23. Keeping up with the Knossians

Architectural elaboration, material competition and inequality in Neopalatial Crete

Todd Whitelaw[1]

1. Introduction

The principal focus of Graham's 1962 study of Neopalatial architecture, *The Palaces of Crete*, was the architecture of the palaces and palatial architectural features, such as specialised room types, construction details and materials, in a group of *ca*. 25-30 elaborate Neopalatial houses, usually labelled 'villas' (Hägg 1997). In 1982, McEnroe proposed a classification of the full range of Neopalatial houses based on architectural criteria, which more systematically defined most villas as Type 1 houses. Subsequent studies have focused on exploring characteristics of this palatial and elite architectural style (Preziosi 1983; Hitchcock 2000; McEnroe 2010; Shaw 2015; Palyvou 2018).

In two challenging publications, Jan Driessen drew attention to the process of diffusion of palatial architectural characteristics across the island (Driessen 1982; 1989-1990). Previously, these had been interpreted in static terms as identifying an elite class linked to the palaces (Hood 1983), considered key components in regional administrative systems centred on the palaces. These material similarities among dispersed sites have been interpreted as documenting competitive interactions between independent polities (Cherry 1986), the development of a unified Knossian state (Wiener 2007), or assertions of independence during a process of political fragmentation (Driessen & Macdonald 1997: 71). This diversity is possible because material patterns are not inherently political, though they may be given such significance in a particular social and political context.

The formalisation and diffusion of these architectural characteristics is one manifestation of the elaboration of elite crafting and display in Neopalatial courtly culture. This drove the development of material media as arenas for competitive consumption and display expressing identities, wealth and social status. These developments were particularly fostered in the expanding urban environment of Knossos, where regional elites and elite craft production (for which elites were the principal consumers), were concentrated after the decline of the urban palatial centres at Phaistos and Malia following the major late MM II destructions (Whitelaw 2018). Knossos would have been a context for extreme social competition, with its expanding administrative structure and professional classes, intensifying a dynamic initiated in Protopalatial centres (Schoep 2010).

Knossian political expansion between MM II and LM I seems likely (Whitelaw 2018; 2019) and it is widely accepted that late Neopalatial Knossos politically dominated at least Central Crete (Warren 2002), though it remains debated how far to the east or west Knossian political control extended (Tsipopoulou 1997; Driessen 2001; Driessen & Letesson 2023). But Knossos arguably had wide cultural influence across the island, in which the selective adoption of Central Cretan architectural styles was a prominent process.

Interpretation is problematic for any material culture distributions such as pottery styles (Whitelaw 2018: 224-228), since material culture can be manipulated to represent a wide range of identities and affiliations. Neopalatial architectural styles and their diffusion can inform us about the sharing of ideas, cultural norms and ideologies, most of which are not fundamentally political. So political interpretations have to be built on other assumptions

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I thank the editors for inviting me to contribute to this volume in honour of Jan Driessen on the occasion of his retirement. I am pleased to offer this exploration inspired by Jan's early papers on elite Minoan architecture, in recognition that those were just the first of many challenging contributions to Minoan scholarship over the intervening four decades, and remain stimulating. I am also grateful to the editors, and to Emmanouela Apostolaki, Kostis Christakis, Maud Devolder and John McEnroe who kindly read and commented helpfully on the draft. All the figures and table are by the author.

and interpretations about Neopalatial society and political history, which can be used to interpret the architectural patterns, rather than vice-versa.

I want to step back from the political interpretation of architectural styles and consider other ways we can explore architectural patterns to investigate Neopalatial society. This is particularly important as we ask a broader range of questions about Minoan society, and increasingly employ architectural information about houses to do so (*e.g.* McEnroe 1982; 1990; 2010; Darcque & Treuil 1990; Hägg 1997; Zielinski 1998; Whitelaw 2001; 2007; 2017; Mantzourani & Vavouranakis 2005; Cunningham 2007; Vavouranakis 2007; Westgate *et al.* 2007; Letesson 2009; Driessen 2010; Glowacki & Vogeikoff-Brogan 2011; Devolder 2013; Salichou 2013-2015; Fotou 2016b; Letesson & Knappett 2017; Relaki & Driessen 2020; Letesson & Driessen 2020; Gerontakou *et al.* 2020).

2. Social transformations in Prepalatial to Neopalatial society

A few communities on Crete urbanised in the Late Prepalatial period, continuing to expand demographically during the Protopalatial period (Whitelaw 2012). The settlement patterns are highly primate, with a significant proportion of the population concentrated in the three major palatial centres in Central Crete. Urbanisation was very rapid, and sustained through the Protopalatial period, though only Knossos continued to expand after MM II. These developing centres would have pulled-in individuals looking for employment and social opportunities in the expanding centres. Large and dense urban communities would have been population sinks, with many incomers, not used to living in crowded and unsanitary conditions, suffering shorter lifespans. Sustaining population, and particularly growth, would have required continuous population in-flow.

The emigration of young, active individuals will have disrupted traditional village kin-based social structures, also being re-structured as the palaces extended their territories. The fragmentation of the traditional social structures is probably documented by the gradual dis-use of long-term collective tombs and the decline in cemeteries as foci for communal activities during the Protopalatial period (Legarra Herrero 2014).

New social structures developed in the urban social environment, perhaps principally patron-client relations, as in-comers attached themselves to established households and institutions. This resonates with Driessen's model of the House (Driessen 2010), but sees this as an emergent structure in the new urban environment, in contrast with traditional kin-based social formations in smaller and less differentiated communities. There was likely increasing distinction between urban and rural social structures, though the new social forms would also diffuse into rural communities, as traditional structures fragmented through bottom-up and top-down processes, and more intensive links were established between urban and rural communities through regular migration and return, and increased trade and taxation.

How would these new, initially urban social structures manifest in housing? During the Prepalatial and Protopalatial periods it is difficult to demarcate individual houses, though this becomes easier with architectural cues defining discrete houses in the Neopalatial period (Letesson 2014). These cues made the recognition of individual houses and the navigation of urban space more straightforward for residents and visitors (Cunningham 2007; Letesson 2014). Such cues were not necessary in smaller, more intimate village contexts, but became important in urban communities with populations well beyond kin-based integration, significant influxes of new residents, as well as increasing numbers of visitors to the developing Protopalatial administrative, market and ceremonial centres. Clearly defined houses are documented first in urban contexts with the Protopalatial maison-ateliers of Quartier Mu at Malia (Poursat 1996) and in the quarter west of the West Court at Phaistos (Caloi 2013).

The house became the material medium for representing independent households, rather than the larger kin-groups earlier represented by tombs. Houses were particularly effective for the expression of identities and social competition, linked directly with their residents, and having scope for elaboration and very visible display. House architecture adopted an increasing range of palatial features, starting with rectilinear and architecturally distinguishable structures, moving on to socially significant room types (and the associated practices), and construction features and elaborations.

At the same time, the identities represented were becoming more complex. Earlier, these were primarily kin-based, particularly linked to common ancestors and access to agricultural land-holdings, while in the increasingly complex urban social and economic environment, there were occupational group identities and patron-client affiliations, as well as emerging social interest groups, cross-cutting kin-based organisation. Houses and their characteristics were one material expression of these differentiating combinations of cross-cutting identities and affiliations, communicated through activities conducted in and around them, and particularly accessible to us through their visibility and archaeological durability.

3. Neopalatial architectural elaboration and elite emulation

McEnroe's systematic approach documented the scale of contrasts in Neopalatial domestic architecture (1982). He used room types, construction details and elaborations to define three house types, illustrated with 29 examples that span the major variations in Minoan domestic architecture. While distinguishing three types, he recognised there was a continuum, particularly clear in his sub-division of Types 2A and 2B, the first sharing similarities with Type 1 and the second with Type 3 houses. But most subsequent discussions of Minoan architecture principally focus on the characteristics that defined Type 1 houses, largely involving the structures more generally identified as villas.

As analysts have long recognised, three of the main room types that define Type 1 houses are closely associated, Minoan halls with light wells and lustral basins, and also regularly co-occur with ritualised pillar rooms. These are consistent in form, and in the case of the lustral basin and those pillar rooms that had a ritual role, were probably function specific (see also Puglisi, this volume). Removing a significant amount of space from the normal routines of daily household life, houses with these rooms are usually larger than the norm. As house size increases, there may be space for other specialised rooms, such as for storage and production facilities.

The role of the Minoan hall is more debated, though its location usually places it focally within the activities of the house (Palyvou 1987; 2018; Thaler 2002; Letesson 2013). In houses, without the range of ceremonial rooms of the major palaces, this suite seems to be more central and outward/public facing. The role and significance of such residential suites may vary somewhat in houses, potentially corresponding with the role of that specific house and its residents within a community. But the degree of standardisation in the association of the rooms as a package, and their typically prominent position in houses, seem to indicate the diffusion of a common set of practices and understandings, not just architectural forms.

	Mh	Mh&PK	Lb	Lw	Pr+	Pr-	Am
Total	30	34	25	46	27	14	66
Minoan hall		0	18	30	12	9	23
Mh & PK hall	0		21	31	12	9	25
Lustral basin	18	21		20	10	9	19
Light well	30	31	20		15	9	32
Pillar room (max)	12	12	10	15			16
Pillar room (min)	9	9	9	9			11
Ashlar masonry	23	25	19	32	16	11	

TAB. 23.1 CO-OCCURRENCE OF MINOAN HALL, LUSTRAL BASIN, LIGHT WELL, PILLAR ROOM (MIN.=RITUAL, MAX.=ALL), AND ASHLAR MASONRY IN STUDIED SAMPLE OF HOUSES

Of the 366 houses from 46 sites considered here, Minoan halls, lustral basins and pillar rooms occur in 6.5 to 8.2 % of the examples. These three room types are shared among *ca.* 20-30 houses (**Table 23.1**). Many of McEnroe's variables concerned with construction and display relate to how finely these rooms and house facades were finished and presented. They served as a show-case for elaborations such as cut door-jambs, column and pillar bases, cut

slab or mosaico pavements and ashlar walls. Sixty-four houses (16 %) have one or more palatial type rooms, and ninety-four (25 %) have examples of worked stone features (other than thresholds and quoins).

To limit the discussion, I focus on a subset of McEnroe's variables that can be interpreted in terms of wealth and the social status that is aligned with and facilitated by it. My aim is to move beyond this most thoroughly considered, specific suite of rooms, that along with frescoes, characterise our perceptions of the elite segment in Neopalatial society, who we infer resided in Type 1 houses. In contrast, over 90 % of our excavated sample of houses, the smaller and less elaborate Neopalatial houses, receive only limited attention in the literature (see also McEnroe, this volume).

4. Documenting variations in architectural elaboration

To expand the sample we consider for more robust and holistic analyses, we need a continuous scale that addresses the full range of houses and the bulk of Neopalatial society.

Early investigations at major palatial sites such as Knossos and Malia tended to focus on the grander houses likely to have more elaborate artefacts and architectural details. Gournia, Pseira and Palaikastro, where large-scale contiguous clearance was undertaken, provide more of a cross-section of each community, though the excavated areas at Gournia and Pseira constitute the core of each community, and at Palaikastro exploration revealed smaller houses toward the periphery. The situation at Zakros is mixed, with an original focus on the more monumental structures, reinvestigated along with interspersed smaller houses in the later campaigns. Biases due to investigation strategies affect the size distribution of houses at sites where a considerable number of houses have been exposed (**Fig. 23.1**).

There are also regional variations (**Fig. 23.2**), with the residential suite characteristic of houses in Central Crete, probably relating to its development and longer history there (Driessen 1982; Letesson 2013; Shaw 2015) and diffusion outwards. A few characteristics are favoured in East Crete, such as construction using large hammer-dressed stones (Zielinski 1998; Mantzourani & Vavouranakis 2005), and the Palaikastro impluvium hall (Driessen 1989-1990). But other variations are likely to relate to the kind of communities sampled (**Fig. 23.3**). Cross-culturally, larger, particularly urban communities, have more socially and occupationally differentiated populations, an expectation borne out by the distributions of elaborate Neopalatial artefacts. A complication is that the large palatial urban centres are in Central Crete, whereas the small towns of Gournia and Pseira that provide large samples of smaller houses, are in East Crete. Thankfully, the large site at Palaikastro and the smaller palatial centre at Zakros also provide large East Cretan samples, somewhat balancing this regional bias.

To disentangle these patterns, we need to consider critically whether the similarities and differences between sites are due principally to exploration biases, the scale and role of specific communities in local and regional settlement systems, or whether some aspects are attributable to local cultural traditions. Bearing this in mind, we can work with our available sample to develop a broad overview of Neopalatial houses.

I use house size in these graphs as a reference dimension to highlight variation in the sample. But cross-culturally, house size is usually a robust index of household wealth, increasingly being explored archaeologically (Stephan 2013; Kohler & Smith 2018; Fochesato *et al.* 2019). Broadening the consideration of household wealth to include house size allows us to explore a larger and more diverse sample than can be addressed by the presence or absence of specific, variably elite architectural characteristics. This is particularly helpful because so many houses excavated early in the development of the field were only cursorily published at best, many have been back-filled or are poorly preserved, and most excavated more recently have only been published in preliminary reports. We can also increasingly consider houses documented through surface survey, though here I focus on more completely excavated houses. That house size is relevant can be seen by plotting the main classifications of houses by size in **Figure 23.4**. The clearest distinctions in terms of room types and architectural characteristics are between McEnroe's Type 1 and Type 3 houses, with his Type 2 dividing between those that align closer to each of the other clearly distinct types (McEnroe 1982), a dichotomy quite clear in house area.

By being able to include many less well-documented houses on this scale, we can consider a much wider and continuous range of houses and less extensively investigated communities, enabling considerations of Neopalatial society as a whole[2].

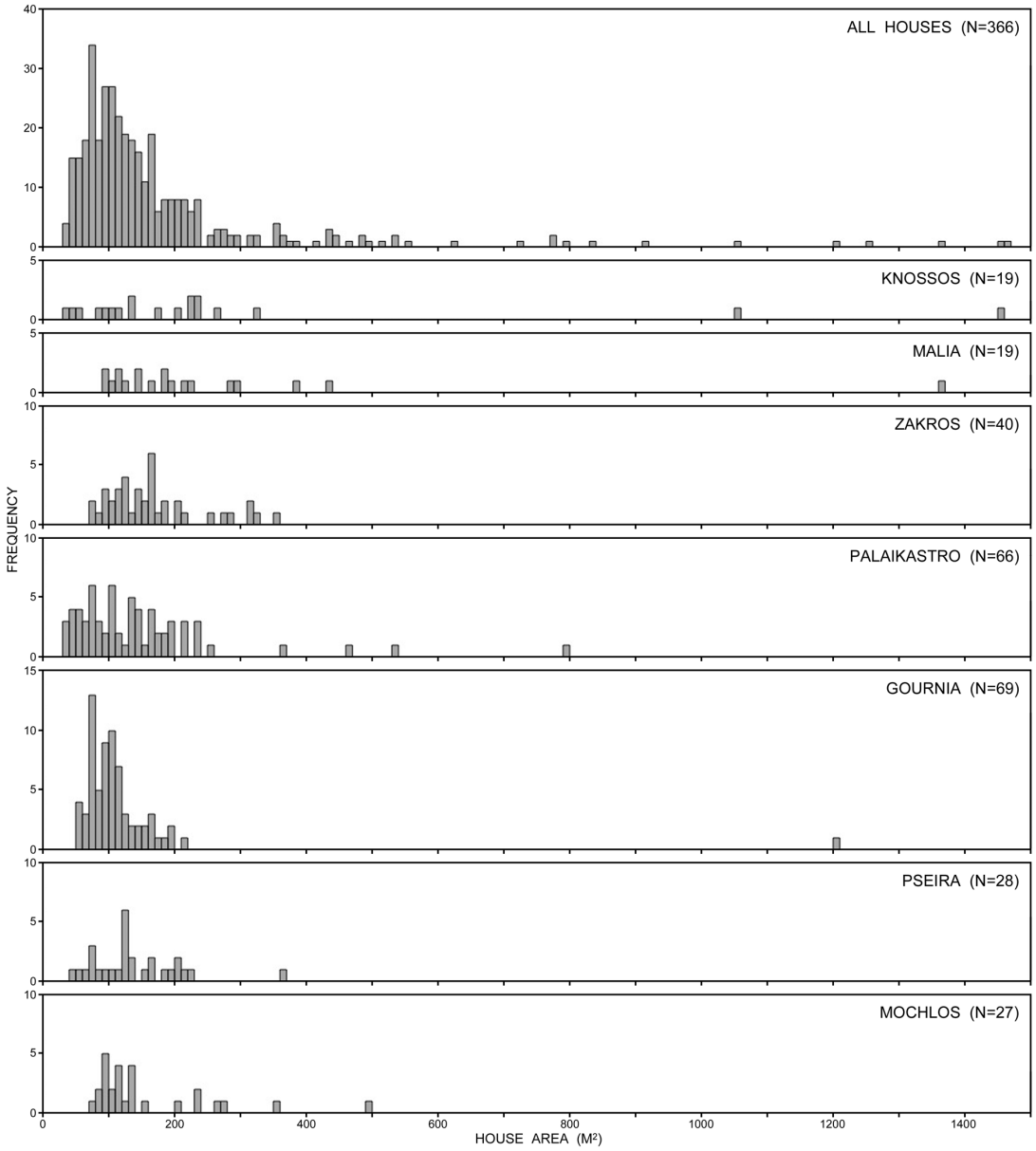

FIG. 23.1 VARIATIONS IN HOUSE AREA IN MAJOR EXCAVATED SAMPLES

2 I include multiple distinct phases of a few houses. The presence, but less so the absence of characteristics is significant, due to partial excavation, poor preservation, or limited description in preliminary publications. There are also conflicts between analysts in the identification of features; I have tended to be inclusive. So these preliminary analyses are illustrative rather than comprehensive.

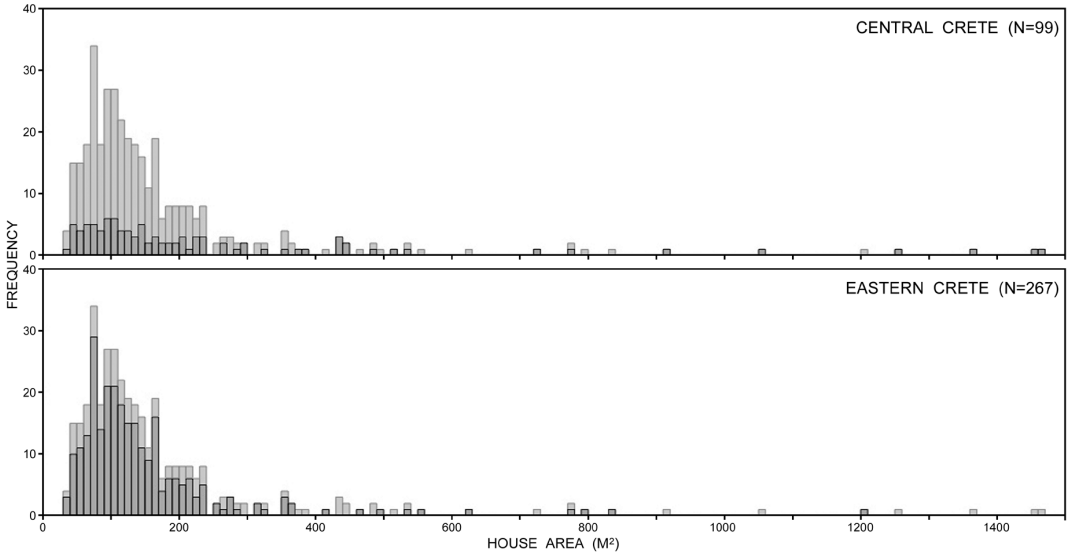

FIG. 23.2 HOUSE AREA BY REGIONAL DISTRIBUTION OF SAMPLE: CENTRAL AND EASTERN CRETE (DISPLAYED AGAINST THE COMPLETE SAMPLE)

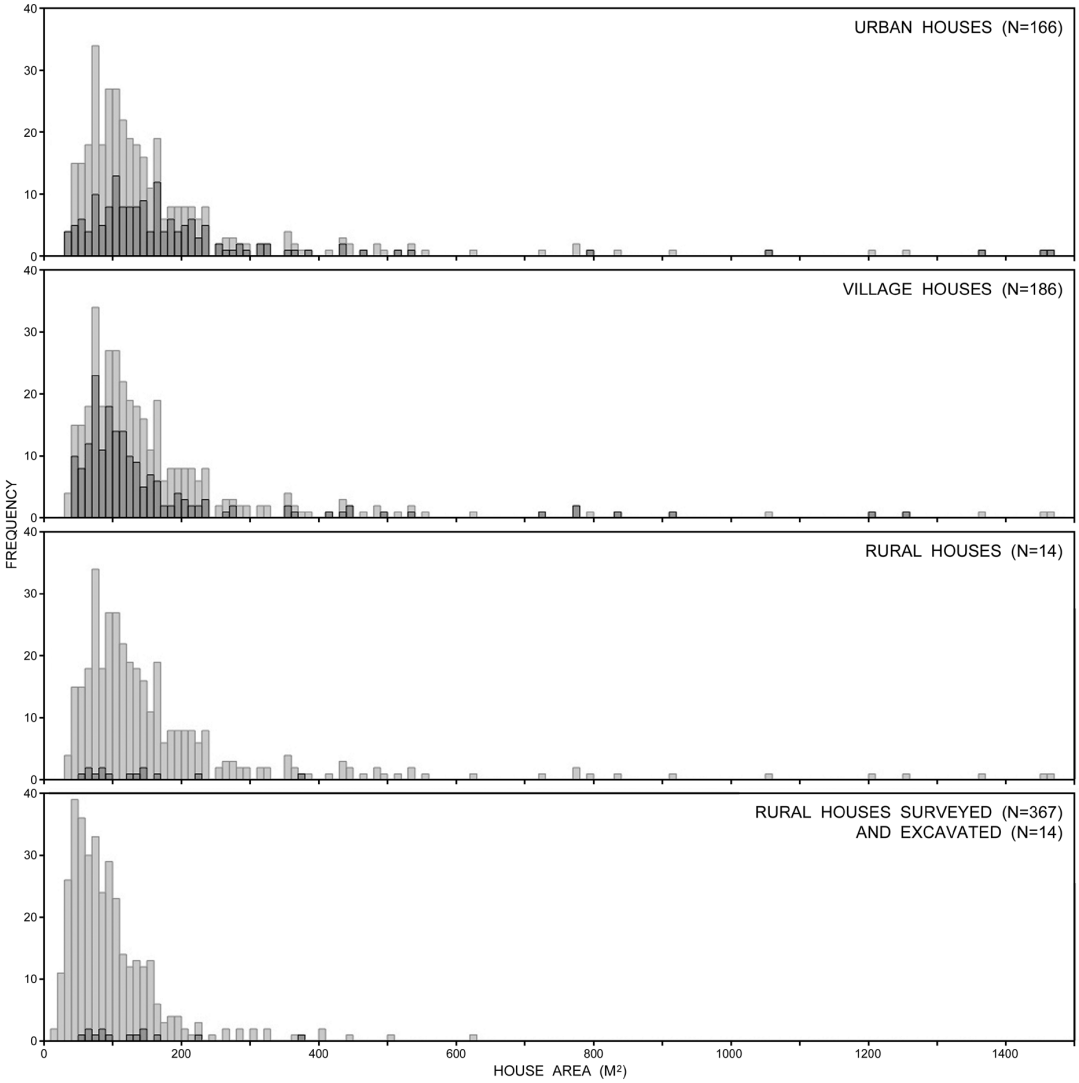

FIG. 23.3 HOUSE AREA BY SITE TYPES

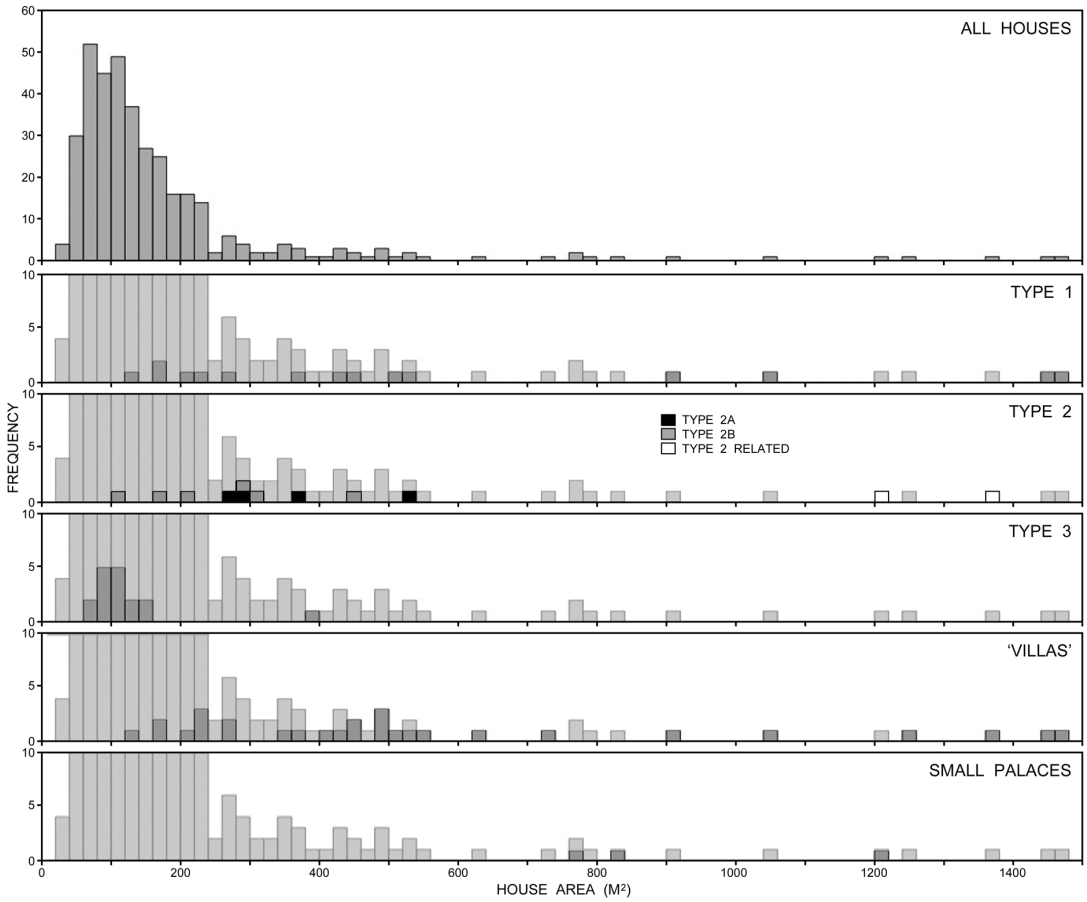

FIG. 23.4 MCENROE'S HOUSE TYPES AND TRADITIONAL CLASSIFICATIONS BY HOUSE AREA

5. House size as a social variable

Domestic architecture is increasingly recognised as a fertile source of information about Cretan societies, and how they were structured. Considering house size as an indication of relative wealth and a proxy for social status is also receiving increasing attention in archaeology (*e.g.* Blanton 1994; Wallace-Hadrill 1994; Morris 2005; Stephan 2013; Kron 2014; Flohr 2017; Kohler & Smith 2018; Hodgkinson 2018; Fochesato *et al.* 2019). I have argued for Neopalatial Crete that as size increases, so does the number of rooms in a house, particularly increasingly specialised rooms (Whitelaw 2001). This enables the disaggregation of activities undertaken in multi-purpose rooms in smaller houses, or the addition of specialised rooms for activities particularly relevant to wealthier, higher status or socially more significant households, including larger amounts of storage, specialised productive facilities and communal or ritual activities.

House size often follows a negative exponential distribution, with many small, and rapidly decreasing numbers of larger houses (*cf.* comparanda from Amarna and Pompeii: **Fig. 23.5**). For Neopalatial Crete, the lower end of the distribution seems truncated, probably due to the traditional tendency to focus excavation on larger houses at major sites. Supporting the expectation of more smaller houses is the size distribution of surveyed isolated farmhouses, likely to define the scale of subsistence-level households.

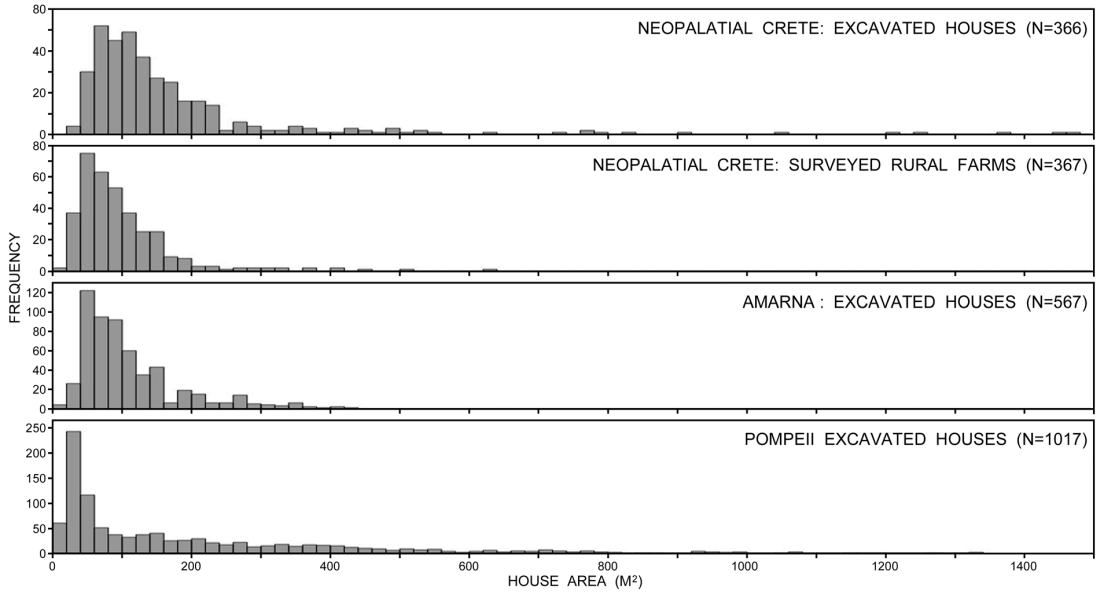

FIG. 23.5 HOUSE AREA DISTRIBUTION COMPARISONS

A commonly suggested alternative is that house size primarily relates to household population. While family size will vary between generations, the house will not necessarily be significantly altered, as households adjust flexibly to changes in membership through each family's developmental cycle. As well, in dense communities there will be little or no opportunity to expand the physical house to adapt to fluctuations in household size. But there are interactions between household wealth and household size. Wealthy families are likely to attract and be able to support extended kin and affiliates, are more likely to have resident servants or slaves, and with access to better nutrition, more children are likely to survive to adulthood. But fundamentally underwriting such larger households is their wealth.

Comparing house size for urban and village sites, the distributions are comparable in range, with the smallest houses corresponding regardless of community type, and also with rural farms (**Fig. 23.3**). This gives us a baseline of what a subsistence-level household could construct and maintain, and the residential space they needed according to activity organisation and cultural norms. The range of the distributions is comparable, but the largest houses in villages comprise those traditionally labelled villas, and where this can be documented, were usually the largest house in a community, such as the mansion at Myrtos Pyrgos. In urban communities there may be multiple examples of houses of this scale, clearly not at the top of the local wealth pyramid compared with the palace. The largest, like the Little Palace – Unexplored Mansion complex at Knossos or Quartier Epsilon at Malia, are comparable in scale to the small palaces at Gournia and Petras. They will have required comparable resources and personnel for their construction and maintenance and to support their activities (Whitelaw 2017), fitting the expectation that larger communities will be socially more diverse.

It is in the core of the distribution that urban and village houses differ most markedly. While acknowledging bias against the investigation of small houses, there are significantly more houses in the 150-400 m^2 range in urban contexts. These houses are also more likely to have staircases, so the differences in ground floor footprint will, in many cases, be exaggerated by the presence of partial or full upper floors. This contrast represents a significant difference in these types of community, again consistent with the cross-cultural expectation that larger communities usually have more socially differentiated populations.

There are various ways we can assess the assumption that house size is largely informing us about the wealth of the residents. Architecturally, distinctions in construction materials and architectural elaborations may be socially desired as an expression of status or related identities, but they often involve specific materials, such as quarried or exotic stone, and the labour and skill to produce them. McEnroe documented that these characteristics broadly correlated with house size, but we can consider how these are distributed across a larger sample of houses (**Fig. 23.6**).

Coursed ashlar masonry is recognised as an elite construction material due to its restricted use in the palaces and in externally visible facades, and association with palatial type rooms in houses, as well as the skill involved in its quarrying and preparation (Kreimerman & Devolder 2020). It was used earliest in Central Crete and its introduction to Gournia, Mochlos and Zakros in LM IB suggests a late extension of Central Cretan high status architectural traditions to East Crete (Soles 2004; Buell & McEnroe 2020). It is characteristic of Type 1 houses and strongly associated with larger houses. Ashlar use has regularly been contrasted with construction using more simply hammer-dressed megalithic blocks. These were often used for foundations and down-slope supporting walls, but also as facades, particularly in East Crete, and have been considered an East Cretan prestige architectural feature, predating the selective adoption of ashlar (Zielinski 1998). A distinction between structural and prestige use was advocated by Mantzourani & Vavouranakis (2005) in their restudy of East Cretan villas. This dual significance seems reflected in its association with Type 2 and 3 houses, and the size of houses that employ it, particularly relative to ashlar. A solely prestige character is also challenged by its widespread use in farms recognised in surveys across East Crete (Vokotopoulos 2007; Beckmann 2012; Kalantzopoulou 2022).

Considering worked stone architectural details, a hierarchy of materials can be seen in the use of stone paving for floors. Such paving is used across the full range of house sizes, but becomes considerably more prevalent in houses larger than 175 m^2, and cut pavement slabs are most frequently employed in larger houses. Other worked stone features such as door jamb, column and pillar bases, almost invariably occur in houses that have ashlar, though ashlar is limited to Type 1 houses, while smaller stone features are also characteristic of Type 2A houses. The proportion of houses with worked stone details increases from 150 m^2 and nearly all houses above 300 m^2 have them. Most of the exceptions are houses only documented in a preliminary way, though House BS/BV at Pseira indicates that some relatively large houses (360 m^2) might not have such features (Floyd 2015). In a repeated pattern, some small houses will have a feature, but beyond a specific size, nearly all will have it, with the proportion having the feature increasing with house size. Greater analytical differentiation could be achieved by assessing the number of rooms with such details, the volume of such worked materials employed, the difficulty of acquisition of the stone, and the skill involved in its working, but this would require dedicated fieldwork to document.

Devolder (2013; 2017) undertook such documentation for her study of the energetics of Neopalatial construction. There are uncertainties in calculating the labour costs of construction and working techniques, and in reconstructing missing architectural components, particularly the extent and elaboration of upper walls and upper storeys (Fotou 2016a). However, this approach is significant in attaching absolute (even if approximate) labour values to individual structures that can be related to those of other crafts and agricultural labour, and therefore ultimately to base-line subsistence requirements. This enables intra- and inter-cultural comparisons (*e.g.* Scheidel & Friesen 2009; Scheidel 2010; Kron 2014).

Devolder (2013) distinguished the skill and complexity of construction work that could be contributed by a house's residents, and that which required more specialised input by masons, linking to McEnroe's distinction between elite/polite and vernacular architecture (McEnroe 1990; Letesson 2014). Such skills are likely to have been concentrated or largely limited to palatial, urban centres, where there was the volume of demand to develop and maintain such skills, with buildings in smaller communities probably relying on itinerant crafters (*e.g.* Devolder 2018; 2019).

Devolder's labour calculations caution against treating house area alone uncritically as an index of wealth, since the materials used and labour required can considerably modify the relationship between house footprint, labour costs and implied wealth. **Figure 23.7** distinguishes houses analysed by Devolder by Type, and each has a different rate of investment. But house area is a general index of architectural investment that can be applied to the bulk of excavated Neopalatial houses, where preservation or documentation do not allow detailed labour reconstructions.

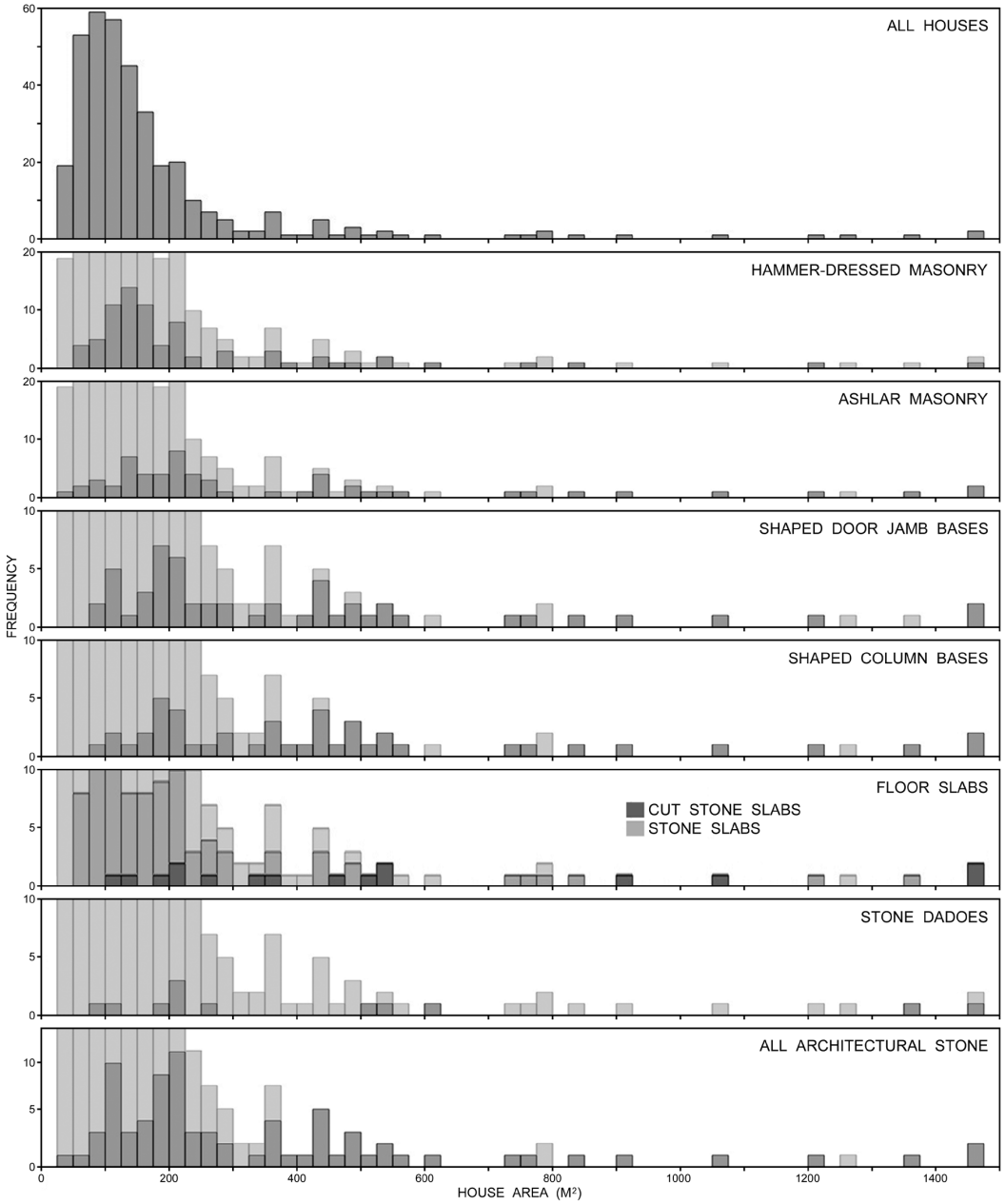

FIG. 23.6 CONSTRUCTION MATERIALS AND WORKED STONE COMPONENTS BY HOUSE AREA

Artefacts as indicators of wealth are particularly subject to abandonment, preservation, recovery and documentation biases, so their presence but not their absence is relevant. Quantities of any type are small, so **Figure 23.8** aggregates data for a range of high value materials (ivory, faience, metal vessels, imported Egyptian stone vessels and Minoan vessels made in hard stones, compiled from Krzyszkowska 1981; Foster 1979; Matthäus 1980 and Warren 1969, supplemented from more recent site reports). As well, the most complex frescoes are found in houses across most of the size range, but particularly characterise larger houses (Cameron 1976 and Immerwahr 1990, supplemented from more recent site reports).

The good correspondence of the houses that have rich finds with those that have frescoes, worked stone features and palatial type rooms, suggests that we can use the more reliably preserved and readily documented house size as a general scale of household wealth. Distinguishing the most complex preserved fresco fragments nuances this scale, as would assessments of the types and quantities of stone and fineness of working of stone architectural details.

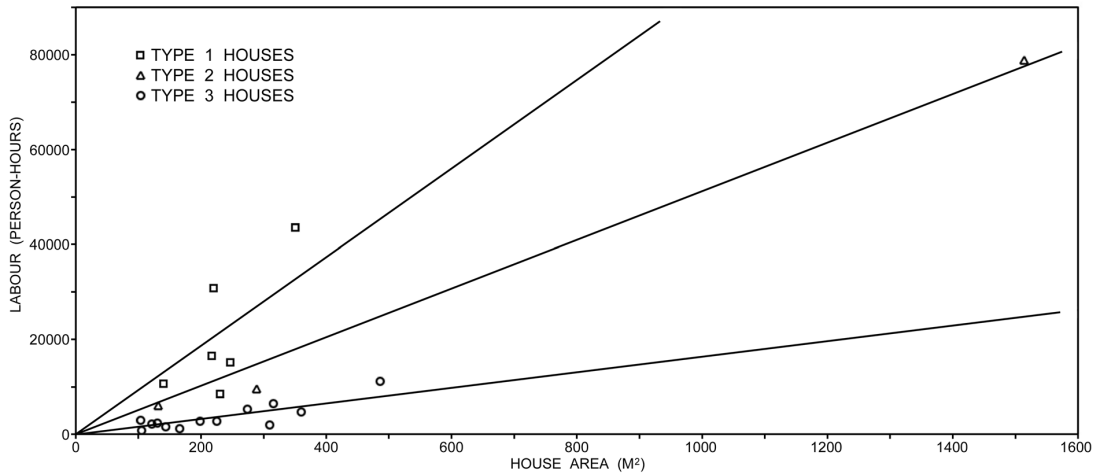

FIG. 23.7 HOUSE TYPES AND ESTIMATED CONSTRUCTION LABOUR BY HOUSE AREA

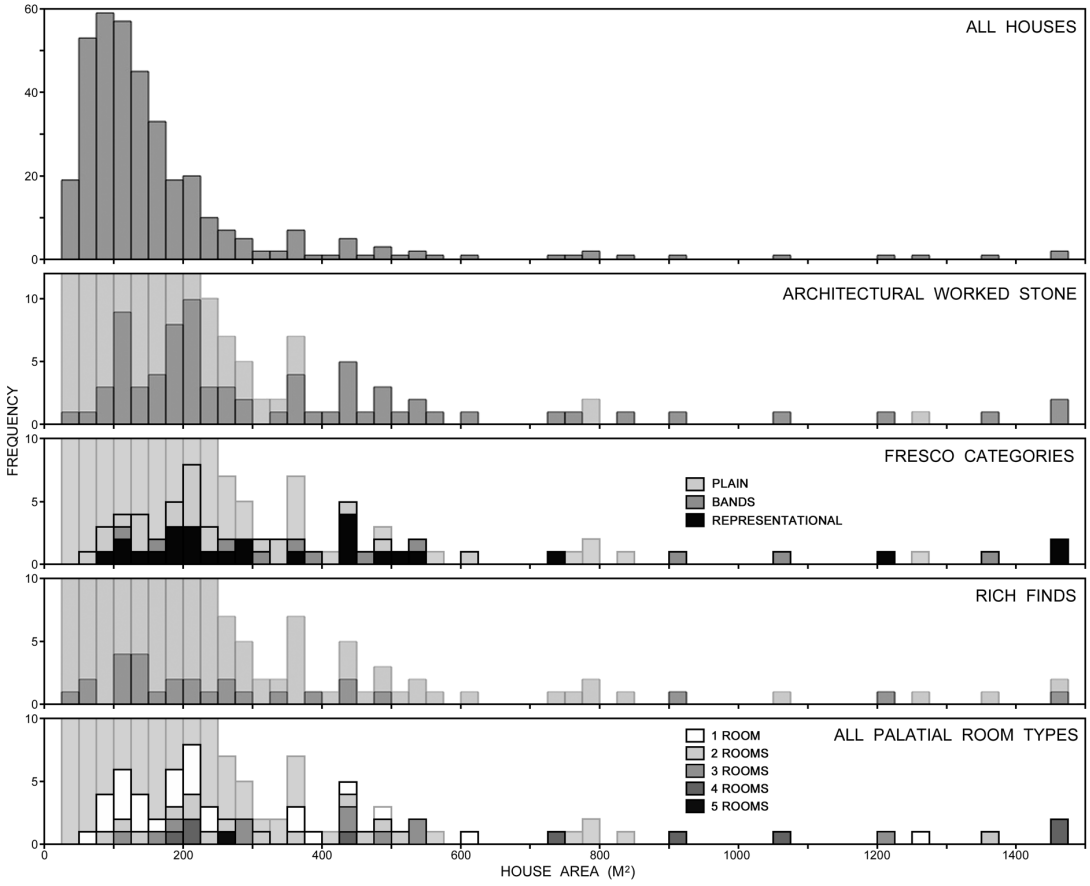

FIG. 23.8 POTENTIAL MATERIAL INDICES OF WEALTH BY HOUSE AREA

6. Scaling and contextualising Neopalatial architectural variation

Having established that house size is a valid index of household wealth, we can return to our starting point of investigating elite architectural elaborations, particularly in terms of palatial room types, with the main types scaled against house size in **Figure 23.9**, and aggregated in the lowest graph.

Because of their strong association with each other, components of the residential suite occur in a comparable range of house sizes, with a more complete set present in larger houses. Pillar rooms are present in a slightly wider range of houses. Houses above 175 m^2 are likely to have palatial room types, with many of the exceptions being poorly preserved or only part excavated. Below 175 m^2, very few houses have such rooms, and if they do, usually only have one.

Comparing urban and village communities reveals significant differences across all indices (**Figs 23.10**-**23.11**). In urban contexts, a limited number of houses between 100 and 175 m^2 display a variety of elaborations, while about half of the houses between 175 and 375 m^2 and effectively all above 375 m^2 do so.

In village contexts, a few small houses may have light wells, pillar rooms or usually simple frescoes. The larger houses that are more likely to have elements of the residential suite and more complex frescoes, are buildings

traditionally identified as villas. Some, due to their central location, were almost certainly the largest and most elaborate, focal house in the village.

Comparing the two types of communities, houses with features indicating wealth are a higher proportion of the houses at each scale in urban contexts. This suggests that there were greater opportunities for acquiring wealth in urban rather than village contexts, consistent with the cross-cultural expectation that larger and particularly urban communities will be more occupationally and socially differentiated. This also aligns with recent work on modern, historical and ancient centres, which documents that larger centres are incubators for innovation and cultural elaboration (Lobo *et al.* 2019).

As can be seen from **Figure 23.4**, McEnroe's classification is particularly relevant for distinguishing houses up to 500 m^2, but is not particularly helpful for differentiating houses within the 175-550 m^2 range, or larger houses including small palaces. So this classification, as well as the more general categorisation as villas, does not allow more resolved analyses of social differentiation across the full range of Neopalatial society.

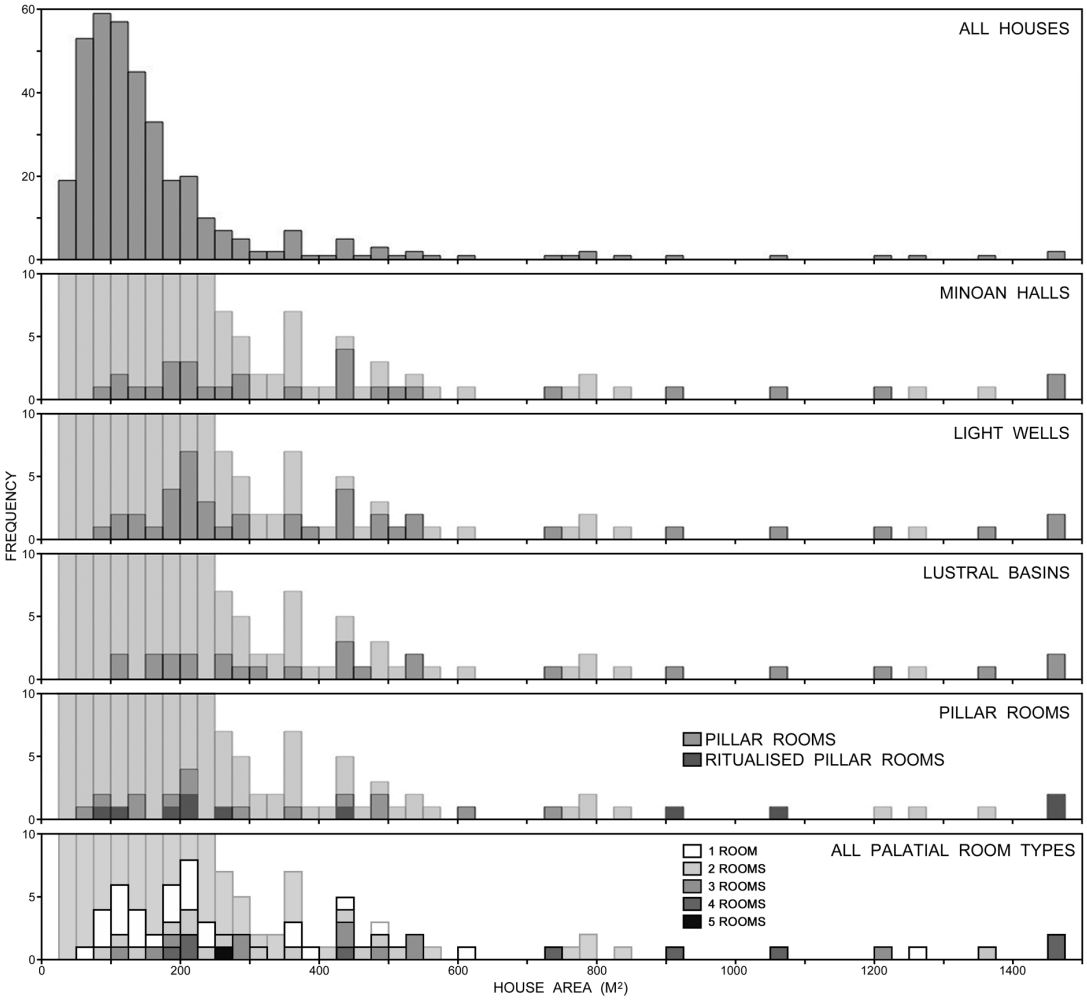

FIG. 23.9 PALATIAL ROOM TYPES BY HOUSE AREA

Artefact inventories can contribute to more subtle interpretation, but are highly affected by the vagaries of preservation and recovery. Architectural elaborations are more likely to survive, and can be assessed on a detailed scale, as demonstrated by Devolder, though this is dependent on full excavation and detailed reconstruction of individual structures.

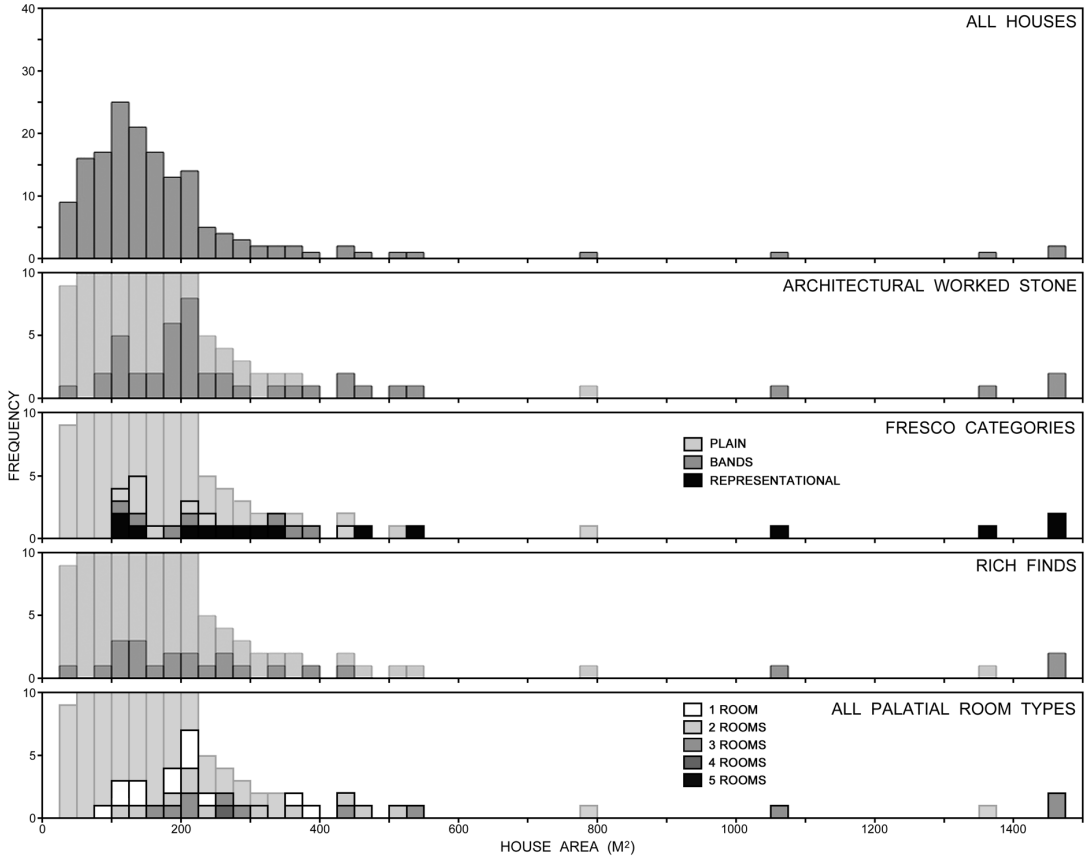

FIG. 23.10 URBAN ARCHITECTURAL VARIABLES AND WEALTH INDICES BY HOUSE AREA

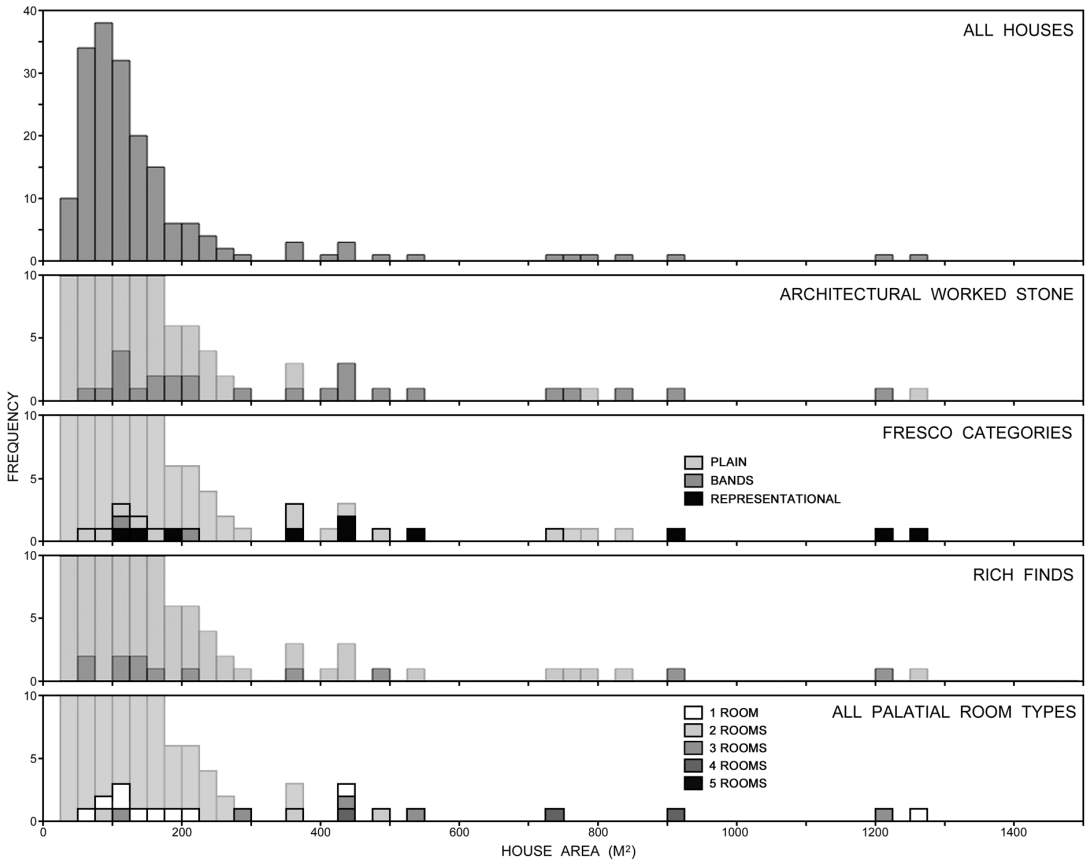

FIG. 23.11 VILLAGE ARCHITECTURAL VARIABLES AND WEALTH INDICES BY HOUSE AREA

7. From elite architecture to interpreting social structures and dynamics

The focus of most analyses on specific architectural elaborations addresses approximately 10% of excavated Neopalatial houses. Adopting house size as a rough but more inclusive scale provides a basis for incorporating far more, and a full cross-section of houses, into analyses of Neopalatial society. It is relevant to all investigated communities, regardless of how extensively a site has been investigated, or how thoroughly individual house excavations have been published.

House size data can be analysed using a Lorenz curve, used by economists and economic historians to assess wealth distribution and inequality, which can also be summarised by the Gini coefficient (Peterson & Drennan 2018; Fochesato *et al.* 2019; see also Scheidel & Friesen 2009; Kron 2014). Curves approaching the diagonal and low Gini values indicate the relatively even distribution of wealth, and high values (approaching 1.0), inequality. Analyses of house size distributions at individual sites may be uncertain if based on small samples, and communities will often be a component of a larger settlement system, so any individual site is unlikely to provide a full cross-section of society. In the Neopalatial case, many sites were arguably part of the political, social and economic system administered by Knossos, so should be analysed together, though several East Cretan communities may have been centres for independent polities, providing some justification for analysing them on their own.

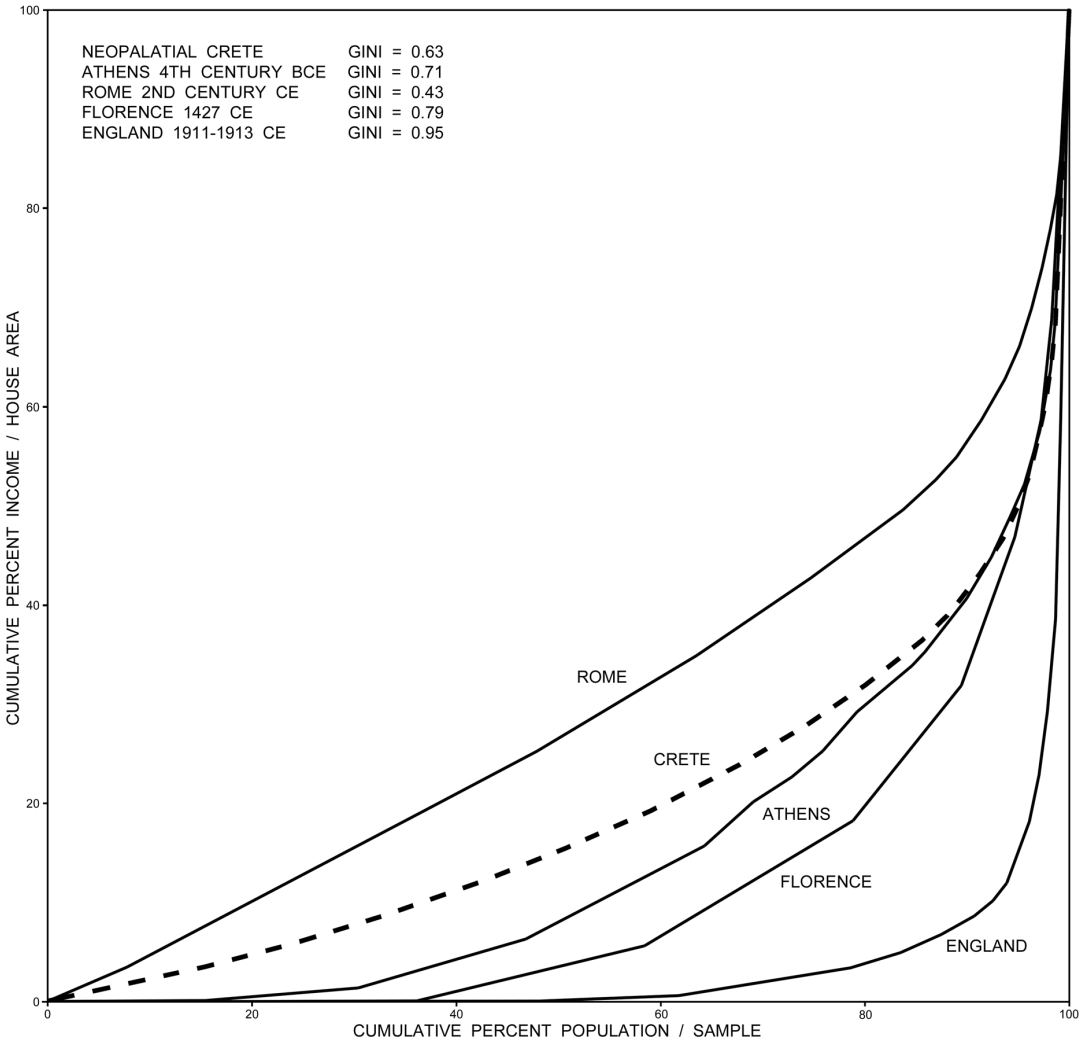

FIG. 23.12 COMPARISON OF ESTIMATED LORENZ CURVES FOR WEALTH INEQUALITY

Figure 23.12 displays a Lorenz curve for the entire sample of Neopalatial houses considered here, compared with assessments based on reconstructed income distributions for Classical Athens, Imperial Rome, Renaissance Florence and England in 1911-13 (Scheidel & Friesen 2009; Kron 2014). An obvious bias in the Neopalatial data is that small houses are significantly under-represented, which would push the major point of significant change further to the lower right, so the present curve probably underestimates the inequality of Neopalatial society.

Figure 23.13 plots house size data for Neopalatial sites with the largest samples. Here small sample and recovery biases are relevant, but the comparisons encapsulate some key distinctions. The graph on the left includes the local palace or central building, because while the palaces dwarf the houses in scale, the local social and economic systems were likely defined with reference to them. The degree to which the palace is distinguished in size from the largest houses in its community accounts for much of the displacement of each

site curve toward the lower right, representing greater inequality. The differences are a reminder that even if communities like Gournia, Mochlos and Pseira were subsumed within a larger polity, and Malia within the Knossos polity, in most residents' perspective, the discrepancies in lifestyle they would encounter in their own community in their daily lives were very considerably smaller than for residents of urban communities.

The graph on the right excludes the palace or central building, so assesses inequality simply in housing. The sequence of curves corresponds directly with overall community size (inset graph), regardless of the different degrees to which each site has been investigated. This represents an index of community social complexity, independent of the presence or scale of any central buildings. This aligns with the expectation that differences in urban scale created different social and economic environments for the residents of each community, which also corresponded to the position of a community in its local and wider settlement networks.

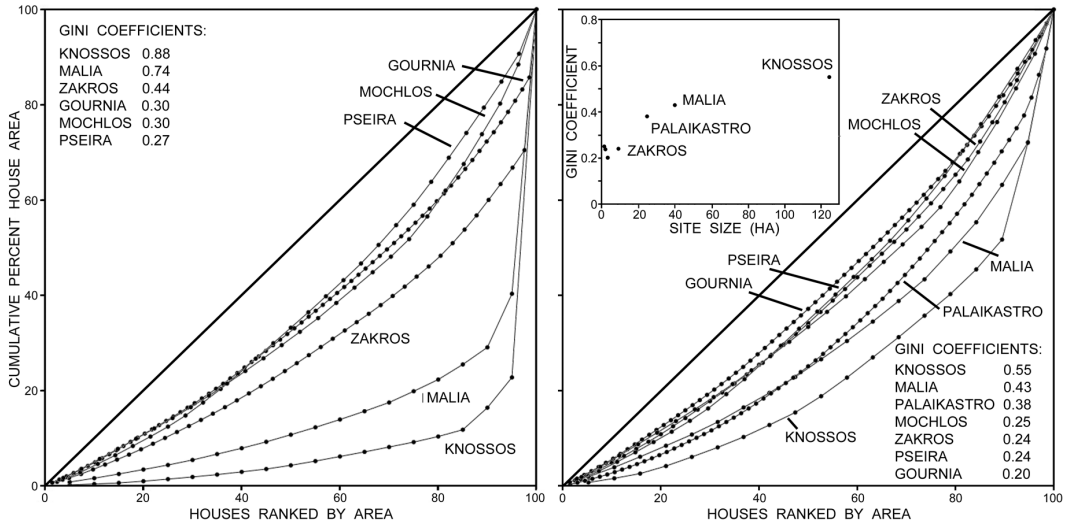

FIG. 23.13 COMPARISON OF LORENZ CURVES ON NEOPALATIAL HOUSE AREAS BY SITES, INCLUDING AND EXCLUDING PALACES OR CENTRAL BUILDINGS

Taking a diachronic perspective, house size distributions varied considerably through time in prehistoric Crete (**Fig. 23.14**). A long term, stable minimum was determined by the basic spatial needs of the household, normative family size, cultural concepts of crowding and the spatial organisation of activities. This minimum corresponds to the standard size of rural farmsteads (**Fig. 23.3**), defining the house size associated with a subsistence level living standard, and the labour that could be mobilised within a household's social group to construct normal houses. We see a very few large houses in urban communities in the Protopalatial period, but the dramatic change took place in the later Neopalatial period when the size distribution expands very significantly to the right. Much of this extension in size is represented by urban houses, but includes some village houses (**Fig. 23.3**). This corresponds with the increased use of material culture for the display of identities, including wealth and status. Socially, this represents the ability of an increasing proportion of the population to devote considerable resources to material aggrandisement. These households are able to construct larger houses and adopt palatial forms of architectural elaboration for the representation of their wealth and status. I suggest this documents the very dramatic expansion of a largely urban-based, late Neopalatial 'middle class'. This can be assessed diachronically through changes in house size, but not through the proliferation of almost exclusively Neopalatial architectural conventions.

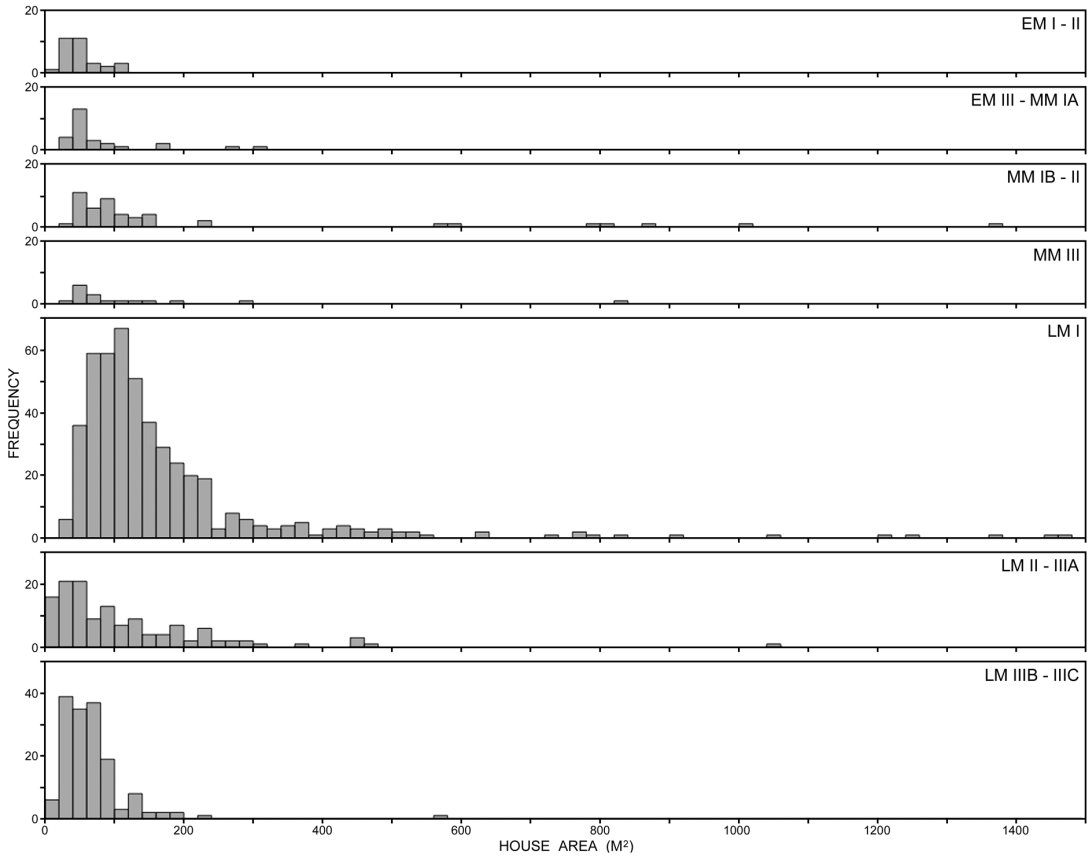

FIG. 23.14 MINOAN HOUSE SIZE THROUGH TIME

8. Conclusions

The starting point for this exploration was Jan Driessen's early research focusing on the social and political significance of Neopalatial architecture and architectural elaboration, which was a significant departure from earlier descriptive treatments. He problematised the social and potentially political implications of the processes of adoption of palatial room types, construction details, and elaborations. Proliferation and diffusion have largely been interpreted in regional terms, but also apply to diffusion down the social hierarchy – the wider adoption and deployment of palatial styles in identity construction and competitive social strategies.

'Keeping up with the Knossians' has been interpreted in explicitly political terms (Driessen 1982; 1999; Wiener 2007), though I suggest this process may have been primarily cultural rather than political, though could well have embodied both. As the major urban as well as political centre in later Neopalatial Crete, Knossos was the principal arena for social competition, differentiation and innovation, represented most obviously archaeologically by the explosion in the quantity, diversity and elaboration of elite material culture in the LM I period. Architecture fits comfortably into this wider process, and more specifically political strategies will be difficult to untangle from this more general social process. This process draws attention to the dynamic role of the limited major urban communities in generating as well as disseminating novel ways of life. These architectural distinctions and their adoption also highlight significant social differentiation and inevitable tensions within Cretan and specifically

Neopalatial society, between residents of different types of community, and also between social groups within communities. Like storage strategies (Christakis 2008), house size provides a continuous scale to measure these differences.

The focus in most writings on Neopalatial architecture, despite McEnroe's original broad consideration, has largely limited discussion to a small sample of structures and the households they represented. The aim in this chapter, in emphasising the relation of these architectural elaborations to a more general variable that can be documented for a far wider range of excavated and even unexcavated houses, is to facilitate consideration of the entirety of Neopalatial society. House size also allows us to consider diachronic patterns of societal change, including periods before and after the floruit of specifically Neopalatial architectural styles. This social and diachronic broadening of perspective also facilitates explorations of variations and changes in social structure and inequality, beginning to be considered for prehistoric Crete (Christakis 2008; Whitelaw 2019), as more generally in the development of ancient societies (Kohler & Smith 2018; Bogaard *et al.* 2019).

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Πολυμήχανος

Man of Many Ways

Papers in Honour of

Professor Jan Driessen

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