3 Experiencing the Built Environment Transformations in Architectural Forms and Installations

Summary 3.1 The Built Environment at the Meso-Scale. – 3.2 The Performance of Buildings and Architectural Forms. – 3.2.1 The Social Significance of Building Shape. – 3.2.2 The Social Significance of Fixed Architectural Elements. – 3.2.2.1 Doorway. – 3.2.2.2 Fire Installations. – 3.3 Spatial Convention Within Buildings: Floor, Surfaces and Occupation Deposits.

3.1 The Built Environment at the Meso-Scale

This chapter explores the performance of buildings and the significance of architectural forms through the examination of building shape and size and the analysis of building's installations and occupation surfaces as indicators of social practices and choices. The micro-scale examinations of building practices and operations, which have been presented in the previous chapter, are integrated, into this section, with the meso-scale analyses of the building's spatial characteristics and of buildings constitutive elements. This evidence provides important clues to analyse the way buildings were used, perceived and experienced in the prehistoric communities of Cyprus.

But, how can architectural forms be representative and indicative of past social practices? The built environment is very much part of the transformative society of prehistoric communities. This is because architectural space is a three-dimensional built object that results from a process of physical construction and a process of

DOI 10.30687/978-88-6969-685-5/003

social appropriation and constant recreation by society (Amerlinck 2001, 2; Bille, Flohr Sorensen 2016). Within this constructed environment, built forms undergo changes and adaptations as different people maintain, use and dwell within them, and these architectonic changes are part of socially embedded technological processes influenced by the relationships between people, material culture and the practice that reproduce spatial conventions (Gosden 2004, 24). Archaeological studies of the *chaîne opératoire* in ancient technologies have shown that every step of a construction sequence involves a complicated exchange of input and output from individual actors, larger social structures, materials and local settings (Kearns 2011). In this perspective, architectural forms can be understood as active creations that afford humans certain possibilities for interaction, and that change over time and enact different responses as they are constructed, maintained, abandoned or destroyed (Ryan 2011). Therefore, the placement, layout and orientation of buildings and built forms in the larger context of community and culture can be used as important indicators to analyse ideological, political, and religious messages about individuals that constructed, used and experienced that built space. In the words of Amos Rapoport, “house form is not simply the result of physical forces or any single causal factor, but is the consequence of a whole range of socio-cultural factors seen in their broadest terms” (1969, 47).

3.2 The Performance of Buildings and Architectural Forms

The concept of ‘built environment’ as a space where social systems are produced, reproduced and transformed is examined through the analysis of architectural elements that were used to configure the building space and make them a place of interaction and social reproduction. Since buildings structure daily life and the life course as well as exceptional events, and communicate experiences and memories through their materials, shape, size, ornamentation and placement, the analysis of these constituent elements may be used to define spatial and socio-cultural conventions, values and boundaries.[1]

The role of buildings and architectural forms in structuring social identities and status is discussed through the analysis of building shape and the use of specific fixed elements as significant indicators of social conventions and transformations. Performances within buildings are then analysed giving special attention to floors, surfaces and occupation deposits as means of social organisation and representation.

1 Cf. Fisher 2014a; Love 2013b; Matthews et al. 2013; Rapoport 1990; Rasmussen 1962; Souvatzi 2012.

3.2.1 The Social Significance of Building Shape

The way a building came into being over time suggests the way collaborations formed and transformed at different spatial and temporal scales. Within buildings, walls serve as tangible and concrete boundaries, which are used by individuals and communities to organise their and others' social lives; therefore, the analysis of building shape can provide insights into the socio-cultural dynamics of the past society and, in the specific case, of prehistoric communities in Cyprus (Kent 1990a; Rapoport 1990; Hodder 1990; Bolger 2003, 21-50).

Three main arguments are addressed and discussed in this section pertaining to the main episodes of architectural and social transformation over the course of Cypriot prehistory:

- The persistence of a circular architectural module in the built environment of Neolithic Cyprus compared to the architectural trajectories observed on the mainland;
- The appearance of semi-subterranean structures at the beginning of Early Chalcolithic Cyprus, and their social significance;
- The introduction of a rectangular building module during the Philia phase and the materialisation of the so-called 'courtyard house' during Early Bronze Age Cyprus.

The change from curvilinear to rectilinear architecture in the prehistory of Anatolia and the Levant is a well-known phenomenon, and it has been largely used as a proxy for socio-economic transformations (cf. Saidel 1993; Steadman 2006; Byrd 1994; Watkins 2004), despite recognition that there is no unilinear evolutionary trajectory in the configuration of the built and social environments (see Wilk 1990). Flannery, who attempted to use mainly architectural evidence to understand social changes in the prehistoric Levant, suggested that the transition from circular to rectangular buildings reflected a significant transformation in household and kin relationships (1972) and that the introduction of a rectangular building module was the material manifestation of different types of households living in expanded agricultural communities (2002). However, recent analyses have shown little correlation between architectural form and social structure (cf. Banning 1996; 2010; Steadman 2004; 2006) and have emphasised that a more nuanced understanding of this significant social, economic, and architectural shift can be provided by looking at buildings as dynamic contexts of social reproduction.[2]

In Southwest Asia, this architectural transition occurred at the end of the Pre-Pottery Neolithic A (PPNA) and the beginning of the Pre-Pottery Neolithic B (PPNB) periods, between the 11th and the 7th

2 See Cutting 2006; Banning, Chazan 2006; Kay 2020; Duru et al. 2021.

millennia cal BCE (see Duru et al. 2021, tab. 1). In Cyprus, however, despite the close contact with the mainland from at least the 9th millennium cal BCE, the curvilinear tradition persisted until the introduction of rectangular structures during the 2nd millennium BCE.

The Late Aceramic Neolithic architecture in Cyprus was characterised by circular buildings of two different types, both of which have their origin in North Syria, Southeast Anatolia (Peltenburg 2004): the circular pillar buildings, consisting of small circular structures with internal large rectangular pillars, as exemplified by few structures at Kalavassos-*Tenta* and Khirokitia **[fig. 3.1: 1-3]**; and the circular radial building, consisting of relatively spacious, installation-free, central circular or sub-circular space and radial cells, as indicated by most of the structures at Cape Andreas-*Kastros*, Khirokitia and Tenta (Peltenburg 2004) **[fig. 3.1: 4-6]**. The introduction of sub-rectilinear architecture during the 5th millennium BCE, as primarily attested at Ceramic Neolithic Sotira-*Teppes* **[fig. 3.2]** and Ayios Epiktitos-*Vrysi*, did not consist in a proper transformation of the built space. At these sites, rectilinear architecture co-existed with the circular module, and no functional differentiation was noted between the two types of structures (see Clarke 2007c), suggesting that the rectilinear form was a variant of the circular module and possibly a sort of architectural experimentation to enlarge the interior living surface of buildings, with no abrupt changes in the way the built space was lived and perceived. As argued by Clarke (2007b, 114), although internal fixtures and fitting may have physically shifted in the sub-rectilinear buildings of Ceramic Neolithic settlements in Cyprus (for example, the off-centred position of hearths within rectilinear structures), the internal layout of these dwellings remained virtually unchanged. Also, from a constructional point of view, Clarke noted that the walls of these rectilinear structures were constructed as one continuous feature – likewise in the circular structures –, as opposed to the later rectangular buildings of Prehistoric Bronze Age Cyprus, which were constructed with right angles. According to Peltenburg (2004) and Clarke (2007b), the persistence of a circular module during Neolithic Cyprus, with structures characterised by an unchanged use of internal space, reflects the stable economic and social strategies that existed on the island. Peltenburg (2004, 83) affirms that the limited influx of migrants, the low population growth and the lack of intergroup competition promoted continuity of the communal system. Similarly, Clarke claims that when little or no pressure is exerted on a population to change, there will be a trend toward cultural stability, including construction practices and living space organisation.

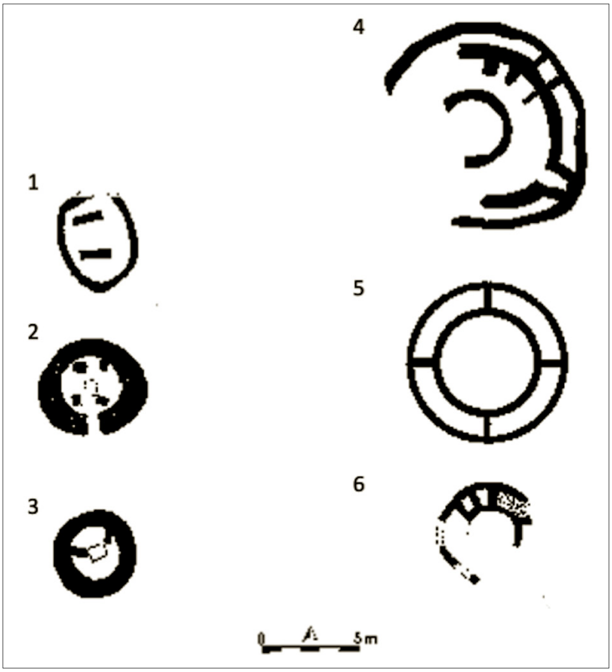

Figure 3.1
Circular Pillar Buildings (1-3) and Circular Radial Buildings (4-6): 1) Kalvassos-Tenta (Todd 1987, fig. 20); 2-3) Khirokitia (Le Brun 1984, figs 15.2, 24.2); 4) Kalvassos-Tenta (Todd 1987, fig. 20); 5) Khirokitia (Le Brun 1984, fig. 32.1a); 6) Cape Andreas-Kastros (Le Brun 1981, fig. 2). © Peltenburg 2004, fig. 7.2

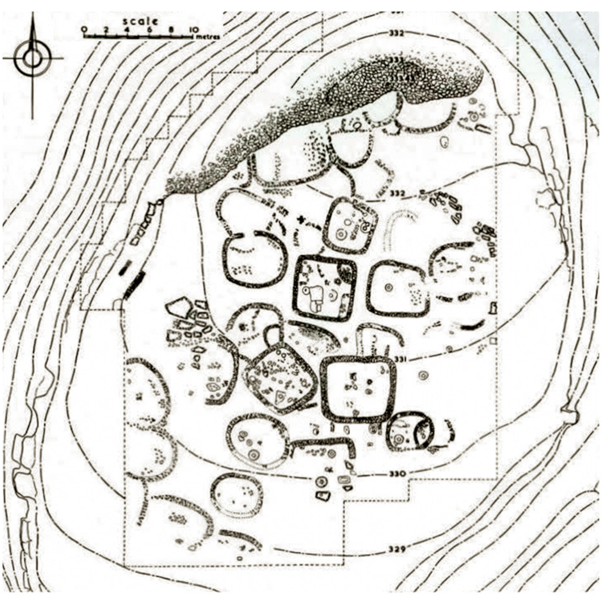

Figure 3.2
Plan of Sotira-Teppes. © Dikaios 1961

The circular module persisted during Chalcolithic Cyprus and became materialised in the architecture of the Middle and Late Chalcolithic settlements. In-depth analyses on Chalcolithic architecture conducted by Thomas (2005a) indicated that circular buildings became progressively larger, better realised in terms of construction technology and well-organised internally. While earlier circular building variants (Early to Middle Chalcolithic) were constituted by foundation hollows packed with clay or clay and rubble, sometimes with a ring of postholes around the exterior structure perimeter, and a rounded mud platform hearth in the internal building spaces, as at Erimi-*Pamboula* Phase 1 (Dikaios 1962), Lemba-*Lakkous* Period 1 (Peltenburg et al. 1985), and at Kissonerga-*Mylouthkia* (Peltenburg 2003), later building variants (Middle to Late Chalcolithic) were characterised by larger diameters, a more efficient use of plaster materials and stones and a more developed compartmentalisation of the internal building space, through the addition of partitioning elements like kerbs, as attested in the round buildings at Kissonerga-*Mosphilia*, Lemba-*Lakkous*, Souskiou-*Laona*, and Chlorakas-*Palloures*. Efforts to enlarge the living space inside the buildings, thanks also to skilful use of building materials and techniques, seem to have been one of the driving forces of the progressive transformation of Chalcolithic dwellings in Cyprus.

Detailed studies have been conducted on socio-economic transformations and dynamics of increasing social complexity, which are related to these progressive transformations of the built environment over the course of Neolithic and Chalcolithic Cyprus (see Thomas 2005a; Peltenburg 2004; Steel 2004). I would like to focus the attention on the increasing consistent orientation of entrances in circular buildings constructed or renewed at the end of Middle/beginning of Late Chalcolithic, as primarily identified at Kissonerga-*Mosphilia* (Thomas 2005a, 183) but also attested at Souskiou-*Laona* (Peltenburg 2019, 76-8), and partially at Lemba-*Lakkous* Period 4 (Thomas 1996, 52; 2005a). This constitutes an interesting aspect in the discussion of social and cultural implications associated with transformations of the prehistoric built environment on the island. In fact, the lack of building orientation characterises Neolithic and Early/Middle Chalcolithic circular structures and suggests that construction responded to individual household groups' exigencies. By contrast, the occurrence of buildings possibly oriented according to a wider settlement design during the Middle/Late Chalcolithic may be interpreted as an indication of an important transition towards an increased communal decision-making and a higher level of social organisation; this can be considered an important marker of increasing complexity in the wider economic and social life of Chalcolithic communities of the island (on this point, see also § 3.1.2.1) **[fig. 3.8]**.

This process of architectural transformation started in the Early Chalcolithic period, with the appearance of semi-subterranean post-frame structures during the 4th millennium BC. The possible correlation between the construction of semi-subterranean dwellings and climatic and environmental changes has been already addressed in § 2.1. Here, the aim is to focus on the possible social significance of the short-term shift to this building type.

Around 3900/3800 BC, Late Neolithic sites were abandoned, and sites characterised by small semi-subterranean dwellings and numerous pits of varying shape and size were constructed (Knapp 2013, 192-6). The two sites that best represent the period are Kalavassos-*Ayious* and Kissonerga-*Mylouthkia*, but structures of this type have been also identified in the early Chalcolithic phases at Erimi and in the Chalcolithic deposits of Maa, and appear to have their antecedents in the Ceramic Neolithic subterranean hollows at Kalavassos-*Kokkinoyia* **[fig. 3.3a]** and Philia-*Drakos* (Clarke 2007c, 124-6; Knapp 2013, 171). *Ayious* is a very distinctive site, characterised by wide shallow depressions, a pit and tunnel complex and more than 100 pits, varying in form from large and deep (with diameters up to 2.75 m) to small and shallow (with diameters of < 1.0 m) **[fig. 3.3b]**. There are no standing architectural remains, but these pits were possibly covered by light superstructures, according to archaeological reconstructions based on the occurrence of post holes which, in some cases, are associated with these hollows (Todd, Croft 2004). At *Mylouthkia*, pits have different shapes than those at *Ayious*. They are squarish in outline or shallow concave, and there are no tunnels or tunnel complexes (Peltenburg 2003). The most important aspect identified at *Mylouthkia* is that some contexts (e.g. Building 200) show a continuity of use from pit to semi-subterranean post-frame structures to round buildings with mud walls and stone foundations (see Clarke 2007c, 124; Croft, Thomas 2003). As pointed out by analyses conducted on the architecture of the Neolithic Near East, these different stages of construction could have responded to the need to enlarge the living surface inside the buildings, possibly to respond to new social exigencies deriving from a more defined organisation of activities inside and outside the building's perimeter (Bialowarczuk 2016) **[fig. 3.4]**. In fact, while the Neolithic and Early Chalcolithic buildings in Cyprus display a more fluid arrangement of rooms, with no formal boundaries and a tendency for buildings to exhibit divergent functions and diverse internal feature arrangements, the Middle and Late Chalcolithic phases witness a more formal organisation of interior spaces with specific floor types and distinct division of activities area (Thomas 2005a, 183-4).

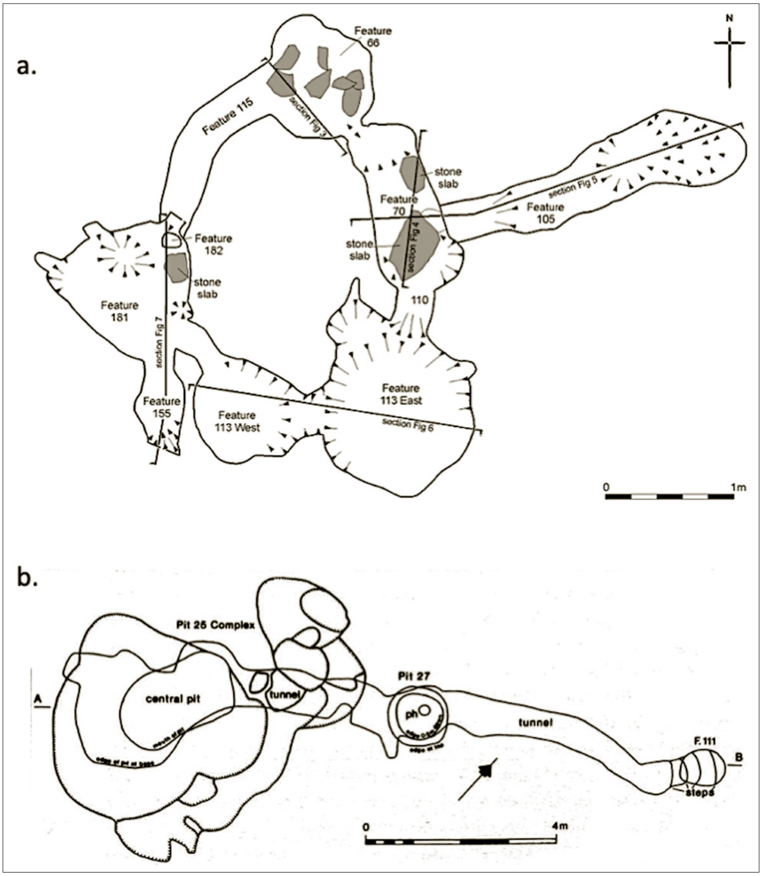

Figure 3.3 Plan of channel and tunnel complex at a) Neolithic Kalavasos-Kokkinoya – Area U (Clark 2009, fig. 2) and at b) Kalavasos-Ayious (Todd, Croft 2004, fig. 9)

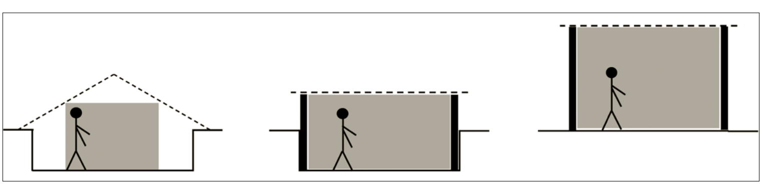

Figure 3.4 Reconstruction of the possible stages of construction from semi-subterranean shelters, to semi-subterranean post-frame structures, to free-standing structures. The grey square is indicative of the living area within the structures. As represented in the figure, the living area progressively becomes larger. © Bialowarczuk 2016

It has been argued that these pits and semi-subterranean post-framed structures were used as sources for building materials, as seasonal or regular shelters, or as storage facilities (cf. Clarke 2007c; Thomas 2005a, 118-24; Peltenburg 2003, 261-3; Knapp 2013, 204-6). As important as these functions were, the proposal here is to view these structures not in terms of function or economy but in terms of the social processes involved in their digging. Whittle writes that "to build a house, you must first dig. Digging makes that house-to be" (2007, 361-4). The act of digging can be seen as a physically collaborative effort, as well as an opportunity for collaboration and shared experience. According to Bailey (2018, 1-40), pit houses can be seen as projects which have effects on relations and communications between the people: working outside of the building in shared and more open spaces; collaborating on small-scale or more widely spread activities. In this perspective, it is possible to consider the semi-subterranean post-framed structures that appeared at the beginning of Chalcolithic Cyprus as transformative built and social environments (see also Clarke 2007c). The reduced space for activities within these structures – as testified by their limited size (the largest hollows rarely exceeded 2-3 m in diameter; Todd, Croft 2004, 214-15) and their restricted domestic inventory if compared to tools and installations of earlier Neolithic buildings – possibly promoted the use of open areas as *loci* of social activities and relationships. Mechanisms of cooperation and space sharing, which possibly emerged in these small-size communities living in and using these semi-subterranean dwellings, may constitute the first step towards a more communal way of living. This sense of community and engagement presumably increased over the course of Chalcolithic – as testified by buildings with consistent entrance orientation, which suggests the emergence of a supra-household settlement layout and organisation –, and represented an essential requirement in the establishment of larger social groups during Middle and Late Chalcolithic Cyprus.

It is important to stress that the possible tendency towards social cohesion and sharing contrasts with the narrative of an increasing development of domestic space (see Peltenburg 2003, 274-5) and of households 'owning' storage facilities, as proposed for Middle and Late Chalcolithic communities (see Bolger 2003, 29-31; Steel 2004, 89). However, these two distinct dynamics can be considered complementary rather than divergent (on this topic, see Carballo 2013): this seems best exemplified by the household communities of Prehistoric Bronze Age Cyprus.

The dichotomy between community cooperation and household competition, I argue, is materialised in the rectangular building module, which emerged on the island at the beginning of the Early Bronze Age, during the Philia phase (c. 2400/2350-2250 cal BCE). According to previous studies, the transition from circular to rectangular architecture indicates economic and social changes in the household structure, and reflects on the conceptual spaces and relationships between the household and supra-households (cf. Byrd 1994; Watkins 2004). Steadman (2006) affirms that rectangular buildings have practical advantages because rectangularity allows rooms and buildings to be packed closely together. In this perspective, the demographic growth of Early Bronze Age Cyprus and the emergence of new extended settlements, for example Marki-*Alonia*, can sustain Steadman's argument (see also Swiny 1989, 21). However, this single explanation is not entirely satisfying. More recent researches in the Levant and Anatolia point to cross-cultural practices in which storing food and the increased privatisation of households led to a simultaneous increase in the number of buildings and to increasing compartmentalisation of the building's space (cf. Duru et al. 2021; Kuijt 2000; Banning, Chazan 2006).

In this transformed architectural module, courtyards played a central role in the trend towards community cohesion, on one hand, and household privatisation, on the other. Courtyards, in fact, enlarged the building space, allowing inhabitants to have an additional area to conduct domestic activities **[fig. 3.5]**. This is well exemplified by evidence from the earlier occupation phases at Marki-*Alonia* (Phases B-C), the only prehistoric Bronze Age settlement by date which provides an extended development sequence from the Philia phase until the beginning of the Middle Bronze Age, and testifies the evolving interactions within and between households (Webb 2009, 262). In the earlier Phases B and C, courtyards were equipped with installations like hearths and emplacements, suggesting that the majority of daily activities were conducted within these semi-open spaces. Frankel and Webb (2006a; 2006b; see also Webb 2009), show that, in some instances, the courtyard space was shared between two or more compounds, indicating a high level of social and economic cooperation. According to their view, this can be viewed as a "survival mechanism appropriate to a newly established pioneer community, perhaps numbering only 40 people, dispersed among a handful of households in relatively inhospitable terrain" (Frankel, Webb 2006b, 301).

At the same time, courtyards created a physical as well as an ideological 'filter' between those who were inside and those who were outside. The introduction of courtyards in rectangular buildings, I argue, contributed to a more definite distinction between the individual and the communal spheres, through the activation of mechanisms of inclusion/exclusion. If the 'inclusion' entailed the opening of the household space to the others, thus promoting dynamics of cohesion and collaboration, the 'exclusion' implied a limitation of social interaction. In this perspective, courtyards offered new means of compartmentalising the domestic space. At Marki-*Alonia*, this dual role of the courtyard can be recognised in the architectural and social transformations between the earlier and the later phases of settlement occupation. Frankel and Webb (2006a; 2006b) explain how the

Figure 3.5
Plan of the courtyard houses at Alambra-Mouttes. In grey are evidenced the courtyards.
© Webb 2009, fig. 5a

gradual reduction of activities within courtyards and their progressive dismissal – as indicated by the relocation of hearths and other installations from courtyard to building space – is proportional to the increasing privatisation of domestic space. According to their view, the emergence of self-contained semi-enclosed households, during later occupation phases at Marki, coincided with increases in the size of the community and of individual families and with improved economic security at the household level. Similar architectural trajectories are likely to have characterised other prehistoric Bronze Age settlements of the island, such as Alambra-*Mouttes* and Sotira-*Khaminodhia*, with multi-roomed buildings with a single entrance and a flow from outer to inner rooms (Webb 2009) **[fig. 3.5]**. However, in the Gjerstad house at Alambra, courtyards were less enclosed than those at Marki, indicating a less pronounced filter between the household members and the outsiders, thus presumably suggesting a higher level of sharing and cooperation among community members over the course of Early and Middle Bronze Age Cyprus.

The increasing compartmentalisation of interior spaces and the subsequent creation of more private rooms within rectangular buildings have been identified as evidence of increasing social complexity in ancient communities (Kent 1984; 1990; Bolger 2003; Rapoport 1990). According to ethnographic studies conducted by Kent (1984; 1990), house interiors are likely to become more ideologically and physically segmented as household members have an increasing number of tasks to perform (1990, 150). Evidence deriving from archaeological and geoarchaeological analyses conducted on floors and occupation surfaces of prehistoric settlements in Cyprus can support this discussion, and will be presented in detail in § 3.2.

3.2.2 The Social Significance of Fixed Architectural Elements

Social settings are not only defined by buildings shape, but also by architectural forms, which help determine social conventions by encouraging social interaction and reproduction within building spaces. Fixed elements, together with their functional character, can be used to express socio-cultural ideologies and status, circulation and movement patterns, sequences and interconnections of activities and interrelations. In this section, doorways and fire installations will be examined as key indicators of socio-cultural transformations of early Cypriot communities.

3.2.2.1 Doorways

Among the fixed architectural components, doorways represent one of the most significant elements of analysis. The importance of doorways as *loci* of access and transition between building spaces and domains has been advocated by numerous authors who indicate doorways as liminal zones in the syntax of the built space (cf. Lang 1985; Parker Pearson, Richards 1994; Hillier, Hanson 1984). In his analysis of the Late Bronze Cypriot built environment, Fisher acknowledged their crucial role by sustaining that doorways, beyond their topological function, are elements embedded with social and symbolic meanings (2009a, 445; 2009b, 194-9).

Four attributes are taken into consideration to explore the role of doorways in the construction and transformation of the socio-cultural environment of prehistoric Cypriot communities: doorways orientation, number, width and architectural characteristics.

Building orientation can respond to climatic and topographic exigencies. In Cyprus, vernacular buildings are commonly oriented according to the north-south axis in order to take advantage of solar energy and daylight (Lapithis 2005; Nafiz, Haltan 2013). While building orientation in archaeological contexts can be site-specific, depending on the geomorphological and topographic characteristics of the settlement area, in more general terms it appears that in Neolithic and Chalcolithic Cypriot settlements there was a preference for a south-facing orientation. Considering that doors and entranceways constituted the main opening of these early prehistoric structures, the occurrence of a south-facing entrance contributed to taking advantage and maximising the amount of sunlight reaching the interior of the building [fig. 3.6].

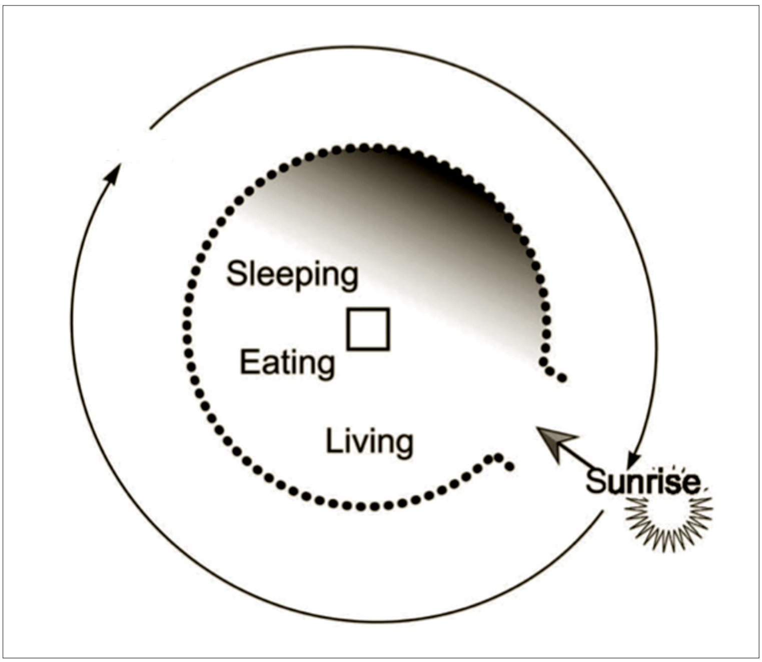

Figure 3.6 Schematic representation of circular building oriented according to the sun path. © Bradley 2013

In addition to functional explanations, doorway orientation retains also important social significance. In § 3.1.1, it was discussed how the recurrent orientation of buildings within a site may suggest communal decision-making in the organisation and planning of the settlement. According to Miles et al. (1998, 38) and Thomas (2005a, 45), a shift in building orientation can be recognised in Chalcolithic settlements between the Middle and Later Periods. During the Late Chalcolithic, there is a change in building orientation from the south to the southeast, with exceptions given by buildings which were oriented north, northwest and west possibly for practical reasons (Miles et al. 1998, 38; see also Schubert 2018, 82-6). Thomas (2005a, 45) suggested that the higher variability in building orientation observed during the Late Chalcolithic can be related to a more elaborate settlement organisation during this period, in which buildings reflect households organised around an open courtyard. However, this hypothesis has not been confirmed by preliminary analyses of the built environment at Kissonerga-*Mosphilia*, Lemba-*Lakkous* and Chlorakas-*Palloures*, which indicate that groups of buildings were preferentially oriented to the southeast rather than facing a central courtyard (Schubert 2018, 82-6). The idea that the consistency in buildings orientation over the course of Middle and Late Chalcolithic Cyprus can reflect communal planning and organisation (see § 3.1.1), could be endorsed for example by the re-organisation of the north section of the settlement at Kissonerga-*Mosphilia* and in particular of Building 1161 during the Middle Chalcolithic. Building 1161 is a rectilinear multi-phased structure, the doorway of which was oriented to the northeast during the first occupation phase. After the construction of a paved track next to it, this entrance was blocked and a new access was opened to the south (Peltenburg et al. 1998a, 30) **[fig. 3.7]** to respond to the same orientation of the other surrounding Buildings 2 and 1000 (see Schubert 2018, 83), and to enable easy and more direct access to the south part of the settlement, including the Ceremonial Area – an area of architecturally and functionally distinctive structures of symbolic significance (e.g. the so-called 'Red House'; see Peltenburg 1998a, 248). This re-organisation was most probably conducted at the supra-household level, according to a shared project and communal layout.

The consistent pattern observed in doorways orientation at Late Chalcolithic settlements **[fig. 3.8]** does not occur in Early Bronze Age rectangular structures. Both at Early Bronze Age Marki-*Alonia* and Sotira-*Kaminoudhia*, buildings orientation does not respond to an organised layout. Buildings' entrances were constructed and oriented according to individual households' spatial organisation. At Marki, doorways placement changed during the different phases of settlement occupation (e.g. Units 6 and 8), reflecting transformations in buildings organisation and layout; a trend that echoes the rapid demographic growth of the settlement and its progressive expansion in an interrupted process of buildings construction, maintenance, change of use and abandonment (Frankel, Webb 2006a, 305-15; Webb 2009). Doorways' placement in domestic buildings at Middle Bronze Age Alambra-*Mouttes* and Erimi-*LtP* show similar variation, with door orientation dictated by the relationship between buildings and the concomitant courtyards and access routes. A more regular pattern has been identified in buildings of the Workshop Complex at Erimi-*LtP*, where doorways appear to respond to a preconceived plan. Buildings show a northwest-southeast orientation and entranceways

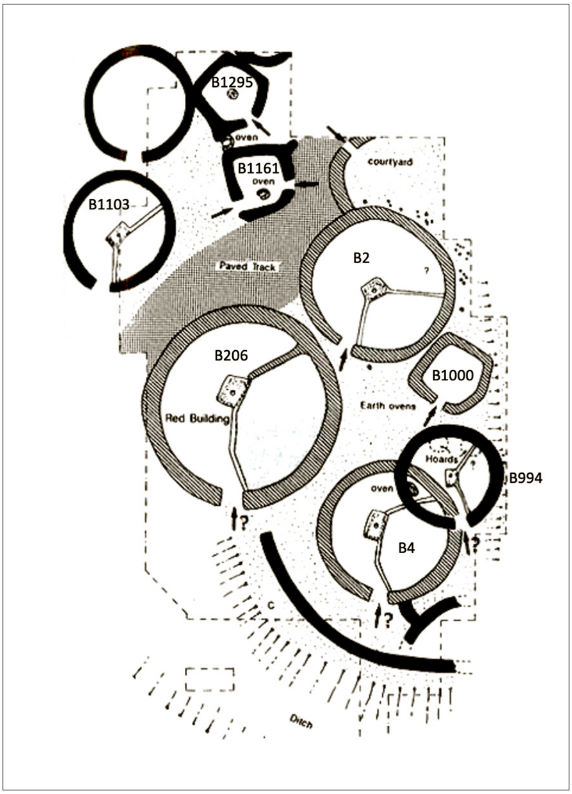

Figure 3.7 Plan of Kissonerga-Mosphilia indicating the doorways of buildings B1161, 1195, 1103, 1000, 206, 4, 2. © Peltenburg 1998, 245

were likely placed according to two main access routes and passageways: one in the southern portion of the complex, which connects building-units SA I, SA II, SA III, SA VIII with the domestic quarter of the settlement; one in the northern section of the complex, which connects building-units SA VI and SA V and open and semi-open spaces WA I, WA III, WA IV, WA VII, WA VIII to one of the possible access points to the settlement. Exceptions to this layout are due to the restructuring of buildings between the earlier and the later occupation phase, especially in the case of open areas turned into roofed structures (e.g. Building-Unit SA IIa-IIb). The divergent trend identified at the Workshop Complex in Erimi-*LtP* is indicative of different spatial organisation patterns between household spaces and communal working areas – such as those emerging over the course of Middle Bronze Age Cyprus and characterising most of the settlements constructed and/or transformed and occupied during this period, e.g. Erimi-*LtP*, Ambelikou-*Aletri*, Kissonerga-*Skalia*. The Workshop Complex at Erimi was conceived and constructed as a communal project responding to supra-household planning and organisation. Instead, domestic areas of Prehistoric Bronze Age settlements do not appear to have been regulated by a preconceived spatial layout, e.g. Marki-*Alonia* and Sotira-*Kaminodhia*; although some of these domestic structures were constructed taking into consideration internal routes, passageways and open courtyards, hence appearing spatially more organised, e.g. Alambra-Area A.

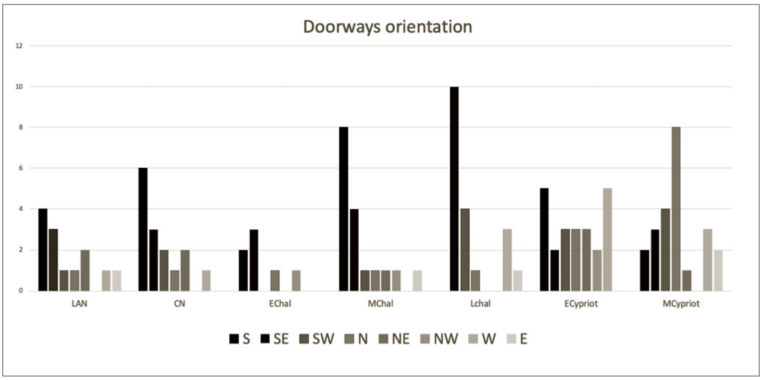

Figure 3.8 Bar chart showing doorways orientation in prehistoric Cypriot context. Numbers were calculated taking into consideration two main settlements for each recorded period: Khirokitia and Cape Andreas Kastros (LAN); Sotira-Teppes and Ayios Epitkitos – Vrysi (CN), Kissonerga-Myloutkia and Kalvassos-Ayous (EChal); Kissonerga-Mosphilia, Lemba-Lakkous (MChalc); Kissonerga-Mosphilia, Lemba-Lakkous (LChalc); Marki-Alonia-Phase E, Sotira-Kaminoudhia (EC); Alambra, Erimi-LtP (MC)

The number of doorways in a built structure also contributes to giving significant indications of socio-cultural practices and can inform on the filters applied to control or limit access to a building. Prehistoric Cypriot dwellings are generally equipped with one entranceway. The presence of two or more doorways is rare, and it occurs when there is a change in the use and orientation of the building. In this case, one of the accesses is blocked and a new one is opened in the structure. Limiting the number of entrances had practical advantages: it contributes to maintaining a good temperature and level of humidity within the building (Philokyprou et al. 2017) and to controlling the movement of people entering and exiting from the structure (Fisher 2009a). The need to enclose and control the space of the building is also suggested by doorways width. This represents an important factor to assess the level of interaction and social representation in any building. According to analyses conducted by Fisher, public-inclusive contexts are characterised by wider doorways than the private-exclusive ones (2007, tabs 8.2, 8.3; 2009a, tab. 2). As indicated in table 3.1, the average width of doorways in prehistoric buildings of Cyprus is c. 0.60-1.0 m **[tab. 3.1]**. Access width looks proportional to the elaboration of the doorway itself. Wider doorways are typically characterised by a higher architectonic elaboration, including the presence of constructed thresholds and pivot stones. On the contrary, narrower entranceways are represented by a simple gap in the wall. The occurrence of architectural elements – thresholds *in primis* – which embellish and mark the entranceway of a building, represents an important indicator of the need to increase privacy and control (Lang 1985). In buildings where entranceways were constituted of a simple gap in the wall, as in most Neolithic and Chalcolithic buildings, the transition from the outdoors to the indoors possibly was more fluid, allowing people to enter the structure with no particular restriction and limitation. In this regard, it is interesting to note that the most significant buildings within a settlement were generally equipped with more elaborated entrance systems. An emblematic case is represented by Building 3 – the so-called 'Pithos House' –, the most significant building of period 4 at Kissonerga-*Mosphilia* (Peltenburg et al. 1998a, 36-51, 249-58). This is one of the largest Late Chalcolithic buildings and it is characterised by a well-preserved entrance of 1.20 m in width, equipped with a stone-paved threshold and a socketed stone. The doorjambs (one not preserved) were built of roughly squared limestone blocks. A doorstep and a group of socketed stones were placed close to the east doorjamb. The occurrence of such architectural elements not only improved the aesthetic characteristic of the structure, but also constituted an important functional means to enclose the structure, secure the products within, and symbolically mark the building's importance and significance (Fisher 2009a).

Elevation changes and steps have also a key role in regulating passage and admittance within buildings, as they require people who traverse them to adjust their movement (Lang 1985). Stepped thresholds have been identified at Neolithic Sotira-*Teppes* (e.g. House 39) **[fig. 3.9]** and Chalcolithic Kissonerga-*Mosphilia* (B1), as well as in Prehistoric Bronze Age structures, notably at Sotira-*Khaminoudhia* and Erimi-*LtP*. At Khaminoudhia, in particular, the limestone monoliths used as thresholds in Units 6 (Area A) and 25 (Area C) were placed higher than the floor and the bedrock level (threshold 29 of Unit 25 rises c. 27 cm above the bedrock; Swiny, Rapp, Herscher 2003, 40) as "high sills" (Frankel, Webb 2006a, 11) **[fig. 3.10]**. While a possible explanation for this unusual threshold placement is that their raising position was intended to block and protect the building interior from flooding and rainwater, it is further possible that the elevation change of these thresholds was aimed at reinforcing the awareness in the transition, hence possibly amplifying the significance of the act of entering and the importance of the building itself (Lang 1985).

Figure 3.9 Stepped entrance of House 39 at Sotira-Teppes. Note the elevation change between the house floor level and the outdoor level. © Dikaios 1961

Figure 3.10 Monolithic threshold at Sotira-Kaminoudhia, Unit 25, Area C. Courtesy of S. Swiny; © Author

Thresholds may be identified as central elements of doorways (Unwin 2007, 33-5), as they tangibly mark the transition between spaces and the different ideological significance of these, such as indoor and outdoor, private and public, clean and dirt (Lang 1985, 206). Thresholds in prehistoric Cypriot contexts have important value in the archaeological reconstruction of the past built environment, because they validate the assumption that wooden doors were enclosing the doorway space of a building, especially when pivot holes are preserved. At Marki-*Alonia* many of the pivot stones identified and recovered show striations around the circular hollow left by swinging doors (Frankel, Webb 2006a, 11) **[fig. 3.11]**.

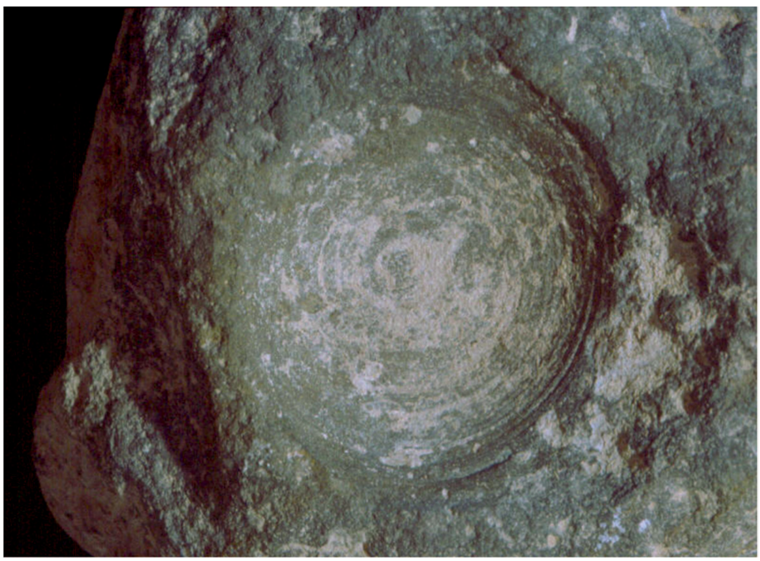

Figure 3.11 Detail of the concentric striation left by door pivot; pivot stone S890 from Marki-Alonia. © J. Webb

While stone thresholds have been used at many settlements since the Neolithic period **[tab. 3.1]**, the level of architectural elaboration of monolithic limestone thresholds attested at two Prehistoric Bronze Age settlements – Sotira-*Kaminoudhia* and Erimi-*LtP* – needs a particular mention. At Marki-*Alonia* (Frankel, Webb 1996, 58; 2006a, 11), Alambra-*Mouttes* (Coleman et al. 1996, 27-8, pl. 5c) and Alambra-*Asproyi* (Gjerstad 1926, 22) doorways were marked by more simple pivot stones and stone thresholds made of re-adapted limestone blocks and demolished walls. On the contrary, worked monolithic limestone blocks were in use at Sotira-*Kaminoudhia*. Here, blocks were selected from the surrounding calcareous environment and successively dressed in order to have a roughly rectangular face. In some cases, blocks were worked to be equipped with hollows for door pivots (Unit 6-Ft. 95; Unit 25-Ft. 29) **[fig. 3.10]**. At Erimi-*LtP*, monolithic limestone thresholds were diffusely used in the settlement. These monolithic blocks were carved from the calcareous bedrock floor according to specific sizes. The large dimension of these blocks indicates that they were procured from the local environment using an apt and specific carving process **[box 3.1]**. The more elaborate examples of these monolithic thresholds have been placed in the Workshop Complex; these blocks were carved in order to have a step toward the inner space of the building, holes to allocate c. 5 cm posts for doorjambs and a pivot hollow of c. 15-20 cm **[fig. 3.12b]**. The high-level dressing technique of Erimi-*LtP* thresholds, which, in some cases, are introduced by small entry areas (Building-Units SA IV, and SA XII) **[fig. 3.12c]** makes them more similar to Late Bronze Age ashlar prototypes. According to stratigraphic evidence, most of these monolithic thresholds were introduced at the settlement during the later occupation phase, at the end of the Middle Bronze Age period (Bombardieri 2017, 16, 34-8), and, considering the time and workforce necessary for conducting carving and dressing operations at a large scale, they can be identified as the product of specialised or semi-specialised work. Fisher (2009b, 194) argues that aesthetic elaboration is a means to attribute symbolic values to thresholds, reinforcing the ideological significance of these liminal architectural forms (Blanton 1994, 117; Sanders 1990, 61; Rapoport 1990); this appears to be the case at Erimi-*LtP*, where monolithic limestone blocks were selected and skilfully quarried and dressed in order to form a single homogenous block with the related abutting walls. If we consider the aesthetic characteristics of these monolithic blocks, including their large sizes, their worked and flattened faces, their level of architectural elaboration, as well as their social significance – notably the fact that they are the product of a supra-household effort made by experienced workers to mark the architectonic renovation of the built space of the Workshop Complex –, we can indicate them as 'pseudo-ashlar' and possibly argue that they represent one of the first stages in the process of experimentation which prelude the appearance of an ashlar architecture at the beginning of Late Bronze Age Cyprus. This idea is here further developed **[box 3.1]**.

Box 3.1
What Is ‘Ashlar’? A Brief Consideration Concerning the Initial Appearance of Ashlar Stone in Cyprus

Ashlar blocks are stones that unequivocally went through a process of human intervention; thus, the efforts, skills and tools necessarily associated with ashlar are its distinctive markers (Kreimerman, Devolder 2020). The term ‘ashlar’ can designate both the single stone element worked and dressed in order to have flat surfaces, and the masonry made of such components.

According to Hult (1983), Bronze Age ashlar stone refers to wrought blocks which approach the ideal of a rectangular visible face when the blocks are in place. The faces that are not visible are mostly unwrought and the size of the carved blocks varies considerably from 0.50 × 0.30 × 0.30 m to 1.0-5.0 × 0.50-1.50 × 0.50 × 0.90 m (Philokyprou 2011). Among scholars, the term ‘true ashlar’ is used to refer to stone components of which all faces, with the exception of the back one, are worked; while the term ‘pseudo-ashlar’ is used to designate blocks of which only one or two faces are worked, generally the front face and the top and the bottom ones (Gineouvès, Martin 1985, 56; Kreimerman, Devolder 2020, 3).

The regular shape of ashlar components is often generated by the procurement of quadrangular rough blocks through channel extraction. This technique is attested in the entire Eastern Mediterranean, including Egypt, Crete and Cyprus, and consists in digging narrow channels around elements of the desired shape and dimensions (cf. Shaw 2009; Wright 1992; 1985). The extraction activity is governed mostly by the presence of a good cleavage plane (Philokyprou 2011; see also Fisher 2020), and the removal of the block is finalised through the use of wooden or metal wedges, which facilitate the extraction of the block from the surface (Wright 1992, 362-3). The blocks are quarried with a specific size or module in mind; this practice is necessary to regularise the carving process and to exploit the carved stone as much as possible in the construction activity (Amadio, Chelazzi 2014; Wright 1992, 362-3).

The production of ashlar did not take place simultaneously in the ancient Mediterranean region. Social and economic factors, including the organisation of labour and workforce, played a fundamental role in enabling technological innovations, including those related to carving and dressing stones. In Egypt and Syria, the production of ashlar is dated back to the third millennium BC (Hult 1983); in Anatolia and mainland Greece, the technique spread during the Middle and Late Bronze Age (Philokyprou 2011); in Crete, it emerged over the course of the Early Minoan period (Shaw 1983; 2009). Analyses conducted by Philokyprou (1998; 2011) indicate that the first use of ashlar in Cyprus is dated back to the Late Bronze Age (c. 1700-1050 BC), with the appearance of the first public and administrative building complexes.

It is important to stress that the ashlar architecture – like other socio-cultural and technological innovations – did not abruptly appear on the island, nor can it be considered a process favoured exclusively by foreign involvement, as argued by earlier studies (cf. Catling 1973, 170; Hult 1983, 89; 1992, 75). Instead, it should be considered as the result of a process of experimentation, which gradually emerged in the transformative social environment of Prehistoric Bronze Age Cyprus (Webb, Knapp 2021; Peltenburg 2008; Manning, de Mita 1997). The socio-economic dynamics which characterise this period, and the progressive transformations in the organisation of labour that are progressively evident over the course of Middle Bronze Age Cyprus – including the emergence of supra-household forms of production (as indicated by the appearance of productive areas separated from the domestic ones; see Webb, Knapp 2021; Bombardieri 2013) – enabled the necessary workforce for demanding and time-consuming operations, such as quarrying and dressing activities.

The more evident outcome of this transformative socio-economic and architectonic environment is represented by the Middle Bronze Age III/Late Bronze Age I fortresses. One of the most representative examples of the earlier use of ashlar in Cyprus is constituted by the fort of Korovia-*Nitovikla*; here ashlar blocks and masonry are attested in the construction of the structures' foundation, mostly for the plinths with drafted margins that supported the monolithic doorjambs of the main gate (Hult 1983, 15, 81; Astrom 1972; Wright 1992, 410-11). I argue that this process of increasing experimentation in carving and dressing stones gradually developed during the Early and Middle Bronze Age Cyprus, as represented by the monolithic threshold prototypes identified at Sotira-*Kaminoudhia* and Erimi-*LtP*. For the production of these stone features, a compact calcareous material was skilfully sourced among the local resources available; the blocks were then carved according to a specific size, dressed and further worked in order to have additional elements, such as hollows for setting jambs, door pivots and steps. In particular, the monolithic thresholds produced at Middle Bronze Age Erimi-*LtP* represent examples of high-level skills in carving and dressing limestone blocks (see § 3.1.2.1). The monoliths recovered and analysed at the settlement have variable sizes, ranging from 1 to 1.50 m in length, and show three out of six faces worked **[fig. 3.1.2]**.

The thresholds of Sotira and Erimi demonstrate how technological know-how was progressively established in local communities of the island through the sharing of technical knowledge and ongoing experimentation. This progressive specialisation was supported by the emergence of supra-household forms of labour, mostly attested during Middle Bronze Age Cyprus.

Returning to the initial definition of ashlar as "a stone that went through human intervention, the appearance of which is imbued with symbolic meaning and is a corollary to wholesale changes in socio-cultural and economic settings" (Kreimerman, Devolder 2020), we can conclude that the construction of these monolithic thresholds at Sotira and Erimi symbolises control over human, material and technological resources. Their occurrence certainly contributed to enhancing the aesthetical appearance of the structures, providing a sense of permanence not only for the buildings where these thresholds were placed but possibly also for the social structure that endorsed their construction (see Fisher 2020).

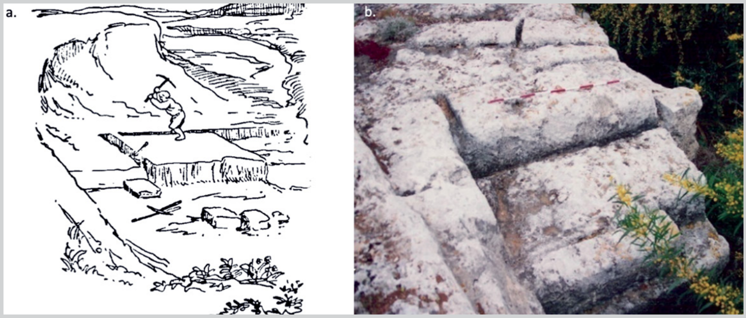

Figure 3.1.1 Carving technique in Cyprus: a) Sketch representing the channel extraction technique, adopted to carve the ashlar blocks (Wright 1992, 214); b) Ancient quarry site in Cyprus (Philokyprou 2011, fig. 8)

Figure 3.1.2 Examples of monolithic limestone thresholds at Erimi-*LtP* (Building-Units SA I, IV, XII, X respectively; © L. Bombardieri)

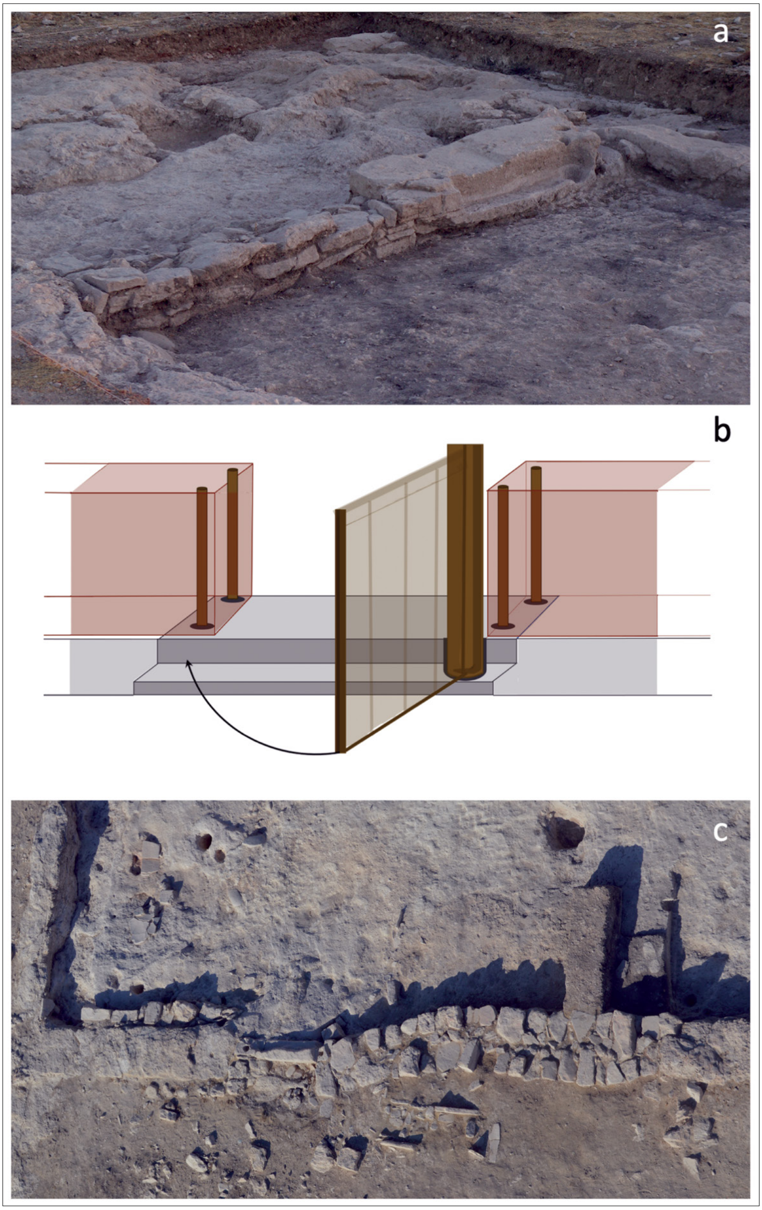

Figure 3.12 Thresholds at Erimi-LtP: a) monolithic threshold of building-unit SA I, Workshop Complex; b) hypothesized reconstruction of the monolithic threshold with the door system. © Author; c) threshold of building-unit SA IV with a small entry, Workshop Area. © L. Bombardieri

Table 3.1 Doorways types and width at the main prehistoric Cypriot settlements considered in the analysis

Period	Sites	Doorway types	Doorway width (m)
LAN	Khirokitia-*Vouni*	Stone threshold	0.50-0.80
		Threshold made of mudbricks	1.0 c.
CN	Sotira-*Teppes*	Simple gap	0.70
		Threshold covered with stones	1.0-1.30
		Threshold with steps	1.0-1.30
EChal	Kissonerga-*Mylouthkia*	Simple gap and earth threshold	0.60 c.
MChal/LChal	Kissonerga-*Mosphilia*	Basal course stones as doorjambs + steps/ramp + pivot stone	0.50-0.70 c.
		Carefully constructed stone doorjambs + stone-paved threshold + pivot stone	1.0 or more
		Large stones as doorjambs (thicker walls) + earth/stone threshold + pivot stone	0.60-1.0
		Simple gap into the wall	0.50 c.
	Lemba-*Lakkous*	Carefully constructed stone doorjambs + stone-paved threshold + pivot stone	1.0 or more
		Large stones as doorjambs (thicker walls) + earth/stone threshold + pivot stone	0.60-1.0
		Simple gap into the wall	0.50 c.
	Souskiou-*Laona*	Large stones as doorjambs (thicker walls) + earth threshold + pivot stone + fragmented querns as door stopper	0.60-1.0 c.
	Chlorakas-*Palloures*	N.A. (only one door identified by date)	-
EC	Marki-*Alonia*	Flat slabs as threshold	0.60-1.10
		Pivot stone	0.60-1.10
	Sotira-*Kaminoudhia*	Monolithic thresholds equipped with pivot holes	1.0-1.32
		Simple gap into the wall	0.80-1.0
MC	Alambra-*Mouttes*	Simple gap into the wall	0.60-1.30
		Stone threshold with step	0.60-1.30
	Erimi-*LtP*	Simple monolith threshold	0.60-0.80
		Monolith threshold with carved pivot hole, and post-hole for jambs	0.80-1.0
		Monolith threshold with carved pivot hole and step and post-holes for jambs	1.0-1.50
	Ambelikou-*Aletri*	Simple gap into the wall + pivot stone (?)	1.0 c.

3.2.2.2 Fire Installations

Fireplaces, hearths and ovens have an important role in structuring social life, as they contribute to creating places of belongings, transforming landscape and materials, and marking continuity or discontinuity in social roles and relations (Matthews 2016, 107-8; Bloch 2010). The socio-cultural power of hearths is that they embrace a series of events, from daily activities to ritualised ceremonies; by doing so they aggregate people and play a key part in shaping social identities and memories (Dunbar, Gowlett 2014). The social importance of hearths is well indicated by the fact that, in many cultures, they materialise the 'home' itself (e.g. in the Italian lexicon the word *focolare*, 'hearth', is also a synonym for home; see Balossi Restelli 2015). Another important aspect is the potential of hearths and fire as a source of energy in technological choices, as they provide enhancement in processing and production and therefore play a fundamental part in economic improvement (Sillar, Tite 2000; Clark, Yusoff 2014). In order to consider the functional and social aspects of these structures, fire installations are analysed by examination of their availability, construction, shape, size and location within prehistoric Cypriot buildings. This will provide data to preliminarily establish variation over time that may reflect the varying requirements of households and communities.

Installations identified in prehistoric Cypriot contexts comprise fire features without built structures; for example, areas of reddened and burnt materials (fire spots), and built structures, such as fire pits **[fig. 3.13b]**, circular/rectangular hearths and ovens **[tab. 3.2]**. Among these, hearths are the most attested fire installation type in prehistoric Cypriot settlements. Hearths were generally made of a clay or mud-plaster kerb, circular in shape, less frequently rectangular. Other prototypes include the so-called 'campfire' hearth (Miles et al. 1998, 42), consisting of a ring of fieldstones containing an area of burnt and ashy material; however, only a limited number of this hearth type has been identified in prehistoric Cypriot settlements, e.g. at Neolithic Sotira-*Teppes* (House 20) and Chalcolithic Kissonerga-*Mosphilia* (B 200 ?), Lemba-*Lakkous* (F1 and F2 in B3 1A) and Souskiou-*Laona* (Units 541, 733, 1086, 1132, 1179, 1181, 1184) **[figs 3.13, 3.14a]**. A more elaborated hearth is represented by the Middle/Late Chalcolithic circular platform hearth with a central fire bowl. This type occurs so frequently in Chalcolithic dwellings that could almost be regarded as the hallmark of the architecture of this period (Peltenburg et al. 1998b). These platform hearths were made of a stone bed set in mud and inserted into a shallow circular pit; the mud was shaped according to the hearth profile (Thomas 2005a, 51-2) **[fig. 3.14c]**.

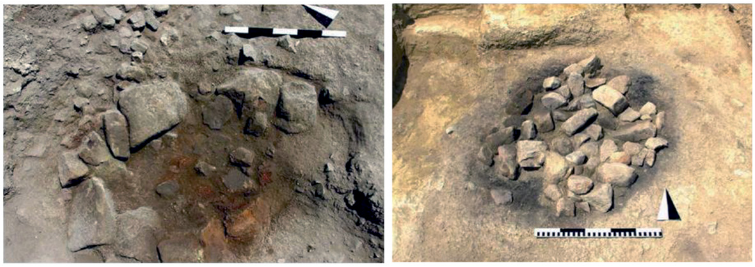

Figure 3.13 Firepits 1030 and 1032 from Souskiou-Laona. © D. Bolger. 1030 has been also interpreted as an oven because of the coarse ceramics inside, which could be interpreted as the remnants of a domed cover, cf. a tanour, as also identified at Kissonerga-Mosphilia (Miles et al. 1998)

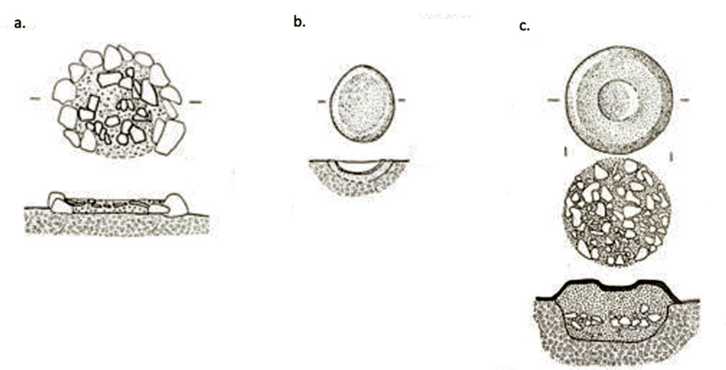

Figure 3.14 Hearth types as identified at Kissonerga-Mosphilia (Peltenburg et al. 1998) and Lemba-Lakkous (Peltenburg et al. 1995): a) campfire hearth; b) pit-hearth; c) circular platform hearth (Peltenburg et al. 1998)

Other hearth prototypes include those identified in Early Bronze Age Marki-*Alonia* and Alambra-*Mouttes*, consisting of rectangular or semi-circular structures set into wall benches (Frankel, Webb 2006a, 14-17; Coleman et al. 1996, 86) **[fig. 3.15: a-d]**, and the rectangular double hearths identified at Sotira-*Kaminoudhia* (Swiny, Rapp, Herscher 2003, 62-3) and Erimi-*LtP* (Bombardieri 2017, 18) **[fig. 3.16]**. Ovens appear instead in the architectural record of prehistoric Cypriot villages relatively later if compared to the other fire installation types, and generally remained little attested in the prehistoric buildings of the island compared to hearths. According to Fuchs-Khakhar (2021), this 'preference' is due to individual choices and collective tradition, as well as ways of cooking and processing food. I also advocate that this preference could be possibly explained by the fact that hearths have multifunctional properties, as they allowed people to simultaneously cook, heat and light up the building space. The first recognised oven structures are at Middle Chalcolithic Kissonerga-*Mosphilia*, the so-called 'tanour' (Miles et al. 1998, 43). The structure consists of an above-ground horseshoe-shaped bank of stone and cobbles set in mud, surrounding an oval-shaped pit, sometimes ceramic-lined (Miles et al. 1998, 43). Similar structures have been also identified at the coeval settlement of Souskiou-*Laona* (Peltenburg 2019, 77-8). Ovens of various shapes are attested at Early Bronze Age Marki-*Alonia*. They are characterised by a narrow, rectangular or elliptical chamber enclosed by vertical slabs of fire-hardened mudbricks on one side, and the building wall on the other (Frankel, Webb 2006a, 21-2) **[fig. 3.15: e-f]**. Modified jug necks were used as chimney flue or as support for cooking pots within these oven structures at Marki-*Alonia* (e.g. Oven 1389 in IX-5; cf. Frankel, Webb 2006a, 21-2); comparative evidence has been identified within hearth Ft. 4 at Middle Bronze Age Erimi-*LtP* (Bombardieri 2017, 18) **[fig. 3.16]**.

Hearths and ovens in prehistoric Cypriot contexts preferentially have a circular shape; this may be possibly explained as a functional choice, considering that most of these structures were moulded with clay or mud-plaster **[fig. 3.15]**. Rectangular prototypes, which are attested both in Chalcolithic (the rectangular platform hearth at Kissonerga-*Mosphilia*) and Prehistoric Bronze Age contexts, were more frequently made of mudbricks, as attested at Marki-*Alonia*, or in limestone slabs bound with mortar, like at Sotira-*Kaminoudhia* and Erimi-*LtP* **[fig. 3.16]**. The possibility that different shapes may correspond to different functions of the fire installations is supported by ethnographic analyses, which demonstrate that there is a correlation between shape and function of fire installation, and that different installations may utilise different fuel types to conserve resources and exploit particular fuel properties (cf. Meyer 2003, 292-3). At Marki-*Alonia*, the identification of hobs associated with semi-circular and circular hearths – especially when hobs are fixed and embedded in the hearth structure (e.g. XII-2 P2450, LXVII-6 P16880, XCIII-7 P14200) – can sustain the idea that these circular structures were primarily used for cooking and processing activities; however, considering the multi-functional character of buildings and features during prehistoric Cyprus, it is possible that these circular hearths also served other functions, primarily heating. It is not possible to confirm the association between the shapes and functions of fire installation on the basis of the archaeological data available for prehistoric Cypriot contexts, as most of these structures were re-used and cleared before the final dismissal, and fuel residues and organic substances that could support their functional identification are on most occasions no longer preserved.

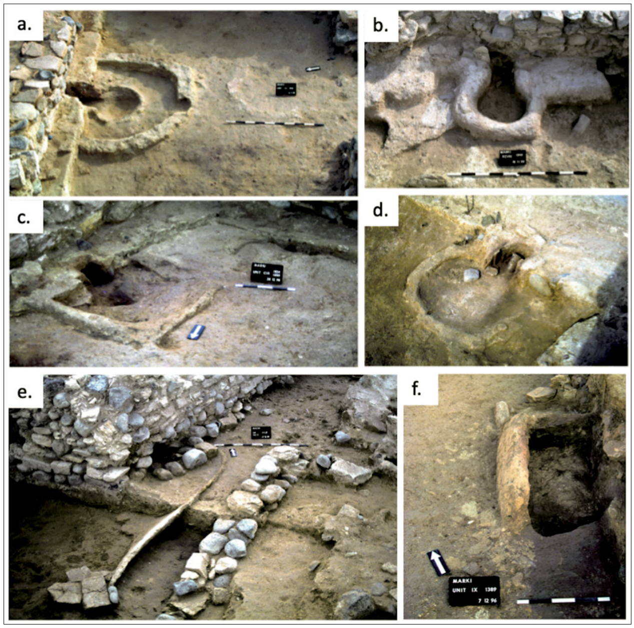

Figure 3.15 Semicircular and rectangular hearths (a-d) and ovens (e-f) at Early Bronze Age Marki-Alonia. © J. Webb

Figure 3.16 Rectangular double chamber hearth made of limestone slabs at Middle Bronze Age Erimi-LtP (Ft. 4). In the firing chamber, a modified jug neck has been recovered. In the bottom right picture, the modified jug after cleaning and restoration. © L. Bombardieri

Even if it is rarely attested, there are cases when two different fire installation types coexist within the same building: e.g. at Chalcolithic Kissonerga-*Mosphilia* (B1547, B3), Chlorakas-*Palloures* (B1), and Early Bronze Age Alambra-*Mouttes* (Buildings II-III) and Middle Bronze Age Erimi-*LtP* (SA I-Area A). While in most of these instances the assumption is that the two structures pertain to two different phases of occupation and use of the building, the presence at Early Bronze Age Marki-*Alonia* of two coeval hearths within different units of one compound (e.g. Compounds 7, 8, 9 Phase E; Frankel, Webb 2006b) may support the hypothesis that two different structures may have served different functions. This is certainly the case when a hearth and an oven coexist in the same compound, as in Compound 6. No temporal variations can be identified in the use of specific hearths and oven shapes, since both circular and rectangular structures were simultaneously used in many contexts **[tab. 3.2]**. Shapes are likely to depend on spatial arrangements and organisation within buildings, but also on individual/communal preferences. This assumption has been also stressed by Swiny (Swiny, Rapp, Herscher 2003, 62-3) when comparing the different hearth shapes at Early Bronze Age Sotira-*Kaminoudhia*, where a prevalence of rectangular structures occurs, and Marki-Alonia, where oval and circular/semi-circular hearths/ovens are the most attested.

In his examination of hearth structures at the Anatolian Neolithic site of Catalhoyuk, Hodder (2014) identifies a trend towards rectangular hearths during the course of the Neolithic. He argues that rectangular structures may indicate more autonomous households because angular structures would compartmentalise the room more than circular ones, thus providing the space for different activities and enabling more household independence (Fuchs-Khakhar 2021). This trend cannot be identified in prehistoric contexts in Cyprus. The analysis conducted indicates that rectangular structures did not become more progressively attested over time. It is possible to assume that the layout of the rooms in each building determined the shape of the installation, also according to the individual/communal needs of their users.

The varied size of fire installations can also give significant indications of social organisation and reflect the adaptation to the requirement of larger or smaller groups within communities. As reported in table 3.2, more elaborated hearth types are generally the larger (e.g. the Chalcolithic platform hearths, the Early Bronze Age double chamber hearths) **[tab. 3.2]**. Larger hearths necessarily require a wider space so as not to impede movements within the building/room; therefore, their presence can possibly suggest a supra-household use as it has been proposed for Oven 1275 in Building 1161 at Kissonerga-*Mosphilia* (Peltenburg et al. 1998b, 29) and possibly for the hearth within Building 1 at Chlorakas-*Palloures*. The central platform of this hearth (Unit 11) is one of the largest encountered in prehistoric contexts of the island and measures 2.50 meters in diameter and is equipped with two non-coeval fire bowls (Düring et al. 2019, 467-90); their occurrence may suggest that the hearth was in use for a longer period (Düring et al. 2019; Schubert 2018, 90). In Prehistoric Bronze Age Marki-*Alonia* and Alambra-*Mouttes*, it has been noted that the largest oven/hearths structures are those installed outside. At Marki-*Alonia* Oven 2468, XCIX-11, Phase B, is formed by a curving hard clay wall, about 350 cm long, with a wide opening to the north side **[fig. 3.15e]**. The oven was placed in an open yard and it was associated with a freestanding dedicated storeroom (XCIII; Frankel, Webb 2006a, 313). At Alambra-*Mouttes*, a 1.50 m wide hearth was constructed in the open space 22, made of flat stones set vertically against the face of the building wall (Coleman et al. 1996, 100-1). Another exterior structure was identified at Alambra, in the Gjerstad's house. The structure is described as a 'bake oven' measuring 3.40 × 2.70 m. However, because the proposed fire installation is preserved only as a burnt clay and ashy area in the plan (Gjerstad 1926, 25), its reconstruction is open to doubt (see Coleman et al. 1996, 28 fn. 3; see also Crewe, Hill 2012, 214). The placement of larger fire structures in courtyard spaces may possibly suggest that the use of these features was not limited to the household members, but also to adjoining and concomitant households. This hypothesis may be in line with the reconstruction proposed by Frankel and Webb (2006a, 311-13), according to which the restricted number of inhabitants within the settlements during earlier occupation phases at Marki favoured mechanisms of sharing and cooperation. The idea that larger fire installations may have served supra-household needs is further reinforced by the fact that ovens and hearths in the productive, communal areas at Middle Bronze Age Kissonerga-*Skalia* (Ft. 33 measuring 2.50 × 1.90 m; Crewe, Hill 2012) and Erimi-*LtP* (Ft. 42 measuring 1.26 m in diameter; Ft. 4 measuring 1.60 × 0.60 m) show larger size than structures observed and identified within domestic buildings in other coeval centres.

As far as the location of fire installations is concerned, the general trend is that fireplaces were situated in the dirty area of a building, and possible changes to this pattern could suggest diverse uses and functions of that installation/area/building, as suggested by Peltenburg for hearths dislocated in off-centred areas at Kissonerga-*Mosphilia* (Peltenburg et al. 1998a, 238: e.g. hearths located in Segment 1 or 2 instead of more standard Segment 4). During the earlier prehistoric period until the Late Chalcolithic, fire installations were preferentially located in the centre of the building (for a detailed examination of Middle and Late Chalcolithic contexts, see Schubert 2018). Instead, a different setting emerged during the Prehistoric Bronze Age Cyprus, where hearths and ovens were constructed on one side of the building room, abutting one of the structure walls. Considering this, it is possible to suggest that the location of fire installation was dictated not only by individual/household choice but also by building shape and spatial organisation. In the circular buildings of Neolithic and Chalcolithic Cyprus, the central location of fire installations permitted warming and light of the building's inner space without constituting an obstacle to the circulation and movement within the structure (Fuchs-Khakhar 2019; 2021). In the passage to rectangular architecture, while the location of fire installations changed, one factor of continuity is represented by the fact that hearths and ovens were always located according to entranceways placement – never too far from the building openings –, in order to allow good ventilation, thus reducing smoke and improving life-quality (Kedar, Barkai 2019; Ozbasaran 1998).

A further interesting data is represented by the limited occurrence of hearths and ovens outdoors. This evidence appears particularly relevant considering the mild climatic condition of Cyprus. Fire pits and fire spots were more frequently constructed and placed in open areas both in the Neolithic and Chalcolithic contexts analysed, e.g. Khirokitia (Dikaios 1953, 158-60; Le Brun 1989, 51-3), Cape Andreas-*Kastro*s (Le Brun 1981, 24-6), Lemba-*Lakkous* (Peltenburg et al. 1985, 226-8); Souskiou-*Laona* (Peltenburg, Bolger, Crewe 2019, 85-6) **[tab. 3.2]**. On the contrary, hearts and ovens seldom occur in courtyards. Rare exceptions are constituted by Cape Andreas-*Kastro*s (Le Brun 1981, 24-6), Kissonerga-*Mosphilia* (Peltenburg et al. 1998, 42-3) and Prehistoric Bronze Age Marki-*Alonia* (Frankel, Webb 2006a, 14-22), Alambra-*Mouttes* (Coleman et al. 1996, 28-9). On the basis of the current evidence available, it is difficult to confirm if the limited occurrence of outdoor hearths and ovens – especially in Prehistoric Bronze Age contexts – can reflect dynamics of increasing privatisation of household furniture and space, or if it can be related to practical reasons, including the fact that indoor areas were possibly cooler than outdoor spaces during the hot season (Kedar, Barkai 2019).

Equally interesting is the complete absence of hearths in some of the domestic structures of prehistoric settlements analysed. While this appears to be much less frequent in the earlier Neolithic and Chalcolithic settlements, the absence of hearths within domestic buildings in Prehistoric Bronze Age – as primarily attested at Marki-*Alonia* (e.g. Compound 7, Phases E-F; Compounds 14, 20), Sotira-*Kaminoudhia* (e.g. Units 1 and 3 Area A; Units 9, 10, 17 Area C) and Erimi-*LtP* (only one hearth structure has been identified within domestic buildings investigated to date) – can be possibly associated to mechanisms of cooperation and facilities sharing among households or to diverse use and functions of buildings within settlements (Kuijt 2018; Kay 2020; on this topic, see also § 4.2.1). This evidence tells us something more important: buildings and households were not necessarily autonomous and stable across time. Instead, arrangements that linked people, practices and places were in a continuous process of transformation.

While a detailed description of spatial and temporal variations of individual buildings within prehistoric contexts investigated is beyond the scope of this section, two brief examples are presented here to describe the process of fire installation construction and decommissioning, and their socio-cultural significance. Hearths and oven construction and placement generally follow the many phases of construction, transformation and re-use of building structures. This is because, as mentioned before, fire installations have to respond to the practical needs of the house and the household. The best example of the process of constant change is represented by the case of Early Bronze Age Marki-*Alonia*, where the numerous transformations in the configuration of building compounds produced also a reconfiguration of hearths placements. This is well exemplified by Compound 6, one of the structures with a long occupation history, and characterised by major structural changes over the course of its use **[fig. 3.17]**. Here, hearths were dismissed and re-built adopting different shapes and sizes according to functional and architectonical reasons. Changes in the building structure and in the position of the hearth were possibly indicative of changing requirements, for example, an increasing need for space to accommodate larger household groups. However, there are also cases where the position of the fireplaces was preserved and – where possible – maintained in the process of building transformation, e.g. in Compound 7. Constructing fire installations in the same location as the previous phase ensured less commitment in the new construction, but also guaranteed a successful layout deriving from previously-gained experience (Fuchs-Khakhar 2019). Düring (2014), taking up Bourdieu's observations (1971; 1977) argues that functional explanations are not adequate to account for building – and hearth – continuity through time, and that building arrangement are never completely due to technical and practical imperatives. Also, according to Hodder and Cessford (2004), the continuity in hearth placement can also reflect household/community memories embedded in daily practices. It is important to stress that these memories stem from daily practices and functional reasons; also, household requirements were most presumably of primary concern and taken into equal account with ideological motivations and symbolic significance in the process of heart building and re-building. At Middle Bronze Age Erimi-*LtP*, for instance, in one of the more prominent buildings of the productive Workshop Complex – SA I –, continuity in the location of fire installation was maintained for practical reasons (vicinity to the main entrance and possibly good ventilation, easy access to the fire structure, easy movement within the building), but an enhancement in its symbolic and social value was expressed with a transformation of the heart shape and materials. The circular hearth made of mud plaster, pertaining to the earlier phase of occupation of the building (Ft. 42) was dismissed and substituted by a new rectangular hearth made of limestone slabs and lime mortar (Ft. 4) **[fig. 3.18]**. The renovation of this hearth accompanied a general renovation of the building itself, whose internal space was completely re-organised and enclosed with a monolithic threshold. The case of Erimi-*LtP* well demonstrates that continuity in hearth location could be explained both by the functional need of maintaining an efficient arrangement within the building as well as by ideological motivations, driven by the role and significance of the hearth and the building for the community production.

Finally, it is important to underline the role of hearths in the emerging supra-household production areas at Middle Bronze Age Kissonerga-*Skalia*, Erimi-*LtP* and Ambelikou-*Aletri*. From a technological point of view, the fire installations retrieved within communal productive areas at these three settlements show no differentiation from the fire structures within coeval domestic contexts. Area B at Kissonera-*Skalia* is characterised by the construction of an oval-shaped fire installation (Ft. 33) measuring 2.50 × 1.90 m with an opening of 0.80 m on its southern side (Crewe, Hill 2012, 214-20). Stratigraphic analysis suggested that Ft. 33 originally had a domed roof, while its floor was characterised by ten irregular and oval-shaped pits of 10-50 cm in diameter containing rich ashy materials, but no charcoal. Archaeological interpretation, based also on comparative examples, indicated Ft. 33 as a communal rather than household structure, associated with beer production processes (Crewe, Hill 2012, 218-20). Hearth structures Ft. 4 and Ft. 42 in the communal Workshop Complex at Erimi-*LtP*, already described in the present section, were associated with processing activities connected to the production of natural dyes (Muti 2021, 197-202; Bombardieri, Muti 2018). Fire installations at Ambelikou-*Aletri* constitute significant examples of structures constructed and used for metallurgy and pottery production at the supra-household level. The circular hearth 't' in Area 1 Unit II, of 1.25 m in diameter, was presumably used for melting and casting activities (Webb, Frankel 2013b, 34-40). Instead, the rectangular structure in Area 2 has been identified as a pottery kiln. The installation, which was located in one corner of a partially covered yard, has a maximum internal base measurement of 2.50 × 2.80 m (c. 7 m^2) and appears to have had the capacity to fire the 39 cutaway-mouthed jugs scattered and retrieved on the floor of the structure (Webb, Frankel 2013b, 213-17). These fire installations certainly had a central role in the production of commodities for communal activities. They contributed to sustaining social relations by providing opportunities for socio-economic development within communities, but we can further suggest that they also played a key part in the dynamics of social division, by promoting activities which potentially encouraged the differential accumulation of wealth among household groups (see Falconer, Fall 2014; Spielmann 2002).

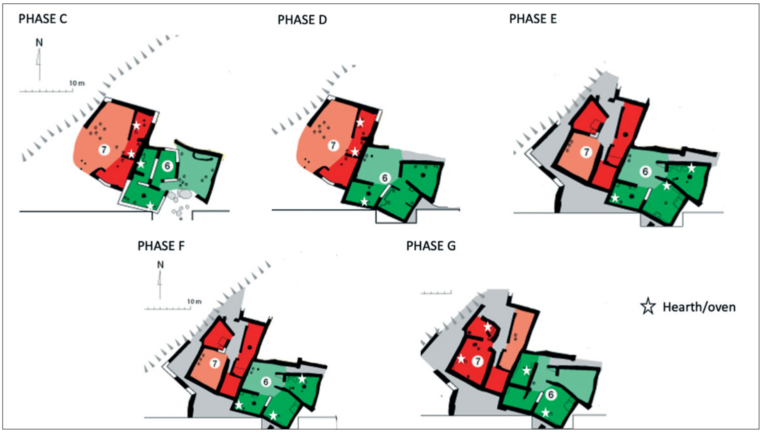

Figure 3.17 Compounds 6 and 7 at Early Bronze Age Marki-Alonia with the changing placement of hearths and ovens. © Frankel, Webb 2006a

Figure 3.18 Building-unit SA I-Workshop Area at Middle Bronze Age Erimi-LtP, with the placement of the two hearth structures, Ft 42 pertaining to the earlier Phase B and Ft 4 pertaining to the later Phase A

Table 3.2 Fire installation types, shape, size, location in the main prehistoric Cypriot settlements considered in this analysis

Period	Sites	Total no.	Type	Shape	Size (m)	Location
LAN	Khirokitia-*Vouni*	4	Fire spot	Rectangular/ irregular	0.80 × 0.50	Within buildings, in a central position; or in an external area
		7	Fire pit (?)	Oval, circular	0.45 dia.	Building exterior
		38	Platform hearth	Rectangular	0.55-1.0 × 0.35-0.70	Within buildings in a central position; or on one side of the structure
	Cape Andreas-*Kastros*	1	Fire pit	Circular	0.50 dia.	Building exterior
		2	Fire spot/ Campfire hearth	Circular	0.50 dia.	Building exterior
		3	Hearth	Circular	0.60-0.80 dia.	Building exterior
CN	Sotira-*Teppes* (Phase 3)	8	Fire spot	Circular	0.40-0.90	Within buildings, close to the wall
		5	Fire pit	Circular	0.14-10.70	Within buildings, close to the wall
		13	Mud platform hearth	Circular	0.50-1.0	Within buildings; generally in a central position, but also on one side of the structure
		2	Stone hearth	Circular	-	-
EChal	Kissonerga-*Mylouthkia*	4	Fire pit	Circular	1.0 c. dia.	Within pits and buildings
		1	Hearths	Circular	0.70	Within buildings

Period	Sites	Total no.	Type	Shape	Size (m)	Location
MChal/ LChal	Kissonerga-*Mosphilia*	1	Fire spot bordered with stones (so-called 'campfire' hearth)	Circular	1.0 c. dia.	Within buildings, on one side of the structure
		1	Fire pit	Circular	1.0 c. dia.	Within buildings, on one side of the structure
		25	Platform hearth	Circular/ Rectangular	0.70-1.30 c. dia. 1.50-2.20 long × 1.10-12 wide	Within buildings, usually in the centre
		4	Oven (so-called 'tanour')	Oval	1.0 × 0.30 c.	Either outside or inside buildings (usually in the centre)
	Lemba-*Lakkous*	5	Fire spot bordered with stones (so-called 'campfire' hearth)	Circular	1.0 c. dia.	Either outside or inside buildings
		15	Platform hearth		0.70-1.30 c. dia. 1.50-2.20 long × 1.10-12 wide	Within buildings, usually in the centre
	Souskiou-*Laona*	73	Fire spot (so-called 'campfire' hearth) and fireplaces	Circular	-	In unenclosed areas
		1	Fire pit	Circular	-	Within buildings
		10	Platform hearth	Circular	0.75-1.0 dia.	Within buildings, usually in the centre
		2	Oven (so-called 'tanour')	Oval/circular	-	Within buildings, on one side of the structure

Period	Sites	Total no.	Type	Shape	Size (m)	Location
EC	Marki-*Alonia*	37	Hearth (hobs can be embedded in the structure)	Circular/ Rectangular	0.70-1.0 c. dia. 0.50-0.90 × 0.70-0.50 c.	Within buildings, set against interior walls
		6	Oven	Rectangular or oval	0.80 × 0.50 c.	Generally within buildings, set against interior walls (especially from Phase D onwards), but also in the courtyard space
		78 (40 are frag.)	Hob	Different shapes	Different size	Associated to hearth structures
	Sotira-*Kaminoudhia*	2	Fire spot	Circular	0.25 dia.	On one side of the building
		4	Mud-plaster double hearths	Rectangular	0.40-0.60 wide	Against the building wall
		3	Single chamber hearth	Rectangular	0.32-0.70 wide	Against the building wall
MC	Alambra-*Mouttes*	6	Fire spot	Circular	-	Within buildings
		3	Hearth	Circular/ Rectangular	1.0 c. dia.	Within buildings and in courtyard (only in one case: Space 22)
	Erimi-*LtP*	1	Fire spot (associated with a mailing bin)	Circular	-	On one side of the building
		1	Hearth	Circular	1.0 c. dia.	On one side of the building
		2	Oven	Rectangular	1.0 × 0.50 c.	Against the building wall
	Kissonerga-*Skalia*	1	Oven (?)	Oval/irregular	2.5 × 1.90	
	Ambelikou-*Aletri*	1	Hearth	Circular	1.25	Against the building wall
		1	Kiln	Rectangular	2.50 × 2.80 (72 c.)	On the corner of a partially covered yard

3.3 Spatial Convention Within Buildings: Floor, Surfaces and Occupation Deposits

Ethnoarchaeological and geoarchaeological approaches to household studies[3] have demonstrated that living surfaces, including walls, floors and occupation deposits are powerful media through which social relationships are expressed and materialised (De Marrais, Castillo, Earle 1996; Hendon 2004, 276) and embody socio-cultural and political settings, boundary and events within buildings and the life histories of the individuals, household and communities associated with them (La Motta, Schiffer 1999; Matthews 2005a).

Both floor and wall surfaces were used in the past as symbolic means to express socio-cultural identities and roles. As Clarke argued, wall plasters represented "white canvas" that communities/individuals used to express themselves through the use of colours (2012, 177-8). The contrast of the white colour of plaster and red/brown of ochre, umber or terra rossa used as pigments for painting – as attested for example at Khirokitia (Hadjisavvas 2007, 49) and in Building 206 in the Ceremonial Area at Kissonerga-*Mosphilia* (Peltenburg 1998a, 244) – possibly acted as a mnemonic device for evoking remembrances, creating memories and reproducing identities (Jones 2004, 174). Despite the great importance of walls in the study of social practices and relationships, the evidence pertaining to wall plastering and painting in prehistoric Cypriot contexts is limited due to their scant preservation as *in situ* preservation. For this reason, arguments and discussions in this section are focused on floor surfaces.

Examinations of floors and occupation deposits have been largely conducted by research in household archaeology.[4] In these analyses, floors have been used as evidence for detecting and interpreting the spatial conventions through which economic and social relationships were represented and negotiated during the life history of communities and settlements (Matthews, French 2005, 325; Parker Pearson, Richards 1994). However, the study of floors and living surfaces has been always challenging, due to the difficulty of recognising floor surfaces in archaeological contexts, and mostly in prehistoric sites, where earthen and clay floors are the more attested and are of more difficult identification. As pointed out by Thomas (2005a, 48), earthen floors, especially when degraded and eroded, are difficult to differentiate from the underlying constructional or natural deposits upon which a floor is founded. Before the recognition of the crucial importance of formation processes in the creation and transforma-

3 Cf. Boivin 2000; Karkanas, Efstratiou 2009; Kramer 1979; Matthews 2005b; Matthews et al. 1997; Milek 2012; Schiffer 1987.

4 Cf. Boivin 2000; La Motta, Schiffer 1999; Milek 2012; Shahack-Gross 2011.

tion of the archaeological record (Schiffer 1987), one of the limitations of the studies conducted on living surfaces within buildings was given by the fact that the attention was mostly on the analysis of materials and installations, with little consideration to the depositional history of the structure analysed and to post-depositional processes, which acted and impacted on the archaeological context as transforming agents. A big contribution in support of the study of floors and living surfaces has been given by geoarchaeological examination, through the application of microstratigraphic and micromorphological analyses, as high-resolution techniques to enhance stratigraphic observations conducted in the field. Micromorphology, in fact, enables the analysis of site formation processes and traces of activities by permitting simultaneous analysis of a diverse range of mineral, bioarchaeological and artefactual remains, and their predepositional and depositional pathways. Furthermore, micromorphology contributes to the analysis of taphonomy and post-depositional alterations, enabling a more robust reconstruction of site formation processes and settlement micro-history, improving archaeological examinations and interpretations.[5]

5 E.g. Ge et al. 1993; Karkanas, Goldberg 2007; Karkanas, Efstratiou 2009; Macphail et al. 1997; Matthews 2005a; 2005b; Milek, French 2007.

Box 3.2
Micromorphology: A High-Resolution Application in Support of Archaeological Analysis and Reconstruction

Archaeological contexts are the product of actions by anthropogenic and natural agents. For this reason, examinations should include not only the architectural (buildings, walls, floors etc.) and artefactual (pottery, flints, stone tools etc.) features that constitute them, but also the deposits which accumulated within it by a combination of processes. Archaeological deposits, in fact, are fundamental units of a site (Schiffer 1987) and as such should be treated as having equal importance with the 'traditional items' of the archaeological record (architecture, pottery, lithics etc.). As Karkanas and Goldberg stated, "the deposit is the encoded relationship between sediments and the contained artefacts that provide the meaning of the archaeological record" (2018, 4-6). The deposit is a three-dimensional segment of a site (Schiffer 1987), which comprises physical components of both natural and anthropic origin. Each of these components can contribute to informing on cultural behaviour and settlement history (Matthews et al. 1997, 282); hence the importance of deposits in the study of archaeological contexts. The integration of artefact analysis and deposits examination enables archaeologists to reconstruct more thoroughly the processes which contributed to the formation and transformation of the archaeological record. However, it is important to consider that the archaeological record is formed by the combination of macroscopic and microscopic evidence; both of them are equally important in the examination of the archaeological contexts.

The recognition of the fundamental role of macro- and micro-evidence implies the exigence of developing a multi-proxy dataset with which to interpret and reconstruct the study context through the application of a methodological approach based on the dialogue between field practices and laboratory-based analyses. Among the micro-analytical techniques, micromorphology represents a valid and effective method of studying depositional sequences and micro-materials (Stoops 2003, 5).

Micromorphology is a branch of soil science concerned with the description, interpretation and measurement of components, features and fabrics in soils at a microscopic level (Bullock et al. 1985, 9). Micromorphology's principal contribution is that it enables simultaneous high-resolution analysis of the microscopic properties of sediments, artefactual and bioarchaeological remains, within their precise depositional and post-depositional contexts in occupation sequences, which are critical sources of socio-cultural and environmental information (Matthews 2005b, 356). Micromorphology enables the analysis of site formation processes and traces of activities by permitting simultaneous analysis of a diverse range of mineral, bioarchaeological and artefactual remains, and their pre-depositional, depositional and post-depositional pathways.

This technique involves the analysis of undisturbed soil samples by means of thin-sections under an optical polarising microscope. Thin-sections are microscope slides of resin-impregnated sediments, cut, mounted, ground and polished to 30 µm (microns = 1/1000 mm) (Bullock et al. 1985; Murphy 1986; Courty et al. 1989; Stoops 2003). Thin-sections allow us to observe material components (including aggregates, voids, mineral grains, anthropic inclusion, post-depositional features etc.) as they occur in their original setting (Bullock et al. 1985; Courty et al. 1989). This enables contextual interpretations of assemblages of diverse archaeological micro-remains, which would otherwise be disaggregated and studied as individual categories (Matthews 2005b; Matthews et al. 1997).
Despite these great potentials, micromorphology has also inherent limitations, mainly related to the fact that the sampling process is more frequently selective, and the sample size is relatively small, which can lead to misinterpretation of the study context (Matthews et al. 1997, 285; Koromila 2016, 47). Furthermore, the emphasis in the analysis is largely on extant visual attributes (Matthews et al. 1997, 285; McAnany, Hodder 2009). To overcome these limitations, the application of micromorphology should be incorporated into a well-integrated research programme, in order to compare micromorphological data with archaeological and stratigraphic analysis conducted in the field. The integration of higher resolution micromorphological analysis with macro-stratigraphic analysis in the field provides an efficient analytic tool to address some of the sampling limitations of micro-analyses, by linking the results with larger-scale field observations.

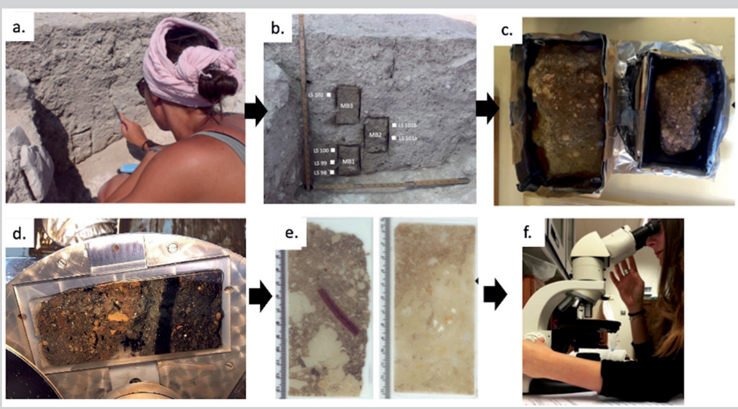

Figure 3.2.1 Procedure for thin-section making: a-b) Block extraction and documentation; c) Block impregnation; d-e) Slide cutting and lapping until reaching a thickness of 30 µm; f) Thin-section examination under a polarised microscope

In Cyprus, floors have been examined and recorded as one of the main features in the analysis of the architectural environment of prehistoric contexts.[6] However, only in more recent years attention has been given to floors as key evidence in the analysis of the household society of early communities on the island (Frankel, Webb 2012, 473-500; Webb 1995; Thomas 2005a). Geoarchaeological projects and examinations have been particularly important in this regard, as they have provided micro-data and multi-scalar reconstruction in support of the analysis of buildings as *loci* of social action and reproduction.[7]

A review of data resulting from macroscopic and microscopic analyses conducted on different prehistoric settlements of the island has provided evidence to examine the role of floors as indicators of spatial and social transformations **[tab. 3.3]**.

Period	Sites	Floor material and technique	Spatial variation of floor types	Spatial segmentation	Temporal variation of floor types
LAN	Khirokitia-*Vouni*	Earth floor, clay floor, lime plaster floor (?)	Consistency in floor types applied within buildings of the settlements	Interior buildings space was divided by walls and kerbs, not by distinct floor types	N.A.
	Cape Andreas-*Kastros*	Earth floor, clay floor	Consistency in floor types applied within buildings of the settlements	No evidence of spatial segmentation within buildings	N.A.
CN	Ayios Epiktitos-*Vrysi*	Earth floor, clay floor	Consistency in floor types applied within buildings of the settlements	Interior buildings space was divided by walls and kerbs, not by distinct floor types	N.A.
	Sotira-*Teppes*	Earth floor, clay floor	Consistency in floor types applied within buildings of the settlements	Interior buildings space was divided by walls and kerbs, not by distinct floor types	N.A.
EChal	Kissonerga-*Mylouthkia*	Earth floor, clay floor	N.A.	N.A.	N.A.

6 Cf. Peltenburg et al. 2000, 39-41; Peltenburg, Bolger, Crewe 2019, 76-90; Frankel, Webb 1996, 53-71; 2006a, 10-11; Swiny, Rapp, Herscher 2003, 54-5; Bombardieri et al. 2017, 14-16.

7 Dalton 2019; Mylona et al. 2017; Hourani 2003; Klinkenberg 2021; Amadio 2018.

Period	Sites	Floor material and technique	Spatial variation of floor types	Spatial segmentation	Temporal variation of floor types
MChal/LChal	Kissonerga-*Mosphilia*	Earth floors, clay floors, lime plaster floors, cobbles	Spatial variation in floor types applied within buildings	The application of diverse plaster floor types contributed to the segmentation of buildings interior space	Temporal variation in the use and function of buildings, but no micromorphological data available for floor sequences
	Lemba-*Lakkous*	Earth floors, clay floors, lime plaster floors, cobbles	Little spatial variation of floor types within buildings	N.A.	N.A.
	Souskiou-*Laona*	Earth floors, clay floors, lime plaster floors	Spatial variation in floor types applied within buildings	N.A.	Floors marked different episodes/phases of construction and use within buildings (B920)
	Chlorakas-*Palloures*	Earth floors, clay floors, lime plaster floors	Spatial variation in floor types applied within buildings. Use of diverse plaster types depending on individual choice and building function	N.A.	Floors marked different episodes/phases of construction and use within buildings (B12.13)
EC	Marki-*Alonia*	Clay and lime plaster (?)	Spatial variation in floor types can possibly be recognised in areas where floors are better preserved (e.g. the application of pebblecrete surface in open work areas)	N.A.	N.A.

Period	Sites	Floor material and technique	Spatial variation of floor types	Spatial segmentation	Temporal variation of floor types
EC	Sotira-*Kaminoudhia*	Lime plaster floor	General consistency in floor types applied within buildings despite limited preservation	N.A.	N.A.
MC	Alambra-*Mouttes*	N.A.	N.A.	N.A.	N.A.
	Erimi-*LtP*	Unfired plaster floor, fired lime plaster floor	Use of different floor plaster types depending on the function of the space on which the floor was laid	The application of diverse plaster floor types contributed to the segmentation of buildings interior space	Marked temporal variation in floor sequences within buildings
	Kissonerga-*Skalia*	Clay floor, lime plaster floor	Use of different floor plaster types depending on the function of the space on which the floor was laid (?)	N.A.	N.A.
	Politiko-*Troullia*	Clay floor, lime plaster floor	N.A.	N.A.	N.A.
	Ambelikou-*Aletri*	No evidence of prepared floors	N.A.	N.A.	N.A.

Plaster floors, other than revealing sensible indications of uses of materials and technological advancement, are highly representative of socio-cultural conventions within settlements and communities. In Neolithic buildings there is a general consistency in the production and use of floor types. Petrographic analysis conducted by Philokyprou at Khirokitia indicates that floors were made of a mixture of calcite and clay, with little variation among samples analysed, possibly indicating interaction among household groups and circulation of technological knowledge among members of these early prehistoric communities (Philokyprou 2012a). A different trend appears to characterise the Chalcolithic Cypriot communities. Thomas (1996; 2005) divides the floors identified at Chalcolithic Kissonerga-*Mylouthkia* and *Mosphilia*, Lemba-*Lakkous* and Erimi-*Pamboula* into five distinct types, according to the material and techniques applied (Type 1: earth floor; Type 2: clay floor; Type 3: lime plaster; Type 4: cement-like floor on a cobbled foundation; Type 5: cobbled surface), suggesting an increasing use of lime plaster floors and a general improvement in techniques applied in the construction of building surfaces over the course of Middle Chalcolithic; this is also confirmed by petrographic and chemical analyses conducted on few samples from Kissonerga-*Mosphilia* (Philokyprou 2012b, 186-7). Micromorphological analysis conducted at Middle/Late Chalcolithic Chlorakas-*Palloures* confirms that there is considerable variation in the manner of application of floors layers within buildings of the settlement, and also indicates that diverse materials were selected and mixed to produce different floor surfaces according to cultural conventions, availability of materials and labour and desired characteristics, such as aesthetic and physical strength (Klinkenberg 2021, 45-6; see also Schubert 2018, tabs 9, 11). Variations in floor materials and construction practices can be noted among Chalcolithic settlements and communities. While at Kissonerga-*Mospihilia* a large variety of floors was in use during the Middle Chalcolithic, at Lemba-*Lakkous* clay floors remained the most common type; lime plaster floors were limited to the larger buildings of the settlement, notably Buildings 1, 10, 21 (Schubert 2018, 76).

The partial preservation of floor surfaces – due to episodes of progressive reconstruction and erosion – in Early Bronze Age contexts, such as Marki-*Alonia* and Sotira-*Kaminoudhia*, does not enable a discussion on the social roles of floors and their functional distinction. However, evidence collected at Middle Bronze Age Erimi-*LtP* may contribute to shedding light on social practices within Prehistoric Bronze Age communities on the island. The general consistency in type, thickness and frequency of floors and deposits identified across many buildings of the Workshop Complex through micromorphological analysis (Amadio 2018), suggests consistency in uses and concept of space **[fig. 3.19]**. Furthermore, the consistency of floor frequency and thickness may also be related to episodes of construction, which may reflect annual seasonal activities as well as lifecycle changes (Boivin 2000). Micromorphological observations also revealed that the majority of floors within building-units of the Workshop Complex were maintained extremely clean; evidence which suggests the presence of common standard in daily activities, possibly associated with the role and representation of these buildings, but also to sense of hygiene and purity, which was used to create community cohesion and social well-being (Clarke 2012). Similar maintenance practices appear to have been applied on floors at other Early/Middle Bronze Age Cypriot settlements. At Sotira-*Kaminoudhia* and Alambra-*Mouttes*, occupation debris was not allowed to accumulate on domestic floors when they were in use (Coleman 1985, 134; Coleman et al. 1996, 331; Swiny, Rapp, Herscher

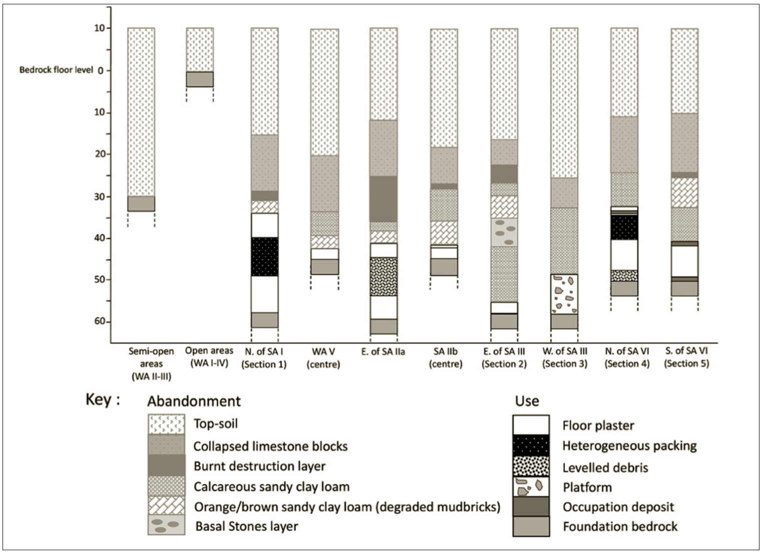

Figure 3.19 Microstratigraphic columns illustrating the type, thickness and frequency of floors and occupation deposits within building-units and open areas at Middle Bronze Age Erimi

2003, 30-1). At Marki-*Alonia*, occupation residues were either removed and deposited in communal middens or recycled and re-used as building fill in later occupation levels (Webb 1995, 65).

It is further important to underline that floor plastering episodes represented important markers of buildings renovation during the life history of many Cypriot prehistoric buildings analysed. In his detailed analysis of Chalcolithic structures, Thomas (1996; 2005a) indicates a progressive enhancement of building interiors over the course of Middle Chalcolithic with the introduction of lime plaster floors. The best examples are documented in Buildings 2, 4 and 206 at Kissonerga-*Mosphilia*, where the laying of a white, finer lime plaster surface over a foundation of cobbles marks the architectonical and possibly functional renovation of these structures. Similar instances are documented at Middle/Late Chalcolithic Souskiou-*Laona* and Chlorakas-*Palloures*. Micromorphological analysis conducted in Building 920 at Souskiou-*Laona* revealed a floor sequence characterised by the occurrence of a white, lime plaster layer constructed on top of an earlier phase of occupation marked by the application and use of a brownish-grey clay plaster floor. The observed change in floor materials and techniques within this sequence suggested a shift in the function of Building 920 over the course of its life history (Dalton 2019, 91-5). Similarly, at Chlorakas-*Palloures*, the introduction of lime plaster floors within Buildings 12 and 13 during the structure's occupation phases, indicated a possible change of use of these two dwellings (Klinkenberg 2021). Considering that lime plaster floors are mostly associated with 'clean' activities within domestic structures (e.g. sleeping, eating and receiving guests), it is possible, according to Klinkenberg (2021, 46), that Buildings 12 and 13 were turned into domestic spaces just in a later phase, while they were possibly associated with craft activities during the earlier occupation. At Middle Bronze Age Erimi-*LtP*, instances of the introduction of layers of new types of plaster have been documented in correspondence with changes in activities within buildings, from dirtier to cleaner, from productive to representative, and with enhancement in the spatial and architectural elaboration of built spaces. These examples include the introduction of prepared floors plaster in open work areas during the latest occupation of the settlement (Middle Cypriot II-III); this marked the functional and ideological renovation of these open areas in the Workshop Complex, with the creation of small annexes as new reception spaces (e.g. Units WA V, SA IIb). Similarly, the introduction of thin layers of pure lime, built on a constructional packing, within the large Building-Unit SA VI during its latest phase of use and occupation corresponded with and signed the architectonic renovation of this structure and its shift from productive to representative functions **[fig. 3.20]**. This spatial transformation during the latest phase of Middle Bronze Age Cyprus is suggested to be a possible consequence of the increasing need for the Erimi community to create spaces of interaction and exchange at the supra-community level (Amadio 2018).

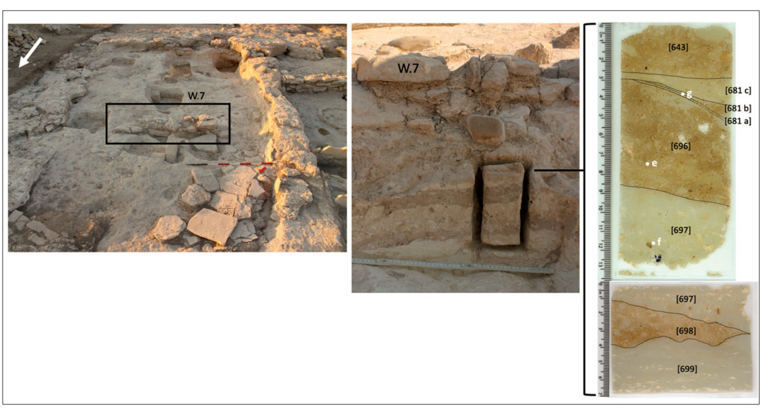

Figure 3.20 Floor sequences identified at Middle Bronze Age Erimi, within building-unit SA VI in the Workshop Complex. © Amadio 2018

Finally, it is important to stress that the use of different floor types contributed to the compartmentalisation of the building's interior space. In contrast to Neolithic circular structures, where the segmentation of space was realised through the introduction of walls and pillars – as indicated in § 3.1 and exemplified by the case of Khirokitia –, during the Middle Chalcolithic the space of buildings was also divided internally through the application of different floor types. At Kissonerga-*Mosphilia*, evidence is attested of the use of diverse floor types according to the function and role of the space where the surface was applied. In one of the most significant buildings of the Ceremonial Area, B206, a lime plaster floor was applied to the left, opposite to the entrance, where clean activities were conducted, and the central lime plaster platform, where the hearth was located, was painted red, presumably to mark the socio-cultural importance of this structure **[fig. 3.21]**.

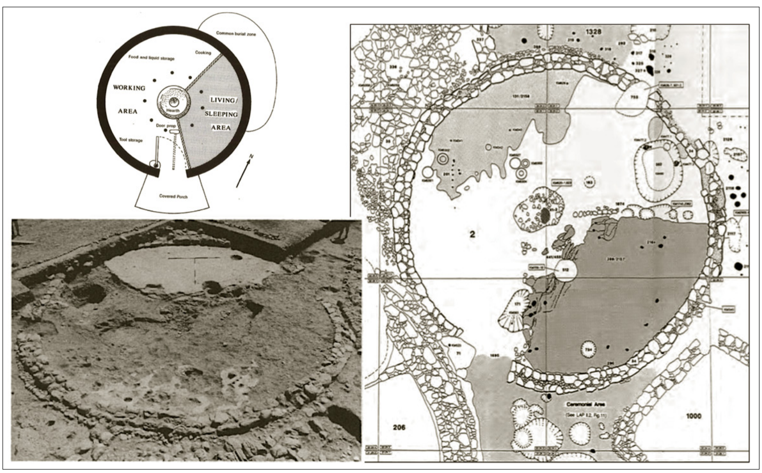

Figure 3.21 Middle-Late Chalcolithic building model with internal spatial division, as exemplified by Building 2 (excavation picture and plan) at Kissonerga-Mosphilia (Peltenburg 1991, fig. 5; 1998c, 239; Peltenburg and Thomas 1996, figs. 19-20). In the black and white picture, it is evident the different applications of floor surfaces within the building space. The white lime-plaster floor at the right of the entrance is much better preserved than other surfaces within the building

A more complex division of space progressively emerged also within rectangular buildings of Prehistoric Bronze Age Cyprus (see Bolger 2003, 31-7). This is evident at the Early Cypriot Marki-*Alonia*, where the compartmentalisation of buildings' interior space is argued to have improved the opportunity for privacy for household members, and possibly marked the division of gender-related tasks within buildings (Webb 2009; Frankel, Webb 2009; 2012; Bolger 2003, 37-41). Investigated floor sequences at Middle Bronze Age Erimi-*LtP* suggested that buildings of the Workshop Complex were organised as large single spaces in the earlier occupation phase (Phase B; Middle Cypriot I). However, an enhancement towards the segmentation of the built space may be identified in the passage to the latest occupation phase of the settlement. The introduction of distinct plaster types together with the construction of small partition walls enhanced the definition of distinct buildings rooms, as well exemplified by the Building-Unit SA I, which over the course of Middle Cypriot II-III was re-arranged in three distinct rooms by the application of diverse plaster floors **[fig. 3.22]**. This trend towards the segmentation of buildings space may be interpreted as a manifestation of the functional specialisation of spaces within buildings, which firstly appeared in some peculiar structures of Middle Chalcolithic settlements (e.g. B206 at *Mosphilia*), and became progressively more evident in Prehistoric Bronze Age buildings, in particular within structures of the new-established formal workshops engaged in the supra-household production of goods during Middle Bronze Age Cyprus.

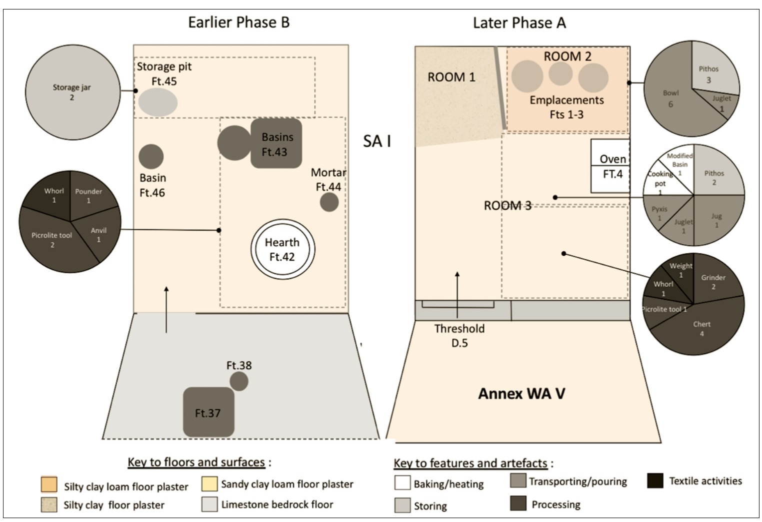

Figure 3.22 Variation in the spatial organisation within building-unit SA I and annex WA V, Middle Bronze Age Erimi, between the earlier Phase B and the later Phase A. The pie chart shows the distribution and occurrence of artefacts according to the functions they are related to (after Amadio 2018)