

a load (fig. 21 left), based on WH F52; and a pair of yoked horses pulling a chariot (fig. 22), based on the fragment WH F54. None of the scenes constitutes an extensive construction and all, with the exception of the heraldic scene, are based quite closely on wall painting scenes (themselves often heavily reconstructed) from contemporary Mycenaean sites, such as Pylos or Tiryns, or (in the case of fig. 21) the neighbouring House of the Oil Merchant. The identification of what is shown on individual fragments and the grounds for such reconstructions, along with the backgrounds to such reconstructed scenes, are very fully discussed in Chapter 3, and Tournavitou nowhere claims that they are anything other than suggestions. Nor am I arguing that such reconstructions should not be attempted, particularly with the restrained and tentative approach that Tournavitou brings to them. Yet I cannot help worrying that, once some of these reconstructed scenes find themselves reproduced in popular books or websites, there is a danger that they, too, will become 'definitive' examples of Mycenaean wall paintings, imprinted on the public mind forever and/or used as the bases for future reconstructions of yet to be discovered wall paintings. However, I do not see that there is anything that can be done about such anxieties of an essentially philosophical nature.

The book is very logically arranged and set out, but it is nevertheless so closely and densely written and with such a level of detail, that it can sometimes be difficult to refind remarks or parts of discussion read several pages back – and for this reason one is immensely grateful for the very full index provided. In fact, in every way Tournavitou and her colleagues should be congratulated on having produced a *tour de force* – an exemplary publication that considers every aspect of the wall paintings and a fitting crown for the cycle of publications that she began in 1995 with her monograph on the Ivory Houses as a whole⁶ and continued in 2006 with her study of the architecture and stratigraphy of the West House.⁷

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Quentin Letesson and Carl Knappett (eds). *Minoan Architecture and Urbanism. New Perspectives on an Ancient Built Environment*. pp. 416, b/w illustrations. Oxford: Oxford University Press. 2017. ISBN: 978-0-19879-362-5 hardback £90.

The volume under discussion arises from a workshop held at the University of Toronto in 2015, entitled 'From Static Data to Dynamic Processes: New Perspectives on Minoan Architecture and Urbanism'. It consists of 15 chapters, which are preceded by a list of figures, tables and contributors. A brief index can be found at the back. References are listed at the end of each individual chapter.

The Introduction, written by the two editors, provides an overview of past studies of the Minoan built environment. In the past, research on Bronze Age architecture has mainly focussed on studying elaborate architecture, seen on the Mainland in a specific focus on Mycenaean palaces and burials, and on Crete by a specific focus on the Neopalatial period, which produced a large amount of well-preserved settlements and buildings. Synthetic treatments mainly dealt with palatial or polite architecture whereby study revolved around architectural forms, functions, materials and techniques. Were earlier

⁶ Tournavitou 1995.

⁷ Tournavitou 2006.

studies somewhat atheoretical, in the late 1970s and 1980s some semiotic and behavioural approaches are used in the study of the built environment. With the turn of the century, also a 'Minoan turn' has taken place in the form of debates on the socio-political organization of Bronze Age Crete and providing new interpretive frameworks.¹

A new synthesis of Minoan architecture and urbanism is called for by a renewed interest in urbanism and a series of major advances. The volume presents a critical assessment of new studies and methodologies, i.e. analytical tools such as GIS, visual analyses, space syntax, formal networks, agent-based approaches and simulations, 'and the new research perspectives they open up, while emphasizing how they can be integrated more effectively and applied to a wider range of evidence'.² For such an integration to take place, bottom-up empirical studies and top-down analytical/interpretive approaches are needed. The contributions in the volume are articulated along the two lines. In addition, different scales need to be considered. The remainder of the volume is therefore organized accordingly: the first part considers building dynamics at the micro-scale, the second part built space and communities at the macro-scale and the final part processes and patterns at the macro-scale. Each of these parts opens with an editorial contribution which summarizes the type of data existing; theory and methods; type of questions; how the particular scale relates to the other two scales, and why it is useful to do so, while contextualizing the individual papers. Some of the individual papers adopt a diachronic perspective, while others are more strictly focused on a particular period.

Part I: Architecture: Building Dynamics at the Micro-Scale, is made up of three contributions in addition to the editorial chapter. Tim Cunningham addressed flaws and anomalies in Minoan architecture, thereby using Block M at Palaikastro as an example. He argues that Minoan buildings could be deceptive: plaster imitating marble; a plastered column made of rubble instead of wood; a seemingly solid stone wall but made with a wooden support skeleton. In some of these cases the ornamental architectural feature (such as a column) is disguised or presented as structural (load-bearing). Likewise, in town planning at Palaikastro: the form of Main Street 'gives the impression of functionality while serving a *primarily* ceremonial or symbolic role. This echoes the architectural habit of disguising the *ornamental*

elements as *structural*'.³ Cunningham argues that the functional aspects of Minoan architecture were perhaps less important than the symbolic, especially in elite architecture, and wonders if socially speaking the structural may have been presented as ornamental: ceremonial aspects of life were perhaps mechanisms of control. Underlying the discussion is the need to explain why Minoan cities came into existence. Minoan 'cities' as rightfully pointed out by Cunningham in the beginning of his article, are really only towns with respect to their size, population, specialization. The existence of early urbanism on Crete was perhaps a kind of choice or ornament of Cretan society.⁴ To control the population, the elite may have used cognitive codes embedded in architecture and other symbolic objects.

Maud Devolder, in her contribution, aims to measure the scale of Minoan building projects by using the method of architectural energetics. Standard costs were formulated and applied to 23 Neopalatial buildings, ranging from a palace to simple houses. The applied method highlights that 'the limited impact of building projects on the communities, and the linear distribution of the labour costs and diffusion of building practices suggests no severe control of building resources'.⁵ A group of low-cost buildings, characterized by requiring little or no preparation of the terrain and the construction of walls in rubble or mudbrick, could be constructed in less than 800 person-days (eight hours a day) of work. The next group of buildings, requiring between 1000-5440 person-days to construct, was set apart from this first group due to three variables: their size, levelling works, and the use of ashlar. Many simple buildings could have been erected by their inhabitants, but also the larger buildings and even the palace of Gournia, could be constructed by only a small percentage of the population, being skilled but non-specialized, whereby only in some parts of the construction process architectural specialists were needed for the incorporation of elaborate masonry. The limited impact of building projects on Minoan communities seems in contrast to the situation on the Mainland, where calculations made by Fitzsimons and Brysbaert indicate that much labour time was devoted to the transport of materials, such as Cyclopean building blocks.⁶ Devolder also argues for a linear distribution of labour-time estimates. However, considering table 4.1 the reviewer is not fully convinced and would suggest a more

¹ Introduction: 4-5.

² Introduction: 7.

³ Cunningham: 47.

⁴ Cunningham: 32-33.

⁵ Devolder: 59.

⁶ Fitzsimons 2014; Brysbaert 2015.

exponential distribution. Especially in relation to the preceding chapter of Cunningham one wonders to what extent observations on the structural and ornamental aspects of Minoan architecture (especially observed in elite architecture, hence the tail of the distribution), affect the calculations made by Devolder and are suggestive of the meaning, interpretation and implications of said calculations.

The final contribution in part one, by Jan Driessen, discusses in-house relationships on Late Bronze Age Crete. In earlier publications, Driessen has argued for the existence of so-called 'Houses', being intermediate and even very large social units. In this paper, he points to the existence in some houses of twin-hall systems (although he does not clearly define what qualifies as a hall in Minoan architecture). Using the LM IIIB Building Complex CD at Stissi and Building Complex Nu at Malia as examples, he argues that the twin-hall systems were distinctive units without excluding the possibility of some complementarity between the units. As the archaeological evidence neither corresponds with that of a single extended household, nor that of independent domestic units, he puts forward the suggestion of the existence of spatial gender differentiation. The gender differentiation may also imply a functional differentiation between the two halls. As Sissi, in the women area, where a hearth is present, evidence is found of cooking, food processing, weaving and close connection to a shrine, while the axuality, size, monumentality and the possibility of wine production and consumption characterizes the men's hall. However, Driessen is careful to avoid equalling gender differentiation with gender inequality within the household or Minoan society.

Part II: Urbanism: Built Space and Communities at the Meso-scale, consists of four contributions. Todd Whitelaw's chapters comprise two sections, beginning with an outline of urban development whereby he focusses first on Crete and the Mainland but situates it in the context of the southern Aegean. In the second section, he compares Cretan urbanism with institution-focused urbanism in the broader East Mediterranean and Near East to explore if these may potentially provide models that can help to analyse the Cretan architectural evidence. He considers 78 sites in the wider Aegean focussing on the overall scale of these urban centres and population differentiation; palaces and temples; and the spatial layout.

Clairy Palyvou, being a devout phenomenologist according to herself, explores in her article ways to benefit from the analytical school of thought,

in exploring the system of rules that shaped the so-called Minoan palaces. She refers to Read and Gil⁷ who argue that there are two ways of reading the parts and whole in an urban environment, namely by a) bounded/nested areas (such as the Mesopotamian city of Ur) and b) overlaid grids, whereby several layers of grids are overlaid, ranging from lower level local streets to the super grid of the main streets. Palyvou sees most Minoan towns as adhering to the latter. The two modes reflect different social structures: the bounded areas correspond to segregated communities and the overlaid grids correspond to integrated communities. Architects and town planners have defined the design of the multi-scalar nature of the built environment into broadly speaking four levels. The Minoan palaces fit best with the urban design or group design, which refers to a number of interrelated buildings and all the open-air spaces, private and public, that are relevant to their function. Group design has also been defined as spatial harmony between independent buildings sculpturally related yet spatially distinct.⁸ Palyvou argues that 'the complexity of spatialization of the Minoan palace can only be understood by a combined analysis of both bounded areas and overlaid grids'.⁹ She illustrates this by various plans showing the different bounded areas within the palace of Knossos, and the overlaid grids consisting of the main routes of access/movement through the palace, whereby she argues that the supergrid of the town proper does not stand on its own but is appended to the town's supergrid system as evidenced in the multiple points of transition between the town and the palace. The central court plays a role in both systems and it is only from here that one can grasp the different parts as well as the totality of the palace. Some common architectural practices may have had mnemonic value: ashlar facades, indentation of facades and raised walkways.

Matthew Buell and John C. MacEnroe outline in their chapter the development of Gournia over the course of a millennium, based on the newest results of the current Gournia Excavations Project. They discuss the prepalatial, protopalatial, Middle Minoan III-Late Minoan IA, and Late Minoan IB periods. From the discussion it is clear that the town of Gournia underwent continuous change. Among the key discoveries are the identification of the Protopalatial palace and the first community street system. An interesting aspect of the construction activities are simultaneous changes during both the

⁷ Read and Gil 2013.

⁸ Palyvou 191, with references to Giedion 1971.

⁹ Palyvou 191.

Protopalatial and MM III-LMIA periods, in the civic-ceremonial centre, monumental mansions and the community street and plateia/square system. According to the authors, this indicates the political and economic interdependence of these three key social constituencies: the palace authorities, the elite residents and the broader community.¹⁰

Joseph Shaw, in the final chapter of Part I, puts forward the suggestion to interpret a long and narrow strip of slab paving, dated to the Middle Minoan period, as a slipway for ships at the Kommos harbour. The pavement stretches in a straight line towards the water edge, with a constant slope of 4.67°, is 1.4 m in width and every 2.40 m there is a shallow gap of 0.15–0.20 m wide. The gaps may have been used as sockets for the placement of greased sleepers, over which the keel of the boat would slide. Although the pavement is relatively narrow, archaeologist Cemal Pulak and engineer George Poulos, in personal communication with the author, write that it is possible that the pavement may have been used as a slipway. After the discussion of the possible slipway at Kommos, a brief overview is provided of prehistoric Cretan seaports. Knossos, for example, seems to have had two ports: one at Amnisos (mentioned in Homer, but no archaeological remains of shipsheds have been found here) and the other at Kasamba, where recently shipsheds have been found, similar to those at Kommos. Also at Gournia remains of two fragmentary shipsheds were uncovered.

Part III: Processes and Patterns at the Macro-Scale: Crete and Beyond, consists of four contributions. Eleftheria Paliou and Andrew Bevan reflect on the trend to use computational approaches. They describe briefly such models that aim to explore the emergence of place and path hierarchies, and examine links between cultural transmission and geographic distance. They present an explicit case study of south-central Crete using computational models and simulations to explore settlement interaction and growth in Bronze Age Crete. These models capture some essential properties of changing structure at the island and regional scale.

Louise Hitchcock and Aren Maeir zoom further out: although their aim is to reflect on LH IIIC Minoan settlements, they place these in a wider context. First, they provide an overview of previous work in Philistine architecture; compare and contrast Philistine, Cypriote and Aegean buildings and urban landscapes; and discuss the importance of regionalism. They point out that much emphasis has

been placed in the past on architectural similarities, which in their opinion however, are actually not so clear-cut, and should be critically reevaluated. In their discussion, much reference is made to the Philistine settlement of Tell es-Safi/Gath. They conclude that key areas of similarity between Philistia and the Aegean are sociality; curation of architectural remains; preference for columned halls; a transitional and mixed nature of buildings; and an indication of smaller scale societies.

Rodney Fitzsimons and Evi Goroginni move from Crete to Ayia Irini on Kea, where House A is well known for showing indications of Minoan architectural influence. They present some preliminary results of the Ayia Irini Northern Sector Archaeological Project (AINSAP) on the suite of rooms known as the North-east Bastion. This suite of rooms is tentatively interpreted as a Minoan-style banquet hall. They give a description of the building and argue that Minoan traits were adopted, adapted and integrated by the inhabitants of Ayia Irini, and served as important mechanisms for the negotiation of status between members of individual communities.

In the final chapter of the book, Quentin Letesson, Carl Knappett and Michael Smith discuss characteristics of Minoan towns and refer to relevant literature. As such, this chapter is something of a literary review, but they group the discussion along three levels of meaning in the built environment, as formulated by Rapoport.¹¹ These three levels are low, middle and high and consider subsequently people and the built environment; builders and users/viewers of the built environment; and symbolism in the built environment.

Overall, this edited volume is an interesting and inspiring read for everyone interested in architectural studies. Especially the introductory chapters to each part written by the editors (chapters 2, 6 and 11) are stimulating, while the first and final chapter (chapters 1, 15) provide ample reference to earlier studies of various architectural (Minoan) features.

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Brysbaert, A. 2015. 'Set in Stone?' Constructed symbolism viewed through an architectural energetics' lens at Bronze Age Tiryns, Greece, in C. Bakels and H. Kamermans (eds) *Excerpta*

¹⁰ Buell and MacEnroe: 222.

¹¹ Rapoport 1988, 1990.

- Archaeologica Leidensia*: 91-105. Leiden: Publication of the Faculty of Archaeology, Leiden University.
- Fitzsimons, R.D. 2014. An Energetic(s) approach to Late Helladic tomb construction: Funerary architecture and state formation at Bronze Age Mycenae, in: D.W. Rupp and J.E. Tomlinson (eds), *Meditations on the Diversity of the Built Environment in the Aegean Basin and Beyond, Proceedings of a Colloquium in Memory of Frederick E. Winter, Athens, 22-23 June 2012*: 83-120. Athens: Canadian Institute in Greece.
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Th. L. Papadopoulos & E. Papadopoulou-Chrysikopoulou. *Excavations at the Mycenaean Cemetery at Aigion – 1967*. pp. vi + 122. 25 colour + 1 b&w plates, 36 b&w figures, 1 plan. 2017. Oxford: Archaeopress. ISBN 978-1-78491-618-3. Paperback \$40.00.

K. Aktypi. *The Mycenaean Cemetery at Ayios Vasileios, Chalandritsa, in Achaea*. pp. xii + 296. 287 figures, mostly colour (but many b&w also, especially profile drawings of vases), 3 maps (colour). 2017. Oxford: Archaeopress. ISBN 978-1-78491-697-8. Paperback (A4 size) £42.00.

These are two publications of material from Mycenaean chamber tombs excavated in rescue work in Achaean cemeteries, both at potentially important sites, but one considerably better documented than the other. The tombs at Aigion, an east Achaean coastal site with a long history that was probably the most prominent settlement

of its region, are four of a larger cemetery (at least 15 tombs are known), which were excavated by the late E. Mastrokostas while ephor. These are represented entirely by the goods catalogued in the Patras Museum; no excavation notebooks or other reports of useful data concerning the stratigraphy or use of the tombs could be found. The goods, including some from an ‘unprovenanced tomb’ and some uninventoried sherds, consist of 93 items of pottery, many of them complete vases, and 35 small finds, mostly the conical steatite buttons/whorls (plus three of clay) commonly found in Late Helladic (hereafter LH) III tombs, with a gold wire ring, three small bronze items, three glass beads, and one clay model of the known ‘throne’ shape. It is noteworthy that the total of items is more impressive than the 73 found in the 11 tombs dug by Papadopoulos himself, published elsewhere.

The range of the pottery spreads from LH II (at least 1 likely item) to IIIC, with the bulk datable to LH IIIB and IIIC. As often in Achaea, LH IIIC is particularly well represented, examples being found in all graves, especially Ts. C and D; there were at least 33 vases from all sub-phases, but only six are classified as Late (five being from T. C). Almost all pieces are illustrated by plates, mostly in colour, and line drawings with profiles; this makes appraising them particularly easy, though some of the photographs of small pieces are rather blurred and indistinct. But it has to be said, the need to keep looking between entries, plates and figures is a bit tiresome, and there are quite a number of errors in plate references in the catalogue (I have spotted 8, affecting references to pls. 24–26).

In general the assemblage fits Achaean patterns, most notably in the predominance of the stirrup jar, in various forms, in the later phases, with other not too large container shapes such as the amphoriskos and straight-sided alabastron or pyxis, and the typically Achaean, and surely intentionally showy, big two- or four-handled jars. Also typically Achaean is the total absence of the standard Mycenaean figurines, making the recovery of a single ‘throne’ figurine all the more intriguing. There is nothing very remarkable about most of the pottery, though some vases show unusual variations in shape (particularly stirrup jars), which may well reflect local production (p. 53). A small fragment of what appears to be a pictorial vase (111-?, much clearer in the drawing) is a rarity in Achaea; also rare among the few small finds is a bronze violin-bow fibula, a type that is generally rare in the Aegean. There were sizeable variations in the number of finds from the tombs, T. D producing far more than the others; this may well reflect continual use over a