

The original arrangement of the Upper Courtyard of the Temple of Hatshepsut in the light of recent archaeological results



Abstract: The Temple of Hatshepsut was in use, and frequently modified, between the 16th century BC and the 12th century AD. From the beginning of the archaeological work at the site in the 19th century, one of the primary research goals has been to understand the modifications made to the building since its initial construction. The present paper provides an overview of the different arguments and ideas proposed for the original configuration of the Upper Courtyard in light of with evidence from recent excavations between 2014 and 2016 in different parts of the court. In 2000, architect Andrzej Kwaśnica argued for an unprecedented arrangement of the architectural elements of the Upper Courtyard. However, recent archaeological discoveries suggest that the issue should be revisited. An examination of the foundations of the Ptolemaic Portico columns has shown that the six bases may have been *in situ* from the reign of Hatshepsut.

Keywords: Egypt, archaeology, architecture, temple, Hatshepsut, courtyard, foundations, Temple of Hatshepsut, Upper Courtyard, ancient Egyptian architecture

The Temple of Hatshepsut was the first of a series of royal temples built in west-bank Thebes during the New Kingdom. Like many other buildings in Egypt and beyond, the structure was reused and modified on several occasions between its construction in the 16th century BC and the last registered medieval activity at the site in the 12th century AD. Despite a history of archaeological work at the site going back to 1855, many important lines of research still remain to be pursued.

Sergio Alarcón Robledo

Department of Near Eastern
Languages and Civilizations
Harvard University

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EARLIER RESEARCH

The original form of the temple and the reasons behind its modifications have been investigated ever since the times of Henri Édouard Naville, who was in charge of the fieldwork at the site between 1893 and 1906. The Swiss archaeologist and his architect, Somers Clarke, were the first to propose a theoretical restitution of the initial temple (Naville 1908: 17–31, Pls CLXIX and CLXXIII). Since then, understanding the initial shape of the temple has been a central topic of research, as it constitutes a primary source of knowledge for the reconstruction of the site.¹ Furthermore, understanding the shape and modifications of the temple is a matter of broader interest as it could, potentially, contribute to ongoing research of other New Kingdom temples, which are not as well preserved and which could have been influenced by the structure that Hatshepsut built (Karkowski 1983: 140).

Clarifying variations in the shape of the structures of a temple, in which so many different teams and archaeologists have worked, is a difficult and oftentimes controversial task. The present article examines the progress made in the Upper Courtyard, which is a particularly complex part of the temple. It begins with an

expounding of the main contributions to the study of the issue and the evidence upon which they were based, followed by a preliminary analysis of the archaeological results of seasons 2014 to 2016, which have suggested new directions for further investigation.²

It is in the aforementioned works of Naville and Clarke that the first approach to the subject of the original configuration of the Upper Courtyard can be found. The British-sponsored team published two different plans of the Upper Terrace of the temple (Naville 1906: Pl. CXIX; 1908: Pl. CLXXII), understanding the courtyard as an uncovered space surrounded by two rows of columns on all its sides. The arrangement of the columns was in both cases symmetrical and independent of both the niches of the west retaining wall and the doorways to adjacent halls to the north and south of the courtyard [Fig. 1a]. The only difference between the plan published in 1906 and the one from 1908 is the north–south intercolumnation, which was shortened in the later version. As a result, the 1906 proposal had 14 columns on the western and eastern sides of the courtyard, while the later plan suggested that these rows had 16 columns.

1 In 1961, the Polish Archaeological and Conservation Mission of the Temple of Hatshepsut at Deir el-Bahari initiated the study, conservation and reconstruction of the temple, concentrating on the Upper Terrace. The first stage of the reconstruction was concluded in 2000, when the Coronation Portico and the Upper Courtyard were opened to the public. Since then, reconstruction and conservation efforts have focused on the complexes adjacent to the Upper Courtyard. As a result, the so-called Solar Cult Complex was opened in February 2015, and the Sanctuary of Amun in December 2017. The Polish team is currently focusing on the study and conservation of the Royal Cult Complex.

2 More on the archaeological fieldwork in Alarcón Robledo 2017 and Iwaszczuk 2017: 100–110.

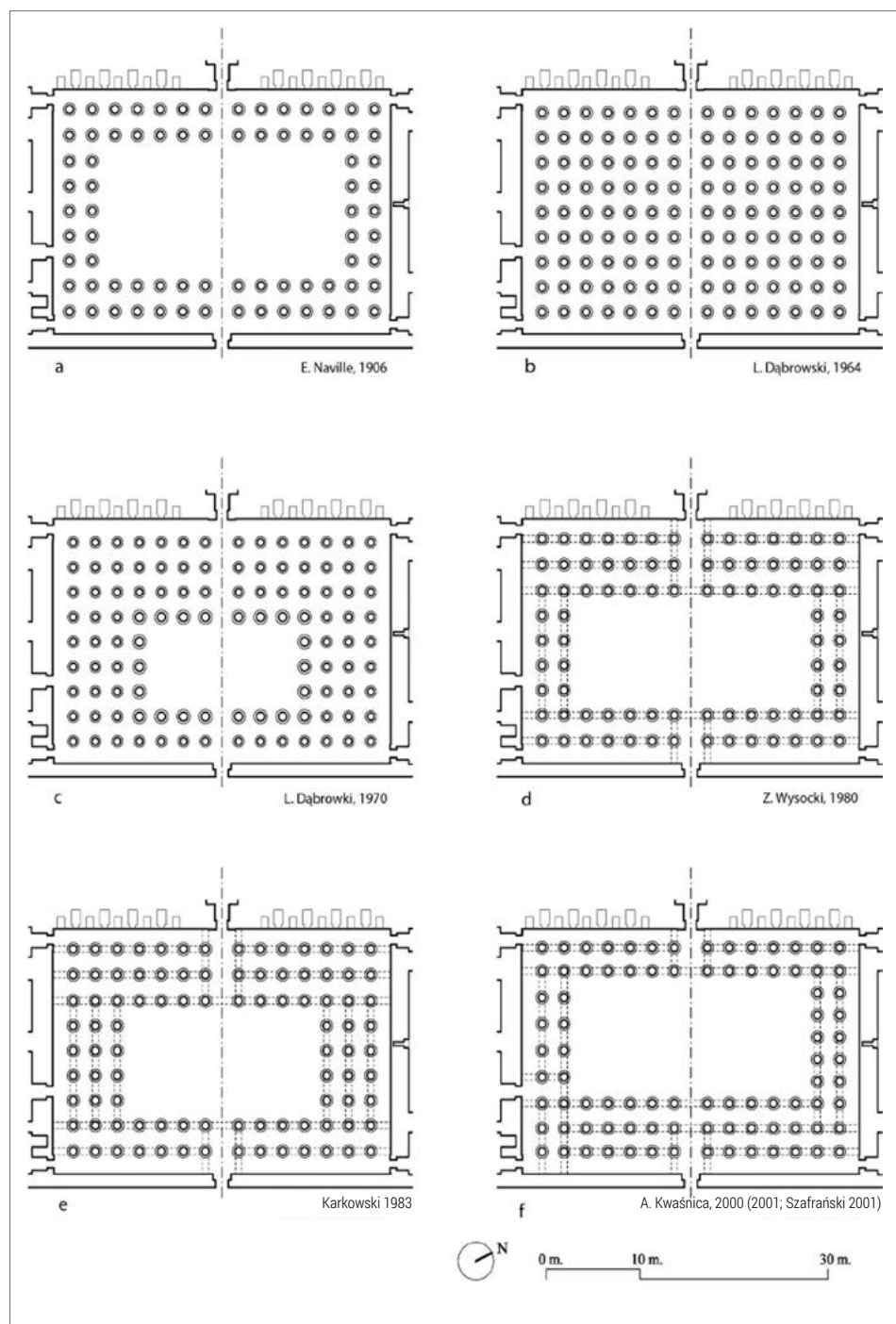


Fig. 1. The original configuration of the Upper Courtyard of the Temple of Hatshepsut according to different researchers (Drawing S. Alarcón Robledo)

Discussing the evidence upon which the British team based these proposals, Naville wrote that the Upper Court “was originally surrounded by a double colonnade, of which nothing now remains in place except a few bases ... , and four columns worked up into the later porch of the entrance to the central speos or Sanctuary on the west side, which have been re-cut to harmonize with the later work. But from these and other evidences it is possible to recover the original design with a considerable degree of certainty” (Naville 1906: 1). There is no further explanation of what is meant by ‘other evidences’. In a later publication of 1908, Somers Clarke added that “... we were able to trace the position and plan of the columns of the upper colonnade by the marks left on the floor by the masons, so we can identify the positions and forms of the colonnades surrounding this court” (Naville 1908: 25). There is no further mention of these mason marks in the literature, nor is there any published photographic evidence. What Clarke meant is thus unclear and could only be corroborated inside the temple by certain chisel marks found and recorded in the lower part of some walls of the temple (for marks of this kind, see, e.g., Wysocki 1987: 274; Karkowski 2003: 35), but not on the surface of the floor as the British architect indicated. It is possible that Clarke was referring to the marks extant on the upper surface of some of the column bases, which *are* attested on some of the bases in the courtyard (Dąbrowski 1964: 50) and are presented in one of the plates of Naville’s publication (Naville 1908: Pl. CLXXI-5), but there is no drawing or further evidence of any mason marks on

the floor of the courtyard proper. Actually, a close analysis of the pavement in the early 1960s resulted in the conclusion that “only in a few spots the pavement has been left in its original form” (Dąbrowski 1964: 47). Numerous blocks that composed the surface of the courtyard were found to be reused decorated blocks, which indicates that secondary paving activity had occurred at some point.

The next relevant contribution to this subject came in the early 1960s with a study of the original configuration of the courtyard by the architect Leszek Dąbrowski at the beginning of the Polish work at the site. In 1961–1962, Dąbrowski began an in-depth study of the courtyard, focusing on four key points: the analysis and restitution of the columns; the examination of the bases *in situ*; the study of the architraves; and the comparative research of the space with other structures. In his first publication on the topic, Dąbrowski (1964) introduced a ground-breaking idea: he proposed that the space which had previously been conceived exclusively as a courtyard could have been a hypostyle hall [Fig. 1:b]. In similarity to the nearby temple of Mentuhotep II and the Hathor and Anubis Sanctuaries of Hatshepsut’s own temple, this hypostyle hall would have preceded the main sanctuary (Dąbrowski 1964: 51). He thus suggested a plan in which columns filled the entire space instead of surrounding an open courtyard (Dąbrowski 1964: Pl. II).

The progress of the archaeological works at the temple, as well as the close examination of the results obtained by the Metropolitan Museum of Art, forced Dąbrowski to reexamine his theory (see Winlock 1942). He thus made a second proposal, wherein he admitted the exist-

ence of an open space at the center of the hypostyle hall [Fig. 1:c]. Apart from the symmetry of the outlined structure, the coexistence of two architectural orders should be noted in this second proposal. Dąbrowski suggested that the uncovered central part of the courtyard was bordered by 22 columns of a larger size (Dąbrowski 1970). Should that have been the case, it would have been unprecedented, although sparking an evolution of the design in the adjacent temple of Tuthmosis III, where the central part of the hypostyle hall was covered by a higher roof, supported by larger columns. The increased roof height opened the possibility of natural light streaming into the hall through windows opened between the two roofs. From an architectural point of view, this structural solution constituted an important step forward; one which could have influenced later architecture, as attested by similar spatial configurations in later New Kingdom constructions, such as the great hypostyle hall at Karnak and the halls of the Ramesseum and the temple at Medinet Habu (Karkowski 1983: 147, note 22). Given these architectural parallels, this configuration would have been plausible, but further research led to its rejection.

Jadwiga Lipińska suggested a similar idea for the layout of the temple courtyard without, however, studying it in detail. She considered the similar size and proportions of the courtyard and the hypostyle hall of the nearby temple of Tuthmosis III and proposed to take them as reference (Lipińska 1977: 35–36). Thus, in Lipińska's proposal, the arrangement of the columns in the courtyard of Hatshepsut's temple resembled that of the neighboring temple with three rows

of columns on its northern, southern and western sides, and two on its eastern side, with the central area covered by a higher roof supported on larger columns (Lipińska 1977: Pl. III). This idea had already been suggested by Dąbrowski when the excavation of the temple of Tuthmosis III was in its initial stages (Dąbrowski 1968: 135), but was ultimately discarded due to a lack of supporting archaeological evidence (Karkowski 1983: 147).

The architect Zygmunt Wysocki continued Dąbrowski's investigations of the original configuration of the colonnade of the Upper Courtyard, ultimately rejecting his revolutionary ideas (Wysocki 1973: 257; 1980: 59). Upon reexamination of the column bases, shafts and decoration, Wysocki concluded that the small number of fragments of the smaller columns (Wysocki 1980: 56) and the supporting points on the architraves could be interpreted only if all of the columns originally set in this courtyard were of the same size. The restitution of these resulted in a total height of 4.945 m from the top surface of the base to the underside of the architraves. Regarding the smaller columns, it is likely that they did not belong to this part of the temple, or if they did, they would have been set in a characteristic place, upon a platform or plinth that would increase their height sufficiently to reach the architraves (Wysocki 1980: 69; Karkowski 1983: 145). Consequently, Wysocki proposed a new plan of the courtyard (Wysocki 1980: Fig. 9) with two rows of columns on the northern, southern and eastern sides, and three rows in the west [Fig. 1:d].

Working concurrently with Wysocki, Janusz Karkowski proposed a plan of the

courtyard with three rows of columns to the north, south and west of the courtyard, and two rows on the east (Karkowski 1983) [Fig. 1:c]. His ideas were grounded

in a study of the original disposition of the architraves throughout the temple and conclusions reached in studies of the decoration of the column shafts.

STATE OF RESEARCH IN 2011

In the 1990s, the architect Andrzej Kwaśnica returned to the issue, carrying out a very detailed analysis of the elements that could shed light on the position and changes made to the colonnade in the Upper Courtyard. Starting from the proposal made by Wysocki, he reexamined the *in situ* location of the column bases as well as the decoration of the column shafts. His most important contribution came from an in-depth study of the architraves in terms of both form and decoration, as well as a review of their supporting points upon the courtyard walls, made possible by the progress in the reconstruction of the decoration of these walls, which was almost complete at the end of the 1990s (Kwaśnica 2001: 81–87).

The supporting points of the architraves enabled Kwaśnica to calculate the distance between the rows of columns as 2.40 m from one column axis to the next. Kwaśnica argued that this length suited that of the preserved architraves, which varied between 2.30 m and 2.50 m. Given this interrelationship, he assumed this distance to be the general intercolumnium of the courtyard. He then drew a theoretical grid over the plan of the courtyard and suggested 10 columns on the northern and southern sides instead

of the nine proposed by all the earlier researchers (Kwaśnica 2001: 92).

One piece of evidence on which he based his conclusions was an architrave with a preserved minimal length of 2.75 m (Kwaśnica 2001: 92).³ This led Kwaśnica to assert that the distance between the columns ought to have been longer somewhere in the courtyard, which would not be surprising, considering that it was a common solution when enlarging walkways through colonnades. There are two examples of this practice in the courtyard, where the columns flanking the main axis of the temple allow for a wider path into the courtyard and the Amun Sanctuary. Kwaśnica suggested a similar design for the walkway to the entrance of the Royal Cult Complex located on the southern side of the Upper Terrace. The points where the architraves were set upon the south wall indicate that the arrangement was similar to that of the above-mentioned walkways, breaking the continuity of the architraves rows, and turning them towards the doorway [Fig. 1:f].

Another noteworthy contribution made by Kwaśnica was based on his analysis of the decoration of the architraves. As attested in other parts of the temple, the reliefs on blocks exposed to direct sunlight were sculpted in sunken relief, whereas those in the shade bore inscriptions made in

3 This particular architrave is damaged at one end, preventing us from conclusively determining its original dimensions (Kwaśnica 2001: 92).

bas-relief. Some of the preserved architrave fragments are decorated with bas-reliefs, but it is possible to appreciate an earlier decoration in sunken relief on their surface. Kwaśnica interpreted this as proof that another row of columns was added on one of the sides of the courtyard once it had been built and fully decorated. This new row would have placed a whole line of architraves, previously exposed to sunlight, in the shade, thus necessitating the replacement of sunken relief decoration with bas-reliefs (Kwaśnica 2001: 94).

The new plan of the courtyard that Kwaśnica proposed—based on a thorough investigation, the main points of which have been summarized here—consisted of two rows of columns to the north, south,

and west of the courtyard, and three of them to the east, the third of which would have been added at a later stage of the construction process [Fig. 1:f]. The asymmetry of the plan, which derives from the elongation of the columns' distance on the pathway to the Royal Cult Complex, is particularly remarkable. Thus, the northern side of the courtyard would have originally been composed of 10 columns, whereas the southern one would have had nine. Kwaśnica was aware of the atypical character of this unprecedented configuration; he argued it based on the complexity of the temple, the modifications that it underwent during the original construction,⁴ and the compositional issues that its builders had to face (Kwaśnica 2001: 97).



Fig. 2. General view of the Upper Courtyard of the temple, during the excavations of the foundations of the Ptolemaic Portico (S1/14) (PCMA UW Deir el-Bahari Temple of Hatshepsut Project/ photo D. Wiczorek, 2014)

4 See the detailed study by Zygmunt Wysocki on the construction of the temple of Hatshepsut and the successive modifications during the process (Wysocki 1986; 1992). He essentially

RECENT ARCHAEOLOGICAL RESULTS

One of the main reasons why Wysocki proposed three rows of columns on the west side of the courtyard as opposed to the east side [see *Fig. 1:d*] was the assumption that the bases upon which the Ptolemaic Portico stood [*Fig. 2*] had not been moved since the initial construction took place and that the Ptolemaic builders followed the extant disposition of columns while setting it up (Wysocki 1980: 69). Agreeing with Naville's idea, Kwasnica wrote: "... The Ptolemaic architects had indeed used the extant column bases to set up their columns, but only the first four counting from the Sanctuary. They added two more on the east, as indicated by the level of the tops of these bases, which is in both cases 6 cm above that of the other four resting *in situ*. The ancient Egyptians could not have allowed such a bump to appear right in front of the entrance to the Sanctuary" (Kwaśnica 2001: 89). He also stated that "... no attention was paid to leveling the ground under these two new bases" (Kwaśnica 2001: 90).

In 2013, total station measurements of the height of these bases revealed a maximum difference of 3 cm of the northern base (P-1⁵), and 4 cm of the southern one (P-2) with respect to bases J-1 and i-1. A similar difference was

observed between the heights of bases J-1/i-2 and J-2/i-2 [*Fig. 3*]. The subsoil of these bases (trench S1/14) was uncovered in search of evidence for the two easternmost bases being added by the Ptolemaic builders. Otherwise, the results would confirm that they were still in their original positions, as Wysocki believed.

Contrary to Kwaśnica's ideas, the excavations revealed that the bases were carefully set on foundation blocks, designed to transfer their structural load to the bedrock [*Fig. 4*]. Such foundation blocks had been attested earlier, for instance, in the excavation of the substructure of the south wall of the courtyard (Stefanowicz 1991; Szafrński 1995). The blocks found underneath bases P-1 and P-2 have the necessary thickness allowing the upper surface of the bases to be set at the proper height of the courtyard pavement, which suggests that the setting of the bases and of the foundations was most likely part of the same architectural undertaking. This is even more apparent when we consider that not all the base blocks in the courtyard have the same thickness. According to Kwaśnica, the two eastern bases of the portico were added in Ptolemaic times (Kwaśnica 2001: 89); had that been the case, the foundations would have been placed there at the same time.

divided the building work into two phases. Worth mentioning is his idea that Tuthmosis II may have been responsible for the first stage of temple construction. Nevertheless, no foundation deposits have been found in confirmation of this theory. In fact, a thorough analysis of foundation deposits from the site argues in favor of the idea that Hatshepsut was responsible for the construction of the temple from the very beginning (Spence 2007).

5 The number scheme of the columns follows the one established by Kwaśnica (Szafrński 2001: 191) except for the easternmost ones, now designated as P-1 and P-2, which Kwaśnica had not numbered, thinking them to be added by the Ptolemaic builders.

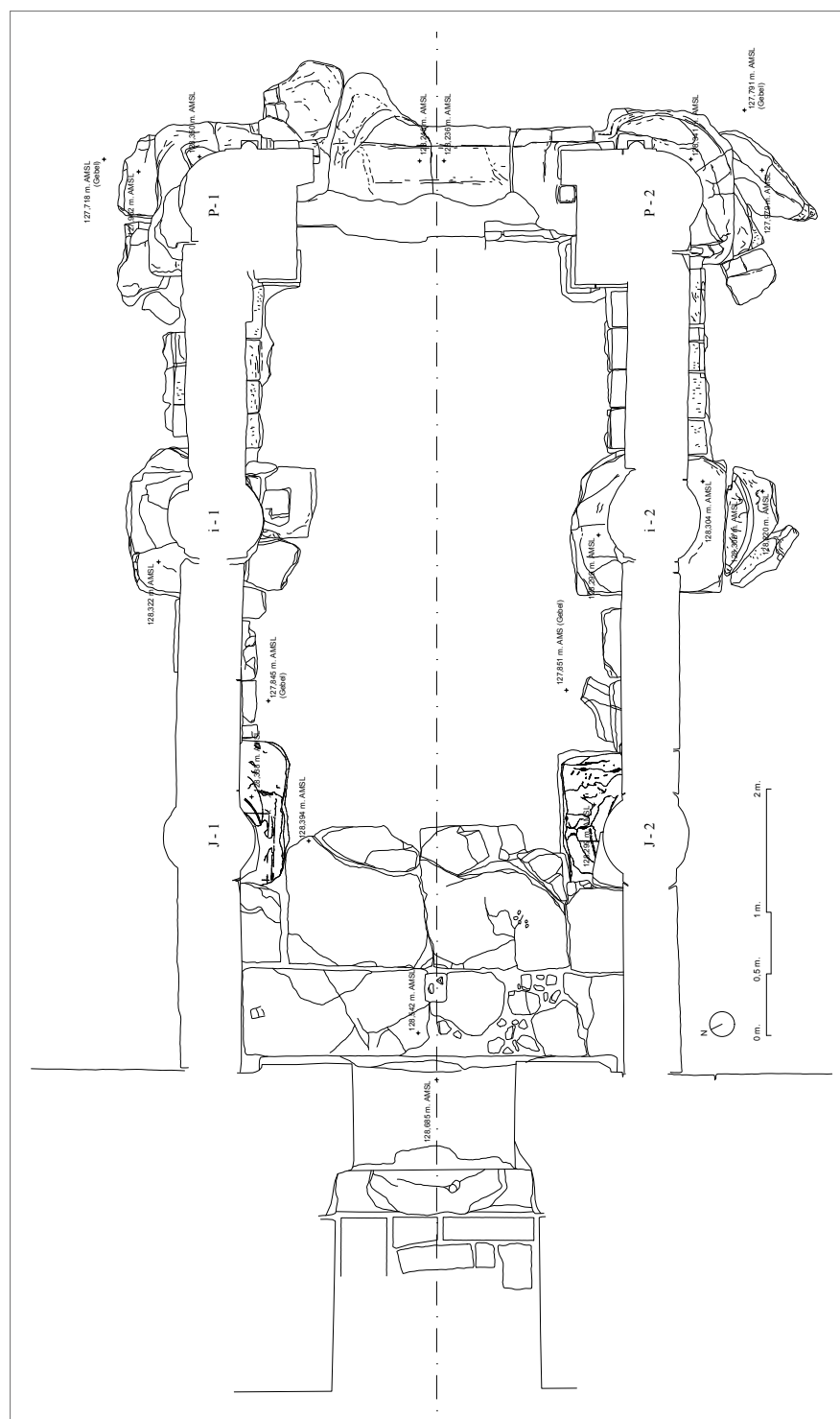


Fig. 3. Trench S1/14; plan showing the Ptolemaic Portico with the foundations uncovered (PCMA UW Deir el-Bahari Temple of Hatshepsut Project/drawing S. Alarcón Robledo)

The question that arises is whether the bases *and* the foundation blocks were all set in the times of Hatshepsut or at the time when the Ptolemaic builders were preparing to construct the portico.

A detailed analysis of the foundation blocks revealed a *dipinto* on the surface of one of those underneath base P-2. These chromatic marks, of a rosy tone, are related to the techniques and progress of block production, from quarrying to different stages of work on their surfaces at the temple (Wieczorek 2010; 2015). According to Dawid Wieczorek, the *dipinto* found on the surface of the block proves that it was brought in and shaped rather roughly during the construction of the temple in the times of Hatshepsut.

The section cut through the subsoil upon which the Ptolemaic portico is set, which was examined in the space between the bases of the Ptolemaic portico, revealed that the portico walls were built directly on the pavement of the preexisting

courtyard. It seems strange and somehow unlikely, from an architectural perspective, that the Ptolemaic builders would have excavated the courtyard down to bedrock just to give the corner bases an appropriate foundation, while setting the rest of the wall directly on the extant pavement without structural reinforcement of any kind.

A piece of diorite was found embedded in the trench section between bases i-2 and P-2 [see Fig. 3]. Diorite is a highly tough rock which was often used for working red granite. The most plausible hypothesis is that this fragment splintered off from a tool used on the surface of the doorjambs or lintel of either the entrance to the Amun Sanctuary or the doorway that enters the courtyard from the Upper Portico. This also suggests that the red granite brought to the site was not fully dressed, as was the case of softer stones. In either case, these stone elements were incorporated into the temple in the times of Hatshepsut, and considering that there is no evidence of any



Fig. 4. Trench S1/14: view of the uncovered foundations under column base P-1 (PCMA UW Deir el-Bahari Temple of Hatshepsut Project/photo D. Wieczorek, 2014)



Fig. 5. General view of trench S1/15, excavated in 2015 (PCMA UW Deir el-Bahari Temple of Hatshepsut Project/photo M. Jawornicki, 2015)

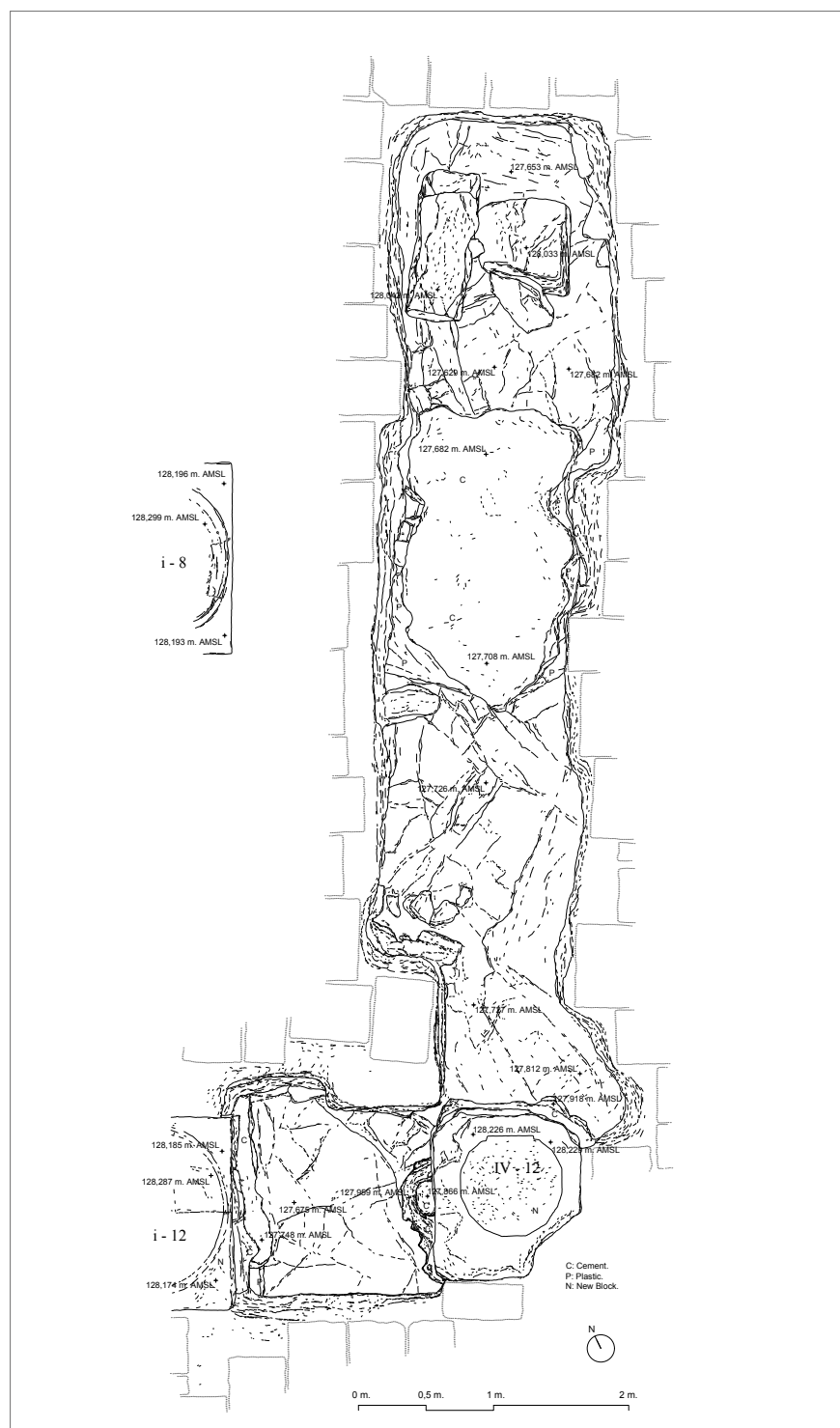


Fig. 6. Plan of trench S1/15, showing cement and plastic present in some parts of the excavated area (PCMA UW Deir el-Bahari Temple of Hatshepsut Project/drawing S. Alarcón Robledo)

red granite or diorite Ptolemaic features in the temple, we can tentatively contextualize the archaeological layers underneath the south wall of the portico as belonging to the construction period of the temple in Hatshepsut's time.

A pottery rim sherd found between base P-1 and the foundation block underneath (which bears the said *dipinto*) was not diagnostic, as it sits equally well in the early New Kingdom and the Ptolemaic period (S. Marchand and Z.E. Szafranski, personal communication).

Based on the fact that the bases underneath the eastern end of the Ptolemaic Portico were properly set on foundations, in 2015 the team excavated trench S1/15, which corresponds to the area where the third row of columns ought to have been, if it had ever existed, working on the assumption that, although the bases were not in place, their foundations could still

be *in situ*. The trench corresponded to the southern half of the alleged third row of columns. Cement and modern plastic found over a considerable part of the bedrock surface in the trench proved that the place had already been excavated down to bedrock, leaving no evidence of value for the issue at hand. A few roughly worked blocks were found to the north of the cement [Figs 5, 6], but the mixed material and the inconsistency of the layers among the blocks made it apparent that they had been removed from their original setting.

The space between bases i-12 and IV-12 was also excavated in the hope of finding foundations for comparison with those of the Ptolemaic Portico. The bases were thick enough to reach bedrock without the need for foundation blocks. Furthermore, cement was found under both of them, proving that their substructures had been modified in modern times [see Figs 5, 6].

CONCLUSIONS

The results of recent archaeological excavations in the Upper Courtyard have reopened an avenue of research closed for the past two decades. The examination of the trenches underneath the Ptolemaic portico revealed the careful arrangement of the setting of bases P-1 and P-2. The dating of this arrangement is supported by the following evidence:

1) The fact that the thickness of the foundation blocks is perfect for allowing the bases P-1 and P-2 to reach the level of the pavement strongly suggests that both the foundations and the base blocks were set at the same time.

2) At least one of the foundation blocks was dressed most certainly in the

time of Hatshepsut. The other blocks do not show any *dipinto* on the visible faces, which would verify a common origin, but the similar manner of dressing and preservation make this most likely.

3) The chisel work on the base blocks, as well as their state of preservation, are similar to those of other bases which were set in the times of Hatshepsut.

4) The fragment of diorite found in the archaeological layers underneath the portico in between bases i-2 and P-2, and the lack of any later material evidence within it, attests to the presumably undisturbed nature of these layers since the times of Hatshepsut.

The archaeological data, even at this preliminary stage of the analysis, sug-

gests that bases P-1 and P-2 may have remained *in situ* since the construction of the temple. If so, then it follows that the existence of at least three rows of columns on the western side of the courtyard in its original configuration cannot be excluded. This is incompatible, however, with the three rows of columns, suggested by Kwaśnica, on the eastern side, because according to the studies of the decoration of the column shaft there ought to have been at

least four columns making up the northern and southern fronts of the open part of the courtyard (Wysocki 1980: 63).

A further and more in-depth review of the various arguments analyzed herein is necessary to render them compatible with the more recent archaeological evidence. This would provide a more certain account of the development of this part of the temple over time ever since its first construction during the reign of Hatshepsut.

Sergio Alarcón Robledo ORCID 0000-0003-2687-8084
Department of Near Eastern Languages
and Civilizations, Harvard University
6 Divinity Avenue, Cambridge, MA 02138, USA
salarconrobledo@g.harvard.edu

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