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New Excavations at the Punic-Roman city of Tharros, Sardinia

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The University of Cincinnati, in collaboration with the Soprintendenza Archeologia, Belle Arti e Paesaggio (Cagliari), undertook its first season of archaeological excavations and fieldwork at the Punic-Roman city of Tharros, Sardinia, in the summer of 2019. This report outlines the preliminary results of this first season of activities, while also situating them within an overview of the broader interests of the project. The excavations were carried out in two different and relatively distant areas of the city: one of these areas is identified as a series of Roman shops (tabernae) to the south of a bath complex (Terme II), which had already been cleared down to (and through) the latest floor surfaces during the first systematic excavations of the city in the 1950s; the other area, further north toward the top of the Murru Mannu hill, had never been excavated, and thus provided an opportunity to both delineate urban structures and to investigate the contexts associated with their decline and abandonment. Our investigation of this second area revealed the remains of a Roman shop. The sequences of development for these retail properties revealed construction activities associated with a pre-Imperial period of occupation, with sizable structures adhering to a somewhat different urban configuration than that associated with the Roman era. Most of the surviving architecture, however, dates rather to a period of significant urban development in the 2nd century CE; it was at this time that we see the construction of shops in both areas. These shops underwent a series of structural developments until about the 5th century CE, when they appear to go out of use and were subsequently abandoned and ultimately dismantled for their building material to be used elsewhere.

Introduction

The Tharros Archaeological Research Project (sponsored by the University of Cincinnati) carried out its first campaign of excavations at Tharros between May and July of 2019. Situated on the west coast of Sardinia, on the Sinis peninsula of the Gulf of Oristano, the Punic-Roman city of Tharros once served as a critical node in the network of important trade routes between the coastal ports of Spain (and the Balearics), Carthage, and Massalia (fig. 1). While the site is best known for its unusually rich Punic tombs, these new excavations are targeting the city itself—particularly its residential and retail quarters—to establish a clearer and more broadly contextualized understanding of the city's growth and decline.

In addition to delineating a more robust sequence of urban development, one that can connect the city's episodic growth spurts to broader aspects of Mediterranean history, the project is asking new questions about the socio-economic fabric of the city's Punic and Roman levels: these include questions of diet and urban consumption, as well as questions of waste management and urban renewal. Another area of interest and inquiry relates to archaeological methodology, particularly the development of digital recording methods as well as exploring new ways to understand and explain the taphonomic processes that underpin the development of urban sites. Ultimately the project hopes to move beyond the most basic aim of telling a series of descriptive, hyper-

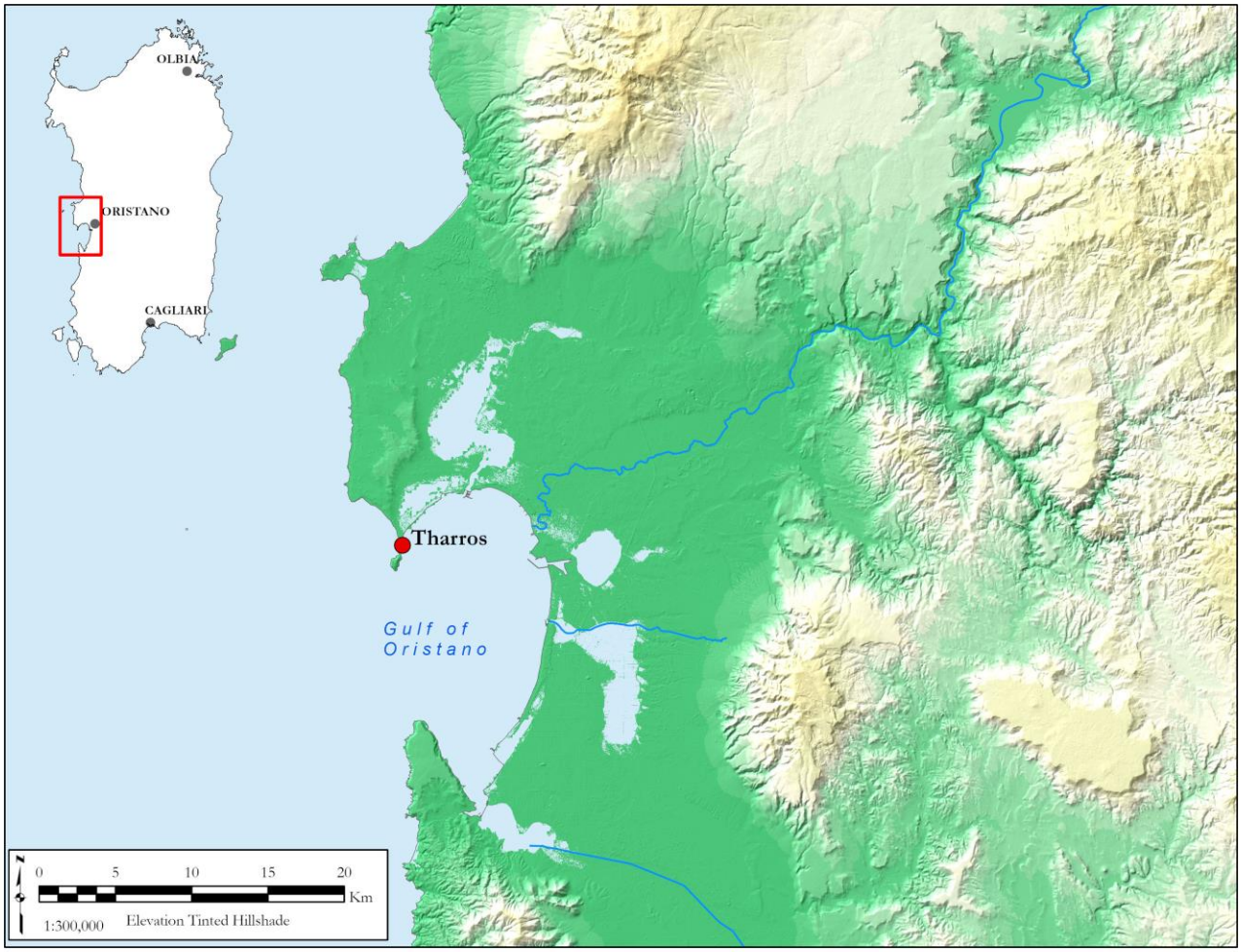

Fig. 1. The location of Tharros on the Gulf of Oristano (Courtesy J. Nowlin).

localized archaeological histories of one building or another, to instead develop a program of study that situates the results of the excavations within a fuller understanding of the broader socio-economic world in which this city once participated along with the archaeological practices that bring it to light.

The 2019 excavations targeted two distant and differently preserved areas of the city in order to develop a somewhat representative spectrum of urban construction, occupation, and abandonment (fig. 2). The differences between the two areas are most immediately apparent from their excavation histories. Trench 1000 was located in a neighborhood of the city that was excavated down to its latest, 5th century CE surfaces in the 1950s by Gennaro Pesce (fig. 3). Those earlier excavations naturally provided an opportunity to build an immediate understanding of the urban structure from those latest ancient levels, but at the cost of learning much more about those uppermost surfaces or the processes of abandonment that once lay above them in that area. Trench 2000, however, was never previously excavated, except for the Cardo Est that fronts the western side of the concession, and thus provided an opportunity to incorporate and examine the processes of urban abandonment (fig. 4). The relatively distant locations of these two areas, moreover, provided an opportunity to survey potentially different urban processes and developments from one part of the city to the other. At the same time, the two areas also have urban structures in common, namely commercial spaces such as *tabernae*. Therefore, a preliminary aim was to compare the historical development of two commercial spaces, and to then test the degree to which—given that *tabernae* are the most common form of any singular type of building in an ancient city—such spaces reflect common processes of socio-economic development.

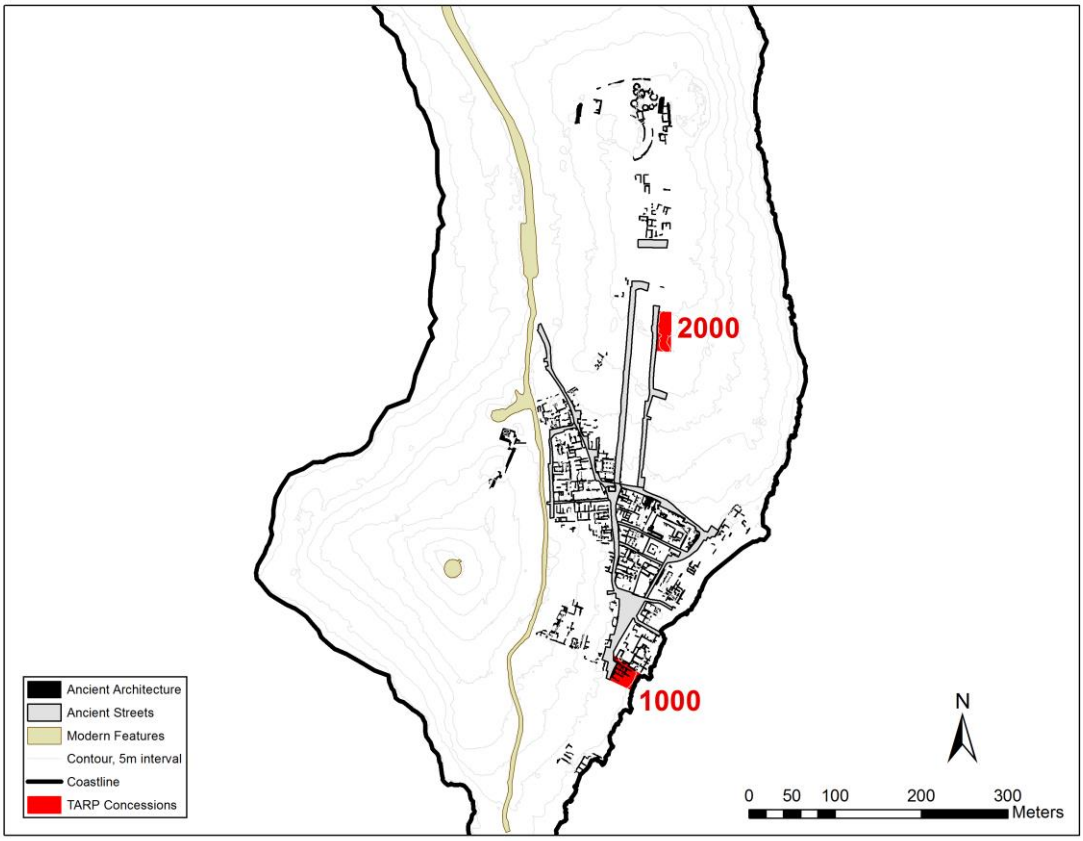

Fig. 2. Location of TARP areas of fieldwork (concessions).

Fig. 3. Aerial view of Trench 1000; viewed from the west.

Fig. 4. Aerial view of Trench 2000; viewed from the northwest.

Trench 1000

This area of Tharros was first brought to light by Gennaro Pesce during his major campaign of excavations of the late 1950s[1]. His excavations revealed a series of structures just south of a civic bath complex (since labelled as either Terme II or Convento Vecchio)[2]. The structures were characterized by basalt-stone thresholds and masonry architecture standing over 1 m (figs 5 and 6). It was the thresholds in particular, which are of the typical retail form, as well as the general configuration of the structures that enabled Pesce to identify these properties as commercial in function. Pesce excavated each property down to at least their latest surfaces, recording some of the artifacts recovered from the abandonment levels[3]. Even so, few interpretations were offered about how those artifacts might relate to, and thus help to define, the rooms from which they were recovered, or about when the buildings were abandoned. Because of his necessary focus on the latest shape of the buildings, less was determined about their construction and occupation histories. Pesce did, however, surmise that because the floor levels of the properties were significantly lower than the street itself, the shops were likely to be of an earlier period than the street and adjacent bath complex (Terme II)[4]. His assessment served to

[1] PESCE 1958; 1966; see also MARANO 2016: 454-458 (schede 147-151) for a list of the finds.
[2] PESCE 1966 labelled parts of these spaces: 83 for the streetside room of our Shop 2, 84 for our Shop 4, and 85 for the latrine (see our fig. 5). It is noteworthy, however, that his numbering system here, as throughout Tharros more broadly, alludes to properties but without clearly delineating them.
[3] On the floors, PESCE 1958: 350.
[4] PESCE 1966: 156.

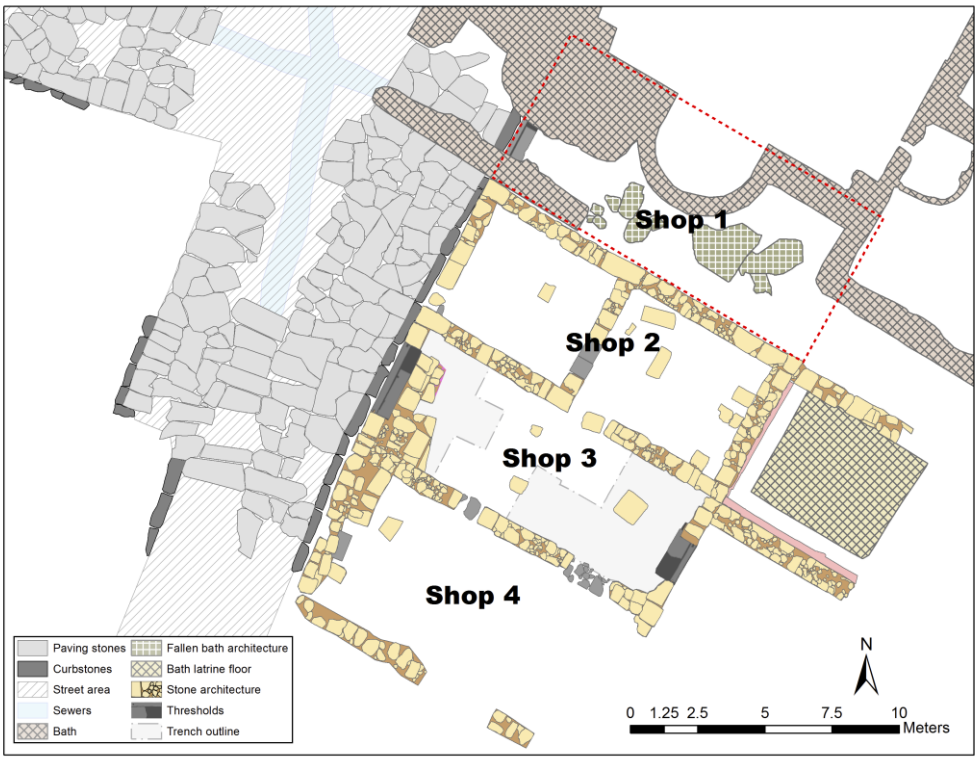

Fig. 5. Plan of Trench 1000 and the broader area of study.

Fig. 6. Shop 3 (Trench 1000) noting the two retail thresholds at each entrance; viewed from the southwest.

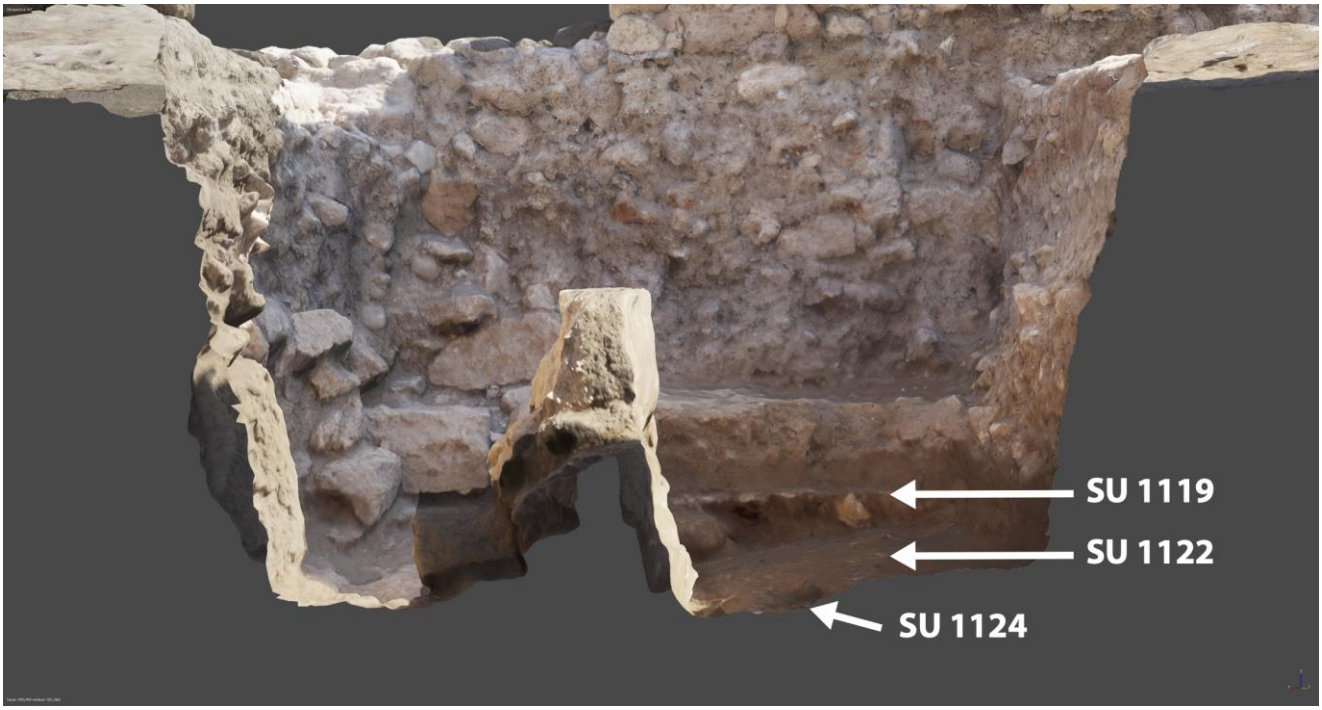

Fig. 7. Section from the photogrammetric model indicating the Phase 2 and 3 surfaces.

influence the location of our excavations, given our interests not just in retail landscapes, but also in identifying the earlier and principal phases of urban development for the city. The previous excavation of these shops thus provided something of a 'quick start' for our new project; as the property boundaries were already defined and the area well-maintained by the park staff, we could immediately engage with the standing architecture and the latest periods of occupation. Moreover, continuing sub-soil excavations in these properties promised an opportunity to engage with Pesce's legacy data[5], a process that remains ongoing and which will ultimately allow our new team to familiarize itself with the historical research on Tharros.

The excavation of Trench 1000, in Shop 3, began simultaneously in the easternmost and westernmost limits of the space (fig. 5). The depths of these excavations would reach c. 1.5 m below the latest ground surface to reveal eleven phases of development, ranging from the first occupation phase to the final observable architectural changes.

Immediately above the earliest deposits (Phase 1), a series of flat and ramped surfaces was installed in the central area of the trench (Phases 2-4). A massive wall was then constructed in the Roman Republican period, associated with another ramped surface (Phase 5). After two subsequent relayings of the surface (Phases 6-7), a stone floor was founded in the western section of the trench (Phase 8). In the early Imperial period (Phase 9), a new structure replaced the earlier (Phase 5) wall, notably built at a more northern orientation than what we will see for all subsequent developments of the city (from Phase 10). It was only in the High Empire (late 1st-early 2nd century CE, Phase 10), that the shop, as it is currently oriented, was constructed. With the addition (or reconfiguration) of its southern wall in Phase 11, the shop took on its final form (that which remains evident today), likely sometime in the late 2nd century CE. Relatively less is known about the final developments—about any construction, occupation, or the ultimate abandonment of the area—as much of the associated deposits was removed in the earlier excavations.

[5] In particular the archives held in Cagliari: Archivio Storico della Soprintendenza per i Beni Archeologici per le province di Cagliari e Oristano (ASSACO); Archivio Grafico della Soprintendenza per i Beni Archeologici per le province di Cagliari e Oristano (AGSACO); and Archivio Fotografico della Soprintendenza per i Beni Archeologici per le province di Cagliari e Oristano (AFSACO).

Phase 1: Natural and first anthropogenic levels

The excavations reached sandstone bedrock in one section of Trench 1000 (SU 1118, at c. 5.36 masl), immediately east of the Phase 10 stairs (SU 1097).[6] Although the decay of the bedrock (SU 1118) into soil (SU 1096) produced a gradual transition between the bedrock and the overlying soil and made the delineation difficult to identify, the change in color from 7.5YR 6/6, reddish yellow (for the bedrock) to 7.5YR 3/4, dark brown (for the soil) was clearly identifiable. The soil deposit overlying bedrock (SU 1096) was deep (c. 0.84 m.), mostly sterile, and relatively consistent throughout. The transition to anthropogenic layers must have occurred within it, however, as some material culture was embedded within the top few centimeters of the context (FN 1096-4). A small concentration of unmodified stones, about 10-15 cm in size, was also identified in SU 1096, between the later Phase 10 stairs (SU 1097) and a section of the Phase 9 structure (SUs 1050 and 1114). The depositional processes for the stones are uncertain as they were separated from subsequent construction activities. Instead, the stones, along with a limited amount of cultural material recovered from soil layers immediately above bedrock, point toward some activity in the area before the more concerted construction activities of Phase 2.

Phase 2: First sloping surface

The earliest evidence for any significant activity in this area was recovered in the center of the trench in the form of a packed earth surface incorporating fragments of plaster/mortar, ceramic, and charcoal, which slanted downward to the east (SU 1122, at c. 5.58 masl, c. 9° slope; fig. 7). This earliest surface was not well preserved and included a cut that contained a charcoal rich deposit (cut = SU 1123, fill = SU 1124).

Phase 3: Leveling of space

A second surface (SU 1119; fig. 7) was more level and better preserved than the first (SU 1122), consisting of a hard lime plaster (c. 1 cm thick) laid on top of a rubble subfill (c. 10 cm thick). The more careful construction of this surface, and particularly its leveling, demonstrates some form of occupation of the immediate area.

Phase 4: Beaten earth ramp

The flat surface of Phase 3 was superseded by a ramped surface in Phase 4 (fig. 7), indicating a new need to mitigate a difference in elevation between a higher area to the north and a lower area to the south. Notably, the direction of this slope was different from the one found in Phase 2, sloping upward from south to north (c. 8°)[7], rather than upward from east to west, altering the use and experience of the space. The Phase 4 ramp was made of a substantial fill and earthen surface (fill = SU 1117, surface = SU 1116, c. 55 cm thick combined) built directly above the Phase 3 floor. Included within the new surface's uppermost matrix (SU 1116) was a collection of large, unarticulated bones from a variety of domestic livestock (FN 1116-2); though close to the surface, the bones were likely associated with the construction fill rather than its visible surface.

Phase 5: Installation of a significantly large wall and sloped surface (Roman Republic)

The first significant architecture in the eastern half of Trench 1000 was encountered during Phase 5, with the installation of a large wall (SUs 1063, 1074, and 1102), the foundations for which cut into the Phase 3 and 4 surfaces below (cut = SU 1120). While the eastern face of the wall was not delineated during excavation, the western side (SU 1102) was formed from cut stone blocks, finished on their western side but irregular on their interior facing (fig. 8a-b; see also fig. 10). One of these interior stones extended perpendicularly to the facade,

[6] Natural soil was identified in the center of the trench (SU 1125, at c. 5.50 masl). Due to limitations of time, however, we were unable to completely remove this material. If the natural soil is as thick in the center of the trench as it is in the west, then we might expect the bedrock to be more than half a meter below this level.
[7] The slope registered c. 0.20 m difference over the 1.39 m length of the ramp that was excavated.

Fig. 8. A: Aerial view of west face of the Phase 8 wall with coring material to the east. B: West face of the Phase 8 wall with coring material behind.

suggesting that the wall may have been buttressed for the fills on the eastern side. The portion of the fill excavated on that eastern side of the wall, so its core (SUs 1063 and 1074), was of a substantial volume of soil (c. 310 L) and stone (c. 140 kg, FN 1063-1). There were numerous air pockets between the larger stones, suggesting the rapid filling of the wall's core. Above the rubble fill was a layer of small, flat stones (SU 1044), which operated as a kind of leveling course. Of great significance is the fact that no eastern face to the wall could be identified, with the core extending into the unexcavated baulk of the trench. If the eastern face was located within this baulk, then we have a wall of at least 1–2.1 m wide. Though more of it needs to be delineated and identified, the sizable dimensions indicate that we have a structure of relatively monumental proportions, and potentially civic in construction.

Accompanying the wall's construction was the installation of another ramped surface (SU 1113) against the wall's western face (fig. 9). Like the surface before it, the Phase 5 surface sloped significantly (c. 10° upward to the north). Materials associated within the Phase 5 fill contexts included African and locally-produced amphorae (FNs 1036-18, 1044-5, and 1063-8); locally-produced coarse wares with monochrome linear decoration (FNs 1036-16 and 1044-2); black gloss fine wares (FNs 1036-14, 1044-3, and 1063-11); and locally-produced red slipped fine wares (FN 1063-11). If the last of these is a local imitation of eastern sigillata or the fine wares of central and southern Italy[8], it suggests that the wall and surface might date to the later portion of the Roman Republic, although additional study is needed.

Phase 6: The third northern-sloped ramp

While there were no other significant changes to the configuration of space during Phase 6, the Phase 5 beaten earth surface was at this time replaced with a similar surface (SU 1111) sharing the same slope (c. 10°). This new surface had a greater depth than the preceding one; the Phase 5 ramp was c. 2.5–7.5 cm thick, while the Phase 6 ramp was c. 18.5 cm.

Phase 7: The last ramp

The final packed earth ramp (SU 1105) had approximately the same slope as the previous two phases (c. 8°), but only ranged between 2–5 cm in depth. Like the previous phase, the present development came with no other activity than the newly relaid ramp itself. The materials from this context—African and locally-produced amphorae (FN 1105-7); plain African and locally-produced coarse wares (FN 1105-8); locally-produced coarse

[8] Local production of fine wares have been noted in numerous places. So-called "local imitations" did not always closely follow the original fabrics, slips, and forms, but instead adapted the external model into the local pottery tradition; Regev 2007: 191; Quercia 2011: 446.

Fig. 9. The ramped surface (SU 1113) of Phase 5 in Trench 1000.

Fig. 10. Plan of the newly leveled surfaces in Phase 8.

wares with monochrome, linear decoration (FN 1105-8); imported black gloss and locally produced fine wares (FN 1105-5)—do not allow us to measure the chronological distance from the initial construction of the wall and ramp in Phase 5.

Phase 8: First significant reconfiguration of the space

A significant reconfiguration of the space occurred within both the western and eastern sections of Trench 1000 during Phase 8. In the east, a new fill and surface (SU 1103) leveled the area for the first time since Phase 3, covering the ramp from the previous phase (at c. 6.23 masl). At approximately the same height (c. 6.33 masl), a section of floor surface (1.24 by 1.65 m) was introduced in the western section of the trench, leveling this area for the first time (fig. 10). Its western edge was set by a line of cut stone blocks (SU 1092)—

Fig. 11. Plan of the western feature (SU 1050), platform (SU 1049), and the eastern. angled foundations (SU 1062; blue dashed line is its projection).

smaller above and larger below—that founded the surface deeply into the natural soils (at c. 6.18 masl). Ceramic materials from fills related to the stone floor's installation (cut = SU 1098, fill = SU 1099) included African amphorae (FN 1099-7); plain African and locally-produced coarse wares (FN 1099-8); locally-produced coarse wares with monochrome, linear decoration (FN 1099-8); and imported black gloss fine wares (FN 1099-5). The fill also contained charcoal and a tannūr fragment (FN 1099-6), suggesting that some of the finds may have originated from a kitchen or cooking dump.

Phase 9: Reconfiguration of the space in the Imperial period

In Phase 9, the area experienced a significant change to the shape of space as the Phase 5 wall (SU 1102) was partially dismantled and covered by fills, some of which were redeposited natural soils (SUs 1043 and 1090), for a series of floors. Although the wall was now buried, the general alignment it established for the area—likely also present in the street's orientation through this period—was maintained in the construction of two new features to the west and east.

In the west, an architectural structure and a masonry platform (possibly the base of a stair) were now built (fig. 11). Only the northeast corner of the architectural structure remains visible (SUs 1050 and 1114), with much of the rest of it obscured by a later architectural feature (Phase 11, SU 1115) or extending beyond the areas of excavation. The platform was better preserved, made of large irregularly shaped stones (SU 1049) overlain by a mortar covering (SUs 1011 and 1078). The platform also extended north and south, beyond the bounds of our excavations. That these constructions were introduced as a single event is demonstrated by an "L" shaped foundation cut (SU 1051) in the west that accommodated both structures.

In the east, only the foundations for the southeast corner of the space (SU 1062) were recovered (fig. 11). It is noteworthy that these foundations in the east, along with the architectural configuration in the west, were on a more northern orientation to that of the later (from Phase 10), still-standing architecture in this area of the city.

Three floor surfaces—at slightly different elevations, and of different forms, but operating in conjunction with each other—were now introduced upon a series of leveling fills (SUs 1073, 1075, 1079, 1080, 1081, 1088, 1108, and 1109) that were rich in fragmented wood charcoal. The first of them, from the west, was an ephemeral, red earth floor flecked with plaster (SUs 1031 and 1038; c. 6.86 masl). The second was uncovered in the

centre of the trench, was slightly lower (at c. 6.81 masl), and formed by flat stone slabs (SU 1084; c. 20-40 cm) that were fitted but not mortared together. Further east, a third surface (SU 1085), lower still (at c. 6.72 masl) abutted the stone surface and was formed by beaten earth upon a series of levelling fills.

The building activities of Phase 9 can be tentatively assigned to as early as the early Imperial period by the first appearance of Italian terra sigillata fine wares (FN 1086-6). The majority of the other ceramic material from these contexts was less helpful for dating but included African, Vesuvian, and Punic amphorae (FNs 1017-5, 1031-5, 1084-8, 1088-4, 1100-11, and 1109-7); plain African and locally-produced coarse wares (FNs 1017-7, 1023-4, 1049-4, and 1070-1); and residual black gloss fine wares (FNs 1031-6, 1064-3, 1084-5, 1086-6, and 1100-10). A mostly-complete coarse ware *piatto ombilicato* was also recovered (FN 1088-3, fig 12a-b), along with other locally-produced coarse wares with monochrome, linear decoration (FNs 1011-1, 1036-16, 1099-8, and 1105-8). These two pottery types are more often associated with funerary contexts, perhaps because of excavation bias, though they are themselves domestic objects[9]. In addition to the locally-produced ceramics, a tannūr fragment (FN 1036-14) and a terracotta bull head (c. 20 cm in length), that will have been either an architectural sculpture or attached to a large vessel (FN 1090-11), were found.

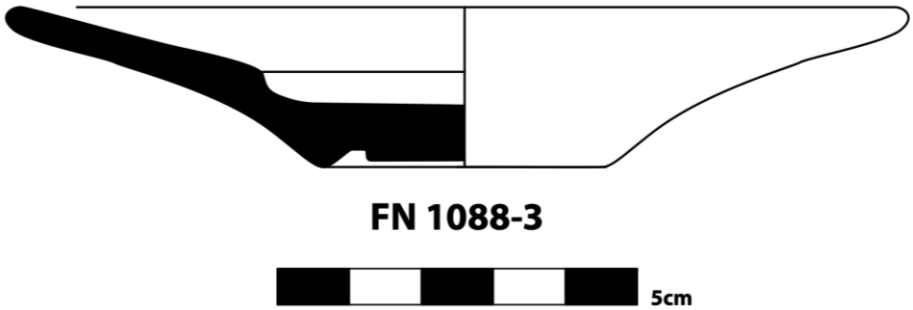

Fig. 12. Coarse ware piatto ombilicato (FN 1088-3) from a Phase 9 leveling fill.

Phase 10: Initial construction of the shop (late 1st – early 2nd century CE)

In the late 1st or early 2nd century CE, parts of the urban configuration of Tharros were restructured. In this area of the city, the street was expanded and resurfaced. Against the new, plaza-like space that the roadwork created, four similarly sized properties were erected at a different orientation than that of the structures which came before them. Pesce first identified these properties as shops (an identification made plain by their

[9] Plates similar to FN 1088-3 were recovered from the necropoleis at Tharros; Del Vais and Fariselli 2006: 86-88, figs. 37-38; Del Vais and Fariselli 2012: 264-265, figs. 8 f, 11, 12 h, 17.

use of sided, shuttered threshold stones; see figs 5-6). The construction of the shops must have closely followed that of the street as a number of large basalt flakes, likely remnants from the stone working associated with the road work, were concentrated near the shop's western wall and threshold in construction contexts of this phase (SUs 1013 and 1037).

The architecture constructed in Phase 10 was significantly different in character than the preceding constructions (fig. 13). In the west, the shuttered threshold stone (SU 1068; c. 7.85 masl) was supported by large, irregularly shaped stones (SU 1054), and stairs down from the entrance (SU 1097) mitigated the c. 0.92 m difference in elevation that now existed between street level and the contemporary floor level. The eastern threshold was installed much closer to floor level (c. 7.10 masl) and was partially supported by the stone foundations of the previous phase (Phase 9). In both the southeastern (SUs 1045 and 1126) and northeastern (SU 1083) corners of the space, the foundations were irregular and so high as to have possibly remained partly visible above the new floor level.

Fig. 13. Plan of the Phase 10 architecture (Shop 3).

The walls above these foundations used a framework (*a telaio*) style of construction. Large blocks at the ends of all walls, as well as in the middle of the north wall, defined the width of the architecture at 0.49–0.51 m. This style of construction is common throughout Tharros and the dimensions of the walls, in addition to being somewhat larger than a suite of shops might seem to require[10], do not match any Roman measurements in whole or half feet[11]. Additionally, many of the stones were reused; large beam pockets are visible at orientations and elevations inappropriate to their current building. These facts suggest the Phase 10 architecture was built from the recycled remains of an earlier building rather than being constructed from freshly procured materials. Where the architecture does conform to broader urban developments is in the use of these particular types of threshold stone. As already mentioned, these are of a form most clearly associated with retail space, are found mostly in the central and western Mediterranean, and date from the early Imperial period[12]. Finally, it should be noted that a number of the stones on the Phase 10 walls, mostly at or below floor level, bear areas of

[10] For example, from our fieldwork at Pompeii and Isthmia, it is known that the width of walls in the Porta Stabia neighborhood at Pompeii average 0.41 m, while many walls of the large-scale buildings from 2nd and 3rd century CE Isthmia are c. 0.45 m.
[11] The measure of 0.49 m is 1.66 RF.
[12] For the dating of this form of threshold, see Ellis 2018: 201-202.

bright red discoloration. The reason for these marks remains uncertain; the sandstone decays into a red sandy soil, but such marks could also reflect a localized burning event. Neither suggestion is conclusive, and we plan to investigate the implications in future seasons.

The floor(s) associated with the present phase were not recovered, likely having been removed by the earliest excavations. We can estimate that the floor stood between c. 6.99 and 7.10 masl, however, based on the top surface of the large block resting in the east of the trench (SU 1018) and the eastern threshold stone (SU 1066). Despite the fact that Pesce excavated the vast majority of these levels, the material we recovered from the leveling fills for this phase was still of a significant volume (c. 850 L). As of yet, the best dating evidence recovered from these contexts were a handful of African Red Slip Ware (ARS) sherds (FN 1016-2); the presence of this material, at a time when such wares were widely exported[13], supports a late 1st or early 2nd century CE date. The majority of the other fine wares were residual, including black gloss fine wares, one sherd of which had an Attic floret (FN 1042-3). It is at least noteworthy that no Italian terra sigillata has yet to be associated with this phase, and that the ARS fine wares are relatively few in number[14]; we might otherwise expect, given the presence of black gloss in this and through all phases, higher numbers of the Italian and African fine wares at this time. The pattern remains to be explained, but could be the result of a chronological bias in the source of the leveling fills.

Phase 11: Addition of the southern wall (Late 2nd century CE)

It was in Phase 11 that this area of the city took the shape in which we see it today. The northernmost shop, Shop 1, was dismantled and replaced by the bath complex (Terme II), with only the threshold stone surviving in situ (fig. 14; see also fig. 5). This activity was thus part of a broader development that has been connected to the construction of the baths, where to the north, especially, earlier architecture has been identified—and which was demonstrably dismantled by the baths—but neither systematically excavated nor investigated[15]. Returning to the south, parts of Shop 2 were, in turn, reconstructed; the northern wall was rebuilt to respond to the new bath complex and the eastern wall truncated for the insertion of the bath's latrine. Additional architectural changes also occurred in Shop 3 (our Trench 1000) during this phase, including the installation of the south wall's central portion (SU 1106); the foundation trench must have been shallow, for nothing of it survives.

Fig. 14. The Shop 1 threshold beneath the later construction of Terme II.

[13] Hayes 1972: 416, 423-424.
[14] Similar trends have been noted in the Maltese islands following the Punic period, where black gloss imports and local imitations were more frequent while later fine ware imports and imitations were more scarce; Quercia 2011: 447.
[15] Acquaro and Mezzolani 1996: 76; Fantauzzi 2015: 116, n. 495; also Pesce 1966: 156.

A masonry structure (SU 1115) was then built into the southwestern corner of the room, for a purpose that remains unknown. Finally, the eastern threshold was further enclosed through the addition of a large stone with noticeable beam pockets (SU 1091).

No soil contexts were recovered from this latest phase. As a result, there is no material culture useful for dating the final architectural changes in Trench 1000, although these changes must correlate with the construction of the large bath complex (Terme II) to the north. Given that the bath is conventionally dated to the late 2nd century CE—albeit without systematic, sub-soil excavations into its foundations, though we have no reason to reject the hypothesis—the present phase of construction for the shops is likely relatively connected to this period[16].

The absence of any surviving material culture, beyond the architecture itself, makes it difficult to fully understand both the activities that once played out here and their ultimate discontinuation and abandonment. Our work with the available legacy data may hopefully fill in some of these gaps of understanding. The shops were almost certainly out of operation by the 6th century CE, when we know that the bath complex (Terme II) was being used for the interment of burials and that overall urban activity appears to have relocated northward to San Giovani di Sinis[17]. Indeed the shops may even have been out of use for some time prior to this period, given that the latest pottery, albeit from disturbed contexts, dates primarily to the 3rd or 4th century CE[18]. For how long the shops operated within this latest configuration is a critical question, the answer to which should have important implications for how we understand the nature and pace of the eventual decline and abandonment of the city.

Trench 2000

Trench 2000 was opened in a previously unexcavated zone of Tharros, atop the Murru Mannu hill toward the northern end of the site (see figs 2 and 4). Though the street itself (Cardo Est) was exposed during the excavation campaigns of the 1990s[19], the buildings—apart from some of the street side threshold stones—remain concealed by abandonment debris and the overlying vegetation. This area thus presented the potential to reveal otherwise unknown structures and to examine the uppermost levels of their latest use and abandonment phases. The unexcavated status of the area was especially appealing to the project, given our interests (and questions) in the processes of urban abandonment and in securing the chronological span of those events.

Our excavations of Trench 2000 revealed eight phases of activity, which includes an assessment of the natural bedrock (Phase 1). Phase 2 was marked by the first cultural activity within the space through the shaping of underlying bedrock into a construction platform, along with the construction of an early (pre-Roman) structure. This structure was built over by a Roman period shopfront in Phase 3a, a building that was notably on an alignment and orientation different from the earlier structure. Various developments to the Roman structure characterize Phases 4-6, namely the installation of new floor surfaces. It was during Phase 7 that we can begin to identify the abandonment of the property and its structural collapse. Finally, Phase 8 shows evidence of post-abandonment robbing of materials from the Roman structure.

Phase 1: The Natural Topography

The entirety of Trench 2000 that was not covered by architecture was excavated to a bedrock (SUs 2063 and 2093). Bedrock was encountered c. 1.2 m below the final phase threshold of the overlying property (at a maximum elevation of c. 26.78 masl). The bedrock here consists of a friable, degraded reddish sandstone, similar to that encountered in Trench 1000 (7.5YR 6/6), overlying a hard reddish-brown sandstone. The material above bedrock (SUs 2064 and 2095) was soft enough to be scraped away by trowel, and mottled in color

[16] On this conventional dating of the Terme II, see Acquaro and Mezzolani 1996: 76-77.
[17] Though relatively little is known about Tharros at this time, for some general statements on the urban developments in the region see Dyson and Rowland 2007: 180-184. On the developments at San Giovanni di Sinis, see Spanu 1998: 84-85, 89-91. See also Barreca 1987: 28.
[18] This material includes an African Red Slip vessel dating from the mid 2nd to the early 3rd century CE (possible Hayes form 14, FN 1030-26) and an African Red Slip rim, dating c. 230/240-300 CE (Hayes form 49, FN 1030-26). The remaining ARS fine wares from disturbed contexts were more difficult to date, but their coarser fabric and thinner slip implies a 3rd or possibly 4th century CE date; Hayes 1972: 289-290.
[19] Bernardini 1996; Bultrini et al. 2000; Marano 2014.

from dark red to white. This matrix varied in depth (from c. 1–10 cm), and some artifacts were recovered from where its uppermost portions gradually transitioned to anthropogenic deposits. This loose material overlying solid bedrock appears to have been cleared in antiquity at some points in the trench, as portions of the earliest architecture in the area were built directly on bedrock (during Phase 2), while some portions of the same structure lie on the degraded material. The foundation walls for the later structure that formed the final orientation of the property (Phases 3a–7), however, appear to have been constructed only on fully exposed bedrock (see below).

Phase 2: The First Structure

The earliest significant cultural activity in the area took the form of a structure with some associated deposits that date broadly to the Punic period (c. 509–238 BCE). The structure lies atop a leveled platform cut in the bedrock (at c. 26.63 masl). Though largely disturbed by the activity of later phases, particularly the installation of the frontage of a building during the early Imperial period (Phase 3a), a low foundation wall (SU 2097) and portion of its superstructure (SUs 2033, 2053, and 2066) were uncovered along the western edge of the trench (fig. 15a-b). The foundation wall (which reached or survives to a maximum height of c. 30 cm) was constructed of black basalt boulders and blocks, some of which were squarely cut, built directly upon either the bedrock (SUs 2063 and 2093) or natural fill (SU 2095). The stones within the foundation were somewhat rounded, evidence that they were not freshly quarried without shaping, and arranged into two or three courses.

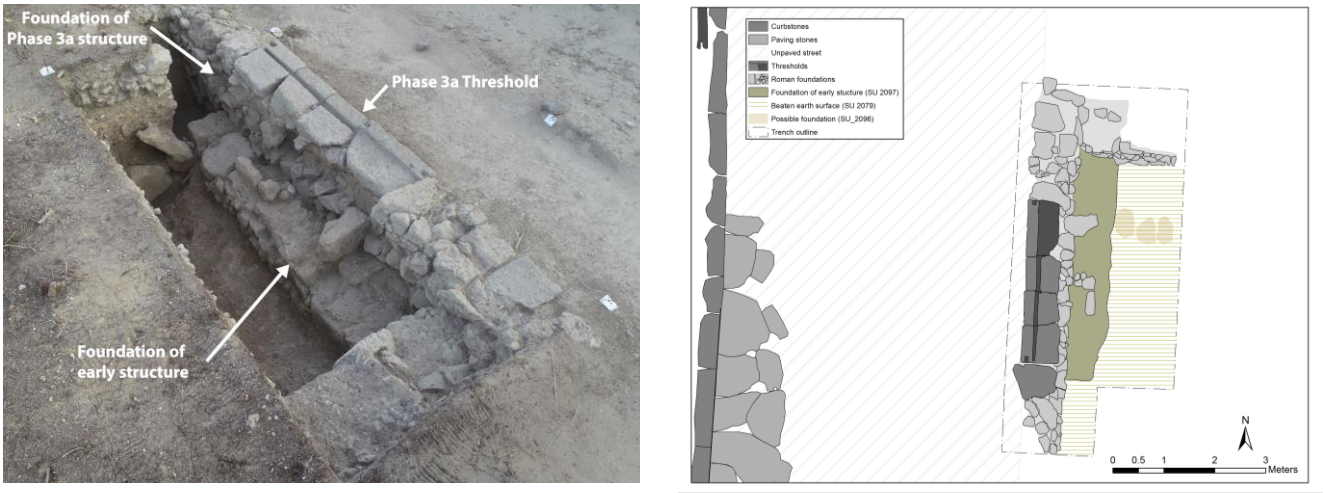

Fig. 15. Aerial view and plan of the early structure of Phase 2 beneath the shop of Phase 3a.

These lowest courses of the structure were bonded with a heavy green clay (2.5 Y 5/3 “light olive green”), used both to cement the foundations to bedrock and as a bonding agent between the component stones. The superstructure (SU 2053) was constructed of faced sandstone blocks bonded together with a firm grey mortar.[20] The lowest course of these cut sandstone blocks directly overlied the foundation wall beneath, while a second course of vertically-oriented blocks was set inward. Further, three large, irregular, stones (SU 2096) were set side-to-side and extended perpendicularly to the east from the low foundation wall, likely serving as a foundation for an unknown structure or feature.

A beaten earth surface (SU 2079) associated with this phase lipped onto the face of the southernmost vertical block of the surviving superstructure (SU 2053), establishing a ground level for the period (at c. 27.05 masl). Underlying this floor surface was a differentiated fill (SUs 2090 and 2094) with significant amounts of grey ash, degraded grey sandstone, degraded red sandstone, and tan sandstone (FNs 2090-6 and 2091-1). This material transitioned into the layer of degraded bedrock (SU 2095).

[20] Similar architecture was uncovered in Phase 8 of Trench 1000, with a foundation of large boulders (SU 1049) topped by mortar superstructure (SU 1011).

Associated with this surface, and indeed the structure itself, was a circular pit and fill (c. 30 cm in diameter, c. 15 cm in depth) cut into the differentiated fill (SU 2094), which itself essentially served as the sub-floor of the surface (SU 2079). This pit was likely ritual in function, given that it was filled with almost pure ash, along with burnt ceramic sherds, animal bone, and shell (SU 2092; fig. 16)[21]. Moreover, these contents were capped with a shaped circular sandstone slab before the laying of the surface above (SU 2079). The nearly perfectly circular opening of the pit, its intentional sealing by a shaped capstone, and its burned anthropogenic fill clearly show that the pit was intentionally created, filled, and sealed all within close physical and chronological proximity to the establishment of the early structure. Similar 'ritualistic' pits and fill assemblages, associated with construction events, have been documented elsewhere[22].

Fig. 16. Ritual pit associated with the Phase 2 structure; viewed from the east.

The assemblages associated with this phase contained materials broadly dateable to the 6th–3rd centuries BCE, including locally-produced coarse wares with monochrome, linear decoration (FNs 2031-2, 2052-1, 2060-5, 2090-8, 209208, and 2094-6; and black gloss fine wares (FNs 2031-3, 2057-4, and 2060-4). These types of pottery appear in almost all subsequent phases of activity at the trench; their presence here, however, and the lack of terra sigillata or ARS wares in the assemblages of this phase suggest at least a pre-Imperial, and possibly Punic (c. 509–238 BCE), date. The most comparable phase of cultural material in Trench 1000 (Phase 8 for Trench 1000; see above) exhibits a similar pattern. The period saw a diversity of imported vessels, including African amphorae as well as Attic and Vesuvian black gloss fine wares (FN 2060-4), which would continue to be present in the trench's assemblages throughout later occupational phases (Phases 2–6). The persistence of these ceramics throughout the chronological span of the trench, also seen in Trench 1000, likely reflects a combination of ongoing use and residual deposition that we hope to more fully understand through future work at the site.

One final note about this early structure and its placement. Our excavations uncovered only part of its eastern and southern limits along the westernmost edge of the trench (a c. 3.5 m by 0.6 m section), and thus its full extent reached not just further westward and northward, but beneath and, to some unknown extent, across

[21] A more detailed analysis of these materials is part of the ongoing study.
[22] On similar ritual pits associated with architecture in Italy, see Fulford and Wallace-Hadrill 1999: 92-93; Robinson 2002; Hesse 2016.

what would become the later trajectory of the Cardo Est, the road constructed at or before the construction activities of Phase 3a (fig. 15a-b). Therefore, while its orientation generally aligns with that of the later Roman street (both features have a roughly 5° aspect), this early structure potentially reflects a different urban configuration than the one that will develop in this area of the city in the following phase (Phase 3a). The disposition of this structure, and indeed the structure itself, is thus of considerable importance in delineating the urban shape of the earlier (whether of the Punic or Republican periods) city; naturally we hope our future excavations can reveal more of the structure's overall shape and of the urban system to which it corresponds.

Phase 3a: Installation of Roman Shop (from 1st – 2nd century CE)

Phase 3a represents a significant reorganization of the space as the previous structure from Phase 2 was replaced by a new building on an altogether different urban configuration (fig. 15a-b). While only the lowest portions of the architecture survive, they are enough to identify a Roman shopfront; installed at this time were the western (SUs 2026 and 2044) and northern (SU 2054) property boundaries, along with a shuttered threshold (as we see for Phase 10 in Trench 1000, above) typically associated with *tabernae*. These foundation walls were built over the earlier structure and wrapped down its side to the south (SU 2033), where the new foundation wall (SUs 2026 and 2044) was built directly onto bedrock (SU 2063). The construction of this new property, and probably also the near-contemporary (re)making of Cardo Est, necessitated the introduction of substantial fills that raised the floor level from that associated with the previous phase (c. 30 cm in depth). These large leveling fills, medium brown soil with a very high density of cobble-sized inclusions (SUs 2025, 2048, 2040, 2073, 2074, and 2087), were deposited as a single event, at least for the shopfront (fig. 17).

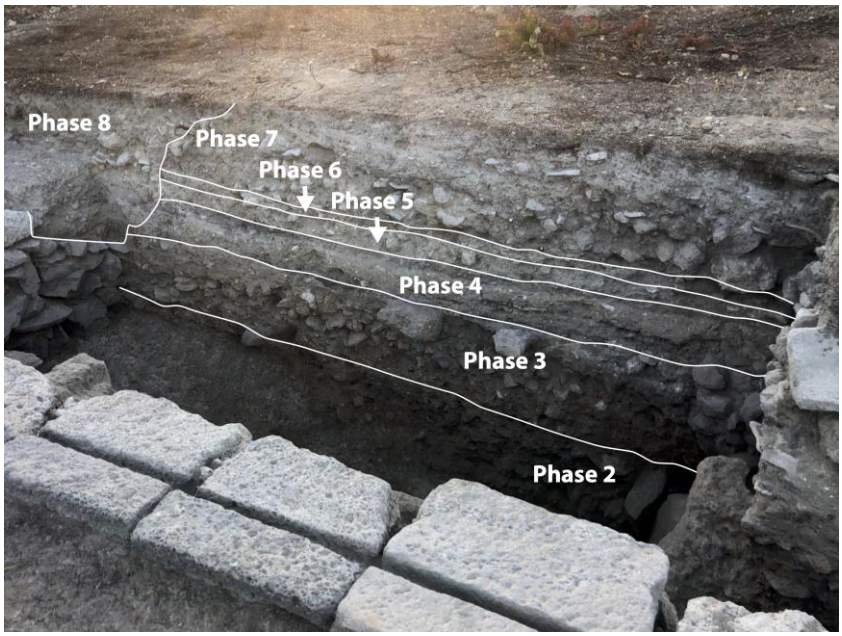

Fig. 17. The sequence of surfaces and phases in Trench 2000 in section; viewed from the southwest.

Beyond the construction of an altogether new property, what the surviving architecture shows is that the present shopfront conformed to a new urban configuration associated with the Roman-era city. The shopfront threshold, for example, shows that this western entrance to the premises fronted the course of the Cardo Est, the construction of which must have destroyed both the preceding structure and the Phase 2 urban layout to which it held. This new configuration suggests some correlation between the construction of the street and of the property; it is unfortunate that the spatial limits of the trench and the surviving condition of the eastern edge of Cardo Est did not allow us to define any clear stratigraphic relationship between the property and the street. The materials associated with the present phase thus far provide a *terminus post quem* to at least the 1st century CE, though the actual building activities that incorporated this material could still be somewhat later into the

2nd century CE. For example, the threshold itself was of a type that, as mentioned above, does not appear earlier than the early 1st century CE[23], while the substantial fills used to raise the property during this phase contained the first examples in Trench 2000 of both Italic and Gallic terra sigillata (a signature of the earlier Imperial period, FNs 2025-5, 2055-5, 2048-5 and 2087-10). The paving of the street system, however, an event to which the present shop construction may have responded, is very generally considered—though without systematic, stratigraphic investigation—to be an early 2nd century CE development.[24]

Phase 3b: Floor Patching

At some point during the Phase 3 configuration of the Roman shop, a bowl-like depression formed in the Phase 3a surface, which was subsequently filled (SU 2088) with large cobbles at its lowest point and given a flooring patch of dark grey ash (SU 2086) to re-level the surface. The depression formed near the center of the property at the eastern edge of the excavated area (reaching a depth of c. 24 cm below the highest point of the Phase 3a floor). The cause or purpose of the depression is not entirely clear, as there is no extant evidence of a removed feature nor of a particular activity occurring in, or having caused, the depression. Phase 3b appears temporally close to Phase 3a, with only minor changes in the makeup of the artifacts present in the subphase, such as the earliest examples of Vesuvian amphorae (FN 2088-4) found in Trench 2000.

Phase 4: Raising of the Threshold (3rd Century CE)

Both the threshold and the floor surface were next raised (c. 15 cm, about half as much as the lifting of the surface that established the shop in Phase 3a) to mark the beginning of Phase 4. Evidence for the raising of the threshold (SUs 2005, 2006, and 2007) is seen in the layer of compacted soil fill between the threshold stones and their underlying foundation wall[25]. A narrow construction trench (SUs 2050 and 2075) was also uncovered along the interior face of the threshold stones (terminating c. 20 cm from both their southern and northern extent), cutting into the preceding level-raising fill (SU 2025). This construction event also saw either the replacement of the southernmost stone in the threshold or a widening of the system, as the southernmost stone (SU 2004) was of a different type of basalt and noticeably less worn than the other threshold stones (SUs 2005, 2006, and 2007).

The new Phase 4 floor surface was built upon a (c. 10 cm deep) subfloor fill of densely compacted brown soil with calciferous inclusions (SUs 2022, 2023, 2045, 2047, 2071, and 2085; fig. 17). Within this matrix there was also a large basalt block with a circular cutting in its top (SU 2024). Though now removed from its intended context, it may have earlier served as a pivot stone in the previous (Phase 3) iteration of this (or indeed another) shop's threshold; the pivot appears to have been turned to be out of the way of its replacement block (SU 2004) and then covered over by fill material. The floor surface of Phase 4 (SUs 2020, 2043, 2070, and 2084) was a thin beaten earth layer with frequent charcoal, clay, and calciferous inclusions.

The artifactual assemblages associated with Phase 4 contained certain temporal markers of a High Imperial date (2nd–3rd century CE). From these assemblages came the first occurrence in Trench 2000 of ARS fine wares (including ARS fine ware rim sherds identified as Hayes form 8a, dating c. 80/90-160 CE, FN 2071-10, fig. 18). This 2nd century CE material could be somewhat residual as it was found together with some later, 3rd century CE objects. The most specific of these is a partially legible bronze coin, possibly an *as* of Gordianus III (FN 2071-9, fig. 19). The coin, recovered from a subsurface fill (SU 2071) provides a date of 240 CE[26]. This date concurs with that of the toe of an Africana 2D Grande amphora (FN 2035-3) dating to the mid-to-late 3rd century CE, which was installed upright into a cut (SU 2038) that was infilled around the vessel with soft sandy soil (SU 2039).

[23] Ellis 2018: 201-202.
[24] For the general acceptance of an early 2nd century CE dating for the paved street system, see Marano 2016: 8; Fantauzi 2015: 138; Mezzolani 2009: 403; Tomei 2008: 117-119; Morigi 2007: 78-79; Acquaro and Mezzolani 1996: 76-77.
[25] Though the fill directly below the threshold was not excavated so as to preserve its stones *in situ*, the material comprising it matches that of the raising fill SUs 2022, 2023, 2045, 2047, 2071, and 2085.
[26] RIC IV Gordian III 284, 308Ab, 309, 320, 321, 322, 323, 324, or 326.

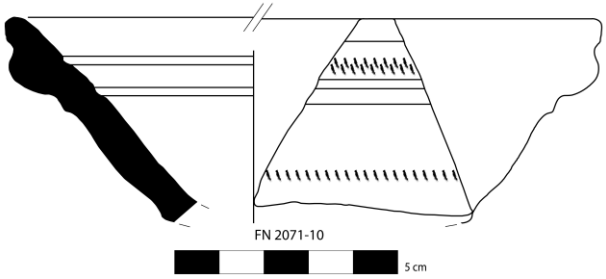

Fig. 18. Hayes form 8a ARS rim from a Phase 4 sub-floor fill (FN 2071-10).

Fig. 19. As of Gordianius *III from the Phase 4 sub-floor fill (FN 2071-9).*

Phase 4 marks the last significant reorganization of space in the trench, as subsequent use phases (Phases 5 and 6) do not alter the structure's foundations nor threshold. It appears that from Phase 4 onward the relationship of this property to the Cardo Est, in terms of both orientation and elevation, remains stable. A similar pattern emerges in Trench 1000, where early phases see significant creation or renovation of the built environment and later phases more minor alterations to already established spaces.

Phase 5: Penultimate Surface

A relatively small raising of the shop's penultimate floor surface marks the transition to Phase 5 (fig. 17), and represents the least change in elevation in the trench thus far. The subfloor here (SUs 2017, 2030, 2042, 2058, 2069, and 2083; c. 5 cm thick) was unlike any other subfloor (earlier or later) in the trench, being composed entirely of the locally occurring green clay material that had otherwise been found as a bonding agent in earlier contexts. The surface itself (SUs 2014, 2027, 2041, 2068, and 2082; c. 5 cm thick) was very similar to that of the previous phase, a grey beaten earth material with frequent inclusions. The surface was also close to flush with the top of the interior portions of the threshold blocks.

The artifactual assemblage for Phase 5 was similar to that of the preceding phase, with African and locally-produced amphorae (FNs 2035-3, 2039-2, 2071-22, and 2076-4); and ARS, residual black gloss, and residual terra sigillata fine wares (FNs 2020-4, 2022-2, 2037-3, 2039-2, 2046-1, 2051-2, 2071-13, and 2076-5).

Phase 6: Final Occupation

The final occupational phase for this property survives only as a thin, poorly preserved beaten earth surface (SUs 2015 and 2040; c. 5 cm thick) made of the same material as the two previous surfaces, though notably lacking a subfloor fill (fig. 17). The relative height of the threshold from the previous phase likely impacted this process and thus might explain the absence of a subfloor, and indeed, the Phase 6 surface partially overlied the interior portion of the threshold stones (SUs 2004, 2005, 2006, and 2007). This final flooring was damaged and degraded by later processes of abandonment and collapse, existing as only a thin skim in some places and, where missing, was frequently filled by collapsed stones and tiles from the surrounding structure which fell in the following phase (Phase 7).

The ceramic assemblage, similar to that of the previous two phases (Phases 4 and 5), is marked by the presence of primarily African and locally-produced amphorae (FN 2015-46); locally-produced coarse wares with monochrome linear decoration (FNs 2015-41 and 2040-6); and ARS and residual black gloss fine wares (FN 2015-45). The floor surface associated with this phase (SUs 2015 and 2040) also produced artifactual evidence of post-occupation contamination: a piece of plastic button that likely traveled down along the root system in which it was entangled and a sherd of green-glazed medieval pottery (FN 2015-42) that was later found to join with a piece of the same vessel recovered from the topsoil (FN 2001-9).

Phase 7: Abandonment and Collapse

The depositional processes in Trench 2000 show a significant change in Phase 7 as the construction events of the previous developments end. Phase 7 deposits are associated with the abandonment of the property and the subsequent collapse of its standing architecture. A soil layer (SU 2012) with relatively few inclusions formed directly above the Phase 6 floor surface, possibly through natural accumulation within the then abandoned structure (fig. 17). A tile fall (SU 2016) was located atop this soil layer near the center of the trench, consisting of c. 25 large fragments of roofing tile (fig. 20). Notably, the pile contained several different tile fabrics, suggesting varied sourcing or reused materials in the structure prior to its collapse (FN 2016-5, fig. 21). This layer underlied a layer of collapse material (SUs 2002 and 2010; c. 25 cm thick) that was predominantly made up of fist-sized stones (FNs 2002-3 and 2010-1). This latter layer, collapse material from the fall of the walls of the structure, had notable concentrations of stones in the areas adjacent to surviving foundation walls; one such concentration was just to the south of the northern property wall, another was along the southern edge of the trench.

Fig. 20. The tile collapse (SU 2016) in Trench 2000; viewed from the northeast.

Fig. 21. A sample of the tiles (FN 2016-5) of various fabrics from the Phase 7 tile fall.

While the contexts associated with Phase 7 were predominantly filled with construction materials, being the masonry and roof tiles (FN 2016-5) of the former structure, this abandonment phase nevertheless contained seven coins, over 40% of those recovered from both trenches combined (FNs 2002-7, 2002-8, 2002-9, 2012-4, 2012-5, 2012-6, 2016-8); future work on these coins is promising for establishing a tighter date range for the city's decline and abandonment.

Phase 8: Robbing of Materials

Following the abandonment and collapse of the property in Phase 7, architectural materials were robbed from the rubble and surviving portions of the walls. The area of the trench was clearly cut (SU 2028) diagonally across the northeast corner of the excavated area. This cut passed through the cobbly collapse material and extended down to the top of the foundation wall that defines the property's northern boundary (fig. 17). The cut was filled with several layers of sand of varying compaction, with the lowest layers (SUs 2013 and 2018) containing some cultural materials while the top layer (SUs 2008 and 2009) was almost entirely sterile. The top layer of sand (SU 2008) was so loosely compacted as to suggest it being the result of aeolian accumulation. The plain fact that so very little of the (once-)standing architecture survives of the building demonstrates the extent to which this building, as likely the broader built-up area on the Murru Mannu hill, was robbed of building materials; that which remains on the ground barely constitutes a fraction of the original volume of the structure.

Conclusion

This first season of excavation at Tharros has provided us with the beginnings of a valuable dataset that will aid in addressing our original questions, as well as—and which might be expected—catalyzing new areas of inquiry. Both areas of excavation revealed sequences of construction activity that will ultimately, and espe-

cially once the relevant material record has been more fully studied, contribute important new information to our understanding of the urban development of the city. In particular, both areas of excavation revealed earlier phases of construction that suggest a somewhat differently organised urban footprint than that which marks the Roman-period city as it survives today: the architecture of Phases 5–9 in Trench 1000, for example, showed sizable structures on a more northerly orientation; the early structure of Phase 2 in Trench 2000, on the other hand, was oriented much the same as the later buildings (those of Phases 3–6), but configured to a different street system for at least that area of the city. It is noteworthy that in both areas this development to the urban configuration of the city can be dated to the early Imperial period, and that it required relatively enormous volumes of material to construct the new spaces.

Though the relative sequences can be determined from a singular excavation season, the associated material record requires a longer period of ongoing study before more committed statements can be made about the dating of these construction events and their phases of occupation. And though these efforts have been limited owing to the Covid-19 pandemic, our ongoing study of the material should ultimately help us to identify any patterns or developments in the consumption of particular products, and thus also to develop ideas about diet, the presence of local and imported goods and objects, and the changing use of, and relationship with, the local environment, as well as other themes of enquiry.

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