νεφελώδες καταστάσεων δεν επέτρεπε την επιτυχία της εφαρμογής του κονιάματος, γεγονός που καθιστά τα σημεία αυτά επικίνδυνα και επιβάλλει την κατά διαστήματα έλεγχο τους.

Fig. 10.3. ΚΑΤΑΘΛΙ ΜΕΤΑ ΤΗΝ ΕΦΑΡΜΟΓΗ ΤΟΥ ΝΕΟΥ ΚΟΝΙΑΜΑΤΟΣ (Ν. ΝΙΚΑΚΗΣ)

4 Είναι σημαντικό το κονίαμα να είναι πυκνό, διότι ένα αραιό κονίαμα δεν έχει την ίδια απόδοση σε ισχύ με ένα πυκνό αφού αποβάλει μεγαλύτερες ποσότητες νερού, πράγμα το οποίο δημιουργεί πολλές προβλήματα. Αρα μιλάμε για ελεγχόμενη προσθήκη νερού στο κονίαμα και δημιουργία ενός αρκετά πυκνού μετάματος.
Πέμπτο βήμα και ένα από τα βασικότερα ήταν το συμπίεση του αρμού (Εικ.10.4). Σε αυτό το βήμα στηρίζεται η δύναμη, η αντοχή και η συνεκτικότητα του νέου κονιάματος, γι’ αυτό και πρέπει να δίνεται ιδιαίτερη προσοχή. Πριν ολοκληρωθεί η σκλήρυνση του (σε χρόνο που δε δίνεται να οριστεί επαρκής δεδομένης και της εξάρτησής του από τα καιρικά φαινόμενα) γίνεται συμπίεση του κονιάματος, με ειδικό εργαλείο μικρής επιφάνειας, με σκοπό την καλύτερη πρόσφυσή του στη λιθοδομή, την συνεκτικότητά του και την αποφυγή του κρακελαρίσματος και των ρηγματώσεων. Είναι ίσως το σημαντικότερο στάδιο σε όλη τη φάση της στερεοποίησης, διότι η εξάτμιση του νερού από το κονίαμα δημιουργεί ρηγματώσεις και οι λίθοι πάνω στους οποίους εφαρμόζεται το κονίαμα συνεχίζουν, παρά την διαβροχή τους, σε μικρότερο βέβαιο βαθμό από ό,τι χωρίς αυτήν, να αντλούν το νερό από το κονίαμα συμπίεσης το. Με τη συμπίεση του πετυχάνουμε την καλύτερη πρόσφυσή του πάνω στην επιφάνεια των λίθων.

Έκτο βήμα ήταν η ομαλοποίηση – ξύσιμο της επιφάνειας του νέου αρμού (Εικ.10.5) με ειδικό εργαλείο και ο καθαρισμός των λίθων από τα υπολείμματα κονιάματος γύρω από τον αρμό με μαλακή βούρτσα. Η ομαλοποίηση της επιφάνειας γίνεται πρώτον για να αφαιρέσουμε την κρούστα, η οποία έχει δημιουργηθεί με την συμπίεση του αρμού και δεύτερον για αισθητικούς λόγους παρουσίασης του ίδιου του αρμού. Η ομαλοποίηση γίνεται καθαρά όταν το κονίαμα έχει φτάσει σε μια φάση προηγούμενης στερεοποίησης και όχι πριν.

Έβδομο βήμα ήταν ο καθαρισμός του αρμού με ειδικές σκούπες. Σε αυτό το στάδιο απομακρύνθηκαν τα υπολείμματα της ομαλοποίησης από τους αρμούς και βελτιώθηκαν οι ατέλειες του προηγούμενου βήματος. Είναι βασικό να γίνεται σχολαστικά ώστε να απομακρύνεται όλη η σκόνη του κονιάματος που έχει επικαθήσει στους αρμούς και η οποία επηρεάζει το επόμενο βήμα.

Όγδοο και τελευταίο βήμα ήταν η δημιουργία πάτινας με την εφαρμογή ενός λεπτού στρώματος υδάτινου διαλύματος από χώμα της περιοχής (Εικ.10.6), προκειμένου να επιτευχθεί η αισθητική αποκατάσταση της λιθοδομής και να περνάει απαρατήρητα η σύγχρονη επέμβαση. Αυτό γίνεται διότι με τα σύγχρονα υλικά είναι πολύ δύσκολο να επιτευχθεί η ίδια ή καταπλήρως χρωματικός τόνος με το παλιό συνδετικό υλικό (χώμα). Ως προς την δημιουργία της πάτινας, η σχολαστική απομάκρυνση της σκόνης που αναφέρθηκαν από το παλιό συνδετικό υλικό, δεν της επέτρεψε να γίνει εμπόδιο στην εφαρμογή και επιφανειακή απορρόφηση του διαλύματος χώματος από το κονίαμα.

Την ολοκλήρωση των στερεωτικών εργασιών ακολούθησε επί σειρά ημερών συνεχής διαβροχή του νέου στερεοποιημένου κονιάματος με άφθονο νερό, με σκοπό να βοηθήσει η διαδικασία της σκλήρυνσης του.
10. ΤΕΧΝΙΚΗ ΕΚΘΕΣΗ ΣΤΕΡΕΩΣΕΩΣ ΣΤΟΝ ΑΡΧΑΙΟΛΟΓΙΚΟ ΧΟΡΟ ΣΙΣΙΟΥ

Fig. 10.5. ΚΑΤΟΦΛΗ ΜΕΤΑ ΤΗΝ ΟΜΑΛΟΠΟΙΗΣΗ ΤΟΥ ΑΡΜΟΥ (Ν. ΝΙΚΑΚΗΣ)

Fig. 10.6. ΚΑΤΟΦΛΗ ΜΕΤΑ ΤΗΝ ΑΙΣΘΗΤΙΚΗ ΤΟΥ ΑΠΟΚΑΤΑΣΤΑΣΗ (Ν. ΝΙΚΑΚΗΣ)
1.6. Τρόπος Εφαρμογής της Στερέωσης στα επιχρίσματα τοίχων και δαπέδων

Πέρα από την στερέωση των ίδιων των τοιχοδομών αναλάβαμε την επιμέλεια και των παλιών επιχρισμάτων που διατηρούνταν σε τοίχους και δάπεδα. Για την ενίσχυσή τους εφαρμόστηκε αρχικά πολύ αραιό διάλυμα ακρυλικής ρητίνης, αφ' ενός με ενέσεις στις ρηγματώσεις, και αφ' ετέρου με την βοήθεια πινέλου. Ακολούθησαν επάλληλες εφαρμογές με όλο και πικνότερο διάλυμα.

Fig. 10.7. ΑΝΤΙΚΑΤΑΣΤΑΣΗ ΜΕΡΟΥΣ ΠΑΛΑΙΟΥΤΕΡΟΥ ΥΠΟΣΤΡΩΜΑΤΟΣ ΒΑΣΕΩΣ ΤΟΙΧΟΔΟΜΗΣ ΜΕ ΝΕΟ ΚΟΝΙΑΜΑ (Ν. ΝΙΚΑΚΗΣ)

1.7. Τρόπος - Ιδιαιτερότητες Εφαρμογής της Στερέωσης της Στερέωσης

Όπως περιγράψαμε και παραπάνω, έγινε πολύ καθαρός καθαρισμός και απομάκρυνση του παλαιότερου συνδετικού υλικού. Ωστόσο η υψομετρική διαφορά που παρουσιάζουν μεταξύ τους οι τοιχοδομές αφ' ενός λόγω της κλίσης του εδάφους και αφ' ετέρου εξαιτίας της μακραίων κατοίκησης του χώρου, υπήρχε πρόκληση. Αυτή είχε να κάνει με το γεγονός ότι υπήρχαν πολλές τοιχοδομές, οι οποίες στηρίζονταν σε υπόστρωμα χώματος άλλοτε σκληρού με προσμείξεις και άλλοτε μεσαίας σκληρότητας. Αυτό θα είχε τραγικές συνέπειες για την τοιχοδομή. Η έκθεση του χωμάτινου υποστρώματος στις καιρικές συνθήκες θα το αποδύναμαν και θα το οδηγούσε στην κατάρρευση του παρασύροντα και την τοιχοδομή, αν δεν λαμβανόταν άμεσα στερεωτικά μέτρα. Γι' αυτό έγινε σε βάθος απομάκρυνση τμήματος του χωμάτινου υποστρώματος και αντικατάστασή του με καινούργιο με βάση το κονίαμα (Εικ. 10.7). Σε περιπτώσεις που μετά από έλεγχο διαπιστώνταν ότι υπήρχε βράχος κάτω από το χωμάτινο υπόστρωμα, η στήριξη του νέου γίνεται πάνω σε αυτόν.

Στο θέμα της στερέωσης όλες οι τοιχοδομές διατηρήθηκαν ακριβώς ως είχαν. Δεν έγινε καμία παρέμβαση πάνω σε αυτές που θα αλλοίωναν τον παλαιό τους χαρακτήρα και την τεχνική κατασκευής τους. Έτσι κενά από χώμα που είχαν απολεθεί, όσες είχαν αποκλείσεις και ρωγμές, έγινε καθαρός και ακολούθησε η μέθοδος της στερέωσης.

Ένα βασικό θέμα στο οποίο δόθηκε ιδιαίτερη μέριμνα ήταν οι κοιλότητες και οι ρωγμές των λίθων που προσέφεραν πρόσφορο έδαφος σε διαβρωτικούς παράγοντες. Στην περίπτωση των κοιλοτήτων έγινε καθαροποίησή από το χώμα και ακολούθησε καινούργια η κατάρρευση της στερέωσης. Αντίστοιχα στις ρωγμές και επικάτευσε στις διασπάσεις των λίθων, έγινε αποκόλληση των τμημάτων που πιθανόν θα κατερρέωσαν και συγκόλληση τουςμε αραιό μείγμα νέου κονίαματος.
1.8. Γενικές Παρατηρήσεις ως προς την Στερέωση

Ο αρχαιολογικός χώρος και μόνο ως προς την θέση του, μας προβληματίζει όσον αφορά τη στερέωσή του. Οι δυσμενείς καιρικές συνθήκες έκαναν το έργο της στερέωσης αρκετά δύσκολο. Οι μεγάλες θερμοκρασίες σε συνδυασμό με τον αέρα και την μεγάλη ηλιοφάνεια καθ’ όλη τη διάρκεια της ημέρας που επικρατούν τους καλοκαιρινούς μήνες, δημιουργούσαν αρνητικό κλίμα για την εφαρμογή του κονιάματος. Αυτό μας άδησε στο να είμαστε περισσότερο επιμελείς όσον αφορά τα τελευταία βήματα της στερέωσης, λόγω της γρήγορης στερεοποίησης του κονιάματος. Ως λύση χρησιμοποιήθηκε η ανά διαστήματα τεχνητή διαβροχή του. Παράλληλα το γεγονός ότι το παλαιό συνδετικό υλικό (χώμα) ήταν κατά τόπους συμπαγές, δυσχέρανε το έργο του καθαρισμού των αρμών. Παρά ταύτα, κρίθηκε απαραίτητο η απομάκρυνση του και η αντικατάστασή του με καινούργιο κονίαμα, λόγω του ότι δεν είχε εκτεθεί στις καιρικές συνθήκες, πράγμα που θα διασπούσε την συνεκτικότητά του. Με τον τρόπο αυτό αποφεύγεθηκε ένας ακόμα κίνδυνος, αυτός της ανάπτυξης φυτών μεταξύ των αρμών αφού το νέο κονίαμα είναι αδρανές.

Σε όλες τις τοιχοδομές έγινε φωτογράφηση πριν γίνει οποιαδήποτε επέμβαση συντήρησης – στερέωσης. Επίσης σε όλα τα στάδια των εργασιών καθαρισμού και στερέωσης υπήρχε φωτογραφική τεχνητή τόσο κατά την διάρκεια όσο και μετά την επέμβαση (Εικ. 10.8 έως 13).

Fig. 10.8. Τοιχοδομή με υδρορροή πριν οποιαδήποτε εργασία στερέωσης (Ν. Νικάκης)

Fig. 10.9. Λεπτομέρεια της υδρορροής πριν οποιαδήποτε εργασία στερέωσης (Ν. Νικάκης)
Fig. 10.10. ΤΟΙΧΟΔΟΜΗ ΜΕ ΥΔΡΟΡΡΟΗ ΜΕΤΑ ΤΗΝ ΑΠΟΜΑΚΡΥΝΣΗ ΤΟΥ ΠΑΛΑΙΟΤΕΡΟΥ ΣΥΝΔΕΤΙΚΟΥ ΥΛΙΚΟΥ (Ν. ΝΙΚΑΚΙΣ)

Fig. 10.11. ΛΕΠΤΟΜΕΡΕΙΑ ΤΗΣ ΥΔΡΟΡΡΟΗΣ ΜΕΤΑ ΤΗΝ ΑΠΟΜΑΚΡΥΝΣΗ ΤΟΥ ΠΑΛΑΙΟΤΕΡΟΥ ΣΥΝΔΕΤΙΚΟΥ ΥΛΙΚΟΥ (Ν. ΝΙΚΑΚΙΣ)
10. ΤΕΧΝΙΚΗ ΕΚΘΕΣΗ ΣΤΕΡΕΩΣΕΩΣ ΣΤΟΝ ΑΡΧΑΙΟΛΟΓΙΚΟ ΧΩΡΟ ΣΙΣΙΟΥ

Fig. 10.12. ΤΟΙΧΟΔΟΜΗ ΜΕ ΥΔΡΟΡΡΟΗ ΜΕΤΑ ΤΗΝ ΕΠΕΜΒΑΣΗ ΣΤΕΡΕΩΣΗΣ ΚΑΙ ΤΗΝ ΑΙΣΘΗΤΙΚΗ ΤΗΣ ΑΠΟΚΑΤΑΣΤΑΣΗ (Ν. ΝΙΚΑΚΗΣ)

Fig. 10.13. ΛΕΠΤΟΜΕΡΕΙΑ ΤΗΣ ΥΔΡΟΡΡΟΗΣ ΜΕΤΑ ΤΗΝ ΕΠΕΜΒΑΣΗ ΣΤΕΡΕΩΣΗΣ ΚΑΙ ΤΗΝ ΑΙΣΘΗΤΙΚΗ ΤΗΣ ΑΠΟΚΑΤΑΣΤΑΣΗ (Ν. ΝΙΚΑΚΗΣ)
1.9. Σημερινή Κατάσταση Νικηφόρος

Κατά την διάρκεια της στερέωσης διαπιστώθηκε η άριστη συμπεριφορά του κονιάματος στα καιρικά φαινόμενα παρά την έκθεση τους σε αυτά. Το μόνο που παρατηρήθηκε ήταν μερικές λεπτές ρωγμές που δεν έχουν σχέση με αυτή καθ’ αυτή τη στερέωση, αλλά με το υπόστρωμα της θεμελίωσης της λιθοδομής. Αυτό παρουσιάζεται λόγω της έντονης βροχόπτωσης ή της συνεχόμενης ύδατος σε διάφορα σημεία που είχαν σαν αποτέλεσμα την αρνητική επίδραση στην σκληρότητα του εδάφους, με συνέπεια την υποχώρηση του ή και την μετακίνησή του παρασύροντας και την λιθοδομή. Πρόκειται για ένα αναπόφευκτο φαινόμενο, στο οποίο δεν μπορούμε να επέμβουμε και να το σταματήσουμε για την ώρα, από την στιγμή που ο αρχαιολογικός χώρος και κατά την συνέπεια τα δωμάτια του δεν έχουν ανασκαφεί πλήρως. Ούτως ή άλλως το συγκεκριμένο φαινόμενο είναι περιορισμένης κλίμακας και μεγέθους, έτσι ώστε να εγκυμονεί οποιοδήποτε κίνδυνο κατάρρευσης και μετακίνησης των τοιχωμάτων. Το μόνο που μπορεί να γίνει είναι να παρακολουθείται η εξέλιξή του ανά διαστήματα και να ληφθούν δραστικά μέτρα μετά την αποπεράτωση των ανασκαφικών εργασιών ή εάν και αφ’ όσον καταστεί άμεση ανάγκη. Μέχρι στιγμής όμως δεν συντρέχει λόγος ανησυχίας.

Ως προς την διάβρωση από τα φυτά, παρακολουθούνται συστηματικά τα σημεία, στα οποία είχαμε αδυναμία τοποθέτησης νέου κονιάματος. Όπου κρίθηκε απαραίτητο, τοποθετήθηκε αραιό διάλυμα λεπτόκοκκου κονιάματος. Επίσης σφραγίστηκαν όλες οι κοιλότητες των λίθων οι οποίες ήταν επιρρεπείς στην εναπόθεση σπόρων και ανάπτυξης αυτών είχε χρώμα, ήταν ένα φαινόμενο που δεν μπορούσαμε να υποστηρίξουμε, διδόμενον ότι ο άνεμος συμβάλλει στην διάβρωση των λίθων.

Ως προς το αισθητικό χαρακτήρα της πάτινας, διαπιστώθηκε άριστη συμπεριφορά και εναρμόνιση με το περιβάλλον παρά τις έντονες βροχοπτώσεις. Δεν υπήρχαν εκπλήξεις από τα όμορφα ϊδατά παρ’ όλη την έντασή τους.
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