



## PRACTICING IDENTITY: A CRAFTY IDEAL?

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### ABSTRACT

This paper focuses on the materialization of technological practices as a form of identity expression. Contextual analyses of a Mycenaean workshop area in the Late Bronze Age citadel of Tiryns (Argolis, Greece) are presented to investigate the interaction of different artisans under changing socio-political and economic circumstances. The case study indicates that although certain technological practices are often linked to specific crafts, they do not necessarily imply the separation of job tasks related to the working of one specific material versus another. Shared technological practices and activities, therefore, may be a factor in shaping cohesive group identities of specialized artisans. Since tracing artisans' identities is easier said than done on the basis of excavated materials alone, we employ the concepts of multiple *chaînes opératoires* combined with cross-craft interactions as a methodology in order to retrieve distinctive sets of both social and technological practices from the archaeological remains. These methodological concepts are not restricted to a specific set of steps in the production cycle, but ideally encompass reconstructing contexts of extraction, manufacture, distribution and discard/reuse for a range of artefacts. Therefore, these concepts reveal both technological practices, and, by contextualising these technological practices in their spatial layout, equally focus on social contacts that would have taken place during any of these actions. Our detailed contextual study demonstrates that the material remains when analysed in their entirety are complementary to textual evidence. In this case study they even form a source of information on palatial spheres of life about which the fragmentary Linear B texts, so far, remain silent.

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**KEYWORDS:** Late Bronze Age, Tiryns, Architecture, Artifacts, Mycenaean workshops, Chaines Opératoires

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## INTRODUCTION

Identities can be inclusive and result in social cohesion when formed by a group membership related to geographic areas, common language, religious beliefs or genealogical links. More fragmented groups' identities pertain to social status, age, gender or occupation (Díaz-Andreu et al. 2005). Most identities are created through certain practices and performances, by which individuals or groups may profile themselves versus those who do not belong. Technological practices and performances may, therefore, form and transform people's identities. By contextualising technological practices we can analyse social acts that bring people together, including some and excluding others. Because such performances connect and may create a bond between certain individuals, they can constitute acts of conscious identity forming or signalling. Since people's relationships and thus their identities are always dynamic and often context-specific, such bonds are prone to shift over time and geographically. These shifting relationships and bonds between people are an integral part of their identity formation, maintenance and/or transformation, and materialize in a variety of ways. It is exactly these materializations of different technological practices which we contextualise in our case study in order to trace shifting artisans' identities.

In this paper we present a case study of technological practices which are traced in a series of material remains, from obsidian tools to gold foil, excavated in the Lower Citadel of Tiryns, chronologically spanning the final palatial (LH III B Final, ca. 1230/25 – 1210/00 BCE) and one postpalatial phase (LH III C Developed, ca. 1170/60 – 1150/40 BCE). The area under study is located in the northern tip of the Lower Citadel and was already interpreted as a workshop area by Klaus Kilian and Joseph Maran (Kilian 1984: 56, fig. 1; 1988: 111 fig. 9; Maran 2008: 90-91). Through investigating the architectural units and finds from this context we aim to answer specific questions about how people's identities were formed and transformed, i.e. how their social relationships and identities may have shifted over time in this specific location, and, moreover, how such so-

cial shifts would be consciously or unconsciously played out in material terms. Investigating and subsequently interpreting material remains as identity markers in the sphere of craft activity is a common topic in archaeological research, but reflection upon the specific link between material remains and identity is often lacking. For instance, an assemblage of objects interred with a single individual in a Mycenaean burial on the Athenian Agora has been interpreted as signifying the profession of the deceased, because the type of objects and tools, (a steatite mould for jewellery casting, a stone celt, a possible bone handle and a chisel-shaped bone implement with four drill-holes) are unusual grave goods in Mycenaean funerary contexts (Immerwahr 1971: 110, 231-232 pls. 55, 77; Kilian-Dirlmeier 2009: 385 No. 23). What exactly would have been his profession is left open, although the deceased is implicitly linked to Mycenaean glass workers. Judging by the scarcity of tool sets in Mycenaean burial contexts, it seems that only rarely were tools deposited in a funerary context, either because they were handed down in the family, possibly because of their use value, or because projecting a specific artisan occupation was generally not considered the most important aspect of one's identity to be signaled in the funerary realm. Ethnographic accounts demonstrate that artisans had a very personal relationship with their working tools and certain objects in every phase of their life. Many such examples are illustrated in the Museum of Man and Tools, Athens, and one marriage contract there highlights the fact that a tool set was often part of the dowry which moved, as a very valuable commodity, from one family into another. The tool set was a material and social insurance that the groom had a profession, and thus a source of income, in order to sustain his future family. His identity and that of his future family was very closely tied to this tool set and remained so for the rest of their lives (*Ανθρωποι και Εργαλεία* 2008: 67-69). This intimacy may have lived on in afterlife as well (see for instance Egyptian artisans' depictions and tools in funerary contexts (e.g. Tomb 2, at Bersheh: Smith 1951: 323, fig.1; Terrace 1968: 15, fig. 6, PL. XX) and, more recently, depictions of people's professions on

19<sup>th</sup> century Greek tomb stones, *Ἀνθρῶποι καὶ Ἐργαλεία* 2008: 112, 115). However, it can be argued that since the dead do not bury themselves, funerary gifts might not adequately reflect occupational status or self-perception of the deceased. On the one hand, the unusual occurrence of tools in a closed context such as the Athenian Agora tomb (see above) may be accepted as an indication to the former profession of the deceased as an artisan. However, this does not give us detailed insights into the process of shaping an artisan's identity due to the often rather generic character of those tools and the static or "frozen" character of such interments which are far removed from actual contexts of craft practice.

Archaeological discourse tended to focus on certain objects and has interpreted these as social markers. For example, double mould-made relief glass beads of various shapes were widely spread in the Mycenaean interaction sphere and are often found in Late Bronze Age Mycenaean tholos and chamber tombs (Nightingale 2008: 82-84; Hughes-Brock 1999: 289). These beads most probably functioned as signifiers of palatial craft production, but, were also, by large, material evidence to the inclusion of the persons wearing them into the ideological ambit of the palace, as John Bennet's term (2008: 155), 'tokens of the palace' indicates. These objects thus seemed to have signalled a belonging to a certain social class (Hughes-Brock 1999: 291) and hence implied the exclusion of other people from that social class, if such beads were not part of their possessions. If we link the discussion of a person's occupation and his or her social standing, highly specialized technological practices involved in craft production probably would have increased the value of a finished object and will have reflected back upon the artisan's social role. Therefore, the artisans involved in the production of relief glass beads could have attained an elevated social status merely by their craft activity, since it involved an expertly produced commodity, it took place in a palatially supervised environment, and it involved very specific pyrotechnological knowledge. However, while the examples above seem to illustrate a possible link between material remains and identities, the interpreta-

tions of the former as identity markers often tend to be based on a *single* grave context or on *one* type of material or object only. In this paper, we try to approach the study of identities through material markers more holistically. We believe that the full integration of all material categories from a given context and wider contextual studies form a much stronger basis in arguing for a link between material remains and identities, especially when focusing on the actual place of practice, i.e. workshop contexts.

## METHODOLOGY

Archaeological data from the Mycenaean site of Tiryns allow for a very tight contextual analysis, which we combine with a detailed technological study of a series of finds and features that cross over several material categories. Furthermore, in the technological investigation of each material category we employ the concept of the *chaîne opératoire* (term coined by Leroi-Gourhan 1964; see also e.g. Pfaffenberger 1998), in order to map out each step involved in forming and transforming raw materials into finished objects. In doing so for every material preserved, we investigate potential cross-craft interactions that may have existed between different *chaînes opératoires*. These *chaînes opératoires* themselves, however, may only partially be represented depending on how much of the entire production process had taken place in one fixed spot, i.e. a workshop, and how much of that evidence is still preserved when excavated. Cross-craft interaction was first coined by McGovern (1989: 1-9); Costin (2005: 1101-6) mentioned it briefly and Miller (2007: final chapter) implemented it to some extent to study technologies in the ethnographic and archaeological context of the Indian subcontinent.

With regard to the Eastern Mediterranean and the Aegean, no in-depth or systematic work on the interplay of the social and the technological, supported by a theoretical framework, has yet been undertaken (Brysbaert 2004, 2007). The need for such research became especially acute since it has been demonstrated that combining the *chaîne opératoire* and cross-craft interaction forms a useful and flexible framework, by which one can investigate a specific craft in

detail (vertical investigation), and, at the same time study several crafts comparatively (horizontal investigation) (Brylsbaert 2008, 2011). This combined approach allows us to investigate technologies from a technical viewpoint, but it also gives insights, through the material remains, whether certain socio-political and economic aspects of societies may have changed, shifted or remained constant over time as a result of technological and social interaction. In this paper, we thus try to integrate new concepts in interdisciplinary research (as evidenced by a five-year research project funded by the Leverhulme Trust; [www.tracingnetworks.ac.uk](http://www.tracingnetworks.ac.uk)) that brings together archaeometric, ethnographic, archaeological and sociological approaches in order to answer questions of importance to archaeological research and modern social sciences alike. At Tiryns we investigate a) what material evidence may belong to or indicate a workshop, and b) if any, what crafts might be represented within such contexts. Subsequently we aim to establish whether, on the one hand, any of the seemingly unassociated finds may well be part and parcel of one set of crafts or, on the other, whether other social practices lead to their deposition in the contexts under study. We, therefore, combine both a vertical sequence, i.e. one entire *chaîne opératoire* of one specific material, with several horizontal ones, too, i.e. *multiple chaînes opératoires* at work at the same time on several different materials, in order to find and interpret the cross-craft interactions (Brylsbaert 2008: 22, chapter 7; 2011). Combined with a spatial and contextual analysis the concept of the *chaîne opératoire* also helps to trace potential social interaction via technological links between these different material remains. By extension, it may hint at specific social identities connected to the production, acquisition and consumption of different craft objects. The construction of these identities, through material means within a contributing architectural frame and surrounding landscape, was probably enmeshed with ceremonial practices, public activities and rituals (Brylsbaert: forthcoming), which, however, are not further explored in this paper. As such, any social exchange / contact / link between people and their things within their sur-

roundings would have had an impact upon people's multiple identities. Especially, but not only in a workshop-context, cross-craft interaction can thus be understood as a constantly changing and dynamic situational platform for communication where people and objects meet and where they create, communicate and negotiate their social identities (Brylsbaert 2007: 329). As reflected in the modern descriptive vocabulary, the technological and social are linked: raw materials were formed and transformed, and so were identities.

## ARCHAEOLOGICAL BACKGROUND

The hill of Tiryns, situated on the southeast fringe of the Argive plain, has been used as a settlement and harbour site since the Middle Neolithic period and, in the second half of the second millennium BCE, evolved into one of the largest Mycenaean palatial centres on the Greek mainland. The hill is divided into an Upper, Middle and Lower Citadel. A multi-phase palace with two Mycenaean megara occupied the summit, i.e. the Upper Citadel (Kilian 1987: 25–28, 32–33). The last phase of the extensive Cyclopean fortifications around the entire hill dates to the mid 13<sup>th</sup> century BCE. Archaeological research on the site started in the late 19<sup>th</sup> century and has been directed mainly by the German Archaeological Institute (DAI) in collaboration with the Greek Antiquity service which also excavates in and around the site since the late 1950s. These investigations have, besides the architectural structures of the palace and parts of the settlement, revealed a multiplicity of finds ranging from humble remains of daily life to elaborate expressions of the palatial elites which substantially enlarge our understanding of Mycenaean society. Monumental architectural projects such as the western staircase, the eastern and southern galleries, and the so-called 'Syringes', testify to the power and the external connections of the local elite during the final palatial period (ca. 1230/25 – 1210/00 BCE; Maran 2004b: 267–275; Maran, forthcoming; FIGURE 1). Studies in the plain surrounding the citadel have shown that an extensive settlement existed in this area during the palatial (ca. 1425/1390 – 1210/00 BCE) and, of even larger

extension, in the post-palatial period (ca. 1210/00–1070/40 BCE) (Kilian 1978: 468-470). Moreover, material remains at Tiryns bear testimony to wide-spread interrelations with the eastern Mediterranean (Cohen *et al.* forthcoming; Kostoula and Maran, forthcoming; Maran 2004a), and to a lesser extent with the west even after the collapse of the palatial system. While the architectural remains testify to a hierarchically and centrally organized community which combined highly developed engineering skills with and within an intimate collaboration of different crafts, intricate planning and organisation, the portable objects found on site are often also of high aesthetic and technological quality. In general, while the technologies and processes related to most pre-industrial crafts are well understood, a detailed investigation into how these crafts were linked to each other and how

the social interactions in palatial and other contexts may have underpinned technological transfers of materials, techniques, recipes and knowledge, is lacking. In this paper we investigate two different chronological phases in the northern tip of the Lower Citadel: first, the final palatial occupation layer (i.e. LH III B Final or late LH III B2) and second, one postpalatial phase (i.e. LH III C Developed, i.e. the earlier part of LH III C Middle) (FIGURE 1). The area has been excavated in 1982/83 by Klaus Kilian and from 2000 to 2003 by Joseph Maran, both successive directors of the DAI excavations at Tiryns. Preliminary reports have included information on the late and postpalatial architecture and some of the associated finds (Cohen *et al.* forthcoming; Kilian 1984: 56; 1988: 111; Maran 2004a: 13-14, 16, 17 fig. 5, 18 figs. 7-9; 2008; Rahmstorf 2008: 240-241).

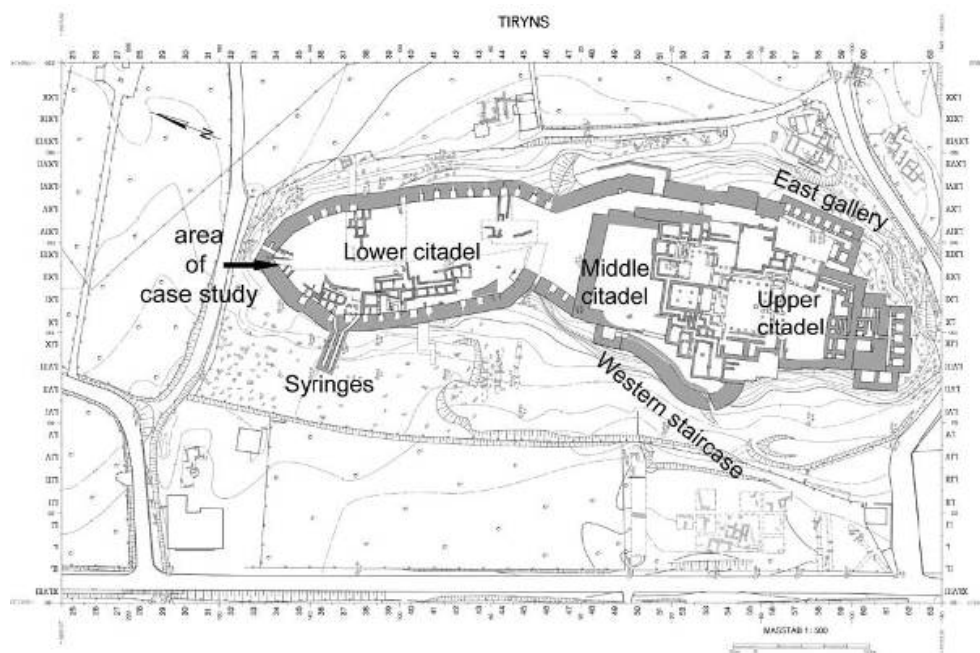


Figure 1: Map of the Lower Citadel of Tiryns (with Building XI indicated in the Northern tip), Tiryns-archive, with kind permission of J. Maran

### CASE STUDY CONTEXT AND FINDS

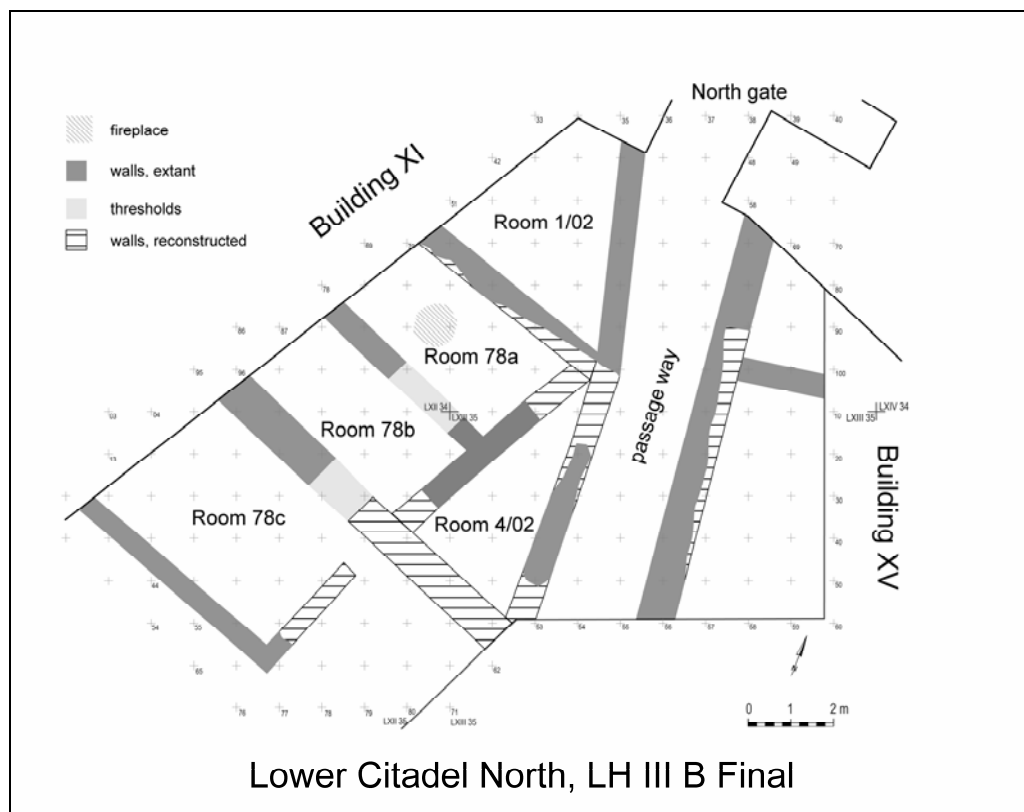
During the final palatial period the plot on the terrace immediately east of the Cyclopean fortification wall was occupied by Building XI (FIGURE 2). This building comprised one triangular room (Room 1/02) and three rectangular rooms along the fortification wall (Rooms 78a, 78b, 78c), and one additional trapezoidal room (Room 4/02) adjacent to and on a lower level

than the passage way which connected the North gate with the Middle and Upper Citadel. The main entrance to Building XI lay in the southeast of the structure (Room 78c). The building did not house fixed installations, but Kilian (1984: 56, 69 fig. 1) identified a fireplace and an associated ash concentration in Room 78a. The finds excavated in and around the fireplace of Room 78a consisted of two well

preserved wall brackets (TN 22; Maran 2008: 51, 52 fig. 27; TN 29; for details of these and further unpublished finds see TABLE 1), faience vessel fragments (TN 207; TN 208; TN 209; TN 210; TN 211; Kostoula and Maran, forthcoming), a relief bracket bead (TN 160) and, within the fireplace, an amber bead (TN 58; Rahmstorf 2008: 241 Cat.-No. 2023, pl. 52: 11), a glass or frit spherule (TN 56; Rahmstorf 2008: 241 Cat.-No. 1916, pl. 85:51), two bronze spills (Rahmstorf 2008: 240 Cat.-Nos. 1770, 1774) and a knob-shaped,

crudely made object with a tiny fragment of gold foil adhering to it (TN 57; Kilian 1984: 56, 71 fig. 3:9; Rahmstorf 2008: 241 Cat.-No. 1786, pl. 35:10).

(TN refers to the database number of each object and feature included in the Tracing Networks project at Tiryns “Cross Craft Interaction in the Cross-Cultural Context of the Late Bronze Age Eastern Mediterranean” ([www.tracingnetworks.org/content/web/cross\\_craft\\_interaction.jsp](http://www.tracingnetworks.org/content/web/cross_craft_interaction.jsp).)



**Figure 2: Plan of Building XI in the Lower Citadel, Horizon 17 a5 (LH III B Final), Tiryns-archive, adapted figure based on drawing by M. Kostoula, with kind permission of J. Maran**

South of the fire place, immediately next to the wall brackets, an extraordinary find was recorded: an ivory rod with a cuneiform inscription (TN 190; Cohen et al. 2010: in press; Maran 2004a: 14, 25; Maran 2008: 52 fig. 29). A better preserved example of a faience rhyton in the shape of an animal’s head (Maran 2008: 57 fig. 38; Kostoula and Maran, forthcoming) was found east of Building XI on the contemporary walking horizon of the passage way, together with another wall bracket (Maran 2004a: 13, 18 fig. 7; Maran 2008: 56 figs. 36, 37). In contrast to Room 78a, where only two prismatic obsidian

blades (TN 43, TN 46) were associated with the floor, Room 1/02 housed an exhausted core fragment, cortical flakes, flake and blade blanks as well as retouched blades (TABLE 2). The room’s assemblage on the LH III B Final floor and the destruction fill above the floor (TABLE 3) is further characterized by a concentration of lead clamps (TN 69, TN 59, TN 62, TN 68, TN 60) and sheets (TN 63, TN 64, TN 67, TN 61), two of them with cut marks (TN 64, TN 61), probably scrap metal, lead clamps and half a crucible showing a stain of a metallic substance on the rim (TN 191) which was found close to

the supposed doorway between Room 1/02 and Room 78a. Room 4/02 yielded a *Lapis Lacedaemonius* fragment with traces of sawing (TN 183; Maran 2008: 53). This unfinished object may point to stone working, possibly associated with a small-scale lapidary workshop (Maran 2008: 90). Another worked fragment of diorite porphyry (TN 184) and small pieces of partly worked rock crystal (TN 218) were found in a secondary fill. A complete bone pin (TN 84) was also associated with the LH III B Final floor of the room. Close to the threshold into Room 78a, the floor assemblage of Room 78b consisted of two tiny fragments of gold foil (TN 35, TN 36; Rahmstorf 2008: 241 Cat.-Nos. 1738, 1741, pl. 104), as well as two faience vessel sherds (TN 204, TN 205; Rahmstorf 2008: 241 Cat.-Nos. 1839-1840 pls. 87:4-5; 96:8-9; 104). Three steatite

*conuli* (TN 47, TN 48; Rahmstorf 2008: 241 Cat.-Nos. 176, 186, 246, pls. 48:1,8-9; 104), and a bone button with incised decoration (TN 196; Krzyszkowska 2005: 186, 203 Cat.-No. 17 pls. 2:17; 6:17), were found scattered in the western part of the room. Finally, in the northwest corner of Room 78c a marble weight apparently conforming to a Mycenaean mainland standard (TN 223; Rahmstorf 2008: 155, 158, 163, Cat.-No. 1207 pls. 57:11; 93:1) was recorded. A bone pin (TN 193) was found at the door.

The occupation of Building XI is terminated by the conflagration at the end of the palatial period. After an occupational break of approximately a generation during the LH III C Early phase (ca. 1210/00 – 1170/60 BCE) in this area, settling started again in LH III C Developed (FIGURE 3).

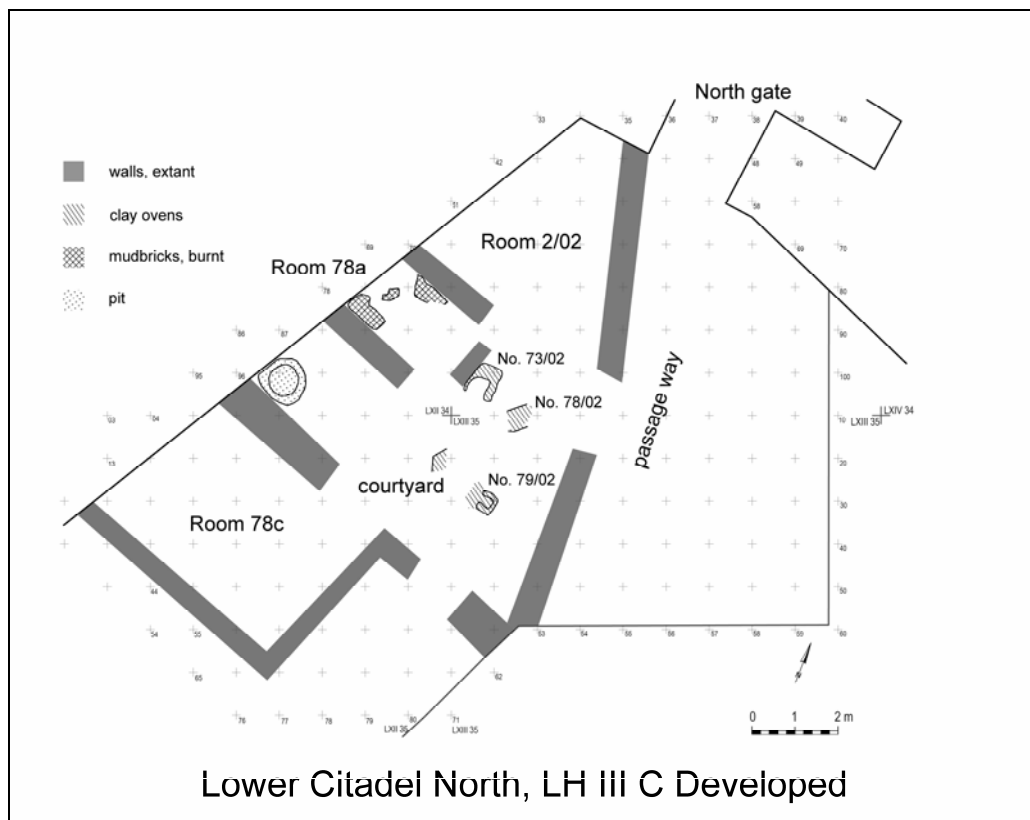


Figure 3: Plan of Horizon 20 a3 in the Northern tip of the Lower Citadel (LH III C Developed), Tiryns-archae, adapted figure based on drawing by M. Kostoula, with kind permission of J. Maran

This time, a clear change in its architectural layout is evident: the sequence of rooms is now replaced by an open courtyard layout. A storage bin (preserved in the shape of a pit) and perhaps some clay installations are located in the western part, in the area of the former

Rooms 78b and 78a, the latter of which now forms a vestibule to the triangular Room 2/02 in the very Northern tip of the Lower Citadel. The north and east parts of the courtyard feature a cluster of at least three oven installations (Maran 2008: fig. 55, 67 fig. 56; 68 fig. 57). The lithics

of this phase indicate an increase in chert, and obsidian finds are located mostly in the fill above the floor (TABLE 4). However, obsidian tools show a concentration in the courtyard between the different oven installations. A second material cluster, of copper alloy fragments and lead, is located between the mudbrick installations No. 78/02 and No. 79/02 (Maran 2008: 68 fig. 57), in a fill above the floor (TABLE 5). Moreover, two spilled lead dribbles (TN 215, TN 231) were found next to installation No. 79/02 and a piece of lead slag (TN 235: Ti 02 LXIII 35/25 a13.08), came to light close to the steps, which links the courtyard with the passage way on the higher terrace to the east. Small copper alloy tools and objects (TN 79, TN 219, TN 220, TN 221), are clustered at the southern entrance to the yard.

## DISCUSSION

How can these finds and features within their architectural units tell us something about

the identities, contemporaneously and diachronically, that were formed by the people who occupied these areas and who were linked to each other by the architectural setting and the material assemblages?

From the distribution of finds in the different rooms of Building XI interaction of different crafts within the same building is a potential scenario. The excavated objects point to obsidian knapping, gilding and probably stone working of non-local varieties into inlays and small architectural pieces (see workshop contexts at Thebes: Demakopoulou 1974; Symeonoglou 1973: 15, 63-71, pls. 88-91; Dakouri-Hild 2005, and at Mycenae: Mylonas 1966: 423, 425-426).

Yet, within this close proximity of activities shown by a series of rooms right next to each other, there is also a separation visible in the distribution or clustering of the objects, clearly enhanced by the architectural layout of a set of rooms rather than one open area (FIGURE 4).

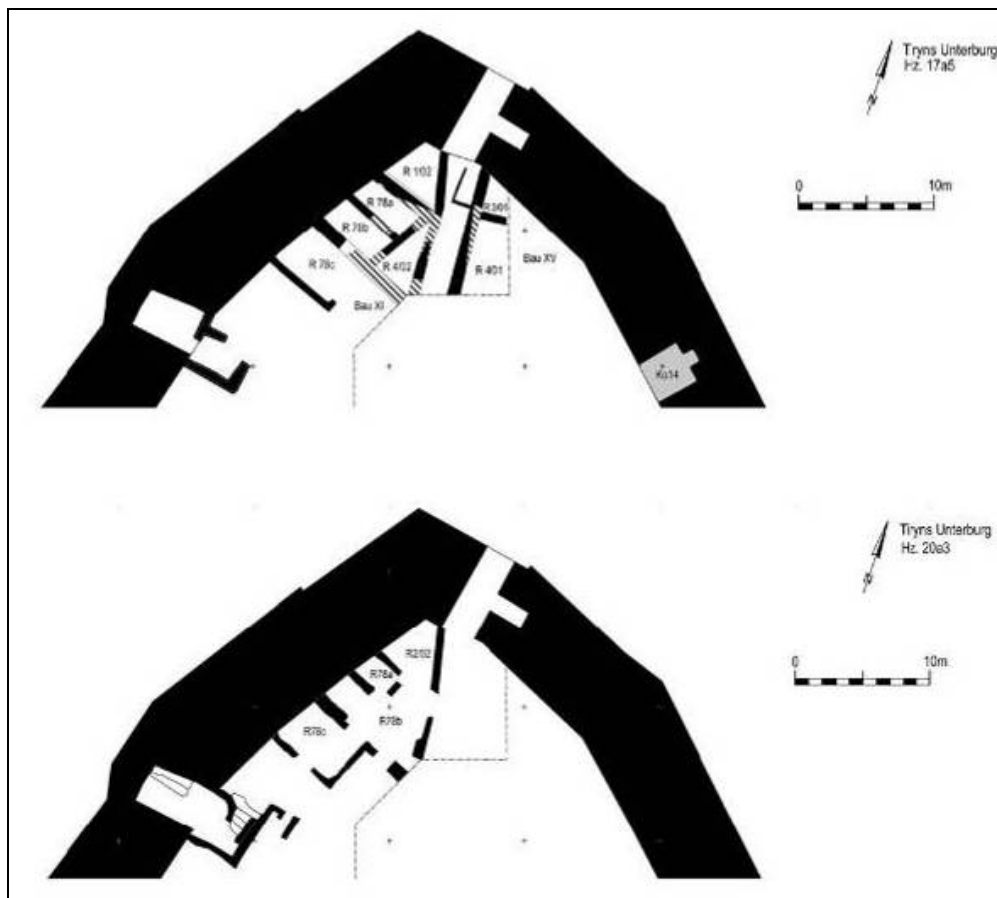


Figure 4: Comparison of architectural layout during Horizon 17 a5 (LH III B Final) and Horizon 20 a3 (LH III C Developed) in the Northern tip of the Lower Citadel, Tiryns-archive, with kind permission of J. Maran



The archaeological remains show a clustering of peculiar artefacts around the fireplace in Room 78a which are 'foreign' to mainstream Mycenaean assemblages:

1-the rod, possibly in ivory with cuneiform inscription (Maran 2004a: 25; 2008: 90; Cohen *et al.* 2010: in press),

2-locally produced wall brackets (Rahmstorf 2008: 91-95, 108, 110-111; Maran 2004a: 12-13) and

3-fragments of zoomorphic faience rhyta (Kostoula and Maran, forthcoming).

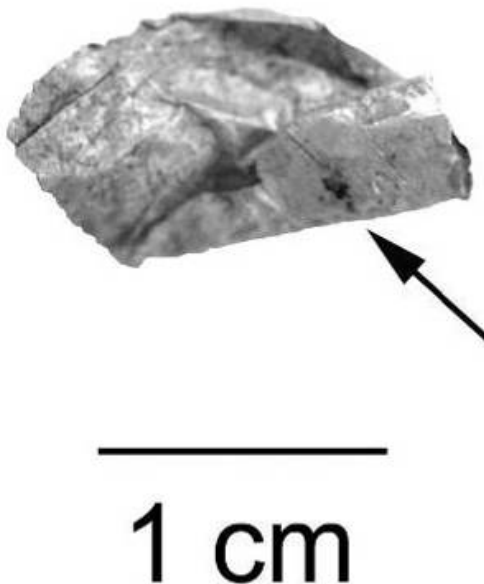
Kostoula and Maran (forthcoming) recently interpreted the faience material remains as evidence for the final embellishment of animal-shaped faience rhyta which were potentially also inlaid with different materials, probably semi-precious stones and glass. They pointed out that faience vessels are common paraphernalia in elite consumption contexts in the Eastern Mediterranean (Maran 2004a: 13, note 6), but the specific *Mycenaean* trait in the vessel found in Tiryns is the hole in the mouth of the animal (Maran 2008: 90, note 49). This determines its function as a rhyton in contrast to the head-shaped faience cups as seen in the Levant (Zuckerman 2009). Furthermore, the marble weight found in Room 78c and the probable function of the ivory rod as a label, measuring stick or, most likely, a tally stick, point to the use of standardized measurements. The location of the workshop in the Lower Citadel as well as the items for labelling and measuring indicate the involvement of the palatial administration in the production of these goods of international style which served in elite consumption contexts (Zuckerman 2009: 119; Maran 2008: 90; Kostoula and Maran, forthcoming). Although it cannot be supplemented with textual evidence, the archaeological remains strongly suggest that this workshop area was under the supervision of the palace. Further data more clearly confirm a palace-controlled set-up for the production and finishing of vitreous materials. Out of context, but probably from Tiryns' Upper Citadel are remnants of production waste from the making of glass beads and other objects excavated by Heinrich Schliemann (Schliemann 1886, 176; Panagiotaki *et al.* 2005). Furthermore, the mention of ku-wa-

no-wo-ko-i (*kyanoworgoi*'glass-workers') in the Linear B texts (MY Oi 701, 702, 703, 704; Nightingale 2008: 79-80), found in the Cult Centre of Mycenae, document that these artisans were closely supervised by the palace (Bennet 2008: 161; Panagiotaki 2008: 47; general: Bech Gergersen 1997).

But how to interpret the contents of Room 1/02 which is, contextually, closely related to the rooms with exotic elite good production? In Room 1/02 we witness all the steps that constitute the technical side of the *chaîne opératoire* for obsidian knapping, here a mundane material among luxurious goods (for a discussion on the *chaîne opératoire* related to stone knapping, see e.g. Dobres 2000: 170ff.: 'following gestures flake by flake'; Kardulias 2009: 317-324; on obsidian, the *chaîne opératoire* approach and *habitus* see Carter 2003: 76). Obsidian knapping is a craft not recorded in any palatial documents (Newhard 2003: 20-21, 118). Our evidence, however, points into the direction of intimate cross-craft interaction (see Evelyn 2000: 445-469 on tool kits; Nightingale 2008: 92 on cross-craft interaction of glass bead production and stone mould carving; upcoming work by Heidi Dierckx at Mycenae), if we consider links between several *chaînes opératoires*. Considering the pure technical aspects of the *chaîne opératoire* of gilded faience production will clarify this immediately. If the artisans in our context obtained an already fired faience vessel for final embellishing and gilding, they still would have to shape and apply the gold foil. To this end, they would have to cut strips of gold. Moreover, they would need a binding material and a set of very small and fine tools in order to wrap the gold foil tightly around the body of the object, so that creases and tears would be avoided since these would diminish the continuous lustre of the gold effect. In order to shape the gold foil, a sharp and pointed tool would have been needed so an obsidian blade would work well (see also Tournavitou 1995: 253).

Subsequently, in order to press the foil in place over the faience with the binder as medium in between, tiny but firm tools would have been required to reach all corners and crevices of the moulded faience, e.g. one of the metal or bone implements found in Building XI

(Mossman 2000: 91 furthermore mentions the use of lead in repoussé and gold working). It has already been suggested (Kostoula and Maran, forthcoming) that gold foil may have been adhered to faience by means of employing a binder or glue (see Kilian 1986: 165-166 on coniferous resin or tar in Tiryns; Pulak 2005: 295 on terebinth resin on the Ulu Burun shipwreck; Mossman 2000: 98 on lead as a solder), which at the moment we assume to be bitumen (for the use of bitumen in Late Bronze Age Ugarit see Deschesne 1990). While we have not yet had the chance to confirm this by analysis, small tar-like black clusters were found at the back of one of the gold foil fragments (PLATE 1; TN 31; Rahmstorf 2008: 241 Cat.-No. 1739, pl. 104; for an example from Mycenae Mylonas 1966: 425-426; from Nichoria see McDonald and Wilkie 1992: 268). Despite the apparent lack of fixed installations, the area can be characterized as a workshop area (see criteria outlined by Tournavitou 1988: 447; 1997: 230-232, 238) in the late palatial period, because a series of tools (obsidian and other), half-finished products, as well as scraps of materials were found on the floors of the rooms and are spatially confined.



**Plate 1: Fragment of warped gold foil with trace of black residue, probably remnants of a binder/glue preserved**

In sum, the archaeological remains attest to the establishment of a palatial workshop in

Building XI of the Lower citadel at Tiryns. Circumstantial evidence points to the control of the artisans by the palatial administration since they were working with exotic imported goods, the distribution of which was normally monitored by the palace. They were, furthermore, producing composite objects consisting of stone, gold and vitreous materials (see also Bennet 2008: 161) which, most likely, catered to the tastes of an elite belonging to an international *koinè*.

Approximately a generation later, in LH III C Developed (ca. 1170/60 – 1150/40 BCE), the excavated evidence attests to renewed workshop activities in the same place (yet differing in construction from the previous layout), this time in the form of fixed installations which are not of domestic origin and which involve the melting of lead. The tool and artefact assemblages associated with these fixed structures have not yielded any exceptional or prestige items.

How can these data be tied into a discussion on identities? We propose that, for the LH III B Final phase (ca. 1225 – 1210/00 BCE) there are reasons to infer from the material remains that a group of people likely working for the palace, maybe a group of foreigners, interacted closely with obsidian knappers who were apparently not supervised by the palace. Based upon scattered evidence in the Linear B texts and on other archaeological remains of palatial workshops on the Mycenaean mainland and seen in the historical frame of Eastern Mediterranean elite interaction, we assume that the highly skilled artisans active in this workshop were most likely under palatial control. They had access to glass, gold, and possibly bitumen, three raw materials that were acquired and imported, distributed and controlled by the palace. The cuneiform signs on the ivory rod (which is purely utilitarian in character) point to intimate contacts with foreigners if not actual knowledge of this recording system. Since the signs carved into the rod represent cuneiform and the closest parallels for such an object are found on Cyprus and in Ugarit, this might either suggest that foreigners from this region or individuals familiar with this language, e.g. via

trading with people from the Near East, were present.

Our suggestion that we may be looking at foreigners at work does not merely rest on a single object, i.e. the cuneiform rod, but also on the peculiar association of that rod, the locally produced wall brackets which have a Cypriote pedigree (Cline 1999; Maran 2004a: 12-16; Rahmstorf 2008: 91-11, esp. 103-104), and the animal-shaped faience vessels which are well known from Near Eastern elite contexts. Although we are not able to present conclusive evidence as to the ethnic origin of the individuals working in Building XI, (who in any case, will have been a mixed group of supervisors belonging to the local elite, specialized foreign artisans and local help), this interpretation is a hypothesis which needs further consideration. The exchange of highly skilled craft personnel in the context of Eastern Mediterranean and Near Eastern elite interaction is a well known phenomenon (see Zaccagnini 1983; Muhly 2005; Brysbaert 2008). We concede that identifying such foreign artisans in the archaeological record is fraught with problems. However, in the case of Building XI such a hypothesis would get some support from the curious association of foreign objects and singular practices (i.e. the faience vessels in the shape of rhyta) and also from the architectural outline. The segregation of rooms in this phase may physically indicate palatial control via the architecture, too. By keeping people together near the palace, but at the very tip of the fortified area and in an architectural setting where circulation patterns are restricted (in general Maran 2006b; Thaler 2006), close supervision and control would have been possible. In this sense, the architectural layout plays an active role (allowing passage, restricting access, shaping work units, etc.), in processes whereby artisans' social relationships allow, restrict and shape the formation and transformation of their identities. However, other individuals who are almost hidden and erased from '(pre)history', not mentioned in the tablets and leaving behind only a series of flakes, blades and debris, may have worked alongside these specialists in those same workshop spaces. They would have worked for the guilders, as obsidian knappers, apprentices, or local

labour, providing the former with obsidian tools and equipment, possibly also fuel, water and other vital materials.

We like to link this suggestion with another ethnographic account which illustrates the hidden character of apprentices very well in Greece two centuries ago. The testimony of Ioannis Topouzidis, born in 1892 in the Pontos area (i.e. the Greek settlements on the Black Sea coast) and trained as bronze worker, tells the story about his life as an apprentice: "the time you are student is as if you are a newly wedded bride. Just as the bride you would enter this new house and you would not talk to your father-in-law and mother in-law, we [the apprentices] were in the same position. Only later you would start getting water for him [the master artisan]" (Ανθρωποι και Εργαλεία 2008: 154). This exemplary account shows clearly how many of the first steps of the craft were taught without any verbal communication but were transferred via observation by the young apprentice watching carefully and quietly his/her master, until she was deemed advanced enough by the master to start helping out. It, furthermore, shows how difficult it would be to find any material remains produced by these young apprentices (because they might have been reworked/recycled immediately), although they were present in the workshop for most of the daytime and for an extended period.

While we cannot assess the actual number of people working within the rooms under investigation at Tiryns, it seems that activities were spatially confined and would probably have been performed by a range of people of differing social status. However, in view of the spatial layout, interaction must have taken place between the palatially supervised artisans and the other individuals, a point we hope to explore more thoroughly in our ongoing research at Tiryns. In the later phase, the same area was rebuilt, but made more accessible by a remodelling of the earlier setup, while incorporating some of the former walls (FIGURE 4). An open plan with a courtyard would stimulate contact, interaction, and exchange of daily talk, but also of knowledge (verbal or tacit), possibly even a level of equipment sharing where needed or wanted. Again, the architecture itself

plays an important active role: by unifying former rooms into an open space more social contact was possible between people who worked within and those that came in from outside.

The archaeological remains of the later phase also give rise to another question about the social significance of space: why did people of the postpalatial period establish a workshop on the same spot as in the final palatial phase? Since only a generation's time had lapsed, certain individuals very probably remembered the former use of the place, perhaps even what valuable elite objects were crafted there. Moreover, the physical remains of the older walls were not altogether forgotten or invisible, so they may have actively triggered memories, too. Taking the hypothesis one step further, perhaps some of the later individuals were genealogically linked to the ones who worked there previously, not an altogether impossible hypothesis in view of the fact that only one generation's time sat between the two building and occupation phases. Many examples in Greece and elsewhere are known of individuals who return to the house and workspace where their predecessors (ancestors?) were rooted. Especially in times where stability was lacking, feeling rooted somewhere was crucial. The architectural layout and remains may, therefore, have also had a strong symbolic attraction to the new generation as being the spot that linked them to their own stable and known past, both in locale and in people (for similar processes see Maran 2001; 2006a). Obviously, those artisans who used the open courtyard for craft activities actively reinforced the remembrance of those past activities performed by the palatial artisans, even though these did no longer have a place in the changed socio-political landscape. However, by unblocking previous walls into an open space, the new occupants allowed wider physical access and consequently more social contact than previously possible. By doing so, they created their own social identities but made a conscious decision to link these to past artisans' identities as well, probably for many reasons. Architectural modelling and re-modelling, over this time span, of the far north corner of the Lower Citadel, also allowed remodelled identities over time but did not disconnect the later

from the earlier ones altogether, inasmuch as the actual architecture itself connected the earlier and later period. In this sense, mundane stones used as building blocks through the technology of architecture, were linking the past to the present (Chapman 2000: 64; Cooney 2009: 72).

## CONCLUSIONS

The hypothesis of a workshop consisting of highly skilled artisans working on luxurious commodities under palatial administration and control may turn into a social reality when we look at all excavated items and the technologies they imply, not just in terms of raw material transformation into finished objects, but also seeing every activity as a social technology. Hitherto hidden people, not mentioned in the Linear B texts, seem to emerge from such a study and, with them, their own technological and social contributions to the workshop playground. Moreover, these activities, technologically and socially shaped, were reflected in the spatial settings, in and around which they took place. They were, furthermore, bound to shift over time when the socio-political system changed or shifted. Whereas the LH III B Final workshop was apparently under palatial control and involved perhaps foreign artisans, activities during LH III C Developed seem to be much more grounded in local practices. This had, as we saw clearly, its repercussions on the architectural layout. The open courtyard is less segregated and more communally accessible, i.e. artisans were more integrated into the local community. This spatial integration would have potentially affected not only the bonds that the artisans had with other members in their community, but also with each other, since any change in a dynamic system of social bonds and interactions necessarily affected associated bonds and relations as well, materialising in dynamically shaped and shifted identities. Therefore, the re-establishment of a workspace using the same locale for similar pyrotechnological crafts, points to the conscious actions of artisans in actively *crafting* their identity.

In sum, such a detailed contextual analysis can eventually provide us with information re-

garding the social intricacies of these workshop setups, about which the Linear B texts are mute. This shows that despite the immense heuristic value of the tablets, we might gain a much more nuanced insight into past social interaction via the archaeological remains, even within the palatial sphere. From a methodological perspective, certain information sources may, therefore, be too coarse-grained or biased to reveal meaningful answers to the scale and scope of the questions posed. In allowing tightly contextualised mundane remains, both portable and architectural, to be active players in technological studies with an explicit emphasis on social interaction as well, this enables us not only to be

more nuanced and conclusive about what a workshop consists of and piece together the evidence, but also to reveal a more fine-grained social set-up in these actively negotiated workspaces. At the same time, by studying these artisans within their actively constructed, maintained or changed contexts, i.e. their dynamic workspaces, we may understand better how these artisans would have profiled their identities to each other, and how they might have been perceived by their contemporaries. While practicing identities is most obvious in the craft output, i.e. the finished product, it is also totally enmeshed in every material and social reality.

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## TABLES

**Table 1: Unpublished TN-objects mentioned in the text with respective find spots**

Tracing Networks database number	Find spot	Description
TN 22	LXII 34/100 IVb, Ti 02 LXIII 34/81 VI, LXIII 34/91 VI a12.90, LXIII 34/91 VI, LXIII 35/01 VIA unter Fußboden	Wall bracket
TN 29	LXII 34/100 IVb, LXII 35/10 IVb, LXII 35/19 IVb, Ti 02 LXIII 34/91 VI	Wall bracket
TN 207	Ti 02 LXIII 34/91 VI f12.81	Fragment of faience vessel
TN 208	Ti 02 LXIII 34/91 VI g12.83	Fragment of faience vessel
TN 209	Ti 02 LXIII 34/91 VIB c12.77	Fragment of faience vessel
TN 210	Ti 02 LXIII 34/81 VIb c12.86	Fragment of faience vessel
TN 211	Ti 02 LXIII 34/81 VIb b12.87	Fragment of faience vessel
TN 160	Ti 05 LXIII 34/71 OfI. VIA a12.86	Relief bead
TN 191	Ti 02 LXIII 34/63 VI a12.97, LXIII 34/63 VC	Crucible
TN 183	Ti 02 LXIII 35/03 VIb a12.92	Worked fragment of <i>Lapis Lacedaimonius</i>
TN 43	Ti 02 LXIII 34/81 VI a12.80	Prismatic blade, obsidian
TN 46	Ti 02 LXIII 34/81 VI a12.90	Prismatic blade, obsidian
TN 184	Ti 02 LXIII 34/61 IVG a13.26 Kilianstörung	Worked fragment of diorite porphyry
TN 218	Ti 02 LXIII 34/92 VA a13.24	Worked fragments of rock crystal
TN 84	Ti 02 LXIII 35/12 VC b12.93	Bone pin
TN 193	Ti 02 LXII 35/48 VI a12.88	Bone pin

**Table 2: Lithics: obsidian artefacts found in Room 1/02 of Building XI, in Horizon 17 a5-18 (LH III B Final)**

Tracing Networks database number	Find spot	Description
TN 112	Ti 02 LXIII 34/63 VIA b12.82 Hor. 17 a5	Obsidian, secondary decortication flake
TN 108	Ti 02 LXIII 34/64 VIA a12.84 Hor. 17 a5	Obsidian, prismatic blade, blank
TN 111	Ti 02 LXIII 34/52 VIA b12.84 Hor. 17 a5	Obsidian, retouched flake, scraper
TN 118	Ti 02 LXIII 34/63 VIA a12.84 Hor. 17 a5	Obsidian, tertiary flake
TN 110	Ti 02 LXIII 34/42 VIA a12.85 Hor. 17 a5	Obsidian, flake, blank
TN 173	Ti 02 LXIII 34/63 VI b12.85 Hor. 17 a5	Obsidian, primary decortication flake
TN 107	Ti 02 LXIII 34/54 VIA a12.85 Hor. 17 a5	Obsidian, exhausted core
TN 114	Ti 02 LXIII 34/52 VIA c12.90 Hor. 17 a5	Obsidian, retouched flake, scraper
TN 117	Ti 02 LXIII 34/33 VIA Hor. 17 a5	Obsidian, flake blank from blade production
TN 128	Ti 02 LXIII 34/52 VI f12.92 Hor. 17 a5	Obsidian, flake blank from blade production

TN 98	Ti 02 LXIII 34/62 VI a12.93 Hor. 17 a5	Obsidian, prismatic blade, retouched
TN 121	Ti 02 LXIII 34/43 VI a12.93 Hor. 17 a5	Obsidian, prismatic blade, blank
TN 102	Ti 02 LXIII 34/42 VI b12.94 Hor. 17 a5	Obsidian, retouched blade
TN 122	Ti 02 LXIII 34/53 VI e12.94 Hor. 17 a5	Obsidian, prismatic blade, retouched
TN 123	Ti 02 LXIII 34/52 VI d12.95 Hor. 17 a5	Obsidian, blade, blank
TN 129	Ti 02 LXIII 34/52 VI e12.96 Hor. 17 a5	Obsidian, tertiary flake
TN 126	Ti 02 LXIII 34/42 VI a12.97 Hor. 17 a5	Obsidian, prismatic blade, blank
TN 130	Ti 02 LXIII 34/53 VI a12.97 Hor. 17 a5	Obsidian, secondary flake
TN 131	Ti 02 LXIII 34/52 VI a12.98 Hor. 17 a5	Obsidian, tertiary flake
TN 132	Ti 02 LXIII 34/43 VI b 12.98 Hor. 17 a5	Obsidian, secondary decortications flake
TN 101	Ti 02 LXIII 34/53 VI f12.99 Hor. 17 a5	Obsidian, flake blank from blade production
TN 104	Ti 02 LXIII 34/52 VI b13.00 Hor. 18-20	Obsidian, prismatic blade, blank
TN 105	Ti 02 LXIII 34/43 VI Hor. 18-20	Obsidian, burin
TN 125	Ti 02 LXIII 34/63 VI Hor. 18-20	Obsidian, prismatic blade, blank
TN 133	Ti 02 LXIII 34/63 VI Hor. 18-20	Obsidian, tertiary flake
TN 138	Ti 02 LXIII 34/63 VC f13.01 Hor. 18-20	Obsidian, tertiary flake
TN 137	Ti 02 LXIII 34/42 VC a13.03 Hor. 18-20	Obsidian, prismatic blade, blank
TN 139	Ti 02 LXIII 34/64 VC a13.03 Hor. 18-20	Obsidian, prismatic blade, retouched
TN 99	Ti 02 LXIII 34/83 VI a13.03 Hor. 18-20	Obsidian, prismatic blade, blank
TN 96	Ti 02 LXIII 34/52 VC g13.04 Hor. 18-20	Obsidian, prismatic blade, burin
TN 141	Ti 02 LXIII 34/52 VC b13.04 Hor. 18-20	Obsidian, tertiary flake
TN 135	Ti 02 LXIII 34/63 VC e13.06 Hor. 18-20	Obsidian, prismatic blade, retouched
TN 140	Ti 02 LXIII 34/63 VC d13.08 Hor. 18-20	Obsidian, secondary decortication flake
TN 97	Ti 02 LXIII 34/63 VC b13.10 Hor. 18-20	Obsidian, prismatic blade, retouched
TN 134	Ti 02 LXIII 34/64 VC Hor. 18-20	Obsidian, prismatic blade, blank

**Table 3: Lead and copper-alloy objects and associated crucible found in Room 1/02 of Building XI, in Horizon 17 a5-18 (LH III B Final)**

Tracing Networks database number	Find spot	Description
TN 78	Ti 02 LXIII 34/42 VIB a12.85 Hor. 17 a5	Copper-alloy, amorphous fragment
TN 72	Ti 02 LXIII 34/63 VI d12.90 Hor. 17 a5	Copper-alloy, amorphous fragment
TN 83	Ti 02 LXIII 34/53 VI a12.90 Hor. 17 a5	Copper-alloy, awl
TN 69	Ti 02 LXIII 34/43 VIA b12.91 Hor. 17 a5	Lead, clamp
TN 63	Ti 02 LXIII 34/63 VI b12.93 Hor. 17 a5	Lead, sheet
TN 88	LXIII 34/52 VI c12.95 Hor. 17 a5	Copper-alloy, amorphous fragment
TN 59	Ti 02 LXIII 34/53 VI b12.95 Hor. 17 a5	Lead, clamp
TN 81	Ti 02 LXIII 34/53 VI c12.96 Hor. 17 a5	Copper-alloy, wire?
TN 191	Ti 02 LXIII 34/53 VI a12.97, Ti 02 LXIII 34/63 VC Hor. 17 a5	Clay, crucible
TN 62	Ti 02 LXIII 34/84 VB a13.00 G2/02 Hor. 18-20	Lead, clamp
TN 90	Ti 02 LXIII 34/53 VC d13.01 Hor. 18-20	Copper-alloy, amorphous fragment
TN 91	Ti 02 LXIII 34/63 VC g13.01 Hor. 18-20	Copper-alloy, amorphous fragment
TN 64	Ti 02 LXIII 34/52 VC e13.01 Hor. 18-20	Lead, sheet with cut-marks

TN 87	Ti 02 LXIII 34/53 VC c13.02 Hor. 18-20	Copper-alloy. amorphous fragment
TN 77	Ti 02 LXIII 34/53 VC b13.03 Hor. 18-20	Copper-alloy, strip?
TN 67	Ti 02 LXIII 34/53 VC a13.04 Hor. 18-20	Lead, sheet
TN 68	Ti 02 LXIII 34/52 VC f13.04 Hor. 18-20	Lead, clamp
TN 60	Ti 02 LXIII 34/52 VC d13.04 Hor. 18-20	Lead, strip or clamp
TN 61	Ti 02 LXIII 34/52 VC c13.04 Hor. 18-20	Lead, sheet with cut-marks

**Table 4: Lithics: selection of obsidian and chert artefacts found in courtyard area, in Horizon 20 a3-21 a0 (LH III C Developed) in area under study**

Tracing Networks database number	Find spot	Description
TN 186	Ti 02 LXIII 35/11 VC b13.04	Radiolarit, retouched blade, denticulate
TN 185	Ti 02 LXIII 35/12 VC a13.08	Chert, prismatic blade, retouched
TN 169	Ti 02 LXII 35/40 VC b13.05	Obsidian, prismatic blade, blank
TN 136	Ti 02 LXII 35/40 VC c13.05	Obsidian, prismatic blade, blank
TN 145	Ti 02 LXII 35/40 VC d13.05	Obsidian, trimming flake
TN 165	Ti 02 LXII 35/40 VC a13.07	Obsidian, retouched blade
TN 163	Ti 02 LXIII 35/11 VC a13.10	Obsidian, secondary decortication flake
TN 148	Ti 02 LXIII 35/03 VB a13.12	Obsidian, prismatic blade, blank

**Table 5: Copper alloy artefacts and lead objects found in courtyard area, in Horizon 20 a3-21 a0 (LHIII C Developed) in area under study**

Tracing Networks database number	Find spot	Description
TN 215	Ti 02 LXIII 35/11 VA b13.23	Lead, spill or driblet
TN 231	Ti 02 LXIII 35/11 VA a13.27	Lead, spill or driblet
TN 212	Ti 02 LXIII 35/02 VA a 13.25	Lead, weight or ingot?
TN 80	Ti 02 LXIII 35/21 VC a12.96	Copper alloy, fragment of pin, wire or hook?
TN 75	Ti 02 LXIII 35/11 VC c13.08	Copper alloy, awl or chisel
TN 219	Ti 02 LXII 35/40 VA a13.31	Copper alloy, awl or chisel
TN 106	Ti 02 LXIII 35/21 VIC a12.98	Slag fragment
TN 220	Ti 02 LXII 35/49 IVH a13.49	Copper alloy, rivet
TN 79	Ti 02 LXII 35/39 VC a13.05	Copper alloy, pin or stud
TN 221	Ti 02 LXII 35/39 VA a13.33	Copper alloy, awl or chisel