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The Gymnasium of Agrigento: Report of the First Excavation Campaign in 2022

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Keywords: *Gymnasium*, Agrigento, Hellenistic Architecture, Roman Architecture, Palaestra, Roman Sicily, Hellenistic Sicily.

Parole chiave: Ginnasio, Agrigento, architettura ellenistica, architettura romana, palaestra, Sicilia romana, Sicilia ellenistica.

Abstract:
The gymnasium of Agrigento has been excavated between the 1950s and 2005. While parts of a race-track section and a pool were revealed between two stenopoi*, the extension of the gymnasium and the existence of a* palaestra *as well as the construction date could not be securely determined. A project launched in 2019 in cooperation between the Parco Archeologico e Paesaggistico Valle dei Templi di Agrigento and the Freie Universität Berlin aims to solve these questions. Based on the results of a geophysical survey, four trenches were excavated in 2022 in a field to the north of the pool where the palaestra was most likely located. The aim of this paper is to discuss the results of the 2022 campaign. After a brief discussion of the chronology established in previous excavations, the trenches are presented from south (trench 1) to north (trench 4), followed by new insights regarding the architecture. In trenches 1 and 2, well-made ashlar walls were found that are consistent in orientation, building technique, and material with the previously exposed walls of the gymnasium and may have belonged to the searched* palaestra*. In trench 3, the continuation of the western* stenopos *appeared. Trench 4 was made at the supposed crossing of this* stenopos *with a* plateia *but did not yield any evidence of built structures or street pavements. The analysis of the architecture showed that previously proposed reconstructions are problematic, particularly regarding the architecture of the* xystos-*stoa. Revisions regarding the reconstruction of the Doric order and its chronology are proposed here, suggesting a period between the end of the 3rd and the first half of the 2nd century B.C.*

Il ginnasio di Agrigento è stato scavato tra gli anni '50 del secolo scorso e il 2005. Sebbene siano state riconosciute una pista e una piscina tra due stenopoi*, non è stato possibile determinare con sicurezza l'estensione del complesso e l'esistenza di una* palaestra*, né la data di costruzione. Un progetto avviato nel 2019 in collaborazione tra il Parco Archeologico e Paesaggistico Valle dei Templi di Agrigento e la Freie Universität di Berlino mira a rispondere a queste domande. Sulla base dei risultati di una prospezione geofisica, nel 2022 sono stati operati quattro saggi in un campo a Nord della piscina, dove probabilmente si trovava la* palaestra*. In questo articolo si presentano i risultati dei saggi della campagna del 2022, dopo una breve discussione sulla cronologia stabilita negli scavi precedenti. Nei saggi 1 e 2 sono emersi muri in blocchi di buona fattura, coerenti per orientamento, tecnica costruttiva e materiale con i muri del ginnasio e che potrebbero appartenere alla* palaestra*. Nel saggio 3 è apparsa la continuazione dello* stenopos *ovest. Il saggio 4, aperto in corrispondenza del presunto incrocio di questo* stenopos *con una* plateia*, non ha restituito testimonianze di strutture o pavimentazioni stradali. L'analisi dell'architettura ha evidenziato che le ricostruzioni precedentemente proposte presentano alcune criticità, in particolare per lo* xystos*, per il quale si propone qui una revisione della ricostruzione dell'ordine dorico e sua cronologia, suggerendo un periodo compreso tra la fine del III e la prima metà del II sec. a.C.*

Introduction[1]

The gymnasium of Agrigento is the most important gymnasium in Sicily and the western Mediterranean more generally, because of its size, design, and chronology. It is located in a valley between the city's agora and the southern row of temples (Pl. 1), and its function is securely identified by inscriptions and its plan. Parts of a race-track section and a pool, located on either side of a small ravine, have been excavated between the 1950s and 2005 and published

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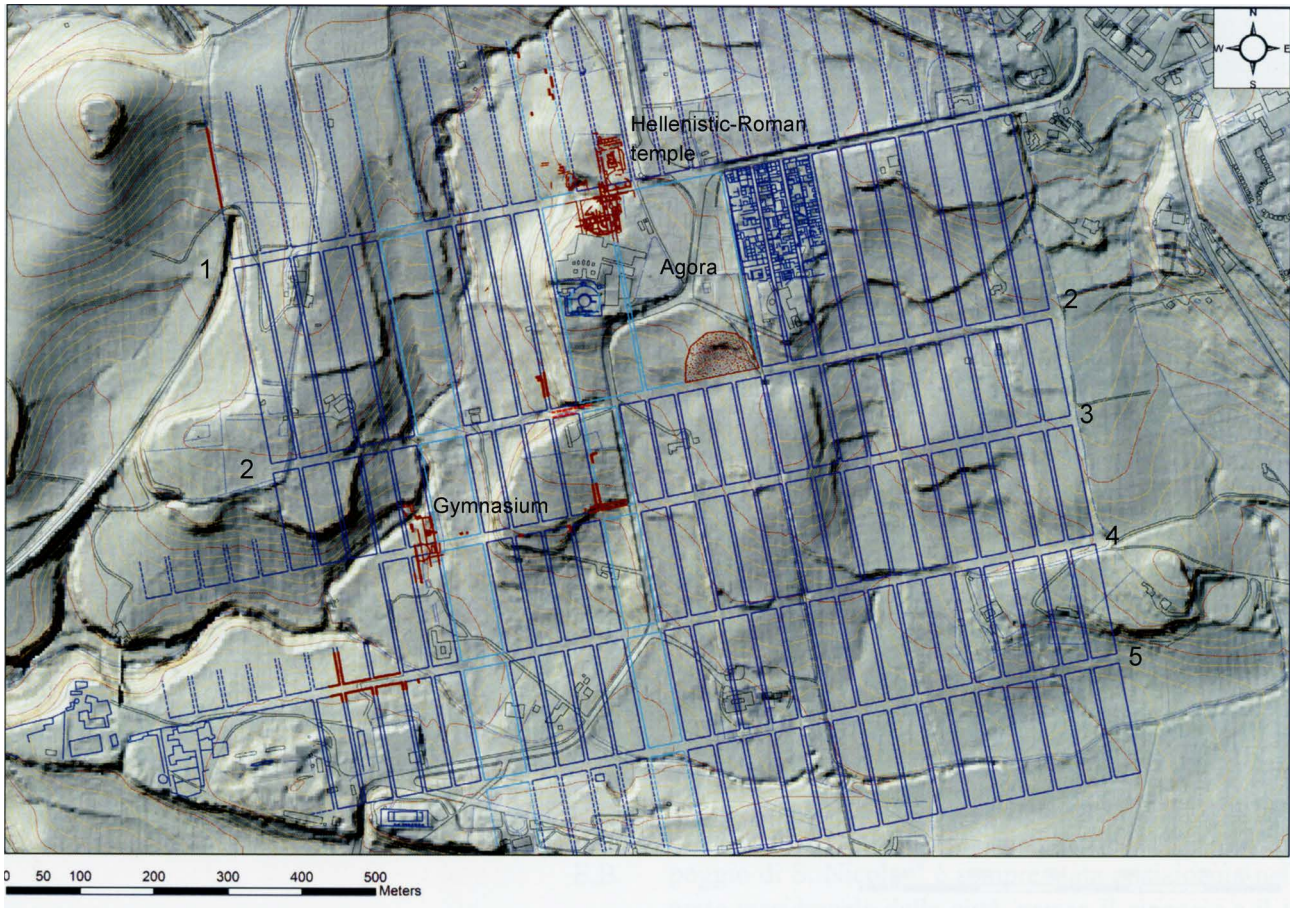
[1] This project could not have been carried out without the generous support and permission of the Parco Archeologico e Paesaggistico Valle dei Templi di Agrigento. Particular thanks are owed to Maria Concetta Parello, who encouraged and supported our project in every possible way. She and also Valentina Caminneci and Maria Serena Rizzo generously shared their vast knowledge of the site and kindly allowed us to use unpublished documentation. The project was generously funded by the Freie Universität Berlin, the Ernst-Reuter-Gesellschaft der Freunde, Förderer & Ehemaligen der Freien Universität Berlin e.V., and the Politecnico di Bari. We would like to acknowledge our trench masters, Florian Birkner, Blanca Kupke, Paola Santospagnuolo, and Francesca Spadaro, and all student volunteers of the Freie Universität Berlin, who cannot be named individually here. We are grateful for the helpful comments of the anonymous reviewers. In this report, Thomas Lappi and Monika Trümper are responsible for the trenches, stratigraphy, and general introduction; Chiara Blasetti Fantauzzi for the finds; and Antonello Fino for the architectural survey.



Pl. 1. Agrigento, reconstruction of the city plan over LIDAR image (M. Trümper based on Brienza, Caliò 2018, p. 47, fig. 3).

in several preliminary and final reports (fig. 1)[2]. The race-track section originally covered in an east-west direction one insula lot of 35 m width, between two *stenopoi*, and over 200 m in north-south direction (fig. 2). It included a stoa/*porticus* of 7 m width (*xystos*), an open race-track of about 17 m width (*paradromis*) subdivided by two facing rows of inscribed seats (45 and 47 m long), a hydraulic complex, an exedra-shaped structure, an altar, and possibly a tribune with seats. The context of the pool section and its extension to the north are unknown. The race-track complex is unique in the western Mediterranean, but has many parallels in the eastern Mediterranean.

Despite extensive excavation and examination of the gymnasium until 2005, crucial questions remain open:
1) the extension, design, and most notably the existence and location of a *palaestra*, which is to be expected in a complex with such a sophisticated race-track system[3];
2) the construction date in the 2nd century B.C., suggested by the typology and style of the architecture as well as general historical considerations; or in the Augustan period, suggested by the stratigraphy and few diagnostic finds[4];
3) and the urban context.

To answer these questions, a project was launched 2019 in cooperation between the Parco Archeologico e Paesaggistico Valle dei Templi di Agrigento and the Freie Universität Berlin. A first campaign was carried out in 2020, in cooperation with the British School at Rome and the Politecnico di Bari, including a geophysical survey and a first architectural survey[5].

Based on the results of the geophysical survey, a first excavation campaign was carried out in cooperation with the Politecnico di Bari from 12 September to 7 October 2022, and the architectural survey was continued. The aim of this paper is to present the results of this excavation campaign and the architectural survey.

In order to better understand and comparatively assess the stratigraphy of the new excavations, the chronology of the so-far excavated gymnasium area is summarized first. This is followed by a presentation of the trenches excavated in 2022 and conclusions that serve to discuss the main results and perspectives for future fieldwork. The results of the architectural survey are presented in a separate chapter at the end.

[2] Griffo 1963, pp. 178-184; De Waele 1971, pp. 38-39; Moretti 1976, pp. 182-186; Fiorentini 1992; 1993-1994; 1997-1998; 2009; 2011, pp. 71-95.

[3] Trümper 2018, 2020a, 2020b, forthcoming a, forthcoming b.

[4] See below note 7.

[5] Trümper *et alii* 2022.

Fig. 1. Gymnasium, schematic overview of the geophysical survey results Fields 1-5 (Stephen Kay, Elena Pomar, Trümper *et alii* 2022, p. 158, fig. 33).

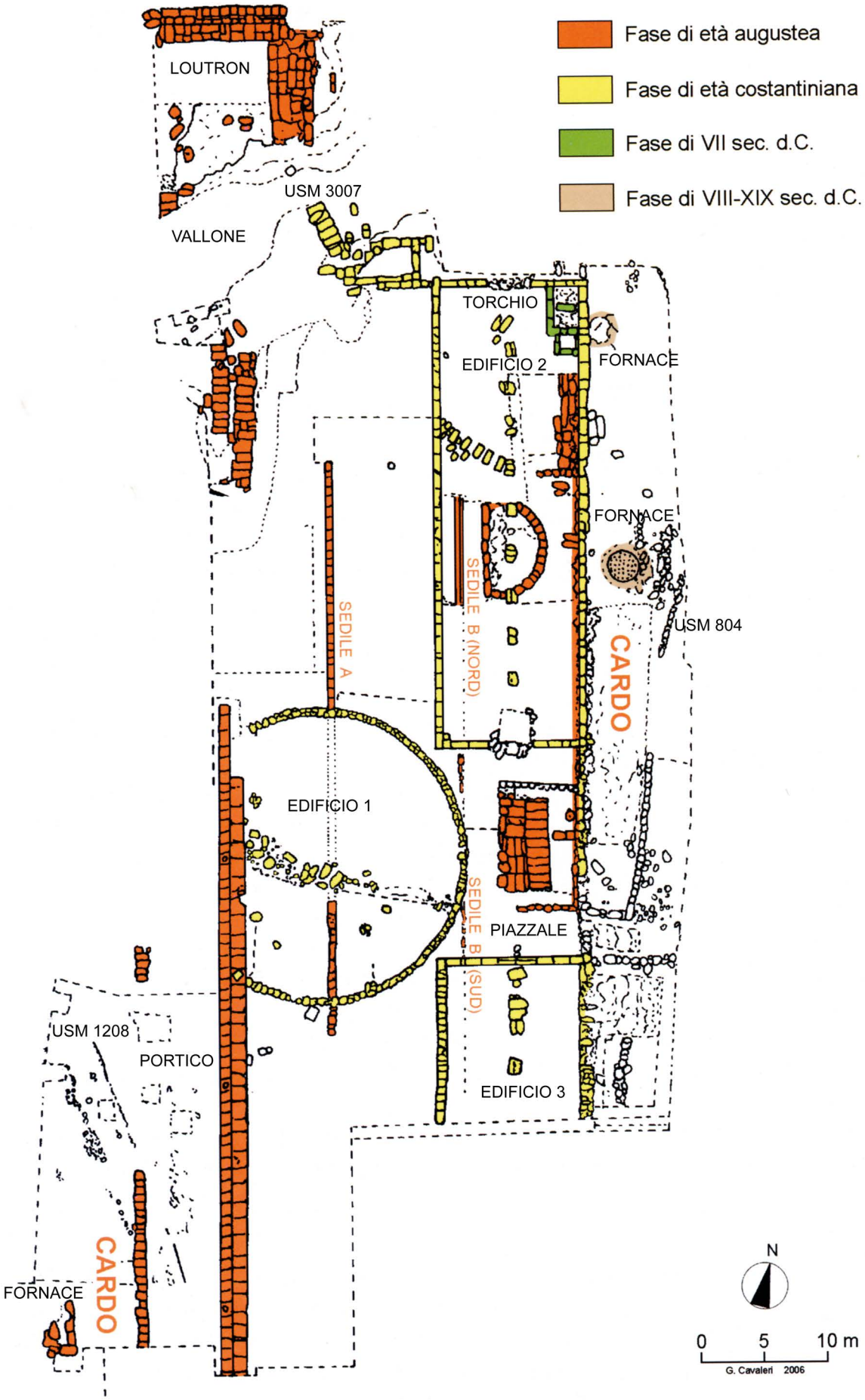


Fig. 2. Gymnasium, phase plan, 2005 (M. Trümper based on Fiorentini 2011, p. 84, fig. 63).

Chronology of the So-Far Excavated Gymnasium Area

In the final reports of the 2004/2005 campaign, Graziella Fiorentini proposed that the gymnasium was constructed in the 2nd century B.C. on open terrain when the city saw a major monumentalizing transformation. This has been accepted in recent scholarship with reference to the typology and style of the architectural elements[6]. However, the stratigraphy inside the building and inscriptions on the architrave of the stoa and seats suggest that at least some, if not all currently visible remains belong to the Augustan period[7].

The single published phase plan differentiates only between four phases (fig. 2). More detailed unpublished phase plans provide important information, particularly regarding the raise of levels in different phases[8]. In the following, the four phases marked in the phase plan are presented, but subphases identified in the text and unpublished final report are mentioned as well and summarized in table 1. Key to reconstructing the chronology was the eastern area, particularly the eastern *stenopos*, where an intact stratigraphy with levels from antiquity to the modern period was found. In contrast, the stoa and western *stenopos* were so significantly impacted by erosion that structures of the late 18th century A.D. were found at the same level as the stylobate of the ancient stoa.

Augustan Period - Orange

On the published plan, all elements of the race-track system and the pool are attributed to this phase, and even an earlier pottery kiln to the west of the western *stenopos* is marked orange. The level of the *paradromis* between the seats was found at 68.69-68.73 MASL, and the eastern *stenopos* sloped from 69.48 MASL at the northern excavated end to 68.65 MASL at the height of the altar. A remodeling phase, dated by the stratigraphy to the late 1st century A.D., is only mentioned in the text; the level to the east of the altar and exedra-shaped structure was at 69.45-69.56 MASL, while no changes occurred in the *paradromis*[9]. The abandonment of the gymnasium is dated to c. A.D. 200-250, based on the stratigraphy, in particular destruction deposits. The upper surface of the abandonment levels in the *paradromis* were measured at 68.54-69.38 MASL. In the northeast, the destruction layer that included many tile fragments and some architectural elements was preserved best and was covered by a thick homogeneous stratum of sandy earth with traces of burning (0.75 m thick)[10].

Constantinian Period - Yellow

Between A.D. 336 and 348, a new complex of buildings was constructed in the northern part of the race-track, reusing material from the gymnasium. This included a large round building (23.50 m in diameter, *Edificio* 1) flanked by two halls with an axial colonnade (37 by 12.30 m, *Edificio* 2 and 3). All three buildings were accessible from a central space (*Piazzale*). Construction and use of this complex until about A.D. 360 is dated by numerous coins. While no evidence of pavements was found inside buildings and the *Piazzale*, the threshold of *Edificio* 3 was found at 69.74 MASL and preparation layers for the pavement of the *Piazzale* sloping from 69.94 MASL (E) to 69.48 MASL (W). The pavement of the eastern *stenopos* sloped from 70.35 MASL (N) to 69.57 MASL (S). In sum, the level between the race-tracks and the Constantinian buildings as well as in the eastern *stenopos* seems to have been raised for about 90-100 cm. Abandonment levels were found at 70.20-70.60 MASL in *Edificio* 2 and 69.50-70.20 in the *Piazzale* and *Edificio* 3[11].

Seventh Century A.D. - Green

Dated by the relative stratigraphic sequence, a wine press and reuse of the eastern *stenopos* have been assigned to this phase, with levels of 70.30-70.75 MASL in the central *stenopos* and 70.10 MASL in the southern part of the *stenopos*, as well as 70.30 MASL around the wine press. Thus, the level of the *stenopos* was raised for 30-50 cm.

6 Fiorentini 2009, pp. 97-102; 2011, 99-100; Soraci 2017, p. 19; Livadiotti, Fino 2018, pp. 65 n. 14; 70-71; 76 n. 84; Fino 2021, pp. 126-127 fig. 75. In contrast, Caminneci, Parello 2021, p. 72 maintain the Augustan date.

7 Fiorentini 2009, p. 101 n. 6; for a more detailed discussion, Trümper *et alii* 2022, pp. 132-133; Trümper forthcoming a.

8 Fiorentini 2009, p. 100 fig. 53; 2011, p. 84 fig. 63; detailed description of the phases in Fiorentini 2009, pp. 97-108: periods I ("banco naturale e suolo originario") to VIII ("IV sec. d. C.") are identified, while the post-ancient structures, from the 7th century AD onwards, are not attributed to numbered phases. Detailed phase plans are provided in Borrello, Lionetti 2005, pp. 2-37 pls. 2-14 who differentiate periods I-IX with subphases (tab. 1).

9 Fiorentini 2009, pp. 91. 102: a coin of Domitian and fragments of sigillata Africana A (type Hayes 8A) and cooking ware (type Hayes 197) were found in the foundation trench of the rebuilt east wall of the race-track complex. Borrello, Lionetti 2005, pl. 5.

10 Borrello, Lionetti 2005, p. 19.

11 Borrello, Lionetti 2005, pls. 7-8.

Eighth to Nineteenth Century A.D. - Brown and Without Color

After the abandonment of the wine press, two pottery kilns were built in the eastern *stenopos* at the end of the 8th century A.D., and destroyed during the 9th century A.D.[12]. The southeastern part of the *stenopos* was reused as street, at a level of 70.36/70.40 MASL, thus with another raise of 25-30 cm.

In the Arabic period (A.D. 828-1245), the terrain was used for cultivation, and a thick stratum of homogeneous and clean humus was brought in for this purpose[13]. Coarse walls of reused blocks defined streets, one of which reused the eastern *stenopos*, while the other was perpendicular to this, located in the area of the *Piazzale*; the level of the streets was at 70.40 MASL, thus similar to that of the previous phase.

In the Norman period after 1245, there was no more agricultural activity, and the terrain was exposed to flooding and erosion.

In the 16th century, the terrain was reused for agricultural purposes, of which evidence survived only in the area of the central eastern *stenopos* and the *Piazzale*; artificial leveling with "*terreno humificato*" was found with upper surfaces at 70.20-71.16 MASL[14].

At the end of the 18th century, the area was leveled again for agricultural use, and a fountain with a supply and drainage system was built. The corresponding levels were found in the central eastern *stenopos* and *Piazzale* (at 72.15 MASL, thus with an artificial raise of 1-2 m) as well as in the southern part of the western *stenopos* (at 68.02 MASL). The fountain, which is still visible today, was made of reused blocks and carries an inscription of 1790. Remains of a supply channel were identified in the eastern *stenopos* (USM 804, at 71.83 MASL), made of small calcarenite blocks "*recanti sulla facia superiore l'alloggiamento di una fistula*", while drainage was provided by a channel (USM 1208, at 68.02 MASL) "*formata da tubuli fittili*", which drained water from the southwest corner of the fountain via the *stenopos* to the ravine. To the west of the drainage channel and running parallel to it, remains of a rubble wall were found that was identified as the western boundary of the agricultural property[15]. A wall that was founded at the current bottom of the ravine and made of reused calcarenite blocks (USM 3007, upper surface at 67.30 MASL) may also have belonged to the water management system of this property. While this wall (USM 3007) has wrongly been attributed to the Constantinian phase on the phase plan (fig. 2), the channels (USM 804, USM 1208) are not marked with any color and the fountain is not shown at all.

Modern period

This is not marked on the phase plan, but includes the accumulation of humus on top of the 18th century water management system, the plantation of orange trees, as well as the excavation and maintenance activities from the 1950s onwards. Excavation started at 72.70 MASL (N) and 72.04 MASL (S) in the eastern *stenopos*, and 68.97-70.61 MASL in the southern part of the *paradromis*[16].

While stratigraphy played a crucial role in reconstructing the development of the area, no stratigraphic sections and barely any finds (coins, pottery) have been published[17]. The key problem of the construction date of the gymnasium remains, and a possible late Hellenistic origin of the gymnasium has yet to be substantiated more thoroughly with conclusive evidence and arguments. Fiorentini specified that her argument is based on an "*ancor parziale esame dei reperti ceramici rinvenuti*"[18], but no further study of the material was published or is documented in the archives.

Many levels are indicated on published and unpublished plans which is very helpful for assessing the stratigraphy and development. But all levels indicated above are 1.70-1.75 m too high compared to today's absolute levels, which have been taken within a GPS based coordinate system. The old wrong levels have been maintained above and in previously published plans[19], but will be corrected in future plans of the entire gymnasium. Table 1 includes both the old and, subtracting 1.73 m, the corrected levels.

[12] For differentiated phase plans of the long phase between the 8th and 19th century AD, see Borrello, Lionetti 2005, pp. 31-37 pls. 10-14.

[13] Fiorentini 2009, p. 106: "costituito da gettate di riporto (m 71.15/69.00 s.l.m.)"; cf. Borrello, Lionetti 2005, 33; the thickness is not specified in either publication, but comparison of levels on the phase plans suggest a thickness of 10-35 cm.

[14] Borrello, Lionetti 2005, p. 35.

[15] Borrello, Lionetti 2005, p. 35 pl. 14; the channel USM 1208 and wall are visible on the stone plan Fiorentini 2009, p. 74 fig. 4.

[16] Borrello, Lionetti 2005, p. 37 pl. 15.

[17] Fiorentini 2011, pp. 90. 91. 97 note. 2; 107: some pottery fragments and coins are mentioned, but without images and drawings.

[18] Fiorentini 2009, p. 99.

[19] Trümper *et alii* 2022, pp. 140-141 fig. 6.

Level in S of *paradromis*, between seats, MASL (*corrected* MASL)	**Level in eastern *stenopos*, MASL (*corrected* MASL)**	**Activity / event**	**Date**	**Phase in Borrello, Lionetti 2005**	**Phase in Fiorentini 2009**
68.60-68.70 (*66.87-66.97*)		Natural soil ("banco naturale"), yellow-blue clay: 69.90 (*68.17*) (NE), 69.40 (*67.67*) (SE), 63.55 (*61.82*) (SW); paleo-channel in W, filled by silty sands and covered by red sandy alluvial and colluvial layers		I	I
-		A: foundation of city; B: construction of drainage channel in N part of race-tracks	A: 6th c B.C.; B: after 480 B.C.	IIA, B	II
-		Construction of workshop/ furnace for production of vernice nera pottery to the west of the western *stenopos*	4th/3rd c B.C.: (Fiorentini); 2nd/1st c B.C. (Borrello-Lionetti)	III	III
A/B: 68.69 (*66.96*); C: 69.38 (*67.65*)	A: 69.48 (*67.75*) (N), 68.65 (S) (*66.92*)	A: construction of gymnasium; B: remodeling; C: abandonment	A: 2nd c B.C. (Fiorentini) or Augustan period (Borrello-Lionetti); B: late 1st c A.D.; C: A.D. 200-250	IVA, B, C	IV (construction); V (Augustan remodeling); VI (Flavian remodeling); VII (abandonment); all orange on phase plan
A:-; B: 69.40 (*67.67*)	A: 70.35 (*68.62*) (N), 69.57 (*67.84*) (S)	A: construction of round building and rectangular buildings; B: abandonment	A: A.D. 336-348; B: A.D. 360-6th c A.D.	V A, B	VIII; yellow on phase plan
-	A: 70.30-70.75 (*68.57-69.02*) (center); 70.10 (S) (*68.37*) B: 70.36-70.40 (S) (*68.63-68.67*)	A: construction of wine press, reuse of eastern *stenopos*; B: pottery kilns, new pavement in eastern *stenopos*; C: destruction of kilns	A: 7th c A.D. B: 8th / early 9th c A.D.; C: early 9th c A.D.	VI A, B, C	No number; green on phase plan
A: 69.60 (*67.87*)	A: 71.40 (*68.67*)	A: rural production site, with streets on S part of eastern *stenopos* and perpendicular to this, palisade on back wall of stoa; thick stratum of homogeneous clean humus; B: abandonment of agricultural use; flooding, erosion	A: A.D. 828-1244; B: after 1245	VII A, B	No number; brown on phase plan
	A: 70.20-71.16 (*68.47-69.43*); B: 72.15 (center) (*70.42*)	A: reuse for agricultural purposes; B: reuse for agricultural purpose, fountain with water management and boundary wall	A: 16th c; B: end of 18th c	VIII A, B	No number; no color on phase plan
70.30 (*68.57*)	72.70 (*70.97*) (N), 72.04 (*70.31*) (S)	Strata of humus and orange tree plantation	19th/20th c	IX	No number; no color on phase plan

Table 1: Chronology of the area of the race-tracks; all data according to Borrelli, Lionetti 2005, if not otherwise specified

Trenches Excavated in 2022

The geophysical survey suggested that a *palaestra* building which is typical of eastern gymnasia, but so far strangely missing in the large complex of Agrigentum, might have been located in an olive grove to the north of the pool (fig. 1: Field 1)[20]. Here, magnetometry and Ground-Penetrating Radar (GPR) identified the largest concentration of anomalies.

Four trenches were excavated in this olive grove in a terrain that rises more than 4 m from south to north (figs. 3, Pl. 1): the southwest corner of trench 1 in a distance of 10.70 m from the northern border of the pool proper; the southwest corner of trench 2 in a distance of 22.30 m from the northern border of the pool proper; the southwest corner of trench 3 in a distance of 43.75 m from the northern border of the pool proper; and the southwest corner of trench 4 in a distance of 76.90 m from the northern border of the pool proper. During the first week, the topsoil and a hard homogenous fill level were excavated by hand for about 50-60 cm depth, yielding substantial remains only in trench 3. At the beginning of the second week, an excavator was used for two days, based on the advice of colleagues from the Parco Archeologico. The excavator removed the unexpectedly thick post-ancient fill layer, which included only very few finds, in trenches 1, 2, and 4, and topsoil in trench 3 to significantly enlarge this trench.

While massive ashlar walls were found in trenches 1 and 2, trench 4 did not provide any built structures, and trench 3 has not yet been sufficiently excavated to fully assess the stratigraphy. Therefore, focus is in the following on trenches 1 and 2.

Trench 1

Trench 1 was located in the immediate vicinity of the pool to investigate the connection of the pool complex to the possible palestra (figs. 1, 3). No anomalies were identified here during the geophysical survey, in part because of a metal telephone pole that is located at the southeast border of the olive grove and caused disturbances in the readings. The trench was initially laid out with a size of 4 m (NS) x 5 m (EW) (fig. 4) and later extended by the excavator to 5.30 m (NS). The northeast corner was slightly oblique at the end because a staircase with five steps was made here for secure access to the trench; at the bottom, the final trench was only 4.50 m (EW) because the side walls of 1.40- 2.15 m height were made slightly slanted for security reasons (figs. 6, 7).

Excavation started from the following levels: northwest corner 71.44 MASL, northeast corner 71.44 MASL, southeast corner 71.28 MASL, southwest corner 71.29 MASL, center 71.34 MASL (fig. 4).

In the southeast corner of the trench, the poorly preserved remains of a rubble stone wall (USM 1001) and a channel (US 1002) were found 30-45 cm below the upper surface (figs. 4, 5). These remains were the only place where the topsoil US 1000, above US 1002/USM 1001, and the brown compact fill US 1001 could be distinguished.

In a depth of 1.20-1.30 m below the surface, two ashlar walls (USM 1002, 1003), running parallel in a distance of 0.70 m from each other and roughly from east to west (NEE to SWW) were found as well as a wall (USM 1005) built perpendicular to USM 1002, running roughly north-south (figs. 6, 7). The walls are consistent in orientation, building technique, and material (calcarenite) with the previously exposed walls of the gymnasium. The nature of a series of ashlars at the northern border of the trench (US 1008: wall in situ, fallen blocks of the upper part of wall USM 1003, pavement etc.) could not yet be identified. A pavement of large stone slabs was revealed in the southwest corner (US 1010), disturbed in the northeast by a later pit (US 1013). The foundation level of the walls USM 1002 and 1005 was only reached in this pit, at a level of 69.00 MASL, while the area between USM 1002 and USM 1003 could not be fully excavated (stopping at 69.26 MASL), and in the entire eastern half of the trench, excavation stopped already at 69.94 MASL for reasons of time.

The following sequence of interventions can be reconstructed, moving from the earliest to the latest (figs. 8-11).
- US 1014: The upper surface of a dark brown compact layer was identified at 69.00 MASL in the pit US 1013 (fig. 12). This served as the foundation layer for USM 1002 and USM 1005. Since this layer was not excavated, no diagnostic finds could be gained for potentially dating the construction of the walls.
- USM 1002: This wall was built on top of US 1014 (fig. 13). Two superimposed layers of ashlars were preserved, of which four blocks were revealed in the upper layer with an upper surface at 70.02 MASL, and two of the lower layers. The lower part of the south face of the lower ashlars was only roughly worked, and only a small band at the top, once

[20] For a detailed discussion of the geophysical survey and its results, Trümper *et alii* 2022.

Fig. 3. Location of trenches 2022 (survey A. Fino).

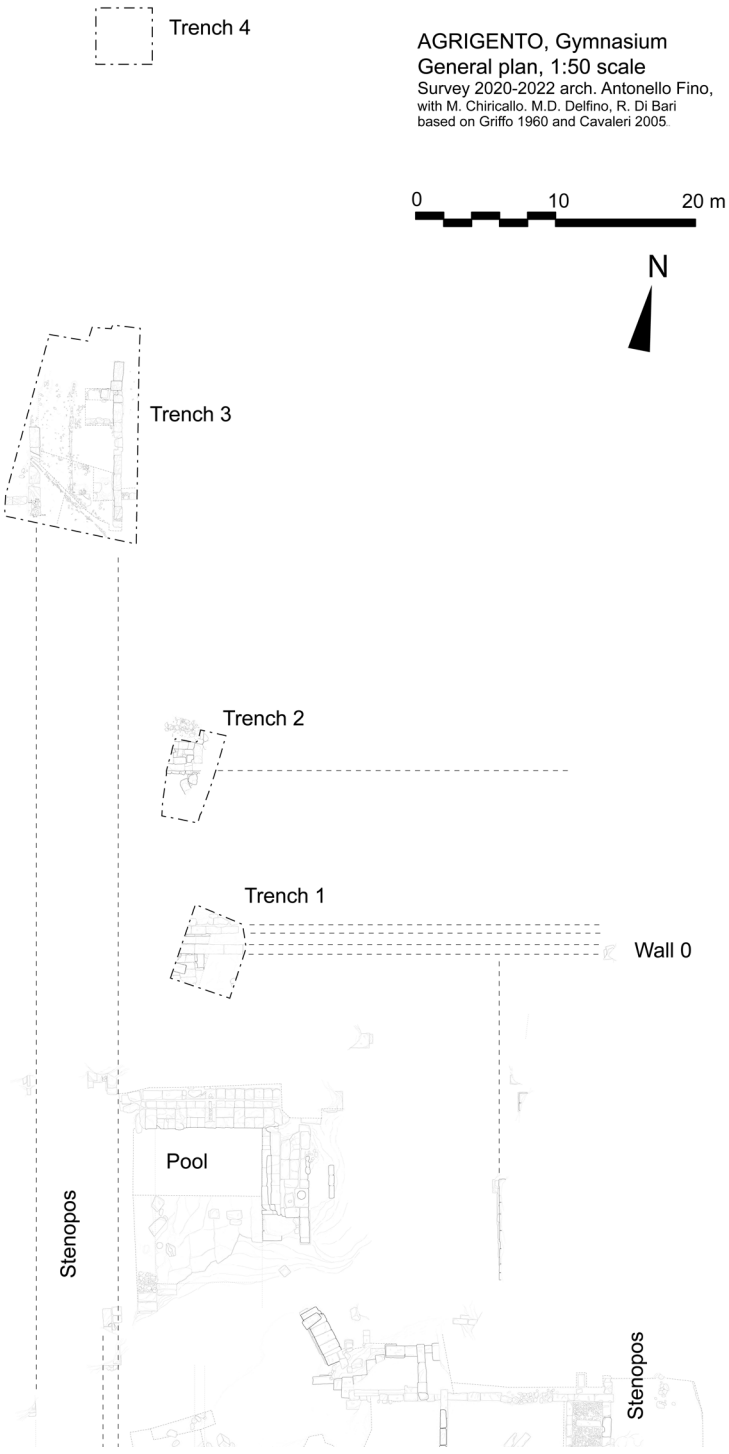


Fig. 4. Trench 1, US 1000. Drone photo after removal of topsoil (photo T. Lappi).

Fig. 5. Trench 1, channel US 1002 and wall USM 1001 (photo P. Santospagnuolo).

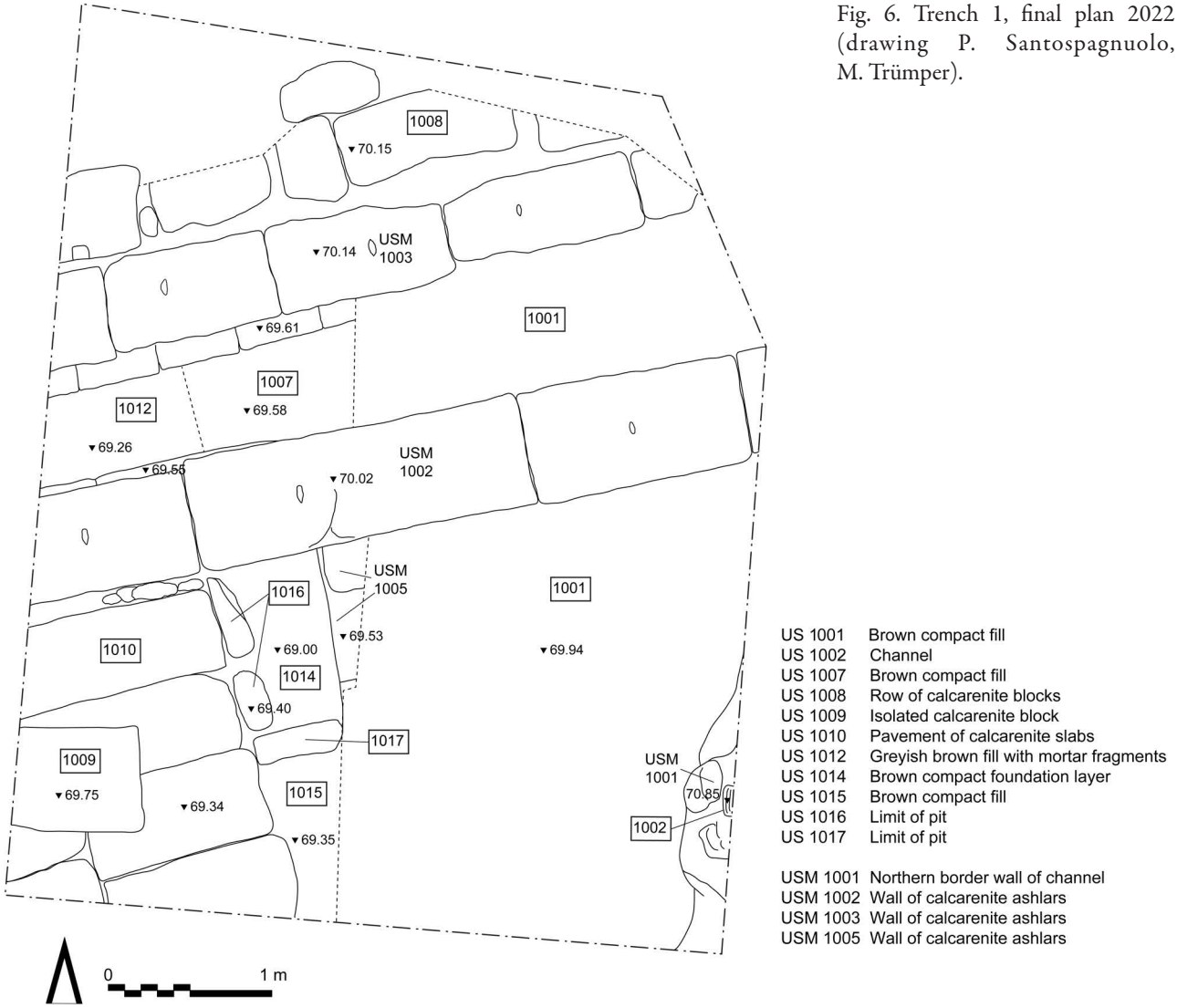


Fig. 6. Trench 1, final plan 2022 (drawing P. Santospagnuolo, M. Trümper).

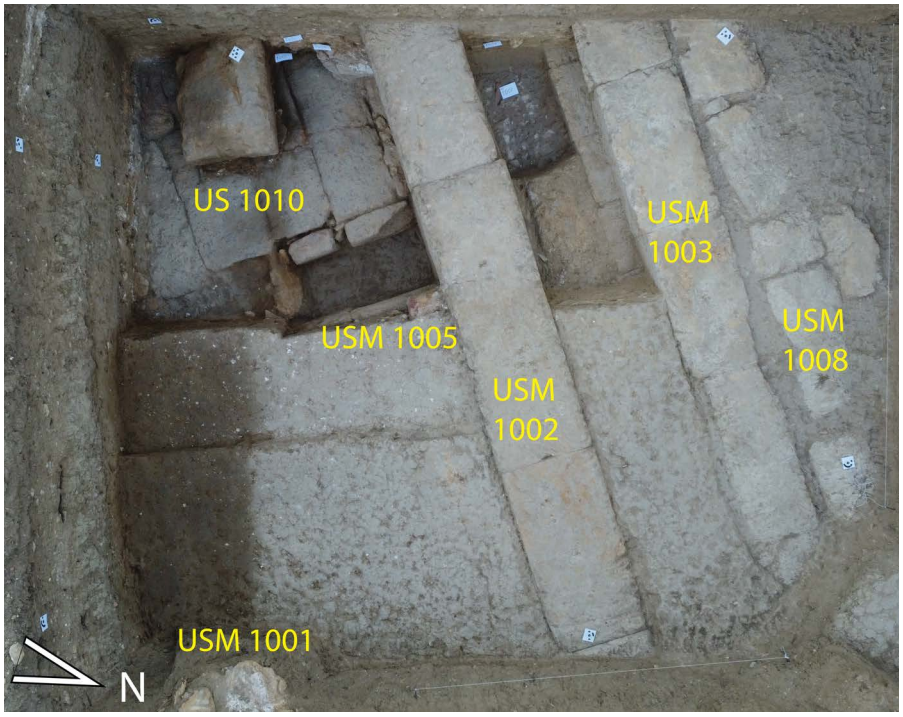


Fig. 7. Trench 1, drone photo at the end of excavation (photo T. Lappi).

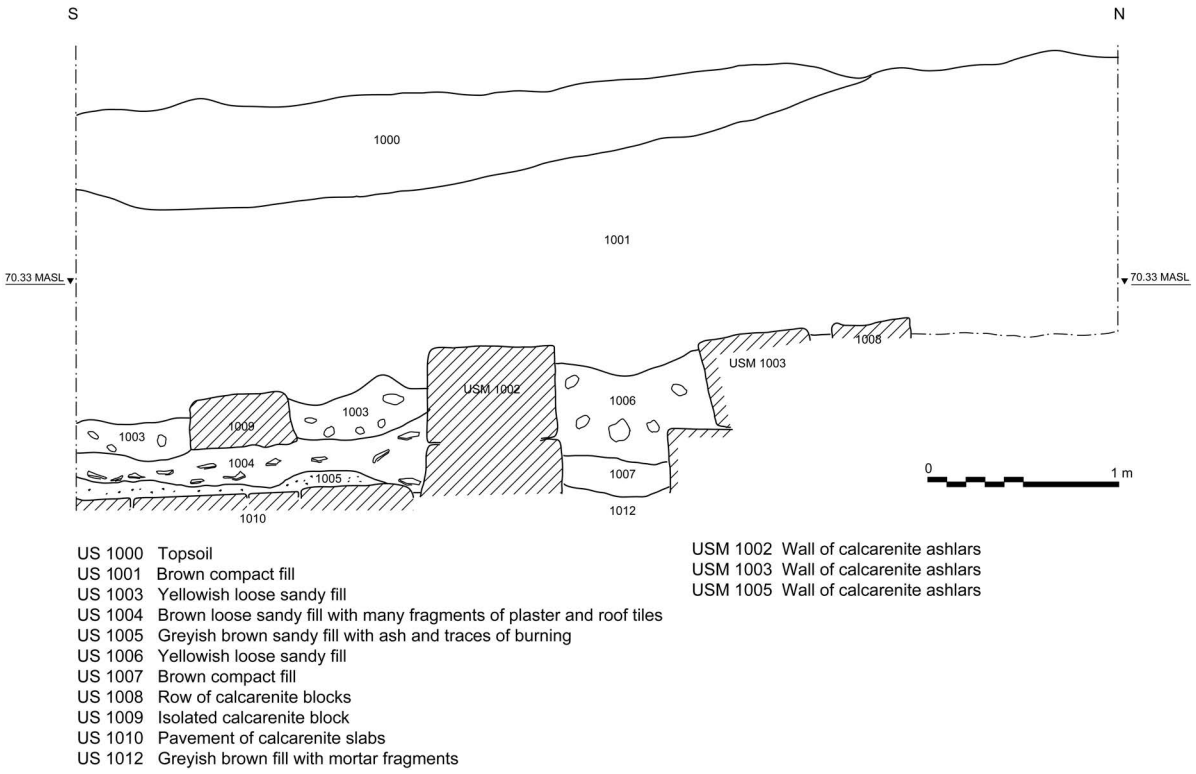


Fig. 8. Trench 1, 2022, West section (drawing P. Santospagnuolo, M. Trümper).

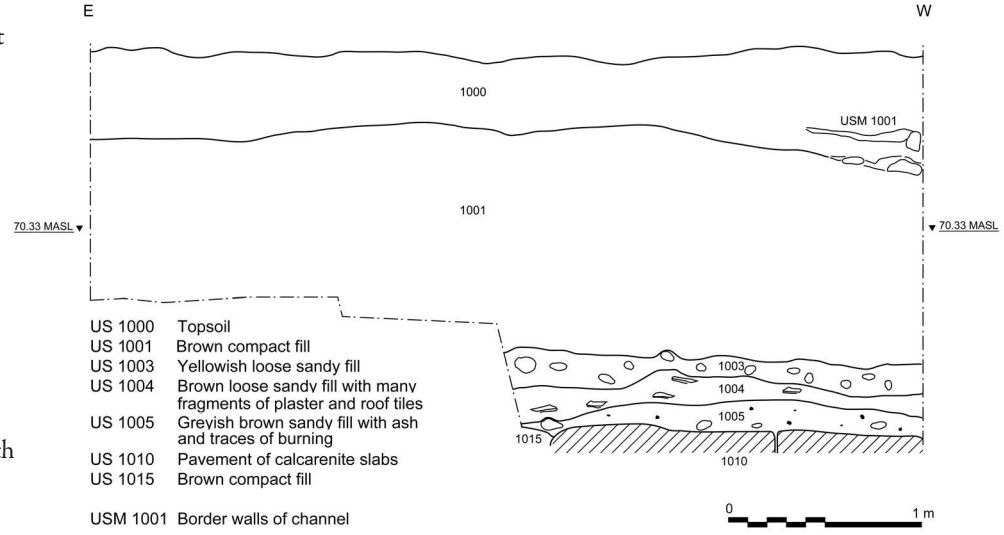


Fig. 9. Trench 1, 2022, South section (drawing P. Santospagnuolo, M. Trümper).

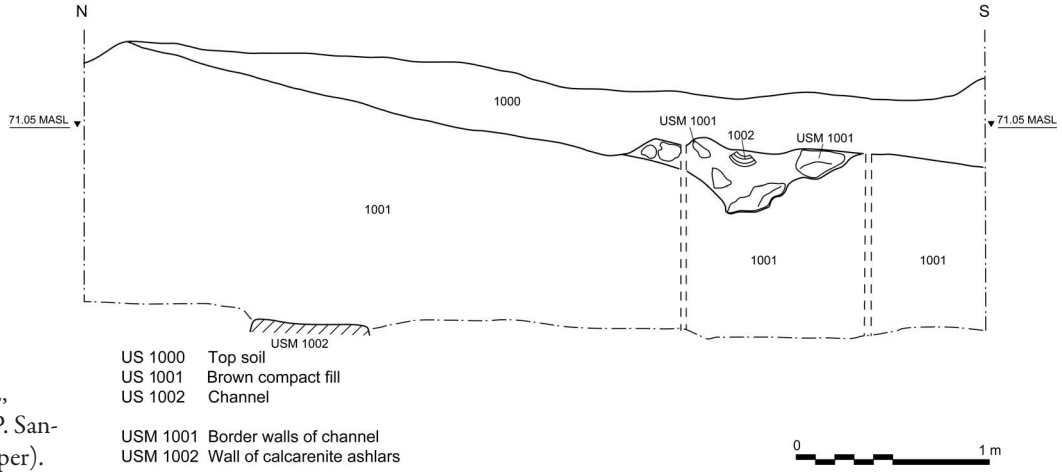


Fig. 10. Trench 1, 2022, East section (drawing P. Santospagnuolo, M. Trümper).

visible above the pavement slabs, was carefully smoothed (fig. 12). Spike holes on the surface of the uppermost blocks show that this was a rising wall with further layers.
- USM 1005: This wall was also set onto US 1014 and against USM 1002. Two blocks of the lower row were revealed, but only one small block of the upper row (fig. 12). This abuts USM 1002 and shows traces of burning. The rest of the lower row was found covered by various strata (US 1003-1005, see below); this lacuna may go back to the abandonment and spoliation of this wall or testify to the existence of a doorway. Fragments of white plaster survived in the corner where USM 1002 and 1005 meet.
- US 1010: Large calcarenite slabs serving as a pavement with an upper surface at 69.34 MASL and thus 58 cm above the northern walkway of the pool (68.76 MASL) were laid. The slight gap between the slabs and the lower row of USM 1002 was filled with small stones (figs. 6, 7, 12). Since the bottom of the slabs was not reached, it could not be determined how thick they are and whether they were founded on US 1014, like the walls, or on another fill layer. Six slabs were fully or partially revealed, organized in regular rows of 50-55 cm width from north to south, while the pattern changes in the southwest corner. The gap between US 1010 and USM 1005 of 65 cm width may originally have been covered with short slabs or long north-south oriented slabs. The size of the slabs may seem astonishing for a pavement, but has parallels in the known parts of the gymnasium: for example, the pavement of the eastern walkway of the pool includes large ashlars with heights of 30 cm[21].
- US 1013: A pit of 0.65 (EW) x 1.20 (NS) m was made, probably by removing a long slab or several smaller slabs of the original pavement US 1010 (fig. 12). It was framed with small stones in the west (US 1016) and south (US 1017), leaving an opening of ca. 0.50 m (EW) x 1.00 m (NS). The area to the south was not further excavated, stopping at a brown compact fill (US 1015) at the level of the pavement (US 1010) (fig. 13). The function of the pit could not be determined, e.g. whether fire was made here that may have been responsible for the — strangely limited — traces of burning on the upper row block of USM 1005 that is located right next to the pit.
- US 1011: The pit was found filled with brown compact earth that included small stones, tile fragments, pottery fragments, and remains of two glass vessels. These provide a *terminus post quem* of the 2nd century A.D.[22].
- US 1003-1005, 1009: The pit and pavement were found covered by three relatively evenly leveled layers of varying thickness, which may stem from either deliberate destruction and dismantling of the surrounding structures or, less likely, from natural decay processes (figs. 8, 9). The lowest, US 1005, is a thin greyish brown sandy fill with ash and traces of burning that covered the pavement and filled pit; it included very little pottery fragments, among them a TS A bowl (Lamboglia 3a =Hayes 14A) and a carinated bowl TS A (Lamboglia 2a = Hayes 9A), as well as one glass fragment, providing a *terminus post quem* of the mid-2nd century A.D. (fig. 30: nos. 1, 2). The next, US 1004, is a brown loose sandy fill which included many fragments of plaster and roof tiles, and only few pottery fragments that could not be dated more precisely. An isolated (fallen?, deposited?) calcarenite block, US 1009, was only partially revealed at the western border of the trench, lying on top of US 1004 with an upper surface of 69.75 MASL (fig. 7). A yellowish loose sandy fill, US 1003, was found on top of US 1004, surrounding the block US 1009, with an upper level of 69.55-69.75 MASL. It included only few pottery fragments and one glass fragment, which could not be dated more precisely.

While the stratigraphy to the north of USM 1002 can currently not be fully correlated with that to the south of this wall, the following sequence seems likely:
- USM 1003 was built at the same time as UMS 1001 and 1005, most likely also on a leveling foundation layer. Two superimposed layers of blocks were revealed, the upper one including at least five blocks that are slightly narrower than those of USM 1002; and the lower one including five blocks that protrude for about 15 cm as foundation layer, the bottom of which was not reached (figs. 6, 7, 13). Like USM 1002, USM 1003 includes spike holes on the surface of the uppermost blocks for the positioning a further layer.
- US 1012: This greyish brown layer was found in between the foundation rows of USM 1002 and 1003 with an upper surface at 69.26 MASL (fig. 13). While it was not excavated, a remarkable concentration of plaster fragments is visible at its surface.
- US 1007: This brown compact fill was excavated on top of US 1012 with an upper surface at 69.58 MASL, and still between the foundation rows of USM 1002 and 1003 (fig. 13). It did not yield any finds.
- US 1006: This yellowish loose sandy fill was excavated between USM 1002 and 1003, with an upper surface at 69.96 MASL, yielding only a few tile fragments and bones (fig. 13).

[21] Trümper *et alii* 2022, p. 143 fig. 10.
[22] The vessels have not yet been restored, but are preliminarily identified as fragments of a ribbed bowl (Isings 1957, Form 3) and a tall indented beaker on a thin, low standing base (Isings 1957, Form 35).

- None of the strata between US 1002 and 1003 (US 1012, 1006, 1007) could be identified as an earth-packed floor, which should have covered the protruding foundation of USM 1003. US 1006 resembled US 1003 in consistency and the scarcity of finds.
- US 1001: On top of both US 1003 and 1006, a hard brown compact fill of 1.07 m up to 1.40 m thickness was found in the entire trench. It was hard to differentiate from the topsoil US 1000 except for the area of the channel US 1002, which was built on top of US 1001, but covered by US 1000. US 1001 included comparatively few pottery fragments and two ancient coins, one of which was not legible; the other provides at *terminus post quem* of 209 B.C.[23]. While US 1001 postdates the fills US 1003 and 1006 and is earlier than the channel, its genesis and date currently cannot be determined more closely. It can be compared in consistency and thickness to strata in trenches 2 (US 2001) and 4 (US 4001).
- US 1002/USM 1001: The channel (US 1002) was made of terracotta pipes of which only few fragments survived; these were embedded in a thick bed of white lime mortar and protected by rubble walls (USM 1001): the northern one survived for a length of 80 cm, while the southern became only visible in the east section of the trench (fig. 10). Scanty traces of this channel were also found in the southwest corner of the trench, visible only in the south section (fig. 9). This suggests that the channel ran from northeast to southwest. While no diagnostic evidence related to the channel was found, the level, course, type of the pipes, and consistency of the mortar suggest that the channel was made and used in the 18th/19th century and belonged to a farmstead. Comparable remains had already been found in the area of the race-tracks and adjacent western *stenopos*[24] and were found in trench 3 (see below).
- The channel was covered by topsoil (US 1000).

Interpretation and Chronology

The walls USM 1002, 1003, and 1005 were most likely built at the same time as the pool, subdividing several spaces, which were located at a slightly higher level (58 cm) than the walkway of the pool. Their construction date can currently not be determined. While it is likely that the walls belonged to a substantially built, even monumental structure (*palaestra*?), the layout of this structure cannot be reconstructed and the function of the two parallel walls that are located in a distance of only 70 cm from each other cannot be determined; both walls included at least one further layer, as suggested by the evidence of spike holes on the upper surfaces. USM 1002 correlates with Wall 0, which was surveyed in 2020 in the valley east of the pool (fig. 3)[25].

A pit of unknown function was created in the northeast corner of the room defined by USM 1002 and 1005, its fill US 1011 providing a *terminus post quem* of the 2nd century A.D. It is not clear whether the building still served as part of a gymnasium at this time.

The filling of the pit also provides a *terminus post quem* for the strata US 1005, 1004, and 1003. The fact that the walls and the uppermost layers US 1003 and 1006 were found at similar levels clearly suggests that the structures were systematically dismantled and spoliated. But it can currently not be determined whether this happened in the Constantinian period, when new buildings were constructed in the race-track section[26], or at another time. Future excavation, particularly also of the strange row of blocks at the northern border of the trench (US 1008) may confirm and clarify this process.

Trench 2

Trench 2 was excavated where the geophysical survey had identified an east-west oriented anomaly that extended across the potential continuation of the western *stenopos* (fig. 1: feature a). The trench was initially laid out at 4 m (OW) x 5 m (NS) and later extended by the excavator up to 7.20 m (NS) x 3.50 m (EW in the south)/4.35 m (EW in the north). The trench was then provided with five steps along the east border to provide secure access, and a shallow step along the western border for security reasons. The excavated part of the trench measured 6.90 m (maximum NS extension) x 2.50 m (OW in the north next to the stairs)/ 2.80 m (EW in the south). Excavation started from the following levels: northwest corner 72.94 MASL, northeast corner 72.74 MASL, southeast corner 71.99 MASL, southwest corner 72.13 MASL. Excavation stopped at the level of 69.11 MASL (figs. 14, 15).

The anomaly was found in the southern half of the trench immediately below the modern surface at 72.11-72.36 MASL, but proved to be a series of isolated blocks and stones that certainly did not belong to a wall. These stones were located in the same massive post-ancient layer (US 2002) found in trench 1.

[23] Roman bronze as: *Obv*. head of Janus; *Rev*. prow; cf. RRC 50/3 (209/208 B.C.) and RRC 88/3 (209 B.C.).
[24] Fiorentini 2009, p. 92 fig. 42: canale USM 1208; 107, note. 1.
[25] Trümper *et alii* 2022, p. 146 fig. 15.
[26] Fiorentini 2009, pp. 103-105; see above tab. 1.

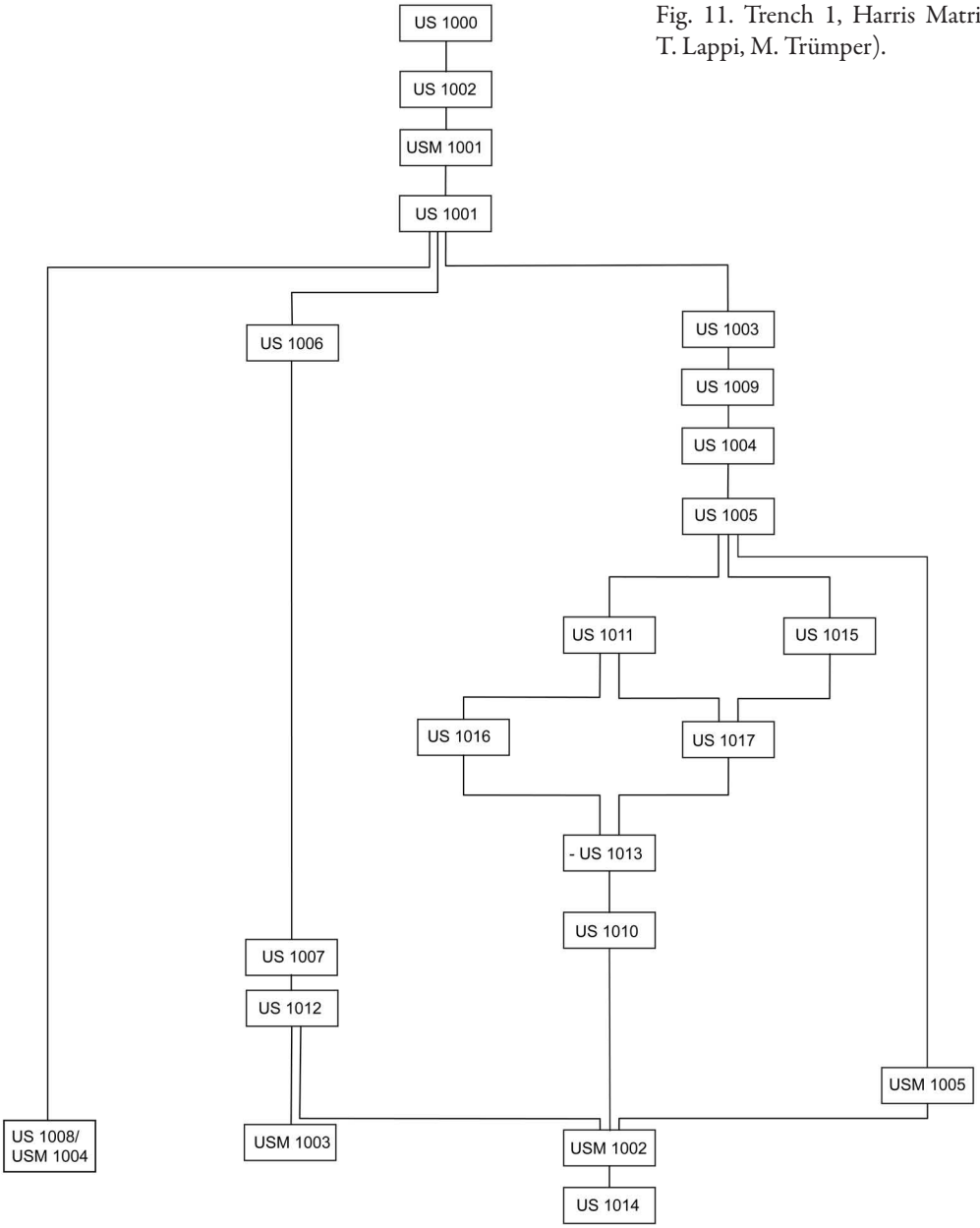
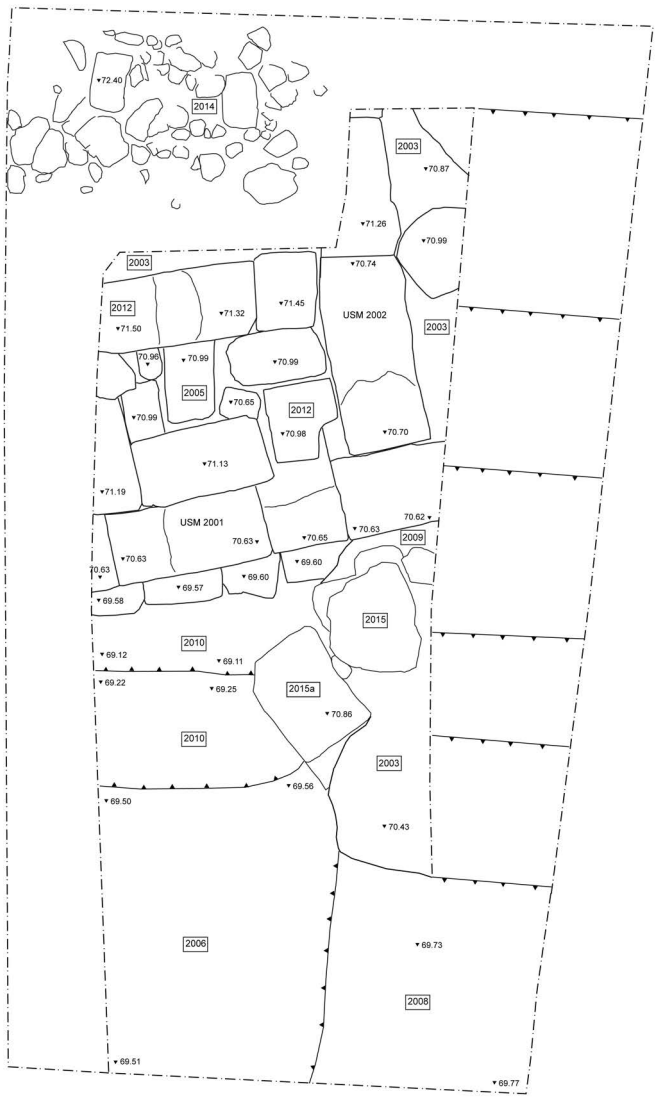


Fig. 11. Trench 1, Harris Matrix (elab. P. Santospagnuolo, T. Lappi, M. Trümper).

Fig. 12. Trench 1, pit US 1013 with pavement US 1010 (photo P. Santospagnuolo).

Fig. 13. Trench 1, southwest corner at the end of excavation (photo P. Santospagnuolo).



US 2003 Yellowish brown layer with many tile fragments
US 2005 Large calcarenite blocks between and under US 2012
US 2006 Brown layer with charcoal fragments
US 2009 Earth between blocks, not excavated, possibly US 2003
US 2010 Yellow bluish clay
US 2012 Calcarenite blocks on top of USM 2001
US 2014 Pavement (?) of differently sized stones
US 2015 Calcarenite blocks turned over (a = sima)

USM 2001 Wall of calcarenite ashlars
USM 2002 Wall of calcarenite ashlars

Fig. 14. Trench 2, 2022, final plan (drawing F. Birkner, T. Lappi, M. Trümper).

Fig. 15. Trench 2, orthophoto at the end of excavation (F. Birkner, M. Trümper).

At the northern border of the trench, 40-50 cm below the topsoil, a type of pavement (US 2014) was found at 72.40 MASL consisting of differently sized stones that could have belonged to the modern farmstead mentioned above. Like in trench 1, these remains were the only place where the topsoil US 2000, above US 2014, and the brown compact fill US 2001 could be distinguished.

At a depth of 1.60-2.00 m below the massive compact fill (US 2002), an east-west running massive wall (USM 2001) and a perpendicular north-south running wall (USM 2002) were found, which correspond in orientation, type of construction, and material (calcarenite) with the walls from trench 1. North of USM 2001 and west of USM 2002, an accumulation of several large and small blocks (US 2005, 2012) was found that are not in situ, but either belonged to a later, as yet undetermined structure or were deposited here during spoliation of walls USM 2001 and 2002. South of USM 2001, several blocks were exposed in a turned-over position, one of which could be identified as a sima block (US 2015a). USM 2001 was excavated down to the foundation level. The following sequence of interventions can be reconstructed, moving from the earliest to the latest (figs. 16-19).

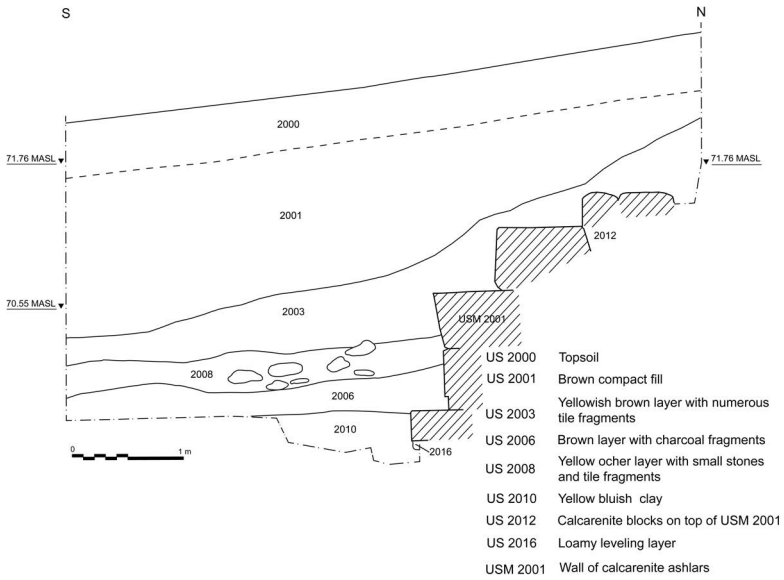


Fig. 16. Trench 2, West section (drawing F. Birkner, M. Trümper).

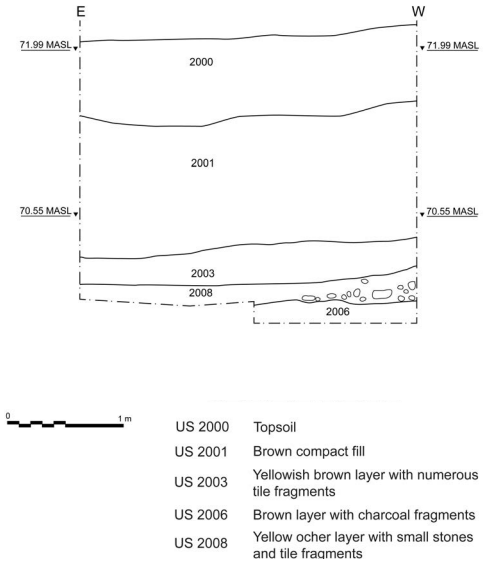


Fig. 17. Trench 2, South section (drawing F. Birkner, T. Lappi).

- US 2010: This layer of yellow bluish clay was found to the south of USM 2001 and excavated to 20 cm below the lower border of USM 2001 (fig. 20). It did not include any finds and can be identified as the sterile natural layer which had been found in previous excavations throughout the gymnasium area[27].
- US 2016: A thin loamy leveling layer was found between US 2010 and USM 2001. USM 2001: The wall made of calcarenite ashlars was built without a foundation trench onto the natural clay US 2010, which was partially cut and leveled with US 2016 (fig. 20). This practice was encountered elsewhere in the gymnasium[28]. Three layers of blocks are preserved: a foundation layer that is partially built on tile fragments and protrudes for up to 28 cm; a layer with a drafted margin at the bottom and a bossed face at the top; and a layer with finely worked faces, but without evidence of spike holes on the upper surface (at 70.63 MASL).
- USM 2002: Since this wall was bordered by the accumulation of blocks in the west and the access staircase in the east, it could barely be excavated and can currently not be fully assessed. It was most likely founded in a similar way as USM 2001, but the first visible layer of calcarenite ashlars corresponds with the uppermost preserved layer of USM 2002 (at 70.70 MASL). For USM 2002, two further layers are partially preserved with upper surfaces at 71.26 MASL and, inserted in the northern profile of the trench, at 71.73 MASL. USM 2001 and 2002 appear to have been connected via at least one block, which must be further clarified in the future.
- US 2006: A brown layer with charcoal fragments was found in the entire area to the south of USM 2001, running up to USM 2001 and above the top of its foundation blocks, and sloping from 70.05 MASL (N) to 69.75 MASL (S). Pottery from this layer provides a *terminus post quem* around the middle of the 2nd century A.D., including the border of a Sigillata A casserole (Hayes 23) (fig. 30: no. 3).
- US 2008: A yellow ocher layer with many small stones and tile fragments was found on top of US 2006, running up to the uppermost layer of USM 2001, and sloping from 70.31 MASL (N) to 70.04 MASL (S). It did not include securely datable finds.
- US 2015: Several turned-over calcarenite blocks were found on top of US 2006 and possibly embedded in US 2008. The gap between USM 2001 and these blocks is so narrow that it could not be properly excavated and the area around the blocks was left untouched until the last days of excavation. Thus, the nature and sequence of layers below (US 2017) and to the north (US 2009) of these blocks could not be securely established. But one of the blocks (US 2015a) could be identified as a sima virtually in the last hours of the campaign, and the block below the sima may also be an architectural element (fig. 21).
- US 2003: Between US 2008 and US 2001, a yellowish brown layer with numerous tile fragments was found, sloping significantly from 72.19 MASL (N) to 70.30 MASL (S). It covered the top of the walls, the accumulation of blocks, and the turned-over blocks. The pottery provides a *terminus post quem* of the 3rd century A.D.

[27] Fiorentini 2009, pp. 72. 98-99.

[28] See previous note.

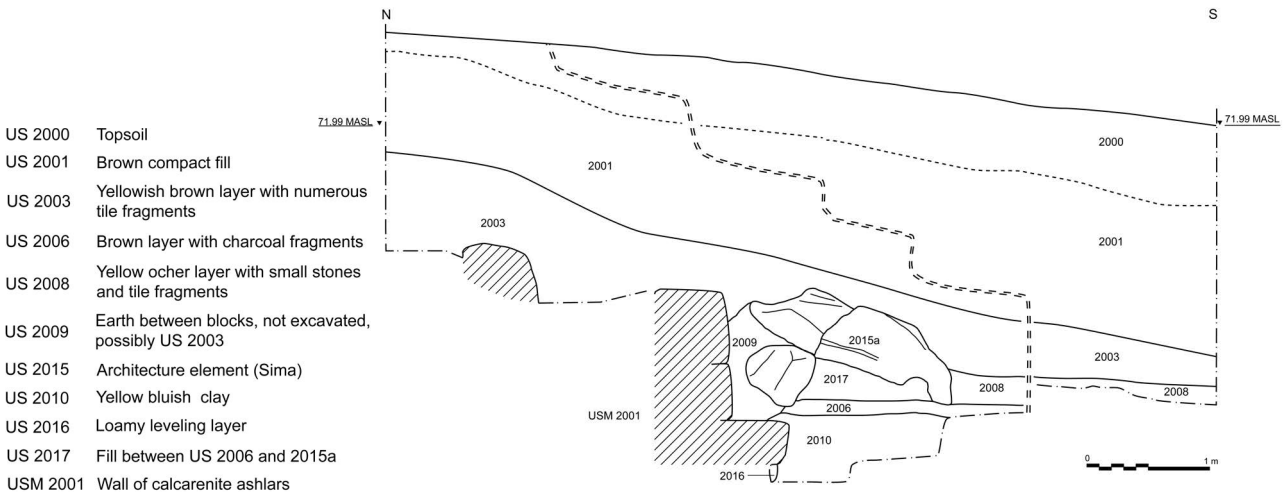


Fig. 18. Trench 2, 2022, East section (drawing F. Birkner, T. Lappi).

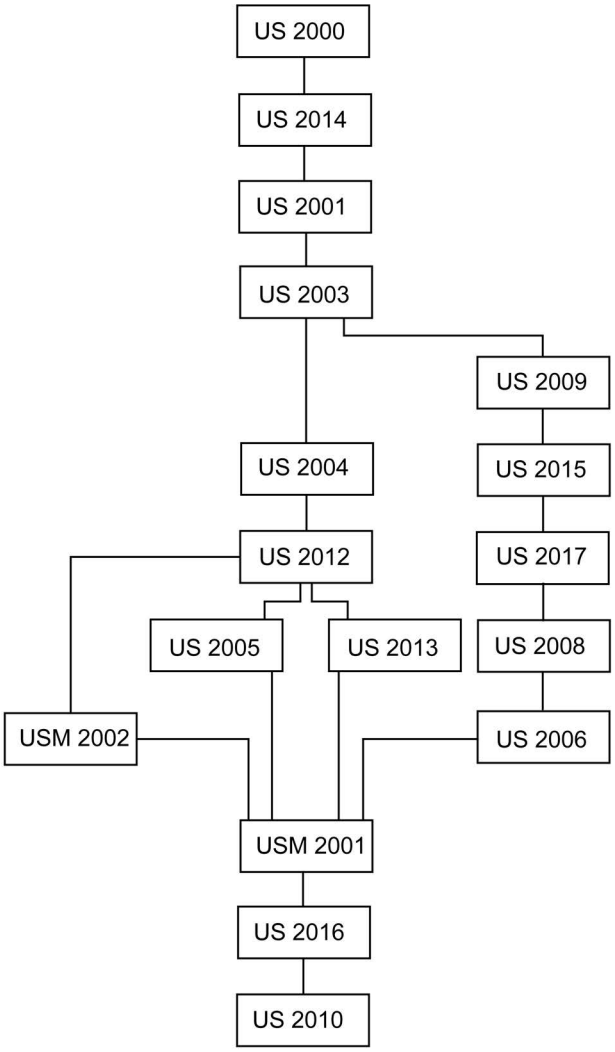


Fig. 19. Trench 2, 2022, Harris Matrix (F. Birkner, T. Lappi).

Fig. 20. Trench 2, US 2010 and USM 2001 at the end of excavation (photo.F. Birkner).

Fig. 21. Trench 2, sima block US 2015a (photo M. Trümper).

- US 2000/2001: A hard brown compact fill of 1.50-1.90 m was excavated on top of US 2003 that included tile fragments and relatively few pottery fragments. While US 2001 postdates US 2003 and is earlier than US 2014, its genesis and date currently cannot be determined more closely, similar to US 1001.

Interpretation and Chronology

The material, building techniques, and orientation of the walls USM 2001 and 2002 suggest that they were built at the same time as the walls USM 1002, 1003, and 1005, and the pool. These walls could not have been recorded in the geophysical survey because they were found far too deep down below the surface for both magnetometry and GPR; the heavy clay soil further hindered the transmission of signals beyond the first meter below ground level[29].

Since USM 2001 was built without a foundation trench, the construction date cannot be determined more closely. The walls subdivided at least three spaces, but cannot yet be correlated in a reasonable plan with the walls of trench 1. The sima block (US 2015a) suggests that there was a colonnade nearby, probably the peristyle courtyard of the *palaestra*. Since it has not yet been fully revealed, its type and style cannot be assessed, also with a view to the dating problem. The turned-over blocks lying under the sima and blocks to the north of USM 2001 (US 2012) may include further architectural elements.

No floor level could be securely identified, but it must have been at least at 69.60 MASL (above the protruding foundation of USM 2001) and thus about 25 cm above the pavement US 1010 in trench 1. The two layers US 2006/2008 are sloping, but run against USM 2001, and could have worked together with it; their genesis and function cannot be determined, but US 2006 included finds that provide a *terminus post quem* of the mid-2nd century A.D., a time when the race-track complex seems to have been abandoned as part of the gymnasium. Thus, US 2006 and 2008 may already stem from an abandonment and spoliation process, which certainly also targeted the walls and may have included the dismantling and deposition of the blocks. This process was abandoned or interrupted at a certain point when US 2003 covered the partially dismantled walls and US 2008. While US 2003 might be the result of a specific spontaneous event, like a landslide, flooding, or destruction, this can currently not be identified more precisely. Finds from US 2003 provide a *terminus post quem* of the 3rd century A.D.

Trench 3

Trench 3 was excavated in the area of the hypothetical continuation of the western *stenopos* and where the geophysical survey had identified the highest concentration of anomalies (fig. 1: feature b)[30]. The trench was initially laid out at 4 m (OW) x 5 m (NS) and later extended to the north and west by the excavator up to an irregular shape of 6.50 m (north side), 15.40 m (east side), 10.40 m (south side), and 13.30 m (west side). The shape is due to the fact that the course of walls was followed and olive trees had to be respected (figs. 22, 23).

Excavation started from the following levels: northwest corner 74.94 MASL, northeast corner 74.80 MASL, southeast corner 74.51 MASL, southwest corner 74.88 MASL. Excavation stopped at the level of 72.98 MASL in a pit. In the original trench, in a depth of 10-20 cm under the surface, a channel of terracotta tubes (US 3004), running from northwest to southeast, and calcarenite ashlars of a wall (USM 3001) at the eastern border of the trench appeared. The channel is similar to the one found in trench 1 (US 1002/USM 1001) and in the race-track complex (USM 1208). The level, typology of the terracotta pipes, and mortar suggest that this conduit also belonged to the 18th/19th century farmstead, leading water from northwest (with an upper surface at 74.96 MASL) to the southeast (74.32 MASL).

The enlargement of the trench yielded the continuation of the eastern wall (USM 3001) and, in 5.30 m distance, a parallel running similarly made wall (USM 3003) at the western border of the trench. The walls flank the *stenopos* which is perfectly aligned with the excavated parts further south, to the west of the pool and the stoa. From each of the flanking walls, an east-west running wall branches off (USM 3004, 3005), which could not be further explored, but obviously served to subdivide rooms or buildings. While the area to the west of USM 3003 was not excavated, no further wall was found to the east of USM 3001 and north of USM 3005, on a stretch of 10.80 m length. It is possible, however, that additional partition walls lie a bit deeper[31]. To the south of USM 3004 and 3005, USM 3001 and 3003 may have included entrances: no thresholds survive, but possibly a robbed-out space that was filled with an accumulation of stones in the west (upper surface at 74.79 MASL) and a void (or missing block) in the east (upper surface at 74.15 MASL). The upper

[29] Trümper *et alii* 2022, p. 154.

[30] Trümper *et alii* 2022, p. 152 fig. 25: no. 2; p. 155 fig. 29: no. 2; p. 158 fig. 33.

[31] The upper surface of USM 3005 was found at 74.39 MASL; the terrain to its north was excavated down to 74.60-74.96 MASL.

surfaces of the ashlar walls are badly preserved and show many traces of ploughing, but also cuts for post-ancient features (US 3018 in USM 3003, further cuts in USM 3003 and 3004), such as the conduit US 3004.

In the center of the *stenopos*, a second conduit (US 3014) was found steeply sloping from north (75.26 MASL) to south (74.23 MASL), thus for almost a meter on a distance of 8 m. It is made of at least four reused terracotta pipes in the north that partially include holes with lids for inspection, and of at least two reused Punic amphoras in the south, two of which have stamps[32]. While the northern pipes were found mostly intact, the upper parts of the amphoras were found broken.

No pavements could be securely identified inside the buildings or in the *stenopos*, where it was hard to clearly distinguish individual layers. The conduit US 3014 was covered by US 3002 and embedded in US 3003 and US 3008, which have both not yet been fully excavated, however. The excavated part of US 3003 yielded finds that provide a *terminus post quem* of the late 4th century B.C., because of a coin[33]. It is clear that US 3003 with an upper surface of 74.12 MASL lies on a significantly higher level than the pavement in trench 1 (69.34 MASL) and foundation in trench 2 (upper surface at 69.58-69.60 MASL), although there is only a distance of about 12 m between trenches 2 and 3.

To clarify the question of possible street pavements and the foundation level of the flanking *stenopos* walls, two deeper trenches were dug along USM 3001, of 2.00 m (OW) x 2.70 m (NS) in the north (trench 3N), down to 73.62 MASL, and 1.50 m (OW) x 2-2.50 (NS) in the south (trench 3S), down to 72.98 MASL. Since there was no time to excavate the area between these two trenches, the stratigraphy could not yet be correlated and shall not be discussed in detail here. But the foundation of USM 3001 was reached in both trenches. In the northern trench, two layers of calcarenite ashlars were found (fig. 24). While the upper layer extended over the entire trench, with a lower border at 74.38 MASL, the lower (US 3502) extended only about 0.50 m from the southern border of the trench, with a lower border at 73.96 MASL. To its north, a cut (US 3510) had been made in a grey brown compact clay layer with blue inclusions (US 3509), seemingly for another foundation block, but was filled with a layer of grey compact clay with white inclusions (US 3511). This is an important finding because it may point to terracing or steps not only in the street, but also in the flanking walls. That the level in the street changed significantly is suggested by the above-mentioned pipe; whether the difference was mitigated with steps or a steep ramp-like slope, cannot yet be determined.

In the southern trench, two layers of blocks appeared in the entire trench, with a lower border at 73.78 MASL (fig. 25). One of the foundation layer blocks was broken at a point, where a pit (US 3012) was later made, slightly undercutting and obviously endangering the statics of this wall. The fill of this pit (US 3006/3016) provided a *terminus ante quem* of the early 1st century A.D. for the pit and the wall USM 3001, and a *terminus post quem* for all layers above, among them the above-mentioned layers US 3003, 3008, and 3002. The material from the fill can be dated from the late Archaic period to the early 1st century A.D., the latest datable find being a fragment of an imitation of Eastern Sigillata A (fig. 30: no. 4)[34].

The parts of the eastern *stenopos* wall that survive further south confirm the notion of a steeply sloping *stenopos* and terrain, as they are founded at 68.56 MASL next to the northwest corner of the pool, and 64.45 MASL next to the southwest corner of the pool. None of the currently visible *stenopos* walls, including both the eastern and the western walls[35], is preserved with more than three layers of ashlars. This may be the reason why the geophysical survey did not record these walls to the south of trench 3 because the steeply sloping walls may have been located too deeply below ground level to transmit signals. Excavation showed, however, that in the area of trench 3, both magnetometry and GPR recorded correctly the flanking *stenopos* walls (cf. figs. 1, 22, Pl. 1), excavated features in the street (fig. 22: USM 3501, US 3011, US 3013), the east-west oriented wall USM 3004, and parts of the terracotta conduits.

Trench 4

Trench 4 was excavated with a size of 4 x 4 m at the hypothetical crossing of the western *stenopos* with a *plateia*, as shown on the recently reconstructed city plan[36]. Excavation started at 76.24 MASL and stopped at 73.30 MASL (fig. 26). The homogeneous compact brown fill was found (US 4001), which had been identified in trenches 1 and 2 (US 1001, 2001). No differentiation between modern topsoil and this fill could be made here. Below US 4001, starting at 74.37 MASL, several alluvial layers sloping from west to east were met (US 4002, 4003), which still included some ancient finds (fig. 27). In the center, a concentration of stones and a few ancient tile and pottery fragments were found

[32] The typological identifications of the two Punic amphoras are based on Ramón Torres 1995: a) T-4.2.1.3 (430-300 B.C.); b) T-4.2.1.5 (300-200 B.C.).

[33] Punic bronze coin (West Sicily? Carthage?): *Obv.* palm tree; *Rev.* Pegasus, SNG Cop, North Africa, nos. 107-108, end of 4th/ beginning of 3rd century B.C.

[34] Malfitana 2005, pl. 6.4; close to a cup Atlante II, Forma 31, p. 28-29 (similar to Conspectus 22).

[35] The preserved western walls next to the pool include Trümper *et alii* 2022, p. 145 fig. 15: Wall 8 and Wall 10.

[36] Brienza 2017; here fig. 40: *Plateia* 2.

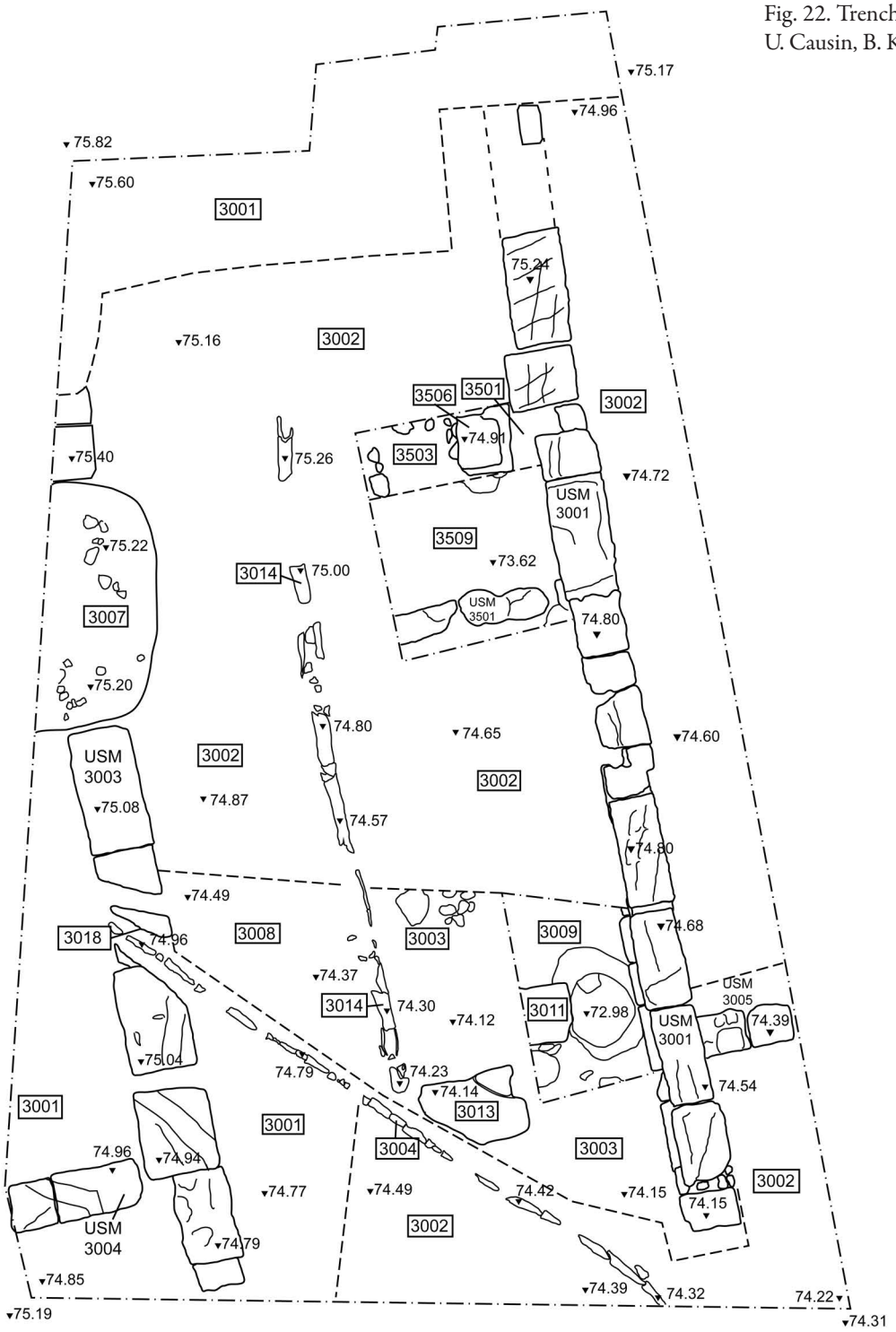


Fig. 22. Trench 3, 2022, final plan (drawing U. Causin, B. Kupke, M. Trümper).

US 3001 Brown compact fill
US 3002 Brown compact layer
US 3003 Yellow ocher compact clayey layer
US 3004 Channel
US 3007 Concentration of tile fragments
US 3008 Grey compact soil
US 3009 Compact greenish clay with white inclusions
US 3011 Calcarenite block
US 3013 Calcarenite block
US 3014 Channel
US 3018 Cut in USM 3003 for US 3004

US 3501 Brown compact fill
US 3503 Brown compact layer
US 3506 Calcarenite block
US 3509 Grey clay with blue inclusions

USM 3001-USM 3005 Walls of calcarenite ashlars

Fig. 23. Trench 3, orthophoto at the end of excavation (B. Kupke, F. Spadaro, M. Trümper).

Fig. 24. Trench 3N, East section at the end of excavation (B. Kupke, M. Trümper).

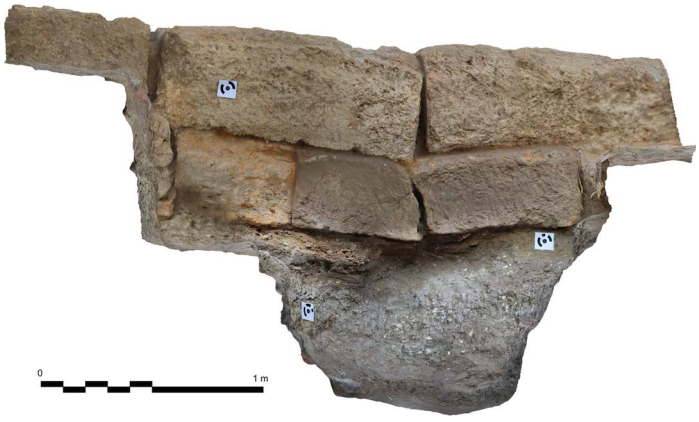


Fig. 25. Trench 3S, East section at the end of excavation (F. Spadaro, M. Trümper).

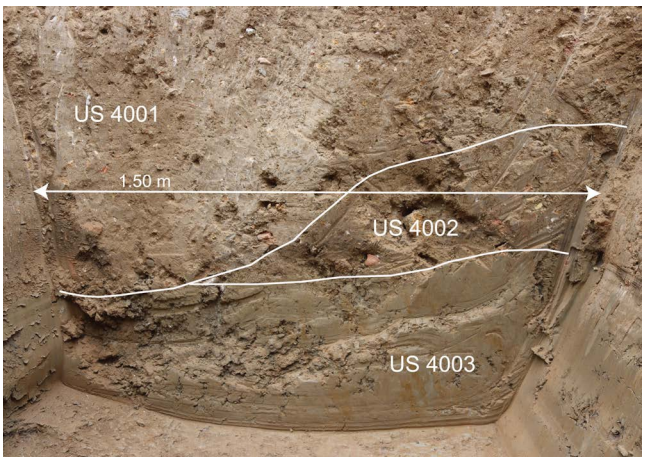


Fig. 26. Trench 4, drone photo at the end of excavation (photo T. Lappi).

Fig. 27. Trench 4, south section (photo T. Lappi).

Fig. 28. Trench 4, accumulation of stones in center (photo T. Lappi).

Fig. 29. Trench 4, trench below accumulation of stones visible in fig. 39 (photo T. Lappi).

(fig. 28). This area was further explored, first in a trench of 1.40 m (NS) x 0.70 m (EW), and then in an even smaller trench of 1.40 m (NS) x 0.30 m (EW) (fig. 29). While the clay layers (US 2004, 2005) became successively cleaner, when going down, the sterile yellow bluish clay layer (US 2006) that is similar to US 2010 was only met at 73.30 MASL.A comparison with similar findings in Agrigento suggests that, in ancient times, there was a course of water in the immediate vicinity to the north, which regularly flooded the area[37]. This trench shows that the orthogonal grid plan was adapted to the topographical conditions and that a *plateia*, if it existed at all in this area, ran further south or north (fig. 31). While the currently visible ravine (Torrente Sala) that cuts through the remains of the gymnasium most likely carried water only after the Constantinian period[38], the evidence of trench 4 requires to reassess the question of ancient water courses.

[37] Pers. communication Maria Concetta Parello: similar evidence was found in recent excavations in the area between Temple D (Temple of Hera Lacinia) and the east-west running Torrente Tamburello, and in fact close to this river. Parello 2021; Parello, Scalici 2022.

[38] Furcas 2016, 2017.

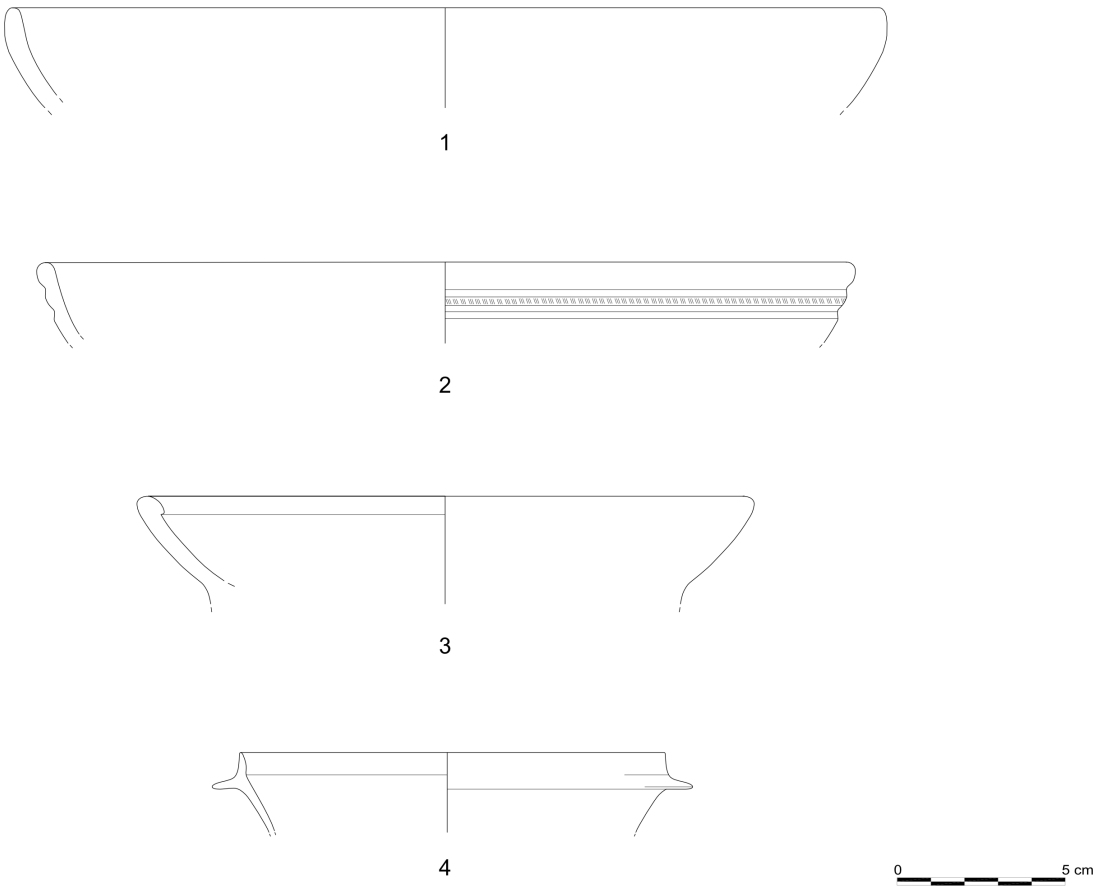


Fig. 30. Diagnostic pottery from trenches 1-3: 1. Trench 1, US 1005: TS A bowl (Lamboglia 3a =Hayes 14A); 2. Trench 1, US 1005: carinated bowl TS A (Lamboglia 2a = Hayes 9A); 3. Trench 2, US 2006: Sigillata A casserole (Hayes 23); 4. Trench 3, US 3006/3016: Imitation of Eastern Sigillata A (drawing C. Blasetti Fantauzzi).

Conclusion

The first excavation campaign provided important evidence for answering the key questions of our project. Several walls were found in trenches 1 and 2 that most likely belonged to the gymnasium and presumably to the searched *palaestra*. The western *stenopos* continued further north in Field 1 (fig. 1), but its crossing with *Plateia* 2 has not been found (Pl. 1). While evidence of *plateia* 2 was securely identified further east, to the south of the Agora and *Ekklesiasterion*[39], this street cannot have run straight to the west. Field 1 is bordered by relatively steep cliffs in the north and particularly west, which must have had an impact on the course of the street.

Two facts must be addressed here: the difference of levels between the four trenches, and the chronology, particularly in relation to that found in the race-track complex. It had long been known and has been confirmed by trenches 1-4 that the terrain of Field 1 slopes quite steeply from north to south and less significantly from west to east, which required significant terracing and leveling, particularly for large public buildings (tab. 2). The yellow bluish clay layer that had been identified as the natural soil in the race-track complex, with upper surfaces at 66.37 MASL in the southwest to 68.17 MASL in the southeast, was found in trench 2 at 69.57 MASL and in trench 4 at 73.30 MASL, but has not been reached in trenches 1 and 3. Even if there was no river running in the currently visible ravine, there must have been a significant natural depression in antiquity because both the back wall of the stoa and the western wall of the pool were founded at or close to the level of the bottom of the ravine[40]. The depression was filled (naturally

[39] Bordonaro 2012; Brienza 2017; cf. Trümper *et alii* 2022, p. 160 fig. 34.

[40] Trümper *et alii* 2022, p. 145 fig. 15.

or artificially) with silty sandy layers before the construction of the stoa[41], and such leveling layers may also have been present or necessary in trenches 1 and 3.

Four different walking levels can be identified at this point for the gymnasium complex, from north to south: at 69.60 MASL (or higher) in trench 2; at 69.34 MASL in trench 1; the walkway around the pool at 68.76 MASL; and the *paradromis* at 67.00 MASL. While the gymnasium of Agrigento was not built on an impressively steep hill like the gymnasia of Delphi, Pergamon, and Priene (Lower Gymnasium), the terracing may have entailed a scenic staging of its different parts (race-tracks, pool, *palaestra*), which could have been visible and admired from the Temple Hill in the south.

But the significant difference in levels between trenches 2 and 3 can currently not be explained. The eastern border wall of the western *stenopos* is preserved at several points, rising from 64.45 MASL at the height of the south-west corner of the pool to 74.38 MASL in trench 3 (N) over a distance of ca. 67 m. The foundations indicate only the minimum level of the *stenopos*, which could have been leveled with artificial fills. Indeed, the back wall of the stoa had foundations of four to eight layers below the level of the stylobate in the area of the ravine and to its south[42]. If the walking level of the *stenopos* was similar to that of the stylobate (c. 67.27 MASL) the *stenopos* would still have risen from 67.27 MASL to at least 74.38 MASL over a distance of ca. 160 m, from the southern excavated border of the stoa to trench 3 (N) (ca. 4.5% incline). However, the difference between the walking levels in trench 2 (69.60 MASL or slightly higher) and the *stenopos* in trench 3 (N, 74.38 MASL) over a distance of 25-27 m is much more significant (18-21% incline) and would most likely have required steps.

The nature of the walls (USM 3001, 3003) that flank the *stenopos* in trench 3 is also significantly different from that of the walls in trenches 1 and 2, suggesting that they did not belong to the gymnasium (*palaestra*) and that the northern border of the gymnasium may have been located somewhere between trenches 2 and 3. The gymnasium would then not have extended more than 40 m to the north of the pool's north wall, and if it was not extended beyond the eastern *stenopos*, the "*palaestra*" could have had a surface area of ca. 1225 m^2 (35 x 35 m) or 1400 m^2 (40 x 35 m). This is, admittedly, not particularly impressive, but has parallels in the *palaestra* of the gymnasium of Delphi or the *palaestra* of Solunto[43].

While the construction date of the walls in trenches 1 and 2 could not be determined, a *terminus ante quem* was provided by the fill of the pit in trench 1 and the layers related to possible abandonment and spoliation in the 2nd/3rd century A.D. Similarly, the pit in trench 3 (S) and its fill provide a *terminus ante quem* for the eastern *stenopos* wall (USM 3001) in the early 1st century A.D.

No remodeling phases of the gymnasium could be identified in trenches 1 and 2, unless the pit in trench 1 belonged to the use of the complex as a gymnasium. The date of the abandonment correlates with that established in the race-track complex. But after this, no more activities could be identified in these trenches until the scanty remains of a pavement and channel that have been attributed to agricultural activity in the 18th/19th century. When and how the thick fills (US 1001, 2001) between the abandonment layers (US 1003, 2003) and the late structures were constituted, can currently not be determined. These fills did not include any late antique, Arabic or Norman finds, and have no parallels in the race-track complex. Even though the walls in trenches 1 and 2 were clearly spoliated, the material was apparently not used in this area for late antique (or later) structures, like the *Edifici* 1-3 in the race-track section.

In trench 3, the situation was similar to that found in the western *stenopos* much further south, at the height of the stoa: the channel of the 18th/19th century was found immediately on top of or even cutting through the spoliated ancient walls. In contrast to trenches 1, 2, and 4, no compact thick fill was found here, but all ancient and post-ancient remains appeared directly below the topsoil (US 3001)[44].

For now, the history of use of Field 1 seems to have been much less complex than that of the race-track section which most likely provided a much larger leveled terrain that was better suited and easier to reuse for both building projects and cultivation.

Based on the 2022 campaign, the following three aims can be formulated for the next campaigns. First, the extension, layout, and construction date of the potential *palaestra* and its connection to the pool and race-track section must be further examined; the architectural survey discussed below suggested so far that the stoa was built between the period between the end of the 3rd century B.C. and the first half of the 2nd century B.C., but this date remains yet to be confirmed by the stratigraphy. Second, the difference in levels between trenches 2 and 3 and the function and layout

[41] Borrello, Lionetti 2005, pp. 1-2; Fiorentini 2009, pp. 97-98.
[42] Borrello, Lionetti 2005, p. 7 note 3.
[43] For the sizes of gymnasia, Trümper 2018, p. 60 tab. 2.
[44] US 3001 equals US 1000 and 2000, which could only be distinguished from US 1001 and 2001 after the late structures had been found.

of the buildings found in trench 3 must be clarified. Third, it must be determined whether a crossing of the western *stenopos* with a *plateia* (*Plateia* 2) existed in Field 1. To this purpose, the following areas should be excavated (fig. 31):
- between the pool and trench 1;
- between trenches 1 and 2;
- an extension of trench 2 to the north, between the rows of olive trees;
- extensions of trench 3 to the north and south
- one or two large east-west oriented trenches from the *stenopos* to the modern fence in the east.

Furthermore, the geomorphology and formation of Field 1 and the entire area around the gymnasium should be systematically examined with drillings. While the Soprintendenza Archeologica di Agrigento had carried out a series of drillings in 1997, which yielded apparently good results, these have never been published[45]. New drillings should allow, among others, to better reconstruct the course of the yellow bluish clay layer, the question of natural/alluvial vs. artificial leveling layers, and the genesis of the compact fill (US 1001, 2001, 4001) in trenches 1, 2, and 4.

Feature	**MASL**
USM 1002, lower border of foundation blocks	69.00
USM 2001, lower border of foundation blocks	69.25
USM 3001, lower border of foundation blocks in S	73.78
USM 3502/3001, lower border of foundation blocks in N	73.96/74.38
Lower border of wall west of NW corner of pool, flanking *stenopos*[46]	68.56
Lower border of wall west of SW corner of pool, flanking *stenopos*[47]	64.45
USM 1003, upper surface of foundation layer	69.61
USM 2001, upper surface of foundation layer	69.58-69.60
US 1010, upper surface of pavement	69.34
Upper surface of northern walkway of pool	68.76
Upper surface of stylobate of stoa	67.27
USM 1002, upper surface of dismantled wall	70.02
USM 1003, upper surface of dismantled wall	70.14
USM 2001, upper surface of dismantled wall	70.63
USM 2002, uppermost surface of dismantled wall	71.78
Trench 1, deepest level reached (in pit US 1013)	69.00
Trench 2, deepest level reached (south of USM 2001)	69.11
Trench 3, deepest level reached (in pit US 3012)	72.98
Trench 4, deepest level reached	73.30
Trench 2, upper surface of yellow blue clay layer (US 2010)	69.57
Trench 4, upper surface of yellow blue clay layer (US 4006)	73.30
Race-track complex, upper surface of yellow blue clay layer NE SE SW 5 m "all'altezza del portico, a ca. 5 metri dal fontanile"[48]	 67.67 68.17 66.37 61.82

Table 2: Comparison of key levels (with corrected levels for the old excavations).

[45] Borrello, Lionetti 2005, pp. 1-2; Fiorentini 2009, p. 98.
[46] Trümper *et alii* 2022, p. 145 fig. 15: Wall 9.
[47] Trümper *et alii* 2022, p. 145 fig. 15: Wall 7.

Fig. 31. Gymnasium, Field 1, drone photo at the end of excavation, location of future planned trenches (elab. T. Lappi, M. Trümper).

Architectural Survey of the Xystos

The 2022 archaeological campaign has revived the architectural survey of the gymnasium complex. While previous publications provided some reconstructions of the architecture, these are partially problematic. The investigation focused on the structures of the *xystos*, and included cataloging the architectural fragments associated with the portico and the creation of detailed drawings[49]. The new research allows for reviewing previously published work and developing new hypotheses regarding the configuration of the Doric order and its chronology.

The main result regards the entablature, which, as described in both *Il Ginnasio di Agrigento*[50] and a chapter of *Agrigento Romana*[51], was previously reconstructed with the canonical sequence of architrave, frieze, and cornice with *sima*, supported by a Doric colonnade. This reconstruction was based on the discovery of numerous fragments that were all attributed, without distinction, to the portico.

A closer examination of the fragment AF01 that had been assigned to the frieze in the main publication by Graziella Fiorentini[52] (cat. no. AF01, fig. 32a) allowed to reassess its features and function and to exclude it from the order of the *xystos*. Despite being only partially preserved in length[53] and exhibiting clear signs of abrasion on all protruding parts of the main face- likely due to its reuse as a building material- it is possible to identify the general layout of the block. The frieze shows two quadrangular metopes (l 35 cm x h 38 cm), a complete triglyph (l 25 cm x h 38 cm), and the portion of a second triglyph on the broken left side. The analysis of the upper and lower surfaces of the fragment revealed that the surface that Fiorentini had identified as the lower or resting surface was, instead, the top surface of the

[48] Borrello, Lionetti 2005, p. 1.

[49] I would like to thank the architects Marco Chiricallo, Mariadina Delfino and Roberta Di Bari, students of the School of Specialization in Architectural and Landscape Heritage of the Polytechnic University of Bari, for their excellent work both in compiling the catalog records of the blocks and in surveying them. At the present stage of the research, 24 elements have been catalogued and assigned a new abbreviation consisting of a letter indicating the type of element (A = architrave, C = cornice, R = column rhombus, etc.) and a progressive number; the most relevant fragments for reconstruction purposes were then surveyed at a scale of 1:5, and are partially presented here.

[50] Fiorentini 2009, esp. pp. 71-79.

[51] Fiorentini 2011, pp. 71-75.

[52] Fiorentini 2009, pp. 76-77 figs. 17, 18; Fiorentini 2011, pp. 74-75, fig. 57, pl. XXVIII.2.

[53] It is preserved for a width of 116.50 cm; the size of 174 cm given in previous descriptions of the block is based on a hypothetical completion of the block providing an ideal development with 3 triglyphs and 3 metopes. See note 52.

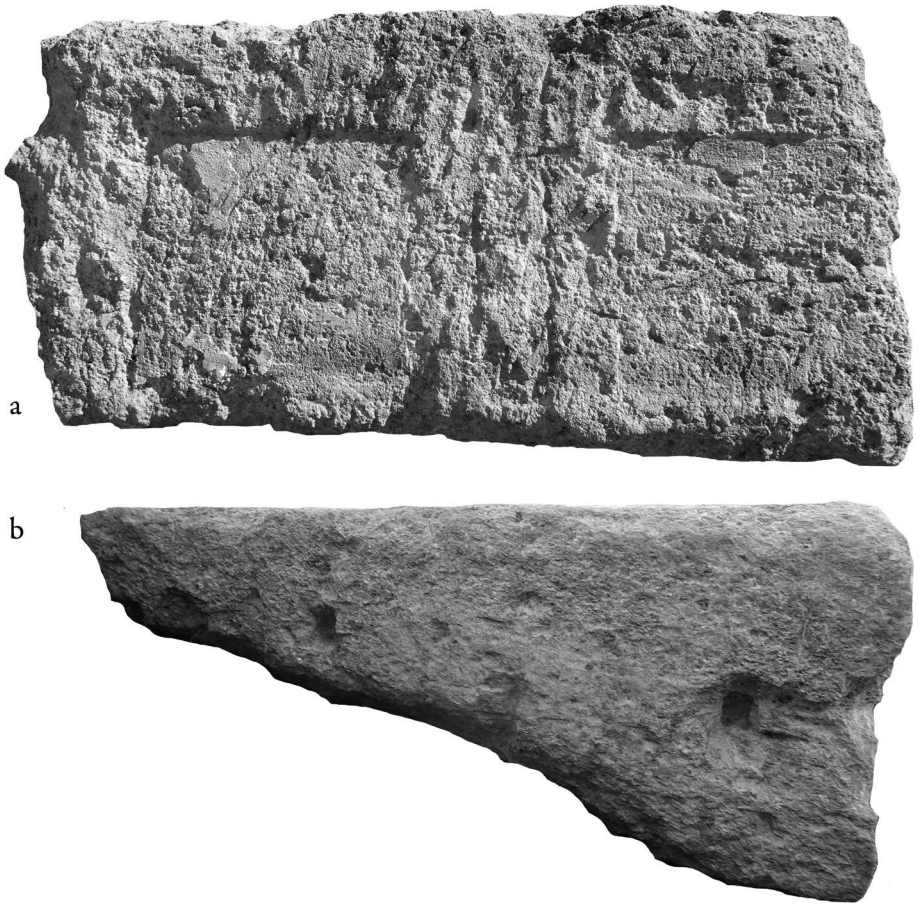


Fig. 32a,b. Block attributed to the *xystos* frieze according to G. Fiorentini: a. main face; b. upper surface (photo M. Chiricallo).

block. The conclusive evidence is provided by pry holes which clearly identify the top surface (fig. 32b). Turning the block upside down also provides a more accurate understanding of a raised *fascia* which is not a crowning band as previously stated. Measuring 16 cm in height, slightly less than half the height of the triglyphs and metopes, this feature is to be instead identified as a portion of the upper part of an architrave worked in conjunction with the frieze. This solution has parallels in architecture of Agrigento, such as the *Oratorio di Falaride* and the Hellenistic-Roman Sanctuary. In the *Oratorio di Falaride*, an architrave-frieze element is preserved to the southeast of the temple; it belonged most likely to the portico, later reused as a threshold. A similar hybrid element was used in the entablature of the *triporticus* of the Hellenistic-Roman Sanctuary[54]. The architrave-frieze fragment found in the gymnasium area, however, did not belong to the entablature of a colonnade but to a wall. This is revealed by both the unbalanced *ratio* between the heights of the frieze and the epistyle, which must have rested on a row of blocks, and the presence of an entire metope close to the lateral face of the frieze, which can hardly be placed above the axis of a column.

The preserved architrave located to the south of *Edificio 1* (cat. n. A01, fig. 33) shows a well-defined *taenia*, measuring 7 cm in height and 3 cm in depth. Below this *taenia*, there are two complete *regulae* positioned at the center and two half *regulae* located at either end, following the common design of Doric *stoai*. This feature is evident in other architrave fragments from the same series, such as two that have been repurposed as thresholds in USM 3006 along the southern boundary of the ravine (cat. n. A01, fig. 34), and one inscribed block currently on display in the Archaeological Museum of Agrigento[55] (fig. 35). The epistyle is 178.50 cm long, thus 4.5 cm longer than indicated in the publications[56]. The revised measurement is more consistent with the traces for the positioning of columns on the stylobate. Based on the dimensions of the architrave, it is possible to determine the measurement unit employed, which corresponds to the length of a 29.7 cm foot. The same unit is also discernible in the internal *ratio* of the order.

If the width of the *regulae* ranges from 24.3 to 24.5 cm and these are positioned at a distance of 35 cm from each other, then the unit of measurement of 29.7 cm results in an exact size of 2 feet for the *regula-via* pattern. This pattern corresponds to the triglyph-metope group in the frieze and the 2 *mutuli*-2 *viae* group in the *geison* soffit. Additionally,

[54] Fino 2018, pp. 73-74.

[55] On the element, particularly the content of the inscription, see Fiorentini 2009, p. 101, note 5.

[56] Fiorentini 2009, p. 76: 174 cm; this measure is probably based on the ideal reconstruction of the elements attributed to the frieze.

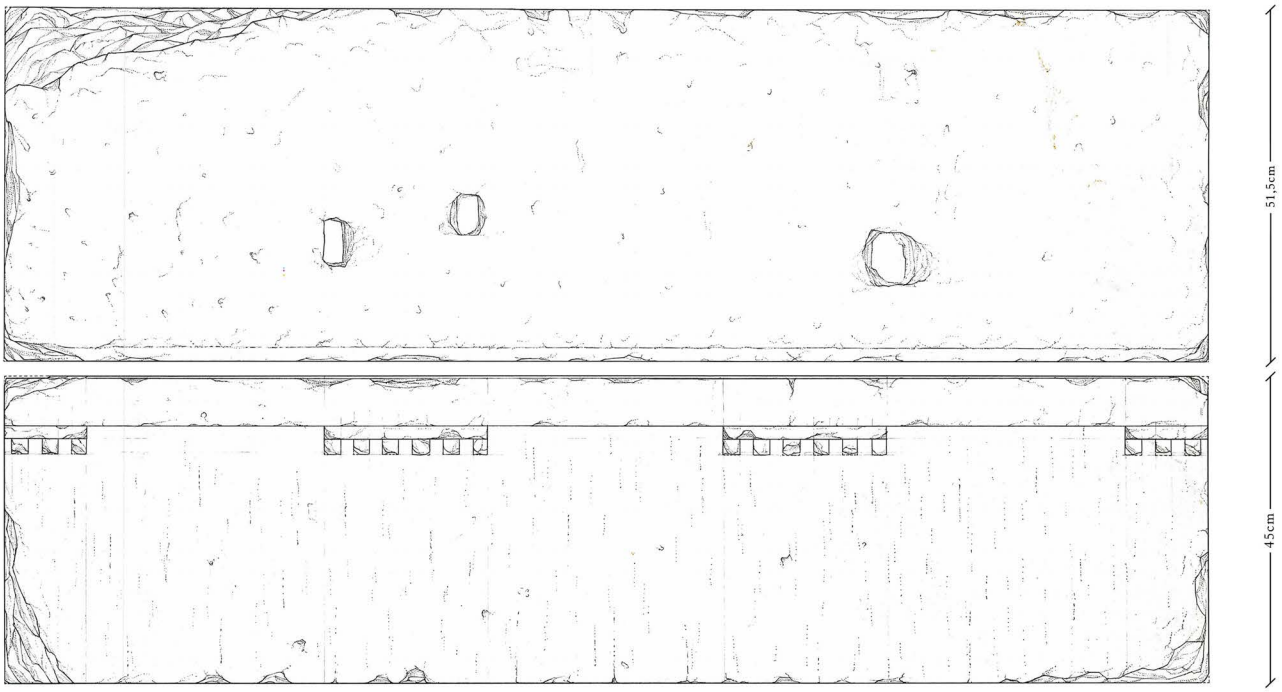


Fig. 33. Architrave of *xystos* (drawing M. Delfino).

Fig. 34. Architrave of *xystos* reused as a threshold in USM 3006 (photo M. Chiricallo).

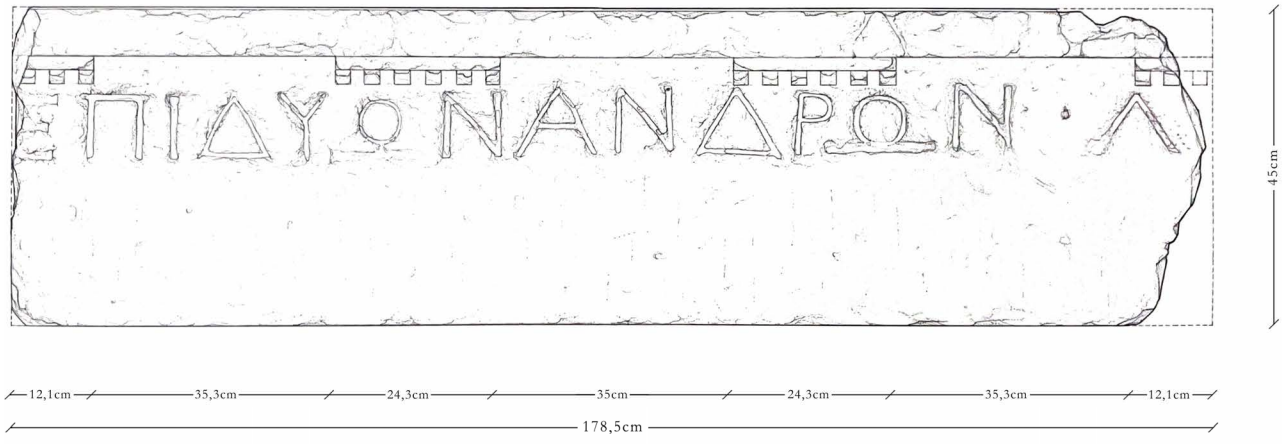


Fig. 35. Agrigento. Regional Archaeological Museum. Architrave of the *xystos* with inscription (drawing M. Delfino).

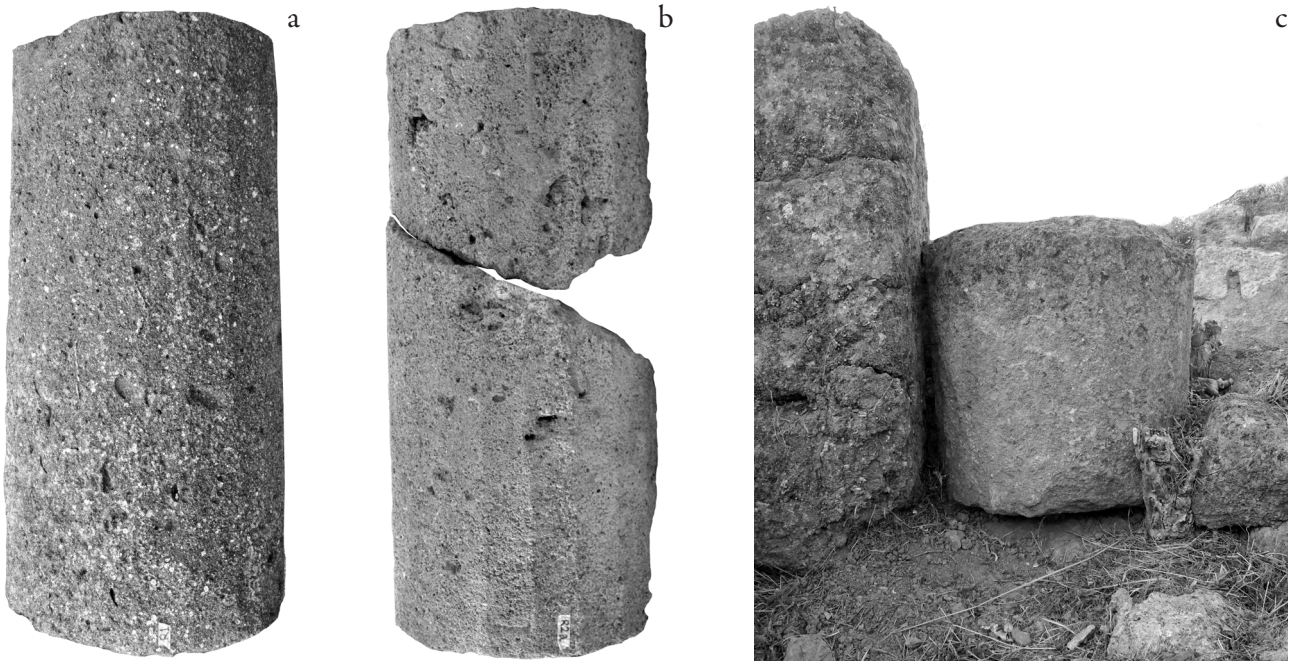


Fig. 36a-c. Column drums of the *xystos*: a. R1; b. R2; c. R3 = US 229 (photo R. Di Bari).

the length of the foot employed here correlates with that used in *post*-Classical buildings at Agrigento, while earlier buildings used larger foot units of 30.70-32 cm[57]. The use of a foot measuring less than 30 cm has been identified in the Hellenistic sanctuaries of Agrigento, i.e., in the *Oratorio di Falaride* and in the early phases (2nd-1st century B.C.) of the Hellenistic-Roman Sanctuary[58].

The previous publications reconstructed the total height of the columns with capitals with 2.45 m, based on a diameter of 51 cm at the base and 42 cm at the top. The shaft of the columns was divided into three drums, with individual heights of 101 cm for the lowest drum (R1, fig. 36a), 97 cm for the central drum (R2, fig. 36b), and only 25 cm for the upper drum[59]. This reconstruction is astonishing because it entails unusually compact proportions for the Doric order[60], with a *ratio* of under 5:1 between height and lower diameter. Such a *ratio* is uncommon in Hellenistic architecture, which generally prefers more slender proportions[61]. Additionally, no evidence has been found for the existence of a drum with a height of 25 cm, nor is it mentioned in any archival document. It is likely that the hypothesized third drum was intended to correlate the upper diameter of the middle drum with the collar of one of the capitals found in the gymnasium area[62]. However, this capital should be excluded from the *xystos* order for the following reason. The surface of the preserved column drums is worked with 20 prismatic facets, which is typical of *stoai*[63]. In contrast, the preserved capitals have collars with concave and sharp-edged flutings, and cannot be connected with the existing drums. As a result of the reassessment of the architectural fragments, the drum with the lower diameter of 51 cm (fig. 36a) cannot have been set up directly on the stylobate, as previously assumed. These drums include, in fact, a square dowel hole at the center of their lower surface which has no equivalent on the blocks of the stylobate. The stylobate blocks show, at regular intervals, groups of three pry holes that served to position columns with a diameter of 54 to 56 cm. A fragmentary drum (R3 = US 229, fig. 36c) reused in the structures east of the Π-shaped altar (USM 1364) can serve as further evidence; it has an intact upper diameter of 51.8 cm, and a diameter of 53.5 cm at the broken lower part. If we apply the same tapering *ratio* (92%) observed in the

[57] DeWaele 1992, pp. 176-202.

[58] Monica Livadiotti reports for both temple buildings a foot of 29.57 cm (Livadiotti, Fino 2018, p. 70).

[59] See note 52.

[60] Reconstruction drawings by the architect G. Cavaleri in Fiorentini 2009, p. 79 fig. 21 and Fiorentini 2011, p. 130 pl. XXVI show the colonnade of the portico with different proportions from those described in the text, namely with three column drums of similar heights.

[61] A ratio of 5:1 can be still found in the second half of the 4th century B.C. in Agrigento in the columns of the temple of *Asklepios*; this can be interpreted as a form of traditionalist resistance in a building that, as Ernesto De Miro argues, "conserva l'immagine della consuetudine classica, ma nello stesso tempo si avverte l'avvio e l'avvicinamento ai nuovi canoni del periodo ellenistico" (De Miro 2003, p. 39).

[62] The capitals (Fiorentini 2009, p. 77 figs. 13, 14) are currently stored at the restoration laboratory of the Parco.

[63] This is a simpler type of processing than concave flutings, which are also more vulnerable if profiled with a sharp edge. In this sense, it is also common to find *stoai* with the lower third of the column smooth and then fluted or faceted up to the collar.

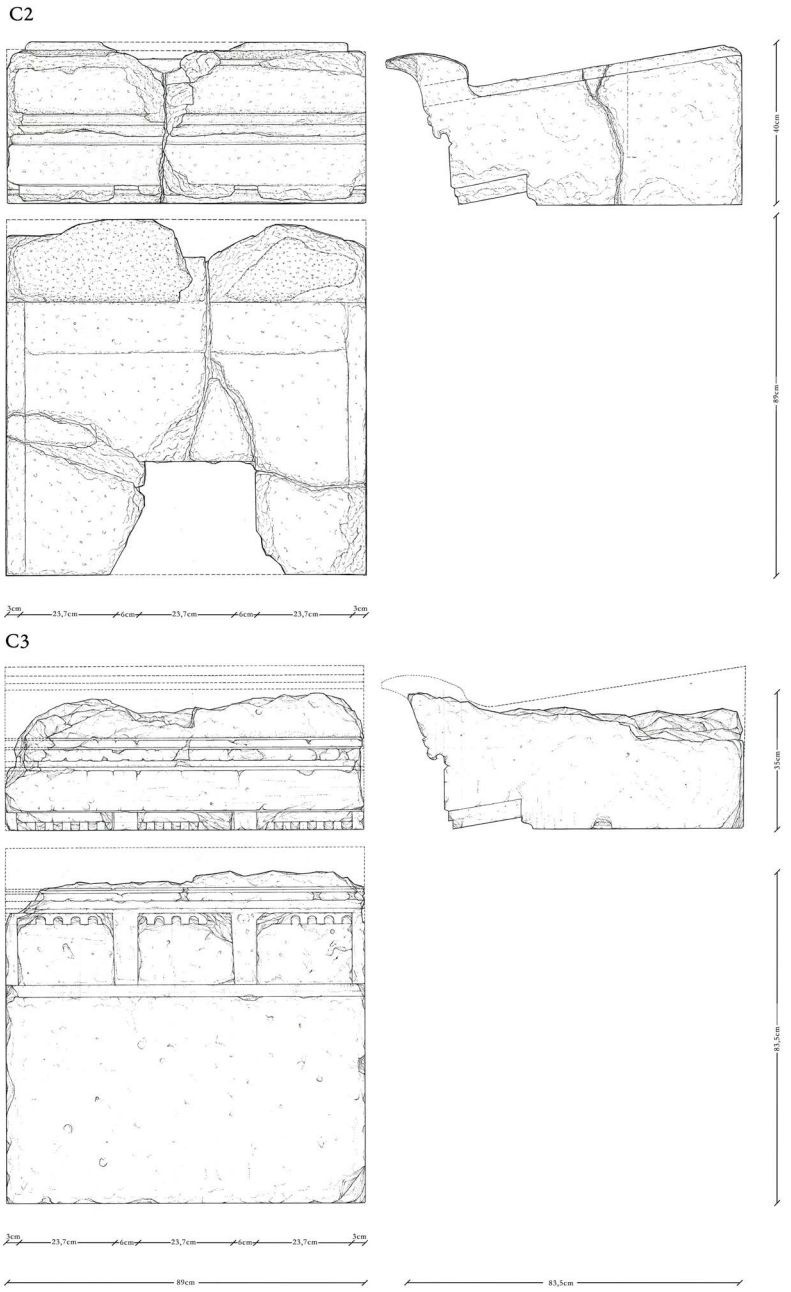


Fig. 37. Cornices of the *xystos* (drawing M. Chiricallo, M. Delfino, R. Di Bari).

intact drums R1 and R2 to the incomplete drum R3, and assume that R3 had a similar original height as R1 and R2, we can calculate the original lower diameter of R3 with 55.9 cm. This value is not only perfectly in line with the traces found on the stylobate but is also more appropriate for the standard of Hellenistic architecture, resulting in a more slender column. Based on these findings, it is suggested that the column, including its capital[64] and without *entasis*, was around 11 feet or 3.26 m high, with a *ratio* of slightly less than 1:2 and an interaxial distance/axial spacing of 6 feet.

The cornices fit well into this picture (fig. 37). The intact elements measure 89 cm in length, which equals 3 feet. All the blocks follow the same pattern, featuring a *cyma reversa* that connects with the *geison* soffit, and, on the oblique plane, 3 *mutuli* for each block (l 23.7 cm) separated by *viae* (l 6 cm) with two half *viae* at the ends. A hawksbeak crowns the vertical band of the *geison*, above which, in the same block, the *cyma recta* sima is set, and in the center of the latter, there is a quadrangular hole for the outflow of rainwater. The only difference between the cornices concerns the presence in the center of the back of a recess to accommodate roof beams (see C2, fig. 37). Assuming that above each column span there was one cornice in a central position and two half-cornices, it is reasonable that the blocks with the recess for the roof elements were placed on the axes of the columns, also for a proper distribution of the weight.

64 Excluding the capitals in the area due to the presence of convex grooves at the collar, the dimensions of the hypothesized one take into account the proportions of the period with respect to the size of the upper diameter of the column drum and the size of the lintel bed that affect the width of the abacus.

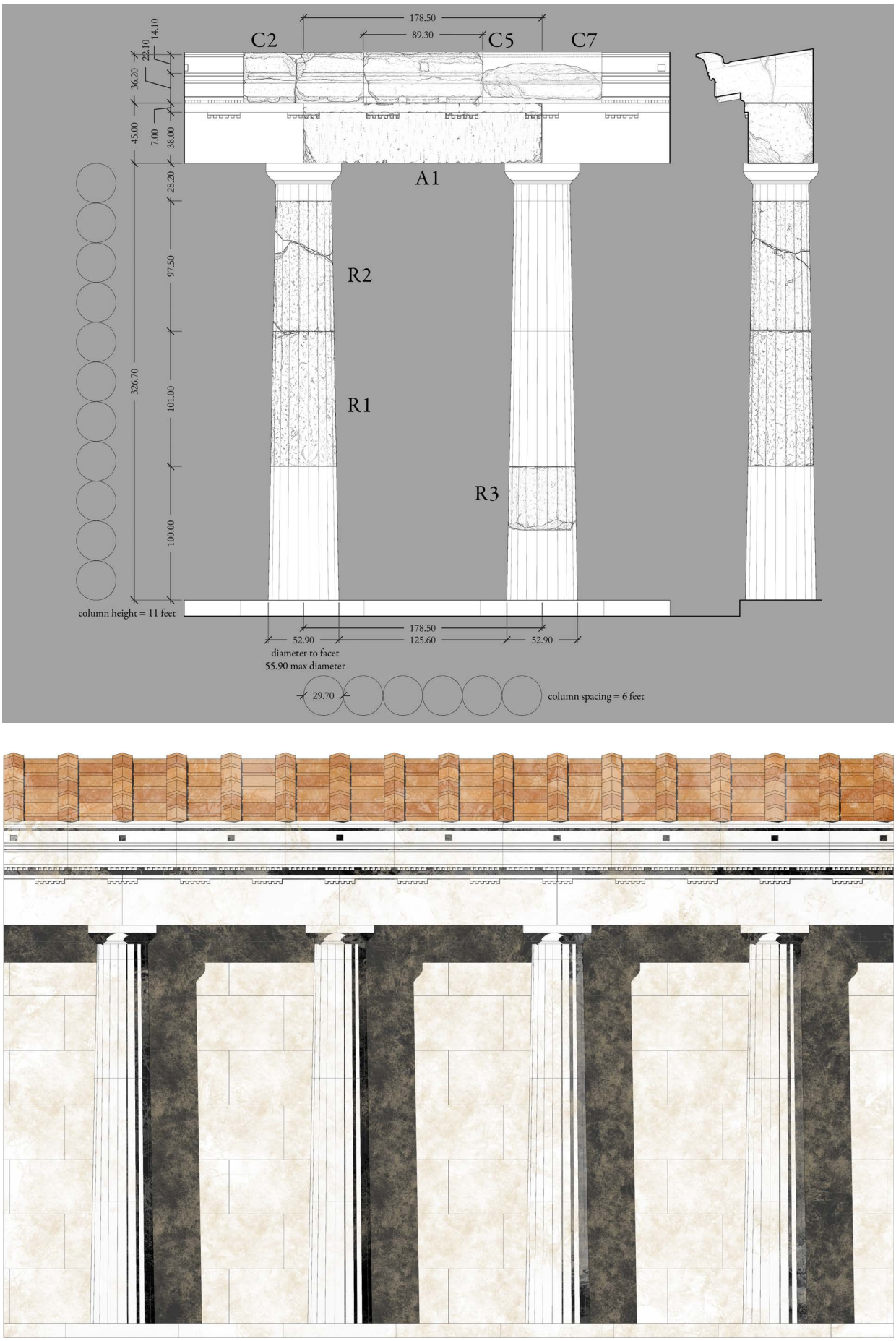


Fig. 38a,b. *Xystos* of the gymnasium: a. Doric order reconstructed with the identified architectural elements; b. reconstruction of the front of the *xystos* (drawing A. Fino).

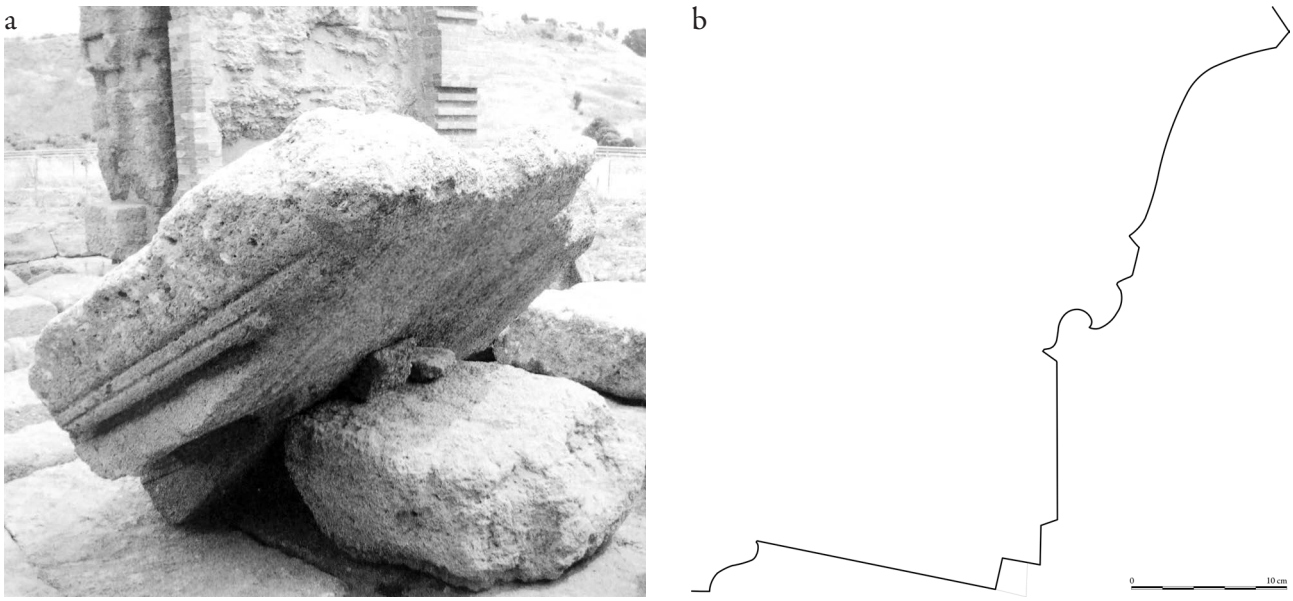


Fig. 39a,b: Agrigento: a. Raking *geison* from the *Asklepieion*; b. profile of the cornice of the *xystos* (photo and drawing A. Fino).

Coming back to the configuration of the order, the examination of the upper surface of the lintel block A01 proved to be particularly interesting. There are pry holes (see fig. 33) at a distance that suggest the presence of elements with a length between 88 and 90 cm, placed on the axis of the block in correspondence with the beginning of the first whole *regula* and the end of the second one. The same span of pry holes was also found on the other blocks of the series (fig. 34), leading to the assumption that the cornice rested directly on the architrave, without a frieze in between the two (fig. 38a,b). The dimensions of the blocks of the cornice with sima found in the area, 89 cm in length, are in fact consistent with the traces recognized on the upper surfaces of the epistyles. Additionally, the positioning of the cornices is confirmed by the exact correspondence of the *mutuli* on the *geison* soffit with the span of the *regulae*, provided by the half *viae* at the ends. That the cornice rested directly on the architrave is also indicated by pry holes on the lateral faces of the blocks: they are located close to the lower surface, at a distance of 14 cm from the front (cf. fig. 39, C3,6), and correspond exactly with similar traces on the upper surfaces of the architrave blocks.

The hypothesis of a simplified entablature is further supported by a number of other features that served to make the construction of a building with a length of 190 m easier and cheaper. For example, the shafts of the columns are only faceted and not fluted; while *mutuli* usually have three rows of fully worked *guttae*, here only one row of *guttae* is schematically defined at the front of the *mutuli*; and, finally, the spout holes of the sima are simple and small (5 x 4 cm), suggesting that they were not further diminished in size by the insertion of a decorative water spout.

With regard to the dating of the *xystos*, the stylistic comparison of the cornices provides a *terminus post quem* and a *terminus ante quem*. The above-mentioned *cyma reversa* at the base of the *geison* soffit appeared in Agrigentinian architecture in the second half of the 5th century B.C. and is also found on the cornice of the pediment in the *Asklepieion*, with which the gymnasium cornice shares some similarities[65]. In both cases, the hawksbeak crowns the vertical band of the *geison*, and a sima shaped as a *cyma recta* is present (fig. 39a,b). These features continued to be used in Agrigento until the middle of the 2nd century B.C., when local architecture changed. Only round 150 B.C. new trends were adopted in Agrigento that had previously been developed under Hiero II in Syracuse[66]. Based on stylistic and typological grounds, the construction of the portico of the gymnasium can be placed between the second half of the 3rd century and the first half of the 2nd century B.C. The construction activities of the Augustan period may have involved maintenance or restoration work on the *xystos*, the extent of which can currently not be determined.

Future research will continue the architectural survey and analysis, attempting to reconstruct the different phases of the monumental complex. One of the objectives of this research is also to investigate the relationship between the structures that are currently separated by the ravine, such as the large pool, and the new findings from the excavations presented by the team in this paper.

A.F.

[65] Fino 2021, pp. 126-127.

[66] For an overview of issues related to the Western Hellenistic context see Portale 2015 and, for architecture, Rocco 2015. On Hieronian architecture: Campagna 2017.

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