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# An interactive tool for the recording, analysis and interpretation of ancient Egyptian domestic mudbrick architecture

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# An interactive tool for the recording, analysis and interpretation of ancient Egyptian domestic mudbrick architecture

Maria Correias-Amador

Archaeologists regularly carry out site surveys which include observation and recording of visible features, drawing of site plans, and production of standing building surveys. After description and classification, the next phase of the archaeological process is interpreting and understanding what is observed and/or excavated. However, in the case of mudbrick structures, there is a lack of a standardised system for their recording and interpretation amongst archaeologists working in Egypt.

This article outlines the practical way in which an ethnoarchaeological study of Egyptian domestic architecture, initially designed as part of a doctoral research project<sup>1</sup>, has been translated into the development of a digital tool for the recording, analysis and interpretation of ancient Egyptian houses.

The aim of the tool is to guide the study and thought processes involved in the recording, analysis and interpretation of ancient Egyptian domestic remains. The methodological framework could nevertheless be used as a basis on which to develop similar tools for the study of any class of site, in any location.

## Theoretical foundations of the research

Architectural historians and archaeologists understand that human beings model characteristics of the landscapes in which they settle to suit their needs, through the modification of natural resources, and the development of human-made structures, chiefly buildings. There is, however, disagreement concerning the specifics of the roles that humans, on one hand, and buildings, on the other, play in that adaptation process. This article is founded on the principle that, although buildings are clearly and deliberately inserted into the environment by human agency, there are also reciprocal influences between buildings, humans, and their wider sociocultural landscape context. Relationships develop in this context which deserve to be studied individually. The sociocultural dimensions are particularly evident in domestic architecture. In order to understand houses properly, cultural signs and meanings on the one hand and functional and practical requirements on the other must be considered integral to the individual's experience of space.<sup>2</sup> The relationships between these meanings and requirements can best be understood through analysis of the various related contextual factors.

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<sup>1</sup> Correias-Amador (2013).

<sup>2</sup> Moore (1986), p. 191.

The study of context is an essential concept in archaeology.<sup>3</sup> Although ‘context’ can have several meanings, it always implies the connection of objects with their surroundings.<sup>4</sup> The context in which archaeological remains are deposited is vital to reconstructing past human activity,<sup>5</sup> and it allows us to develop understanding of how these remains were used in the past.<sup>6</sup> The context in which a house is embedded is formed by a series of variables which were identified in this research project as environmental, sociocultural, community-related, and individually significant factors.

Environmental factors refer to the ways in which the local climatic and physical landscape conditions influence the specifics of how houses are built. Geography, climate, and the particular topography of a site all contribute to the appearance and distribution of the houses within it. In addition, the environment is also subject to human alteration, such as through the construction of canals, which substantially modify the surroundings and can therefore have an indirect effect on local building characteristics.

Sociocultural aspects are amongst the most important contextual factors involved in housing. Social interaction is in part construed by means of the built environment, and consequently, by houses.<sup>7</sup> Status, class, and gender, for example, can all be expressed through architecture, and are in turn expressions of tradition.

Whether a settlement was pre-planned or developed organically is also significant. A deliberate urban plan might result in particular types of buildings being present throughout. The particularities of the community, for example towns which were designed specifically for a certain groups of workers, will affect the number of examples of particular types of buildings.

Finally, individual preferences based on particular social circumstances, tastes and perceptions are also part of the context in which houses are immersed.

Material and context influence each other, and that influence is particularly visible in relation to environmental and sociocultural variables. Building materials are linked to the environment, given that the surroundings determine material availability and climate suitability. In addition, material choices are also influenced by practical choices related to cost, flexibility and durability. Social and cultural factors unrelated to practical suitability can also be significant reasons for certain choices of material. Consequently, all of these aspects must be taken into account if we are to achieve a holistic understanding of domestic architecture.

## **Ethnoarchaeology and domestic mudbrick architecture**

Ancient Egyptian domestic architecture is, for a number of reasons, comparatively less well known than funerary or religious architecture. Traditionally, the discourse regarding ancient Egyptian houses has been built upon the study of the limited archaeological remains available, and some artistic sources including tomb wall representations and models representing typical architectural forms recovered both from domestic and mortuary contexts<sup>8</sup>. These sources have contextual limitations in as far as they are the products of specific social groups and chronological periods. Information regarding domestic architecture is remarkably scarce in ancient Egyptian literature. In addition, archaeological

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3 Cameron (2006), p. 22.

4 Hodder and Hutson (2003), p. 171.

5 Renfrew and Bahn (2000), p. 50.

6 Last (2006), p. 120; Barrett (2006), p. 194.

7 Rapoport (1976); Kamp (1993); Last (2006), p. 120.

8 For a critical analysis of contributions to the study of ancient Egyptian domestic architecture and main points of discussion, see Correas-Amador (2013), pp. 29-42.

studies of architectural remains in Egypt have generally not focused on domestic architectural material; mudbrick in the vast majority of cases. Nevertheless, in recent years, there has been more academic focus on discussions concerning ancient Egyptian domestic architecture, mostly associated with urbanism studies<sup>9</sup>, building on the tradition of the pioneering work carried out from the 1970s at sites such as Amarna, Elephantine, and Tell el-Daba.<sup>10</sup> There have also been more recent publications which, like the research presented here, point at the usefulness of the study of modern mudbrick materials and techniques in order to understand ancient Egyptian domestic architecture more fully.<sup>11</sup>

Current discussions of ancient Egyptian domestic architecture and urbanism could benefit greatly from incorporating a broader understanding of the techniques, possibilities and limitations of using mud and mudbrick as a building material. In this respect, ethnoarchaeology offers a source of information which is largely missing or incomplete in the archaeological record. Its value has been proven by its successful application to the study of ancient Egyptian pottery and basketry, as exemplified by the works of Nicholson and Patterson<sup>12</sup> and Wendrich<sup>13</sup> respectively. However, it had hitherto never been applied to the study of ancient Egyptian houses, despite traditional Egyptian mud houses providing useful data for the interpretation of cultural and geographical contexts and material factors; precisely the information that we lack from ancient sources.

Ethnoarchaeology is suitable for the study of domestic architecture as its main aim is to re-establish the link between material culture - which also includes buildings<sup>14</sup> - and cultural context as a whole.<sup>15</sup> It allows for the development of analogies<sup>16</sup> which can help us understand the reciprocal relationships between humans and buildings. It acknowledges that buildings, as material culture, reflect human activities and intentions, but that these activities and intentions are also shaped, restricted or promoted by the buildings in which they take place and develop.<sup>17</sup>

Therefore, the use of ethnoarchaeology facilitates, on the one hand, a theorized analysis of the influence of contextual aspects in house materiality; and on the other hand, it informs us about practical concerns involving the building material in question, its properties, and the construction methods developed for utilizing it. Finally, it illuminates the relationship between the two, which is a fundamental link for understanding domestic architecture, and one which is most often lost in the archaeological record. It also facilitates the reconstruction of the context – the importance of which was discussed in the previous section.

The study was carried out by analysing the environmental, sociocultural, community, and individually related factors, through study of the available textual sources, architectural surveys, interviews with current inhabitants, and observation of contemporary mudbrick structures.

## Research and tool development methodology

All of the theoretical factors discussed above must be taken into account during an ethnoarchaeological study of domestic architecture. The physical properties of the material should also be evaluated; a consideration of building techniques is also crucial to understanding houses.

9 E.g. Bietak *et al.* (2010), Moeller (2016), forthcoming 'Across Borders' conference 2017 (1<sup>st</sup>-3<sup>rd</sup> Sept 2017, Munich).

10 For a summary of work to date, see [www.amarnaproject.org](http://www.amarnaproject.org), [www.dainst.org](http://www.dainst.org) (Elephantine Project), <http://www.auaris.at>, respectively.

11 Karmowski (2014, 2014b).

12 Nicholson and Patterson (1985).

13 Wendrich (1999).

14 Tilley *et al.* (2006), p. 1, p. 4.

15 David and Kramer (2001), p. 2.

16 Lane (2006), p. 402.

17 Lane (2006), p. 404.

In order to develop the methodology the first step was to test the theoretical principles identified as relevant to research on domestic architecture, in particular the interactive, contextual, and material factors involved. To achieve this, information regarding processes which might have influenced Egyptian mudbrick house architecture was gathered by studying construction carried out in the last century, by way of interviews with local people and observation on the ground in Egypt.

Data collected concerning processes affecting houses in the late 19<sup>th</sup> and throughout the 20<sup>th</sup> century included studies regarding land ownership, rural life and agriculture, economic geography, local geologies, and the more general history of Egypt over that period of time. The time frame was chosen due to the fact that the most substantial corpus of information about mudbrick houses in rural Egypt comes from this most recent era.

Through the analysis of these studies a combination of contextual factors which might have impacted on the layout and physical appearance of mudbrick houses in the more distant past was identified: environmental factors, most significantly the importance of the river Nile and human modifications made to it through the construction of dams and irrigation improvements; sociocultural factors, through the identification of certain construction materials with prestige and status (just as red brick and concrete have related to more traditional materials since their introduction at the beginning of the 20<sup>th</sup> century); whole community-related factors, such as communities having to abandon their houses due to the building of dams; lastly, individual factors, such as individual household compositions changing through time. This data and the associated analysis served, therefore, to validate the various issues proposed as constituting influential contextual factors. The research showed that these factors did indeed influence domestic architectural choices, and it also facilitated the development of a theoretical understanding of the manner in which those issues affect the physical form of the houses.

In addition to the theoretical aspects it was necessary to develop knowledge of construction processes, architectural characteristics, and the development of modern mudbrick houses in order to gain better understanding of the physical aspects which might have impacted on archaeological remains. This was achieved through architectural surveys and observations carried out across three main geographical areas; Lower Egypt (Garbheya, Kafr el Sheikh, Menoufiya, Dakahliya, Sharquiya, Beheira, Qalyubiya), Upper Egypt (Luxor, Qena) and the Dakhleh Oasis. Information was collected by means of individual fieldwork surveys and with reference to a limited number of published<sup>18</sup> and unpublished sources, notably those within Hassan Fathy's personal collection in the Rare Books and Special Collections Library of the American University in Cairo. Checklists, surveys and drawings were used to record materials, construction techniques, and structural elements consistently, as well as house layouts and room distributions.

This knowledge regarding contextual factors and material properties was then used to develop a comprehensive understanding of modern mudbrick house architecture in each one of the chosen areas. To achieve this, the impact of particular contextual and material factors in relation to architectural features was recorded and described, as well as ground plans and information about the use of space in the modern houses.

The information collected regarding material factors (descriptions of materiality of architectural features) was then 'reduced' by restructuring it to fit standard categories used for architectural description, such as the general conceptual division between external and internal finishes, with external finishes being subdivided into: roofs, walls, doors, windows and other features; and internal

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18 Castel (1984), Hivernel (1996), Henein (1988), Schijns (2008), Simpson (2008), de Filippi (2006), Lozach (1930), Hug (1930), Eigner (1984).

finishes into ceilings, walls, doors, windows and others. The way of presenting the information was, for each one of these elements, designed to include descriptions of the materials used and then to explain any variations found. This process of data analysis was repeated for each one of the three areas studied (in Lower Egypt, Upper Egypt and the Dakhleh Oasis) in order to facilitate comparison between regions. Once each one of the three geographical areas was described, the information was synthesised and presented as a general summary for each area to allow comparison between houses featuring each one of the external and internal finishes described.

Concerning ground plans and the distribution and use of spaces, the synthesis of the data included the identification of the main activities commonly taking place within each type of space, across the sample sites, and within the literature examined. Activities included storage areas, animal housing areas, cooking areas, sleeping areas, social interaction areas, and others. The first three are of particular archaeological relevance. These activity areas were recorded and described in each of the three geographical regions, Lower Egypt, Upper Egypt and the Dakhleh Oasis.

Afterwards, in a similar process to that undertaken for the architectural features, the similarities and differences between the three regions for each type of activity area were analysed. The study included examinations of area access and room position relative to the rest of the structure. One

Site	Period	Area	Phase/ Level	Dynasty	Houses	Main sources
Giza	Old Kingdom	Kentkawes Town (KKT)		4th	Houses A-K	Hassan (1943); Lehner et al (2006, 2009); Tavares (2008); AERA (2011)
Kahun	Middle Kingdom	Western town - workmen's houses		12th-13th	all (general descriptions)	Petrie (1890, 1891); David (1996); Quirke (2005)
		N wall: 5 large properties				
Elephantine	Middle Kingdom	South city of Chnum temple	XVb	Late 11th	H25b	Von Pilgrim (1996)
		South city of Chnum temple	XVa	Early 12th	H25a	
		North City	XIV	12th	H86	
		South city of Chnum temple	XIII	12th	H10, H12	
Lisht	Middle Kingdom/ SIP	North - Cemetery	IIa	13th	A.13, A.33	Arnold (1996)
Tell el-Daba	Middle Kingdom	F/I	stratum e	Early 12th/ late 13th	I/20: 5, 6, 7, 8	Czerny (1999)
	SIP	A/V	stratum E/1, D/3, D/2	15th	032-33, 056-59, 056-60, 081-83, 092-093, 173-176	Hein and János (2004)
Deir el Ballas	Late SIP	Houses by North Palace		Late SIP	House E	Lacovara (1990, 1996)
Memphis	New Kingdom	Kom Rabia: RAT	Level IV	Early NK	rooms 7/23, 8/9/22, 3/21, 2/7/14, 19/20/5/26/27, 24/6	Jeffreys (2006)
			Level III	18th		
			Level II	19th		
Amarna	New Kingdom	Main City		18th	Q47.23, N50.19, O49.14, N49.6, O47.8, N51.4, P47.6, Q46.2, Ranefer I and II	Borchardt and Ricke (1980); Kemp and Stevens (2010)
el-Ashmunein	TIP	Site W	level 1b, 2a, 2b, 3	22nd-25th	j.10 and k.10	Spencer (1993)
			levels 1c, 3	22nd, 24th, 25th	j.11 and k.11	
Karnak	TIP	East of Amon's temple sacred lake	phase 1	21st	Houses I to VI	Anus and Saad (1971); Masson (2008); Millet and Masson (2011)

**Table 1.** Houses included in the ancient sample. This shows the sites, settlements, and specific houses included in the study, together with their bibliographical references.

of the aims of the analysis was to identify potentially recurrent associations between room types, and as these relationships could have included rooms on a second floor, the roofing of spaces was also studied, in order to learn how to identify areas that could have supported another storey above. These variations and relationships are both relevant from an archaeological point of view.

The analysis of the distribution and use of space included other aspects that are difficult to understand through the archaeological record, such as the use of open spaces.

Analysis of the surveys was made through the production of elevations and ground plans (AutoCAD drawings). Once all of the drawings were in the same format it was possible to analyse any possible variations and similarities in floor plans.

In order to evaluate and demonstrate the potential of the methodology developed, the next step was to examine a series of archaeological sites (Table 1), in light of the results of the study of modern mudbrick houses. This was achieved through the application of the method developed to the analysis of mudbrick house remains from a wide selection of dynastic era archaeological sites, from several different periods and areas, in order to maximize the number of variable combinations observable.

The interpretation of the compiled results drew on a synthesis of all the analyses made throughout the research. The main analytical processes can be summarised as follows: identifying the main contextual factors and their variations, extrapolating how those factors translate into specific material features, and analysing their influence on the distribution and use of spaces. This process resulted in the production of the accompanying interpretative tool which presents likely correlations between contextual factors and materiality, and which can aid survey and analysis standardisation in future excavations. It can be used as a reference tool and can aid with the interpretations of archaeological remains. Whilst the finished tool is yet to be systematically implemented across a full site, the application of the methodology on the aforementioned published sites has achieved some promising results<sup>19</sup> which support its future testing across full settlements and sites.

The analysis of the archaeological data in this way suggested that establishing general conclusions regarding the relations between houses in the sample, through time and across periods, is difficult, most likely because of the large number of factors involved and the degree of individuality expressed. For that reason, it is suggested that if we are to achieve a meaningful discourse, the necessary approach is first, to contextualize the site and settlement in question within its own period and location, secondly, to analyse the specifics of the settlement and the particularities of the community, and finally, and only once relative conclusions for each settlement have been established, will it be possible to compare settlements across different sites. Consequently, this approach combines, on the one hand, the exploration of cultural and individual diversity brought forth by the study of individual settlements, and on the other hand, it allows for the synthesis of studies between settlements that is necessary in order to develop a general discourse about ancient Egyptian houses.

That understanding informed the design of the underlying structure of the tool, which is constructed in three sections as described in the next section of this article.

### **Key principles and variables included within the tool**

As has been described, by way of survey and study of modern standing mudbrick houses across various locations in Egypt, a number of variables were identified which would appear to

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<sup>19</sup> See Correas-Amador (2013) pp. 192-238 for the practical application to the houses on table 1 and conclusions regarding materials and features, and the distribution and use of space within them.

have influenced the physical characteristics of traditional Egyptian domestic architecture. When considered with respect to the ancient archaeological remains it was found that some of these variables had a clear correlation with the archaeological record, while others pointed towards unproved relations. In a number of cases there was no observed correlation between ancient and modern samples. In some of those cases, however, other features were present which suggested that such a correlation might indeed exist. Those variables were then included in the analytical system, even if no direct association was found in the archaeological record. Where no primary or parallel evidence was available, any potential correlation was excluded from the rationale.

These observed and potential relationships between the architectural parameters/variables were then used to design a digital tool that would encourage consideration of these relationships and potential relationships when surveying other archaeological sites and built structures. This will help develop understanding of the technical factors and cultural meanings that shaped the architecture being surveyed, in the future.

The analysis is, therefore, divided into three sections, which were incorporated in the tool design.

Section 1. Introduces elements of the settlement/landscape context that should be considered prior to the analysis of specific houses.

Section 2. Forms the core of the tool and provides a method of analysis and interpretation for the most common domestic architectural features found across both modern and ancient samples.

Section 3. Develops Section 2 further by suggesting elements that may be reasons for variation both within the settlements and between houses across different settlements.

### *Section 1 - Site Considerations*

Section 1 refers to site and settlement/landscape characteristics which might have had an indirect effect on some of the variables contained in section 2, despite them hardly ever being obvious from the archaeological material. In some instances, these aspects can be identified by studying other districts within the site aside from the settlement containing the main population (i.e. palaces and temples which incorporate iconographic, epigraphic or material information), which provide contextual background for section 2. Understanding different site characteristics can assist when comparing houses from different settlements. Although some of these aspects seem obvious, they have often been overlooked when interpreting, and in particularly when attempting to compare, ancient Egyptian domestic architecture.

Factors such as the degree of isolation of a site, as well as its planned or organic nature, influence the design of houses. The literature regarding ancient contexts suggests that different degrees of political and cultural dependence or independence existed at different sites within the same periods. Proximity to or distance from central powers affects local economics and material production and could have also have affected architecture.

The reasons behind the original foundation of settlements, where known, should be considered when analysing the architecture in order to be able to evaluate the influence of global and local politics, economics and traditions. The site's chronological history and relation to other settlements within the landscape must also be understood.

### *Section 2 - Building Analysis*

Section 2 is the core of the interpretative method and the tool as it contains the range of factors that can directly influence architectural features, as well as detailing the different ways in which



this influence can materialise. Such relations are explained through tags ‘related to’, ‘subject to’, ‘modified by’, ‘encouraged by’, ‘not encouraged by’ and ‘enables’.

‘Related to’ suggests a link between the feature and the variable which can be more or less obvious but can manifest itself with different degrees of strength. That can be the case for example for windows, which are clearly primarily related to ventilation and light. Similarly, the number of floors is usually related to land availability, with houses tending to have more floors if the building space is limited, though this relation is not *sine qua non*.

‘Subject to’ indicates that the feature is likely to be directly and substantially modified by a certain variable when this is in operation. For example, sturdy roofs are subject to deposit formation over time, eventually making them difficult to distinguish from upper floors.

‘Modified by’ means that the variable consistently has an effect on the feature, as in the case of maintenance and repairs to walls, which will substantially modify the color of the bricks.

‘Encouraged by’ and ‘not encouraged by’ refer mainly to environmental factors which may or may not prompt the need for a certain feature, as is the case of rain, which encourages sturdy beamed roofs as opposed to weak, straw-piled roofs.

Lastly, ‘enables’ recognises that relationships between variables and features are bi-directional and that, in some cases, the features may actually prompt some of the processes present in the variables as well as vice versa. For example, the presence of an oven enables the action of cooking.

This section also encourages reflection on the function that features can have, for example decorative, practical, adaptive or structural. Bricks and mortar are structural as there would be no wall without them; render is practical in as far as it protects the wall even though it is not essential, and paint mainly has a decorative role which can often carry cultural connotations.

The section also considers the environmental variables that were identified through the research, and takes into account the natural processes affecting the archaeological remains after deposition.

Environmental variables have a direct effect on both the building material choices and the appearance and distribution of houses as a whole. Organic material requires constant maintenance for its preservation, due to it being subject to environmental erosion, however, its organic nature also means that it can be easily recycled, re-used and modified.

The particular distribution and use of space within a house is subject to several inter-related influences and should also be considered carefully. These include the cultural characteristics of the community, the resources available to the community, and the productive activities of the community in which the house is embedded. Changes in the demographic composition of the house’s inhabitants, their occupations, their social positions and beliefs, all have the potential to change houses over time, however, the fact that vernacular architecture is deeply rooted in local tradition should not be forgotten.

One of the most important contributions of the study of space in modern mudbrick houses was the development of an understanding of the distinction between intended function and subsequent use. It is important to note that, despite the fact that rooms might originally be designed with a certain function, this function usually changes through time; not only over long periods, but also at different times of the day, and of the year. A consequence of this is that certain rooms can be transformed or demoted from their original functions, for example, bedrooms can be transformed into animal storage areas. During the research, common activity areas were identified across houses which did not always correspond to Western-style dedicated rooms. Similarly, it is worth noting that not all use-changes leave a trace, and that ephemeral

issues such as privacy and gender divisions might occur and indeed shift without the need for an architectural correlation.

In addition to all of the previous factors considered, deposit formation over time and the action of the elements should always be considered when evaluating the reasons for the presence or absence of architectural features.

It is clear that, given the organic nature of mudbrick houses, their excavation and interpretation can bring specific challenges; for example, thick layers of deposits created as the result of repetitive maintenance of buildings can be mistaken for signs of long occupation. Distinguishing between the contents of a room, its fallen roof and any structures that were located above is also problematic. Similar remains can sometimes belong to different features; for example, wall remnants can be mistaken for roof and ceiling fragments and vice versa; ceiling beams can be mistaken for wooden beams used in walls as structural reinforcement, as the original lengths and diameters of wooden elements are usually badly affected by rot.

These erosion processes can also alter the dimensions of certain features, such as bricks, or even cause their total disappearance in some cases. These processes do not only occur in the long term, but also in the medium term, which is why regular maintenance is essential.

### *Section 3 - Variation Analysis*

Finally, section 3 revisits possible reasons for variability within the same settlement and between settlements, based on the information obtained for each house, through consideration of the parameters outlined in section 2. Variation within the internal analysis of a settlement can be due to economic differences between houses, varying traditions, different household structures, and individual factors, but the characteristics of a settlement as a whole can also vary in comparison to others. This variation may be influenced, for example, by differences in local material availability, or local climatic conditions. Land availability also influences the degree of spread and density of houses in settlements through time, and should be considered a factor that may help explain variation between sites.

## **Operation of the Tool**

The various sections of the tool can be accessed as interconnected pages of a PDF document. The tool is interactive, allowing users to be guided through the documentation process by clicking on the various menus. When placing the mouse over words in the PDF a small hand appears over those menus which lead to other related sections and pages of the tool. By clicking once, the user will be re-directed to the relevant related section where associated variables are listed. This interactive document could potentially be used on-site, in the field, on portable tablets, and used alongside more traditional clipboards with paper forms for recording results and relationships.

Some of the feature pages include a camera icon; the user can click on it to see examples illustrating that type of feature, and then click back to return to the original text page.

Ideally, the sections should be worked through consecutively in order to create a standardised record and analysis. A sample form may be designed and provided with the digital tool that can be used to record observations, help develop understanding of the factors and variables involved, and eventually identify possible relationships. Users are also encouraged to adapt and design forms for their own practical use, and are only asked to acknowledge the original source of the conceptual design.



## Conclusion

Throughout the ethnoarchaeological study that preceded the creation of the tool, the complexity that characterises the manner in which humans modify their environment, and the material forms into which those modifications translate, was revealed. The house, both in its ancient and modern forms, showed itself to be a canvas on which environmental, social, cultural, individual, and a myriad of other influences, are captured and displayed. When appropriately analysed, houses reveal the essences of the cultures that made them; precisely the insights that archaeologists want to gain from the study of ancient remains. Humans 'live' in caves, tents, and houses; and these capture everything that is to do with being alive. They embody relationships established with the world around and with other people in it.

This ethnoarchaeological study of mudbrick houses highlights the importance of a holistic approach to domestic architecture, and a change in focus from previous studies of domestic architecture is suggested. That change is articulated in the new theoretical and methodological approach described here, which has its practical manifestation in the accompanying tool.

In the first instance, it is hoped that this tool will provide a basic framework and become a starting point of reference for archaeologists involved in the excavation and study of ancient Egyptian domestic mudbrick remains. It cannot be emphasised enough that it is not designed as a static finished product, but rather as a system that should be expanded, modified, and developed as it is tested and tried by colleagues in the field, in a collaborative way. This will help promote a common methodological and conceptual workspace from which current and future researchers can benefit.

Moreover, the methodology upon which the tool has been built means that it can potentially be adapted to other Egyptian architectural environments, such as funerary or temple architecture. Furthermore, its consideration of environmental, sociocultural, community, and individual factors as universal variables influencing architectural development make it adaptable as an initial framework which can be applied to the study of architecture from other cultures and eras.

The realisation, no matter how problematic, that organic structures are dynamic entities which are subject to constant changes, is paramount for this type of archaeology. That the factors involved in such changes are manifold and often bi-directional is a natural corollary of such a realisation. Our research methods would be flawed if they did not attempt to mirror such a complex reality. In that respect, ethnoarchaeology has proved to be an essential tool in the process of achieving such a goal, as far as ancient Egyptian domestic architecture is concerned.

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