MAUD DEVOLDER

THE PROTOPALATIAL STATE OF THE WESTERN MAGAZINES OF THE PALACE AT MALIA (CRETE)

Summary. *The evidence available for the reconstruction of the Western Magazines of the early palace at Malia is here re-evaluated. Despite the importance given to external social agents stationed in the Protopalatial town outside the palace, our knowledge of the main building during this key period in the history of the settlement remains limited. The shallow stratigraphy associated with its construction and heavy rebuilding during the succeeding Neopalatial period obstruct a clear vision of the architectural phasing of the early building, but a new analysis focusing on building materials and techniques suggests the presence of a series of Protopalatial storage rooms behind the main façade on the West Court, later integrated into the Neopalatial building. This architectural analysis allows a better assessment of the role of the central building of Middle Bronze Age Malia.*

INTRODUCTION

The traditional view that the emergence of palaces in Middle Minoan (MM) IB (1925/1900–1875/1850 BC) Crete was a trigger for major technological innovations, and that the buildings were the seat of political and religious powers, controlling long-distance trade and concentrating production, storage and administration, has been challenged in recent years and this for several reasons (Evans 1921; Renfrew 1972; Halstead 1981; 1988; Halstead and O'Shea 1982; van Effenterre 1983; Cherry 1984; Branigan 1987; Dabney 1995; Pelon 2002). Activities that were once thought to be the prerogatives of the palatial administration have been identified outside their walls and specific innovations, especially architectural ones, which were assumed to have had a palatial origin, were first traced in high-profile buildings outside the palaces. Arguments have also been brought forward to deny Near Eastern comparisons within Evans' palace-temple model, further questioning the traditional interpretation of the Minoan palaces (e.g. Farnoux 1993; 1995; Driessen 2002; Hamilakis 2002; Schoep 2002a; 2006a; 2010; Papadopoulos 2005). This revision has gone as far as questioning the conventional labelling of these complexes, favouring the less loaded term – though surely a less colourful one – of 'court-centered' or 'court building' rather than 'palace', although in this paper the conventional term is maintained for descriptive reasons (Driessen 2002; Schoep 2004, esp. 245; 2006a, 38–9; Schoep and Tomkins 2012, 11).

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Despite the clarity of its plan and minor modern alterations in comparison with other sites, the palace of Malia has surprisingly occupied a somewhat marginal position in the discussion on the genesis, infrastructure and function of the Minoan palaces (Schoep and Tomkins 2012, esp. 8–11). Instead, emphasis has been placed on the somewhat faceless Maliot elites, residing in large residential complexes outside the palace and involved in activities that traditionally were seen as the prerogatives of the palace during the Protopalatial period (1925/1900–1750/1700 BC). The dynamic creativity of these elites, especially when it comes to technological and architectural innovations, has been stressed (Schoep 2002a; 2002b, 9–21; 2004; 2006b; 2007, 224–36; 2009, 30–1; 2010, 232, 236; 2012, 418–19). Such a view of Protopalatial society at Malia partly stems from a lack of detailed knowledge about the earliest phases of the palace building itself, a condition further exacerbated by the recent unfortunate death of two of the scholars in charge of the publication of the edifice. This has delayed the publication of detailed information on the architectural phasing and the correlation of architectural, ceramic and stratigraphic data.[1] The evolution of the layout of the building throughout its history is generally acknowledged, but the internal organization of the complex during its early phases remains largely unknown. Major rebuilding operations during the Neopalatial period (1750/1700–1470/1460 BC) have destroyed much of the evidence pertaining to the Protopalatial state. By making use of first-hand architectural observations, final and preliminary excavation reports, and unpublished records, the present paper attempts to remedy this situation for a part of the West Wing (Rooms I 1–7, II 1a, 2–3, III 5, 6 and 8, VI 11–12, VII 7–9, 13 and 14, and VIII 1–3 on Fig. 1).

ARIADNE'S THREAD: LAYERED RUBBLE MASONRY

Ammoudha, sidheropetra and terra rossa constitute the 'local triad' of materials used in the walls of the palace at Malia (van Effenterre 1980, 99–101; Guest-Papamanoli 1989; Dimou *et al*. 2000; Müller *et al*. 2003, 456–69; Müller-Celka and Dalongeville 2009). Ammoudha is an abbreviation of ammoudhopetra, literally meaning 'sand'-'stone', and is formed by eolian dunes consolidated by calcareous material. It was extracted from nearby quarries that are located all along the Maliot shore. Sidheropetra, or ironstone, is a hard limestone ranging in colour from light grey to dark grey-blue, which forms the core of the geological substrate of the plain. Its decomposition results in a fertile red soil, the terra rossa. The red and dark-grey hues of local building materials, along with its unimpressive location in a plain, have sometimes been perceived as a mark of rusticity of the Malia palace (Graham 1962, 46), an impression which is all the more evident when compared with the palaces of Knossos and Phaistos, located on hilltops and visible from a distance because of the use of locally available high-quality stones such as gypsum and poros limestone (Shaw 2009, 18, 21–3; Chlouveraki 2002). On most other levels, however, such as scale, architectural organization and the presence of distinctive features of Minoan elaborate architecture, the Neopalatial palace at Malia compares well with its neighbours (Shaw 2009, 157–66; Driessen 1989–90, 5). In this paper, I use the presence of the red soil which has been incorporated in the masonry to track specific walls that date to an earlier phase in the central portion of the West Wing of the complex, the so-called Western Magazines.

1 For a descriptive account of the ruin see Pelon 1980, preliminary reports on the soundings in Pelon 1965, 1966, 1967, 1969, 1984, 1986b, 1989, 1991, 1993b, and studies based on the same soundings, Olivier *et?al*. 1979, 4–7, Pelon 1982, 165–90, 1983, 679–703, 1993a, 523–46, and Pelon and Hue 1992, 1–36.

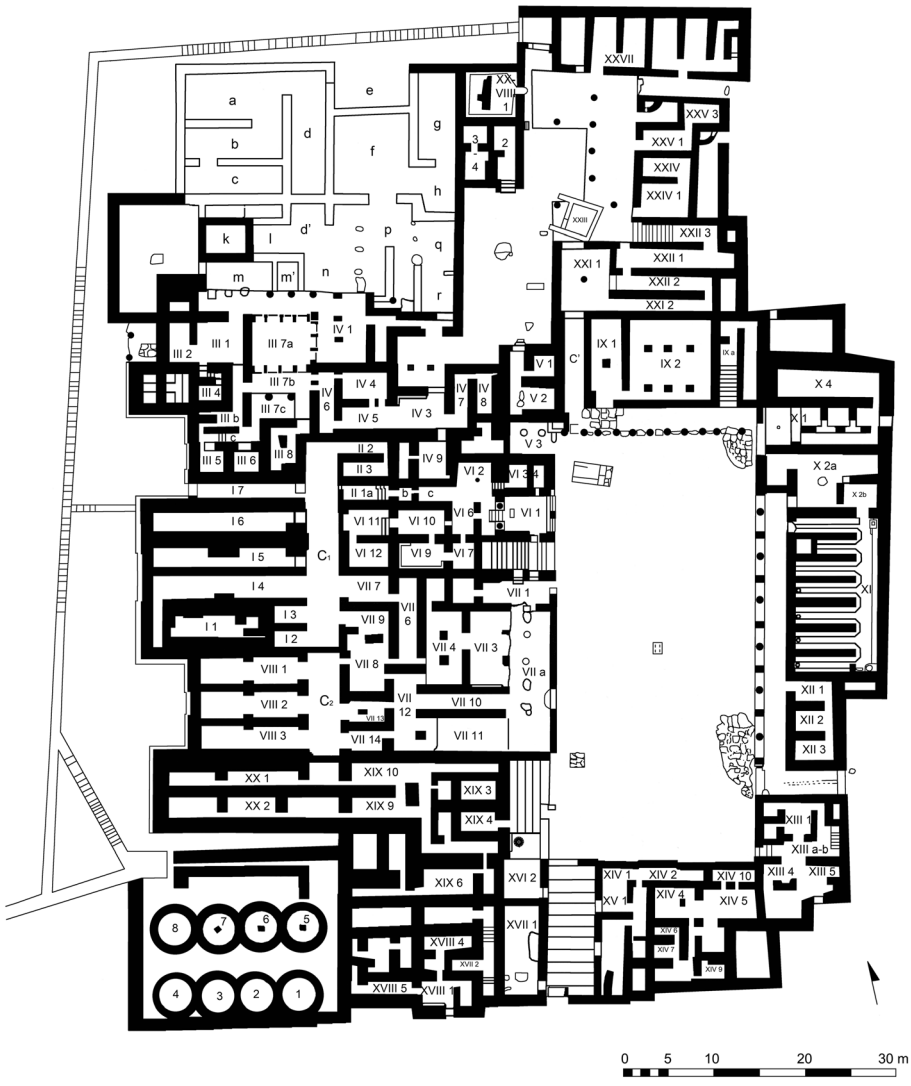

Figure 1
Plan of the last phase of the palace at Malia, based on E. Andersen (Pelon 1980, plan 28) and M. Schmid and N. Rigopoulos (Pelon 2002, pl. XXXII). The room numbering system is based on the Areas (upper case Roman numerals), which are clusters of rooms (lower case Arabic numerals).

When describing the walls of the palace, the French excavators mention the presence of a specific kind of irregular rubble masonry which they call the *blocage* technique, a random mixture of red clay and sidheropetra rubble (Charbonneaux 1928, 345; Joly 1928, 328). The casual position of the fieldstones and the large quantity of clay used made these walls stand out from both the more common coursed rubble masonry and the ashlar walls (McEnroe 1990; Shaw 2009, 56–7, figs. 68–9). In most cases, the irregular character of the walls was hidden behind a thick coating of clay plaster and one or more layers of a finer coating, which may even be lime plaster in some cases. The

irregular rubble masonry mainly formed the walls of the upper floors, although in some cases it is also found in ground-floor walls where the masonry is set on top of a stone plinth. Hence, the walls of the north-eastern area of the palace are often made of this kind of irregular rubble masonry, and scattered throughout the building other examples can still be identified, allowing the suggestion that at one time a significant part of the complex was constructed using this technique (Pelon 1980, pls. 108.3, 109.3, 119.1, 138.2). Dowel holes in cut ammoudha blocks in several walls of the palace possibly indicate the existence of an elevation in irregular rubble masonry originally set into a wooden framework.[2]

In the central portion of the West Wing of the building, however, a somewhat different type of irregular rubble masonry can be identified. This is especially clear in the area around the long corridor, C, which, at some point during its history, was blocked by a mudbrick wall and divided into a northern (C1) and a southern (C2) part (Figs. 2 and 3). Several of the walls to the west of Corridor C are built with rubble masonry set in clearly identifiable layers. The practice is best illustrated by the south wall of room I 4 (Figs. 4 and 5). Above a course of sidheropetra boulders or large fieldstones (0.60 x 0.20 m) is masonry made of small fieldstones (0.25 x 0.15 m) set into a red clay which also includes small stones and sherds. This forms a layer about 0.80 m thick. The top of this layer is formed by a thin course of regularly placed small stones (0.05 x 0.04 m) which is covered by a thin layer of coarse red clay flattened and covered again with a thin and fine layer of beige/rose clay.[3] Higher up, a new layer about 0.55 m thick is composed of sidheropetra fieldstones (0.30 x 0.12 m) and topped again with a thin course of regularly placed smaller stones

Figure 2
Malia palace: view of Corridor C from the south-west. In the centre of the picture, the Neopalatial mudbrick wall that divides Corridor C into C1 and C2. Photo: K. Papachrysanthou.

2 Such dowel holes appear in blocks in the southern wall of the light-well of the 'Quartier d'apparat' (III 7), at the eastern end of the wall alongside the staircase in the lustral basin (III 4), in the southern wall of the Central Court, in the western ends of the northern walls of rooms XXI 2 and XXII 3, and in the blocks of the Pillar Hall north of the Central Court (IX 2).

3 This description is based on *in situ* macroscopic observations only.

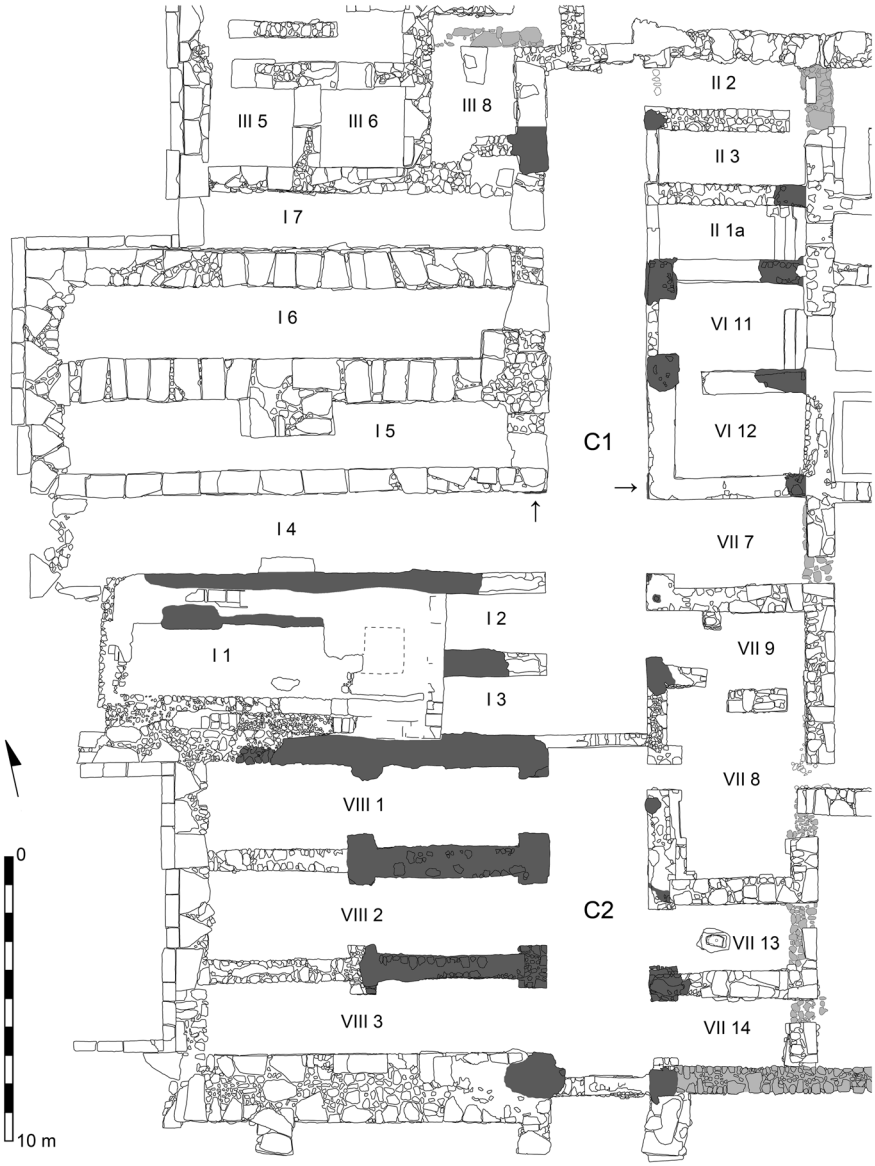

Figure 3
Malia palace: state plan of the Western Magazines, elaborated after E. Andersen (Pelon 1980, plans 15, 16, 17, 23, 24 and 25). In dark grey, the remains of layered rubble masonry walls; in light grey, associated blocks and rubble remains.

(0.04 x 0.03 m), a layer (0.08 m thick) of red clay and a thin layer of beige/rose clay. On top of this was probably another layer of which only about 0.30 m survives, and it is very likely that the entire wall was originally constructed in a similar fashion. The masonry is still partly hidden behind a light-brown clay coating with high chaff content and it is very likely that on this was a coat of finer material, which may have been lime plaster in some cases.

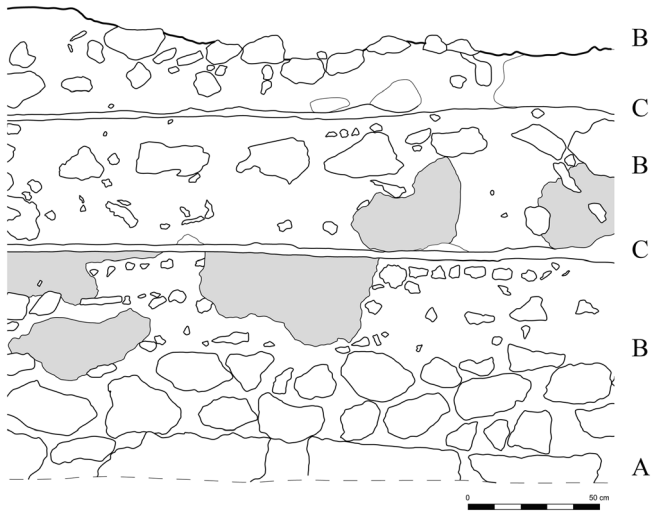

Figure 4
Malia palace: details of the layered rubble masonry in the southern wall of room I 4, with a course of sidheropetra boulders or large rubble stones (A), successive layers of red clay mixed with rubble stones (B), and red clay flattened and covered with a thin layer of fine beige/rose clay (C). In light grey, remains of coating. Drawing: M. Devolder.

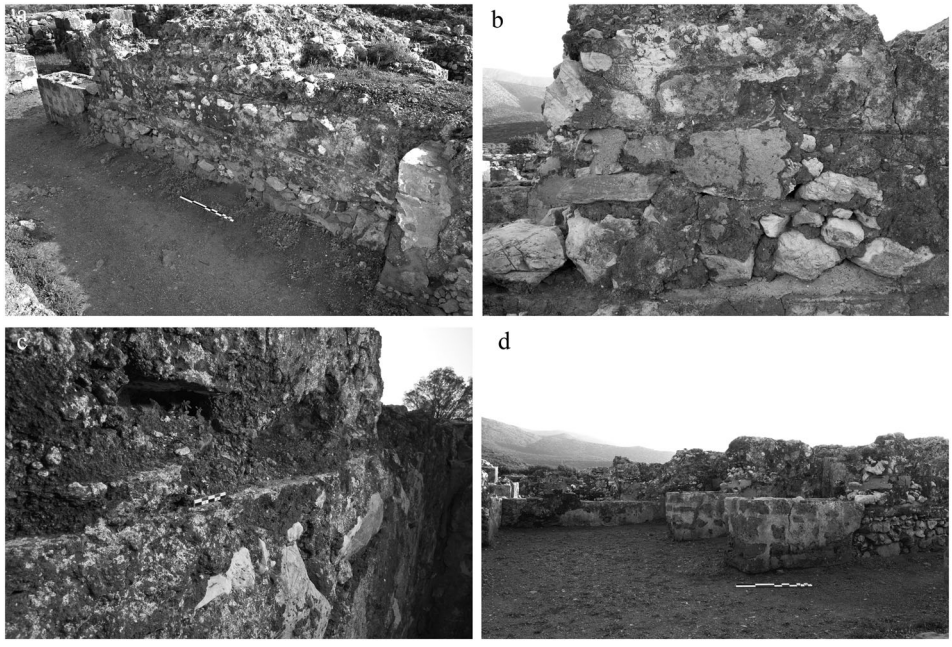

Figure 5
Malia palace: layered rubble masonry wall south of room I 4 (a), with details on superimposed coatings (b) and imprints of wooden pressing device (c), and modern restorations of the eastern ends of the northern walls of rooms I 2 and I 3, and of the mudbrick wall dividing Corridor C (d). Photos: K. Papachrysanthou.

Figure 6
Malia palace: T-shaped stone plinth forming the eastern end of the wall delimiting rooms VIII 3 and VIII 2 (a), eastern end of the layered rubble masonry wall separating rooms VIII 1 and VIII 2 (b), modern restorations hiding layered rubble masonry stumps in the south-eastern area of Corridor C (c), heterogeneous ammoudha block and sidheropetra rubble stone walls in room VII 8 (d), modern restorations and Neopalatial walls reusing layered rubble masonry ones in the north-eastern parts of Corridor C (e), and western end of the layered rubble masonry wall separating rooms VI 11 and II 1a (f). Photos: K. Papachrysanthou.

The beige/rose clay, in association with the red one, sealed the wall facings and top of each layer. In some places where the beige/rose clay layer has disappeared, the flattened surface of the red clay under it suggests that it was initially pressed with a device, most probably a wooden plank

(Fig. 5c). Each of the successive layers of rubble masonry corresponds to a distinct phase of the construction sequence. The small stones in the top part of each layer may have functioned as wedges inserted in the masonry while the layer was being pressed. The same technique can be identified in the walls delimiting rooms I 3, I 2, VIII 1, VIII 2 and VIII 3 (Figs. 3, 6a and 6b). The eastern parts of the southern walls of rooms I 4 and I 2 are heavily restored (Fig. 5d), but magazines VIII 1, VIII 2 and VIII 3 indicate that walls constructed with this technique ended, to the east, with T-shaped rubble plinths.

Considering that the distinctive features of the fine beige/rose clay topping each of the superimposed layers of rubble masonry and the T-shaped wall endings are found in association, it may be suggested that this type of masonry once existed in all walls of the rooms on both sides of Corridor C. T-shaped projections, sometimes barely visible at the foot of modern restorations of Neopalatial walls, and the head of walls erected with superimposed layers of rubble masonry topped with a beige/rose clay layer, still indicate that this type of masonry was once used to build the northern walls of rooms VII 14, VII 13, VII 8 (as well as a partition wall within this room), VII 9, VII 7, VI 12, VI 11, II 1a and II 3 to the east of Corridor C, as well as the walls of rooms situated in the area of the later rooms I 5, I 6, I 7, III 5, III 6 and III 8 (Figs. 3, 5 and 6).

In the southern walls of rooms VIII 3 and VII 14, the identification of the masonry is hindered by the presence of a series of modern walls that were constructed during the 1915 excavation and later restorations, in order to support a brick wall which had partially collapsed from an upper level, possibly a lintel (Hazzidakis 1915, fig. 7; van Effenterre 1980, 55, fig. 77) (Fig. 7a). On both sides of these modern walls, however, a projection is visible, itself partly restored to the east, supporting a mixture of rubble stones, red clay, and remains of a thin horizontal layer of beige/rose clay. To the west, i.e. south of room VIII 3, nothing is preserved of the layered rubble masonry, but the wall is made of large ammoudha blocks (Fig. 7a). To the east, i.e. south of room VII 14, the wall has entirely disappeared apart from the plinth of sidheropetra blocks and rubble stones (Fig. 7b). No other traces of sidheropetra limestone plinths are visible where we would expect them south of rooms XX 1 and XIX 10, which may imply that this masonry technique had not been used further south than rooms VIII 3 and VII 14 (Fig. 1). If this type of masonry ever existed at the

Figure 7
Malia palace: southern limit of Corridor C, from the north (a) and stone plinth of the southern wall of room VII 14, from the east (b). Photos: K. Papachrysanthou.

northern end of Corridor C, it is now entirely hidden in the rebuilding and restoration of the walls. It is likely that Corridor C initially opened to the north onto other rooms, but this access was narrowed at some point in the history of the building by the construction of a mudbrick wall and is now blocked by modern restorations.

The architectural remains hence show that Corridor C was once bordered by two series of narrow spaces that had walls made in the layered rubble masonry technique. Their limited conservation – in the eastern part only stumps are preserved – is due to their partial destruction and the construction of later walls (Minoan and modern), largely built of ammoudha blocks (Figs. 3, 6c, 6d and 6e). Patches of a white plaster floor discovered by Hazzidakis are still visible at the foot of the stone plinth in room VIII 1 (alt. 14.48), with a curve showing that it initially sloped upwards onto the layered rubble masonry wall, and also in the south-eastern corner of room VII 14 (alt. 14.61) (van Effenterre 1980, 220–1). Within this room, however, an earthen floor was also found 0.10 to 0.20 m above the stucco floor, and on this was found the Neopalatial destruction layer (F. Chapouthier, unpublished letter, 14 August 1929). The French excavators mention the discovery on the lower floor of early material, dated to MM I (Chapouthier and Charbonneaux 1928, 8–9). This chronological attribution cannot be taken at face value since in the early days of excavations, pottery dated to MM I probably meant MM IIB, a major moment of destruction at Malia (Poursat and Knappett 2005, 194). If this is the case, we may assume that the white stucco floor was already in place before the destruction of the complex at the end of the Protopalatial period (Poursat 1988, 66; van Effenterre 1980, 36, n. 60). Unfortunately, no soundings were made under this stucco floor which could provide more precise stratigraphic evidence for the dating of the layered rubble masonry walls (Pelon 1969, 1054), but as we will see below there are some other indications that suggest that they belong to the Protopalatial palace.

THE WEST WING DURING THE PROTOPALATIAL PERIOD

Since it was completely rebuilt in the Neopalatial period with ammoudha blocks set in successive projections and recesses (Fig. 1), the appearance of the Protopalatial façade on the West Court is somewhat vague. Chapouthier and Charbonneaux excavated down to the Protopalatial stucco floors in rooms I 4, I 5, I 6 and I 7, but never mentioned whether the floors encountered formed the entire surface of specific rooms or only part of these so that we cannot be sure how far west these early floors extended (Chapouthier and Charbonneaux 1928, 8–9). As mentioned, the layered rubble masonry technique is preserved as far west as the western limit of room I 4, where it covers the Prepalatial remains of room I 1 (Chapouthier and Charbonneaux 1928, pl. V2). It is most likely, however, in line with Minoan architectural tradition, that the Protopalatial façade already showed a series of projections and recesses, as is the case at Knossos, Phaistos or even Quartier Mu at Malia. A sounding outside the Neopalatial western access to corridor I 7 did not provide any evidence of an early paved floor in the West Court. However, while cleaning the northern half of the recess west of rooms III 5, III b and III c, Demargne found paving running beneath the Neopalatial ammoudha façade. This seems to imply that the Protopalatial façade in this specific area may have been situated further east than the Neopalatial ammoudha one (P. Demargne, unpublished notebook, 1956, 2). Rooms III 5, III 6 and III 8 did not yield clear evidence of the occupation and architectural state of the building before the Neopalatial period (Chapouthier and Charbonneaux 1928, 16; Pelon 1986b, 813–14), and data remain patchy for the area between the southern wall of room I 4 and Area III to the north, the early levels of which were the focus of extensive explorations.

A series of soundings in rooms III 2, III 3, III 7 (a–c) and IV 1 came across several Protopalatial rooms (dubbed α, β and γ), some of which had stuccoed ammoudha platforms bordered by channels leading into buried collector vases (Figs. 1 and 9). The rooms had been destroyed in the general MM IIB destruction of the palace (Chapouthier and Charbonneaux 1928, 13, pl. IX1; Chapouthier 1936, 483–5; 1938; Chapouthier and Gallet de Santerre 1947–8, 405–6; Demargne 1957, 691; Pelon 1982; 1983; 1984; 1986b, 813–14). Room β yielded about 20 Chamaizi vases as well as two extraordinary bronze swords, including the famous 'acrobat sword' (Chapouthier 1938; 1946, 88–9, fig. 8; Pelon 1982, figs. 6–8). At the west end of these rooms are two bases, which once supported wooden columns, forming a porch that opened onto the West Court.

The walls of this north-western area are built of sidheropetra blocks and rubble. Although most of the extant walls are nowadays barely preserved, a general understanding of the plan is possible thanks to the excavators and Pelon's detailed description of the ruin (Fig. 1) (Chapouthier and Demargne 1942, 26–31; Chapouthier *et al.* 1962, 35, 37, 64; Pelon 1980, 235–42). The so-called porch e probably formed a main access towards room g to the east and a series of courts to the south (e.g. spaces f and p). Court p is bordered on the southern and western sides by an L-shaped portico, as indicated by a series of stone bases. But the most relevant feature for the current discussion is the north–south Corridor d, which leads to the west to a series of long parallel rooms: a, b and c. Floors in Corridor d and in rooms a, b and c are plastered. Further south, Corridor d' provides access to the narrow magazine j, where the remains of a plastered ammoudha platform with evacuation channel are still visible, and to rooms l-k and m-m' (Pelon 1980, 239–40, pls. 162.2–3). Rooms m-m', n and p of the north-western area are associated with the rooms discovered under Area III (Fig. 9). The wall forming the southern limit of the portico in court p appears to be the eastern extension of the northern wall of room γ, while the southern wall of rooms m-m' and n forms the northern limit of a narrow room, ε, located along the northern side of room β (Pelon 1984, 881, fig. 6). To summarize, rooms α, β and γ discovered under Neopalatial rooms III 2, III 3, III 7 (a–c) and IV 1 are linked structurally to the Protopalatial north-western area, which is partly served by the north–south Corridor d-d' – itself echoed by Corridor C. This suggests that the West Wing of the Protopalatial palace was the result of a well-conceived plan which included large storage rooms arranged along two main arteries (Fig. 9).

I have mentioned that the layered rubble masonry technique is visible in the south-eastern corners of rooms II 3 and II 1a, but that it could not be identified further east beyond a thick north–

Figure 8
Malia palace: layered rubble masonry walls in the south-eastern parts of rooms II 2 and II 3, from the north (a), and sidheropetra block wall east of room II 2, from the east (b). Photos: K. Papachrysanthou.

south wall made of sidheropetra blocks and rubble stones, which was used as a foundation for later walls (Figs. 3, 8a and 8b). Soundings made to the north-east of this large north–south wall in Areas IV and VI revealed the remains of a fire destruction and a series of walls of which the orientation was repeated by the later, Neopalatial, ones (Fig. 1).[4] These walls are preserved up to a height of 1.70 m, indicating that the floor level to the north-east of the thick north–south wall was once much lower (Pelon 1969, fig. 6). This wall hence probably formed a significant boundary where a sharp change in the level of the palace occurred. Pelon found virgin soil at a depth of 1.50 m under the latest floor level in the western half of room VI 2, and proposed that a natural depression in the plateau had necessitated the construction of deep Protopalatial rooms in this part of the building (Pelon 1966, 1013). Beneath rooms VI 10 and VI 9, a destruction layer associated with material preliminarily dated by Pelon to Early Minoan (EM) III (2300/2250–2200/2150 BC) was found, whereas Charbonneaux had dated the layer found beneath room VI 2 to the early MM period (Pelon 1969, 1055; Charbonneaux 1925, 2). The final publication of the material brought to light in the soundings by Pelon and Stürmer will help to determine whether this destruction layer corresponds to the general catastrophe that marked the end of the Protopalatial period on the site in MM IIB (around 1750/1700 BC) or to an earlier phase within or before this period (Pelon 1982, 180; 1983, 686; 2005, 189–90; Poursat 1988, 74–5). Yet the absence of the layered rubble masonry technique beyond the north–south sidheropetra wall seems to suggest where the eastern limit of the Protopalatial Western Magazines was located.

To the north, this north–south sidheropetra wall is associated with an east–west wall made of similar material (Figs. 3 and 8b). Later constructions to the north-west of room II 2 obscure the west ending of this wall (see above), but it represents a convincing northern limit for the Protopalatial Western Magazines. An alignment of stones visible in the floor of room III 8 may perhaps have formed the stone base for a Protopalatial wall bordering an early room there (Figs. 3 and 9).

The walls of rooms VI 11 and VI 12 were largely restored, notably because of damage caused by heavy winter rains in the early 1920s (J. Charbonneaux, unpublished letter, 24 August 1924). To the south-east, a large part of Area VII is occupied by the Pillar Crypt and its dependencies (VII 1–6 and 10–12, Fig. 1), which were almost exclusively built of large ammoudha blocks. In contrast, the walls of rooms VII 9, VII 8, VII 13 and VII 14 show ammoudha blocks mixed with sidheropetra rubble in a more heterogeneous fashion (Fig. 6d). These walls seem not to belong to the original project, but may have replaced earlier east–west walls made in layered rubble masonry of which some remains are still visible as stumps protruding from the later masonry along the eastern side of Corridor C (Figs. 3 and 6c). The above-mentioned sidheropetra north–south wall would then have formed a key structural element within the Protopalatial palace, dividing the central portion of the West Wing into a western part, devoted to storage, and an eastern part mainly occupied by the Pillar Crypt and associated rooms (Area VII, Fig. 1).

To the south of rooms VIII 3 and VII 14, the absence of any sign of layered rubble masonry has already been noted. An east–west wall of sidheropetra boulders and large rubble stones formed the stone plinth of the southern limit of room VII 14, but the masonry it supported has completely disappeared except at the western end of the wall (Figs. 3 and 7b). This sidheropetra wall extended

4 The soundings were made by Charbonneaux in rooms VI 2 (where he found the crystal pommel sword and leopard axe; Chapouthier and Charbonneaux 1928, 21–2), III 8, V2 and VI 5 (unpublished notebook, years 1925 and 1927–30), by Chapouthier in rooms VI 2 to VI 7, by Dessenne in room IV 9 (unpublished, referred to in Pelon 1969, 1051), and by Pelon in rooms II 1c, VI 7, VI 9, VI 10 and VI 11 (Pelon 1969, 1051–6).

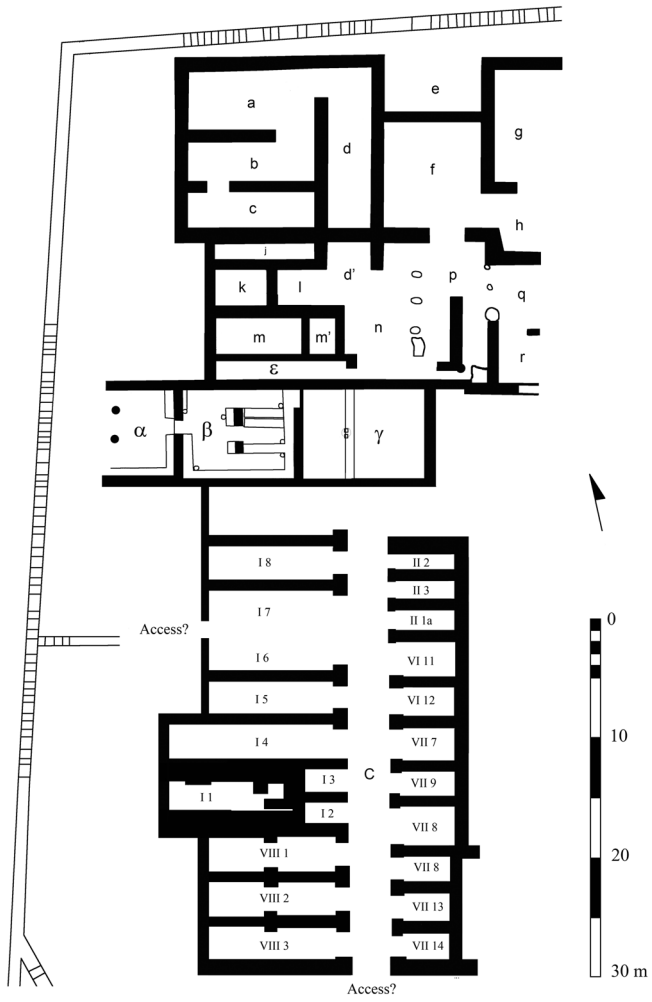

Figure 9
Proposed reconstruction of the plan of the Western Magazines of the palace at Malia and the rooms possibly associated with them to the north, elaborated after E. Andersen (Pelon 1980, plan 28) and M. Schmid and N. Rigopoulos (Pelon 2002, pl. XXXII).

further east beneath the ammoudha blocks forming the wall south of room VII 11 (Fig. 1) (F. Chapouthier, unpublished letter, 14 August 1929), then forming the southern limit of the Western Magazines and the Pillar Crypt area.

There is no information regarding the Protopalatial occupation between this wall and the south façade of the Neopalatial building, which was built directly on top of the EM III–MM II 'Maisons Sud' (Chapouthier *et al*. 1962, 13–17). The excavators had already suggested that the south façade of the First Palace should have been located further north than the later one, but exploration was only sporadic in this area (Demargne 1933, 297; van Effenterre 1980, fig. 79). A stucco floor with a plastered circular depression, however, was discovered to the north-east of silo 5, which was associated by Pelon with the EM III–MM I occupation south of the palace (Pelon

1965, 1005, fig. 8). An oblique wall running beneath silos 2 and 6 was also found but no plan was ever provided (Chapouthier *et al*. 1962, 19). Traces of an early pavement in the western part of rooms XX 1 and XX 2 further suggest that the Neopalatial building encroached here on an early level of the West Court (Pelon 1980, plan 15). Unfortunately, the trial trench made at this spot in 1978 also remains unpublished (van Effenterre 1980, fig. 79). Considering these lacunae, it is difficult to reconstruct the appearance of the southern façade of the Protopalatial palace and of the rooms between this façade and the Western Magazines. A raised walk in the southern part of the West Court, leading east, ends against the Neopalatial walls along the northern side of the silos (Fig. 1) (Driessen and Macdonald 1997, 185). This raised walk may have led to an entrance in the south-western area of the First Palace (Fig. 9).[5]

Although the Protopalatial wall facing the West Court is hence not precisely clear, it seems likely that some of the magazines situated on the western side of Corridor C were 15.50 m long (I 4), this in marked contrast with the shorter magazines (*c*.5.50 m long) on the eastern side of it (Fig. 9). It may also be observed that, in this reconstruction, the magazines do not face each other on both sides of the corridor. The position of the extant walls in layered rubble masonry indicates slight to marked shifts, so that some wall ends face wide openings into the opposite magazines. To the west of Corridor C, several of these walls were strengthened with buttresses. In one case, the buttress has the appearance of a later addition to the original wall (south wall of room I 4), but the structural connections indicate that they were constructed together with the walls in layered rubble masonry to the north and south of rooms VIII 1, VIII 2 and VIII 3 (Fig. 3). Such features were most probably intended to support columns in upper-floor rooms (Schoep 2004, 247, 264; 2006a, 40). They were also incorporated in the later palace, and even replicated by the construction of thick walls with additional buttresses in rooms XX 1 and XX 2 (Fig. 3).

FUNCTION AND CHRONOLOGICAL SEQUENCE OF THE ARCHITECTURAL REMAINS

If one traces the walls constructed in layered rubble masonry and connects these with early walls identified in soundings under the Neopalatial floor levels or integrated in the later complex, a tentative outline of the Western Magazines of the Protopalatial palace of Malia can be proposed (Fig. 9). This reconstruction suggests that a rigorous plan lay at the basis of the layout of the western part of the first complex, with a definite structural and circulation axis, mainly two north–south corridors leading to adjoining storage rooms. The absence of layered rubble masonry between rooms I 6 and I 7 suggests that no such wall existed here during the Protopalatial period (Chapouthier *et al*. 1962, 37–8, pl. XXXV2). Perhaps an extension towards the east of the main north–south walkway on the West Court led here to an early entrance to the complex (Fig. 9).

Several elements already mentioned strongly support a Protopalatial dating of the layered rubble masonry walls. First, in rooms I 4 (north wall), I 5, I 6, I 7, III 5, III 6 and III 8, early walls were thoroughly destroyed for the construction of walls in ammoudha blocks that are structurally connected to the façade on the West Court (Fig. 3). The construction of such walls on remains of the MM IIB destruction discovered in Area III clearly indicates that the ammoudha western façade is part of a Neopalatial building programme, while the layered rubble masonry walls belong to an earlier architectural phase of the palace (Chapouthier and Charbonneaux 1928, 13, pl. IX1; Chapouthier 1936, 483–5; 1938; Chapouthier and Gallet de Santerre 1947–8, 405–6; Demargne

5 Despite what was stated by several authors (Levi 1976, 352; Strasser 1997, 78), we agree with van Effenterre (1980, 334–5), and Driessen and Macdonald (1997, 185) that the silos are Neopalatial.

1957, 691; Pelon 1982; 1983; 1984; 1986b, 813–14). Secondly, Corridor C echoes another one, d-d', which opened onto rooms of the north-western area of the complex (Figs. 1 and 9). This area was destroyed at the end of the Protopalatial period and never reoccupied (Pelon 2005, 186), indicating that both corridors were part of a common Protopalatial layout. No structural connection with the MM II rooms discovered beneath Area III is now visible, but the layout strongly suggests that the Western Magazines once functioned together with these elaborate Protopalatial storage rooms. Thirdly, to the south-east of the Western Magazines, south of room VII 14, a long wall made of sidheropetra blocks and rubble stones once supporting courses of layered rubble masonry runs beneath the ammoudha courses of the southern wall of room VII 11 (Fig. 7b) (F. Chapouthier, unpublished letter, 14 August 1929). This ammoudha wall can be dated to the Protopalatial period, as room VII 11 belongs to the Pillar Crypt area, which was built along the first façade of the West Wing on the Central Court (Chapouthier and Charbonneaux 1928, 27–8, 33; Chapouthier *et al*. 1962, 26–30, 39; van Effenterre 1980, 201; Pelon 1980, 30, 137, 147; 1999, 474, 480–1, figs. 1–2).

Architectural evidence suggests that the layered rubble masonry walls belong to a Protopalatial palace destroyed at the end of MM IIB and later incorporated into the Neopalatial project. However, the dating of such walls alongside the ceramic chronological sequence is a more complicated subject. The layered rubble masonry walls of rooms I 4, I 3, I 2 and VIII 1 all surround the EM IIB (2450/2400–2300/2250 BC) remains in room I 1 generally known as the 'casemate' (Fig. 3), where the layered rubble masonry is evident (Chapouthier and Charbonneaux 1928, 7, 48–50, pl. XXV3–4; Pelon 1966, 1008–11; 1980, 229–32; 1989, 777, 779). This could point to a Prepalatial, EM IIB date for the technique (Shaw 2009, 158). The mudbrick walls, however, that form the core of this 'casemate' show a slight but distinctive deviation in orientation from the layered rubble masonry walls (Pelon 1980, plan 16), and it may be that the plasticity of the layered rubble masonry allowed the easy incorporation of early mudbrick remains into a later, Protopalatial, project.

The evidence for a construction date of the First Palace in MM IA may be summarized. There is firstly the presence of an EM III/MM IA foundation deposit discovered alongside an early wall beneath the western limit of Neopalatial room IV 7 (Pelon 1986a; 1986b, 814). There is also an early wall discovered beneath a later one forming the eastern limit of the Eastern Magazines, which is set in a MM IA layer (Pelon 1989, 779–80, 785, figs. 24–5, 30–2). And finally the abundance of EM III–MM IA material in the destruction layer of the First Palace was noted (Pelon 1983, 698–700). As mentioned, no soundings were made beneath the Protopalatial stucco floor of the Western Magazines but Pelon did uncover the remains of an EM III or early MM IA destruction layer beneath the floor of Protopalatial room γ (Pelon 1983, 699–700, figs. 1, 21). We have discussed the connection of the Western Magazines to rooms α, β and γ under Area III and this then provides a strong argument for their construction directly on top of MM IA remains.[6]

Just as the palaces at Knossos and Phaistos were constructed in several phases (Militello 2012, 237–40; Macdonald 2012, 93–104), it may also be assumed that the First Palace at Malia is the result of an incremental construction process, affected by a series of intermediary destructions or events of a similar nature. The question may be asked whether the layered rubble masonry walls were constructed in MM IA, or were part of later, MM IB or MM II, modifications of a pre-existing

6 Macdonald and Knappett (2007, 169) are reluctant regarding such an early date for the erection of a large-scale monumental project. Whitelaw does not exclude a pre-MM IB foundation, but stresses problems related to the confusion between some stylistic attributions and chronological phases (Whitelaw 2012, 123–4). Driessen (pers. comm.) also underlines the recurrent use of heirlooms for foundation deposits, making the Patrikies style teapot a potentially unreliable source for dating.

MM IA design? Whatever the answer, some of these layered rubble masonry walls would have stood strong for several hundred years, perhaps solidified by occasional limited fires which afterwards favoured their incorporation in the Neopalatial complex. It is even possible that this capacity to create fire-resisting walls was seen as a significant benefit in the abundant use of soil in the walls. Such a property may even have been more valued for the construction of walls of storage areas which were known to have inflammable contents. The large amount of mud incorporated in these walls may also have proved efficient in regulating temperature and humidity (Hadjri *et al*. 2007, 145, table 1).

The incorporation of the Protopalatial complex into the later, Neopalatial, one as noted for the Western Magazines is also a trend that characterizes other clusters of rooms elsewhere in the palace and which provided a marked continuity in the building's features, despite some modifications. The mudbrick wall separating Corridor C into spaces C1 and C2 can be dated to the Neopalatial period (Figs. 2, 3 and 5d). It markedly modified the initial layout of what we have identified as the Protopalatial storage rooms, and would have made circulation in this part of the building much less straightforward. The openings north and south of Corridor C seem, however, to have been maintained during the Neopalatial period. The walls blocking these accesses are modern and the corridor stayed open to the north and south during both the Proto- and Neopalatial periods. To the north, the corridor must have led in some way to the stuccoed rooms discovered under Area III, while to the south we cannot exclude the possibility that Corridor C opened immediately onto an external space, unless the southern walls of Protopalatial rooms VIII 3 and VII 14 did not constitute a first, Protopalatial, southern façade of the palace.

CONCLUSION

The palace at Malia still has much to offer regarding its architectural sequence. Owing to the shallow stratigraphy of the plateau on which the complex was built, evidence for its earlier phases is preserved within its walls rather than beneath them. The incorporation of the old into the new is an enduring practice in the building, with architectural remains as early as EM IIB integrated into later walls (Driessen 2007). The builders continuously incorporated early standing remains into newly erected parts of the complex, and the plasticity of some of the materials used and their 'freezing in time' due to fire destructions notably left us with a patchy, though reliable record of the Protopalatial Western Magazines. The organization of the western part of the West Wing suggests such rooms were devoted to storage. Scholars have warned that the Protopalatial palaces are still too often understood by climbing the chronological ladder upwards and considering these early complexes along the lines of their Neopalatial – or even Final Palatial – successors (Schoep 2002a, 102; 2006a, 39, n. 27). However, the present study has shown that a West Wing made of long, narrow storage rooms, sometimes associated with ritual spaces bordering the Central Court, is already a feature of the earliest complexes (Graham 1962, 129; Macdonald 2005, 42), a conclusion which has bearings on the socio-political background of the First Palaces.

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