

## *The fortifications at Kastro Apalirou*

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### **Abstract**

Το άρθρο παρουσιάζει τις οχυρώσεις του Κάστρου Απαλίου. Οι οχυρώσεις περιλαμβάνουν τείχος, εννέα καταγεγραμμένους πύργους, μια πύλη, καθώς και έναν μεταγενέστερο κυκλικό προμαχώνα και ένα προπύργιο. Το τείχος απλώνεται σε μέγιστο μήκος 315 μέτρων στον άξονα Βορρά – Νότου, ενώ το μέγιστο πλάτος είναι 100 μέτρα στον άξονα Δύσης – Ανατολής. Η τειχισμένη περιοχή καταλαμβάνει έκταση 2,10 εκταρίων. Το τείχος είναι μια απλή κατασκευή με κυμαινόμενο πλάτος, ενώ εξάρματα φυσικού βράχου εντάσσονται συχνά και με οργανικό τρόπο στην οχύρωση. Μεγάλα τμήματα του τείχους αποτελούνται από αδρά πελεκημένους λίθους, χωρίς χρήση συνδετικού κονιάματος, ενώ άλλα τμήματα αποτελούνται από πυρήνα μεικτής τοιχοποιίας με συνδετικό κονίαμα. Δεν υπάρχει κανένα ίχνος προτειχίσματος. Οι περισσότεροι πύργοι είναι τετραγωνικής κάτοψης, ενώ υπάρχουν δύο πύργοι ημικυκλικής κάτοψης στην νοτιοδυτική κλιτύ. Η κυρίως πύλη βρίσκεται σε κεντρικό σημείο στη δυτική πλευρά. Ένας τετράγωνος πύργος ανήκε κατά πάσα πιθανότητα στην κατασκευή, παρόλο που τα λείψανα του είναι μάλλον δυσερμήνευτα. Η πύλη είναι τοποθετημένη κατ' ορθή γωνία στο τείχος, κατά τέτοιο τρόπο, ώστε να παρέχεται επιπλέον ασφάλεια από ενδεχόμενες επιθέσεις.

Η έρευνα έχει αποκαλύψει δύο διακριτές φάσεις της οχύρωσης. Η απόλυτη χρονολόγηση τους είναι δύσκολο να εξακριβωθεί. Εντούτοις, πολλά στοιχεία συνηγορούν στο ότι η πρώτη φάση, η οποία περιλαμβάνει το τείχος στο σύνολό του, σχεδιάστηκε τον 7ο αιώνα. Η κατασκευή του προμαχώνα με τον μεγάλο κυκλικό πύργο στην βορειοδυτική πλευρά του οικισμού είναι δύσκολο να χρονολογηθεί. Είναι ωστόσο σαφές ότι σε μεταγενέστερη περίοδο κατεβλήθη σημαντική προσπάθεια αναβάθμισης της οχύρωσης, καθώς και άλλων κατασκευών και στερνών. Μπορούμε να πούμε με βεβαιότητα ότι οι οχυρώσεις παρέμειναν σε χρήση μέχρι την κατάληψή τους από τις ενετικές δυνάμεις το 1207.

Η τοιχοδομία, η οποία εξετάζεται στο παρόν άρθρο, διακρίνεται σε τρεις βασικούς τύπους: ακανόνιστη τοιχοδομία εν ξηρώ, χωρίς συνδετικό κονίαμα, τοιχοδομία σε δόμους με αδρούς λίθους και με χρήση μικρότερων επίπεδων λίθων και θραυσμένων κεραμίδων για σταθερότητα, και τέλος, ακανόνιστη τοιχοδομία με καλοδουλεμένους λίθους και με χρήση συνδετικού κονιάματος. Επισκευές είναι εμφανείς σε διάφορα σημεία του τείχους. Αδιευκρίνιστο παραμένει ποιες επισκευές είναι αποτέλεσμα διάβρωσης και φθοράς και ποιες αποτέλεσμα εχθρικών ενεργειών στην περιοχή.

Η έρευνα πιστοποιεί ότι οι οχυρώσεις του οικισμού του Απαλίου σχεδιάστηκαν εξ αρχής σε μεγάλη κλίμακα. Η ομοιομορφία της τοιχοδομίας της πρώιμης φάσης είναι εμφανής στο σύνολο του μήκους του τείχους, ενώ οι πύργοι και η πύλη διατάσσονται σε κανονικά διαστήματα. Υπό το πρίσμα αυτό η ύπαρξη του οικισμού του Απαλίου εντάσσεται κανονικά στο πλαίσιο της μέριμνας που επέδειξαν οι αυτοκρατορικές αρχές για την οχύρωση οικισμών σε θέσεις φύσει οχυρές και δυσπρόσιτες κατά την πρώιμη βυζαντινή περίοδο. Ωστόσο, η έκταση του πολεοδομικού σχεδιασμού του Απαλίου δεν μπορεί να εξηγηθεί μόνο με βάση τα οχυρωματικά έργα. Ο οικισμός είναι πιο πυκνά και σύνθετα δομημένος από το μέσο βυζαντινό κάστρο. Οι οχυρώσεις του Απαλίου πρέπει να ερμηνευθούν μέσω μιας ευρύτερης θεώρησης, όπου όλες οι πτυχές του οικισμού θα ληφθούν υπόψη.

## *Introduction*

This article presents the survey of the defences, the towers and the gate of Kastro Apalirou. Focus has been placed on the documentation, building techniques, repairs and construction phases. The aim is to present the project's documentation in order to allow further discussion and input on the phasing and construction of Kastro Apalirou.<sup>1</sup>

From a distance, the most striking feature of Kastro Apalirou is the impressive wall encircling the upper part of the steep mountain slopes (**fig. 1**). At the northern tip, a large round tower and imposing wall structure is visible, which is also the first and largest structure that visitors see when ascending the mountain. When viewing the mountain from a distance one can be led to believe that there are several concentric lines of walls ascending the slope towards the peak. However, this is due to the large, solidly built cisterns that are distributed across the site; in the northern part they are constructed alongside each other, forming a line of walls that gives the impression of a defensive wall when seen from a distance.

There are two clear and visible phases to the defences. The first phase is the laying out of a curtain wall to enclose the summit of the mountain in order to create a defended area for the construction of the urban settlement; whilst the second phase is seen in a set of improvements to the defensive capabilities of the walls through the construction of a large round tower and bastion at the northern tip creating a fortified platform with an extended rampart and crenulated parapet. This part of the defences is clearly delineated from the other parts in construction type and scale as well as masonry and building technique. The strengthening of the northern part of the defences should be seen in connection with defending Apalirou at its main route of access. This route<sup>2</sup> was built along a set of steps and terraces that led to the main gated entrance at the central part of the wall. The bastion and round tower would have created a commanding platform from which to control all access to the town.

The strategic value of the opposite southern and highest point of the mountain is its clear view across the southern and western approaches to the sailing route between Naxos and Paros and northwards through the Aegean. The western and southern shore of Naxos provides the only realistic places for landing and mooring ships and fleets, and as such Apalirou is well placed for maritime surveillance. If Apalirou had a function before the construction of the defended community, the southern tip may have been the site of a lookout or signal tower. There are strong arguments in favour of such a scenario, and separate acropoleis or fortified towers overlooking walled areas are common features at many fortifications around the Aegean.<sup>3</sup> These may have been established on earlier lookouts or constructed as minor bastions within the larger site. Such lookouts and signal posts became a regular feature of fortified sites during the Late Roman and Early Byzantine period.<sup>4</sup>

## *Material survey*

The greatest length enclosed by the curtain wall is 315 m from north to south, whilst the greatest width is 100 m east to west (**fig. 2**). The area enclosed by the walls is 2.10 ha. The lowest point of the site is 429

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1 See also Hill and Ødegård, this volume, for survey of churches, buildings and internal organisation of the settlement. In light of the new research presented in this volume, the established name of the settlement, Kastro Apalirou, now seems obsolete. The site is clearly larger and more complex than the label 'kastro' implies. The name Kastro Apalirou is used here only as a reference to the geographical location.

2. See Hill and Ødegård on extramural structures in this volume.

3. Bouras (2002), pp. 507-8.

4. Petersen (2013); Petersen (2011), pp. 260, 263 with refs.



m and the highest 484 m in elevation. The internal topography of Apalirou is steep and rocky, and in many parts the slope is greater than 45%.

The defences are made up of a single curtain wall of varying width. In the eastern and southern parts, natural cliffs are often used as integral parts of the wall; some sections are so rugged and steep as to make access impossible and walls therefore unnecessary. At the northern tip the large cisterns of phase two would form integrated parts of the defences in addition to the curtain wall. There is no sign of a *proteichisma* on the western slope, as is found for instance at Emporio on Chios.<sup>5</sup> However, the steepness of Apalirou would most probably make a *proteichisma* superfluous. There are nine attested towers, both semi-circular and rectangular, and one gate. For large sections the curtain wall consists only of roughly hewn stones with no binding mortar, while in other places rubble is mixed with mortar in the core of the wall. The walls are constructed to use the crags and the cliffs effectively, and the choice of masonry and building technique incorporates natural features as part of the defences. This fact makes it very difficult to determine building phases and/or repairs of the wall at certain areas. The towers, which are small and rectangular with one, or possibly two, semi-circular exceptions, are not integrated with the curtain wall, but project from the outer wall surface. However, the masonry and building technique shows clearly that they were planned as part of the defences from the beginning (see below). There is a stretch of the western curtain where there is only one visible tower over a distance of more than 160 metres, except for a tower that possibly formed part of the city gate complex. This part facing towards the west is, then, where the main gate is located, and is the most vulnerable to attack. One might expect closer intervals between towers in this part, but the steep incline and very open terrain probably made more towers superfluous. It could also imply that artillery was mounted on the large round tower of the bastion, enfilading along the curtain. Similar intervals are observed elsewhere in steep terrain. A parallel is found at Corinth where a large part of the wall on the vulnerable south flank is guarded by two towers only.<sup>6</sup> The original height of the walls is uncertain as no complete section has survived, and considerable degradation of the structure has taken place (except in the large bastion added later, see below), however a height of about four to six meters could be expected.<sup>7</sup> The standard wall width is 2.0 m, with variations in minor parts from 1.40 to 3.10. The narrowest parts tend to be behind towers, and are often bonded with mortar (**fig. 3**). Additionally, with no parts surviving to its original height, it is impossible to determine if the wall inclined towards the top thus making the width even narrower than 2.0 m. However, although the wall is narrow it does not rule out a parapet, which would be expected. The walls of Apalirou must be counted among the thinnest of Byzantine fortifications but clear parallels can be found elsewhere.<sup>8</sup> Here as elsewhere the walls are pragmatically fitted to the geography so the wall thickness might not be of significance to the defensive potential at the site.

### *Masonry*

The restricted use of mortar at Apalirou has strongly influenced the types of structures that have survived today. The use of mortar was prioritized at the later bastion (as well as for larger buildings and

5. Balance *et al.* (1989), p. 51 for Chios.

6. Athanasoulis (2014), p. 44.

7. A wall height of five meters is e.g. documented at Acrocorinth, Athanasoulis (2014), p. 45, and four meters at Paliochora at Kythera, Ince *et al.* (1987), p. 98.

8. The closest analogue is the walls of Emporio on Chios with a width of 1.75 to 2.50 meters but the walls are supplied by a *proteichisma* at critical points; see Balance *et al.* (1989), p. 51 and drawings V and VI.

cisterns),<sup>9</sup> and as a consequence, this part has also survived to a higher degree than the defensive walls with unbounded masonry.

The defences are mostly built with unworked or roughly cut stones, but fragments of broken tiles and large amphora sherds are occasionally used in rough coursing of walls. Ashlar is hardly seen, but is used sparingly in dressed quoins at the corners of towers (and in a few larger houses). A study of the stone material observed on the surface of Apalirou today can be misleading as there are clear signs that cut stones and ashlar have been removed for re-use elsewhere when the Kastro went out of use in the early 13th century.

A close survey and documentation of the surviving parts of the defences has revealed three main types of masonry: Type 1 consists of uncoursed dry stones with virtually no use of mortar. The stones are mostly unworked or roughly hewn, although dressed quoins are seen especially in the towers. (**fig. 4**). Type 2 is roughly coursed (with variations) and has undressed stones with extensive use of smaller, flat stones and broken tiles for coursing and stability. The stones are worked to form a rough, but fair faced outer surface. A moderate use of mortar is seen in places. This type of masonry is also seen in some of the larger houses, and in the repair of damages in older walls and buildings (cf. below) (**fig. 5**). Type 3 is uncoursed and made up of sharply cut stones of irregular size, however worked to form a fair face. This part of the wall is bonded with grey mortar, occasionally with the surface almost completely washed rendered with mortar. Type 3 is used first and foremost for the bastion, but also in a few larger cisterns and vaulted basements of larger houses (**fig. 6**).

As a general remark, it has been suggested that bricks used for bonding might be a late addition in the provinces, and that it is perhaps inspired by the imperial authorities from the 8th century.<sup>10</sup> This model requires brick for coursing, and at Apalirou only tile fragments have been observed, nevertheless the principle of construction remains the same. However, the absence of bricks should not be taken as indicative of the degree to which the central authorities were involved. Use and availability varies strongly according to local needs and resources independently of the situation in the central parts of the empire.

No parts of the wall have so far been excavated, and thus no satisfying vertical cut is available for studying the method of construction or the interior of the walls and towers. However, over the past years some sections of towers and walls have collapsed so that some observations can be made: Mortar is only used in some parts of the interior of the wall, and only to a minor degree. Rubble, gravel, and occasionally soil and larger stones (probably waste from stone cutting) make up the fill. Due to the steepness of the site, the major part of the defences is located on terrain that inclines between 20 and 45 degrees. It seems probable that the earliest parts of the wall were constructed mainly of dry stones, without binding mortar or tiles/flat stones applied for stability. This rules out the possibility of using tiles and mortar for a stabilising fundament as observed elsewhere, e.g. in the rebuilt parts on the northern edge running down towards the bastion.<sup>11</sup> Successive terraces of larger stones, with infill of gravel, soil and occasionally earth bonding seems to be the preferred method of foundation of the walls and towers at Apalirou (**fig. 7**).

### *Mortar*

Two main types of mortar have been identified on Apalirou, grey and pinkish. The main pattern is that grey mortar is used for masonry in houses, churches and, to a lesser extent, towers and the gate,

9. See also Hill and Ødegård, this volume.

10. Foss and Winfield (1986), p. 145.

11. Cf. also Cherf (1986).

and in the outer wall of cisterns. This mortar is also occasionally found with gravel in the infill of the fortification wall. The grey mortar contains different inclusions. In some parts inclusions are almost absent, while other parts have numerous inclusions of charcoal and quartz. The use of two types of mortar follows a clear functional division between defence walls and general buildings on one hand and the interior of cisterns on the other. The major part of the wall consists of drystone without mortar. The use of mortar is not necessarily indicative of the relative chronology at the site in general. Drystone walls with occasional use of clay bonding and/or mortar in some parts, as well as fortified settlements with drystone walls in combination with mortar use for buildings (churches) has been observed elsewhere.<sup>12</sup>

### *Towers and the city gate*

Nine towers have been identified as part of the defence wall (not including the bastion). However, the large, collapsed wall sections at the west and east curtains are in part obscured by impenetrable thickets such that detailed survey has not been possible, and the total number of towers might have been somewhat higher. In addition, it is expected that a tower would have formed part of the gated entrance, evidence of which is the widened platform and stone fundaments. Another significantly larger tower was probably located at the northernmost part of the earliest defences (see plan). Thick walls bear witness to a large rectangular construction. This would be the obvious choice for a major tower in the period preceding the construction of the bastion in the second phase.

Towers would have been an integrated part of the walls from the earliest construction phases. Behind each tower the walls are strengthened with the use of mortar, and tied together by large ashlar blocks (**fig. 8**). Three of the towers are almost similar in size, extending between 2.80 and 3.10 m from the wall, and measuring between 4.50 and 4.80 m in width (**fig. 9**). There is however some variation in building technique amongst the different towers. The towers positioned on the eastern flank are built solely with dry, roughly hewn and relatively large stones. No mortar or smaller flat stones and/or broken tiles for levelling purposes are visible (**fig. 10**). The remaining square towers display larger variation in stone size, with roughly hewn blocks, or regular ashlar, forming stressed quoins at corners, and extensive use of smaller flat stones for levelling (**fig. 11**). The tower at the north-eastern end differs from the others in dimension and wall thickness. It is virtually square, measuring 3.30 m on all sides, and the walls are 0.60 m thick (in contrast to the regular 0.70 m seen elsewhere). The two towers at the southwest end are also different in construction. The masonry is a mix of large and small stones, with clear coursing. The inside core is made up of small, sharply cut stones and a heavy use of mortar, and the front wall has square drainage holes. At the southernmost tower, it appears that the original front wall was strengthened at a later date by an additional wall, the former having possibly been weakened due to its positions on a steep incline (**fig. 12**). Another exception is the semi-circular tower at the NW end of the site, near the bastion (**fig. 13**). It is again unclear whether this was a later addition, or formed part of the original construction. The dimensions are almost identical to the square towers on the east side, extending 3.10 m from the wall, and 4.50 m wide. The masonry here is also similar to those, but it is difficult to make a firm conclusion since it is without the stressed quoins that could be indicative of having been constructed at the same time. The drystone masonry observed here is also found in minor repairs elsewhere in the walls. What is certain is that the masonry in this part differs strongly from that of the bastion to the north. It is difficult not to consider these two parts of the defences as belonging to separate construction phases. Another tower possibly of the same dry stone construction is located

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12. Dinchev (2007), pp. 483, 503.

mid-way between the semi-circular tower and the gate. Protruding stones integrated in the curtain and collapsed remains clearly attest the existence of a tower at this point. A few stones appear to be in situ, and might indicate that this tower was also semi-circular as the preceding tower to the north.

Generally it can be said that all towers are evenly distributed along the circuit of the wall. For obvious reasons the defences, including towers, are more elaborate towards the northern part of the settlement as this was main outlook for the access to Apalirou. The south end is steep and inaccessible with almost vertical cliffs dominating the terrain. As noted previously, there is a long section of the western flank with only three towers. This is also the most accessible part of the fortified site and where the city gate is situated. However, as we shall see in the following, the main gate with a bent entrance played an important defensive function at this part of the site.

The main gate is located just south of the centre on the western flank. Seen from the northern side there is first an extension out from the main wall, creating a 4.0 m wide and 5.10 m long platform adjacent the gate proper. This platform extends into a wall that continues 5.50 m southwards at a 30-degree angle to the main wall (**fig. 14**). At the end, the wall turns 90 degrees towards the main wall, which is reached again on the south side of the gate after 5.50 m. One meter from the outer corner a 1.90 m opening defines the entrance to the Kastro (**fig. 15**). The upper part of the gate (and wall) has collapsed, and the original height is unknown. Maximum standing height of the remaining parts today is 3.50 m. The steps leading from the entrance up to the level inside the fortified site are completely ruined by the collapsed upper parts of the gate. The northern extension of the wall creates a square platform or podium that fits perfectly the standard measure of the other, square towers. The area in question is too degraded to be able to draw firm conclusions, but it seems likely that a square tower was located here. This would be expected due to what is observed from similar gateways set at right-angles to the curtain wall. The bent entrance also provided additional security, as any attackers would have been forced to approach the gate under assault from the flanking wall. There are no signs of a postern at Apalirou as can be seen e.g. at the south side of Emporio. However, Apalirou has an inverted entrance while the gate at Emporio is a simple one. Maybe this can be seen as indicative of the greater status of Apalirou.<sup>13</sup>

### *Building phases, repairs, and damages/abandonment*

The wall circuit exploits cliffs and variations in the landscape, and follows the terrain in a natural way. Therefore it seems that the defensive circuit at Kastro Apalirou most likely was laid out in one phase and was clearly aimed at enclosing the settlement from the beginning. There are, however, two possible exceptions: at the extreme southern tip, the remains of walls belonging to a building with irregular ground plan are abutting the wall. This may represent an earlier phase at Apalirou when a military stronghold on this highest point of the site was built prior to the construction of the large walls (see above). As already mentioned, this part of the Kastro would have been the perfect location for a lookout or a signal tower due to extensive lines of sight towards the south and west.

At the northern end, a later addition to the defences can be more securely attested. At this point the walls were strengthened and extended to form a large circular tower and a platform with a visible rampart. The building technique is different from the walls in general, with sharply cut stones forming an even face and heavy use of mortar (cf. the third type of masonry above). The junction between the old wall and this later extension is clearly visible (**fig. 16**). The old and new walls can be easily followed, the latter extending to the large platform with a circular tower. From below, this bastion on the northern

13. Balance *et al.* (1989), drawing IV.

edge is presently the most visible part of the defences on Apalirou (**fig. 17**). It is also the lowest part of the Kastro. South of the bastion, the curtain is also of a newer construction and runs for 38 m until a few meters before the curtain meets the semi-circular tower. In this part, the masonry consists of a variety of stone sizes, differently hewn, from ashlar to small angular stones with and without mortar bonding, indicating a rebuild (**fig. 18**).

The regular wall type (masonry type 1) can again be found a few meters north of the semi-circular tower, and extending southwards. This is probably where the old part of the wall re-joined the wall on the western flank. However, the exact layout of the old wall and how it connected to the western part is obscured by severe collapse and difficult terrain (**fig. 19**). What seems clear is that at the point where the old wall is rounded towards the west it ended in a steep gateway into the fortified site accessed by a stepped entrance situated between a large cistern and a building. The building was later strengthened and had buttresses added to the outside facing west (**fig. 20**). In the latest period this building was converted into a cistern.<sup>14</sup> At some stage the major part of this area was redesigned. The construction of the bastion and rampart was followed by reconstruction of the older buildings to the east of the bastion so that they now formed part of a stronger line of defence in the north-western part of the Kastro. The chronology of this enlargement and defensive investment is so far unclear. However, the same building technique and masonry can be identified in several larger buildings on the western slope of the settlement. It is clear that a significant investment in defences, cisterns and buildings took part at a specific point in time, possibly by imperial initiative.

Following the wall southwards, several minor repairs can be observed. They are mostly identified by the use of stones of a variety of sizes and cuts, tile sherds and the occasional use of mortar. Major wall collapse is seen in the stretch southwards from the city gate towards the south-western tower. The original line of the wall is, however, intact, and what is observed is regular repairs and not additions to the wall or towers.

The northern part of the fortified site contains the ecclesiastical complex traditionally named Agios Georgios<sup>15</sup> and a larger area that would have included a major building complex and several large cisterns. The area is now devoid of walls and structural remains, and thus differs strongly from the other parts of the Kastro. It covers approximately one-fifth of the total walled area of the Kastro, and was probably physically divided from the other parts by a wall and/or major buildings that would virtually have created a separate urban space distinct from the rest of the settlement in form and function. Due to the flat terrain terracing is less elaborate here compared to elsewhere on the site. Some parts are relatively rich in soil and significant collapsed structures are probably buried in the parts of this area without visible bedrock.

The original curtain wall surrounding (and supporting) the levelled area east of the church complex consisted of masonry of type 1 (see above) with the exception of a significant 20 m repair immediately behind the Agios Georgios complex. The repaired part of the wall at this point has been supplied with square weep holes, probably to avoid the problems that could lead to structural degradation (see **fig. 5**). It is a reasonable assumption that the wall was part of the first construction phase at the site since the levelling probably took place before the construction of the earliest phase of church complex. The dating of the church and preliminary results from studying the pottery finds at Apalirou is thus significant in helping to define a chronology of the defence wall. A 7th-century date has been proposed for the earliest phase of Agios Georgios,<sup>16</sup> which corresponds well with the small and partly excavated double-

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14. See Hill this volume.

15. See Ødegård, this volume.

16. Aslanidis (2014), pp. 52-58.



aisled church at the south end of the Kastro, where pottery suggests a 7th or 8th-century construction.<sup>17</sup> The earliest surface finds of coins at the site extend back to the reign of Herakleios and even earlier.<sup>18</sup> However, detailed study of the numismatic material has not yet been undertaken.<sup>19</sup> The coin material, when published, will provide a *terminus post quem* for the site. The available evidence today indicates that the earliest phase of the defence wall can be associated with the first half of the 7th century,<sup>20</sup> but the chronology of later phases, and especially the large northern bastion, remains to be established.

One noticeable feature at the Kastro is the systematic destruction of the major cisterns. The massive cisterns on the north-western part of the Kastro had solid walls with standing heights reaching 4.20 m in parts. Besides providing a supply of water, they virtually formed an extra line of effective walls against attackers. The western walls of the large cisterns have been destroyed in parts. It seems that the destruction was carried out in one, systematic operation since the method and position of the damage is identical throughout. One could speculate that the walls were opened to facilitate later reuse of the cisterns, such as for shepherds' shelters, but then one would have expected the openings to extend further down to provide easier access to the interior of the cisterns. The height and the wedge-shaped openings are by no means practical if a function as housing and/or shelter was intended (**fig. 21**). The most likely explanation must be that the destruction was carried out systematically after the Venetian conquest of the Kastro in 1207.<sup>21</sup> Whether this took place immediately after 1207 or later, after Apano Kastro came into function and Chora was again established as an island centre, is impossible to say from the present evidence.<sup>22</sup> Another observation is that the official and most important location within the Kastro is devoid of visible building remains. One possible explanation is that the build-up of soil has completely covered the collapse. However, one could expect more visible stones to be found scattered around this area if it was indeed densely built. On the northern part of the site, building remains, apart from the church complex and a few smaller cisterns, are severely collapsed. One can expect several structures to be buried, since the build-up of soil is significant in this part of the Kastro, but large amount of stones must also have been removed or reused since fewer stones are visible on the surface compared to other parts of the Kastro. The reason for this is uncertain, but could perhaps be considered in connection to the systematic destruction of cisterns and abandonment of the site. In the later phase of the settlement, significant investment in defensive capability took place in this area, and buildings were perhaps destroyed more systematically after the conquest in 1207 to prevent the site functioning as a defensive stronghold again.

### ***The overall planning of the fortification at Kastro Apalirou***

This survey has demonstrated that the fortifications at Kastro Apalirou were planned from the start on a large scale.<sup>23</sup> The uniform masonry of the earliest phase that is largely visible across the entire circuit,

17. Ødegård, this volume.

18. Cf. a coin of Maurice published in Mastoropoulos (2006), p. 22.

19. See Pennas, this volume, and Morrison (2007) for a general account.

20. According to Mastoropoulos (2006), p. 151 a part of the wall "may belong to a prehistoric fortification" without further explanation.

21. Lock (1995); Fotheringham (1915).

22. For Apano Kastro and Chora, see Vionis (2017), pp. 180-81.

23. The area of a kastro or rural fortified settlement in the provinces is not indicative of its population. However, the settlement at Apalirou differs from normal trends observed in other rural settlements. It was common to leave large areas inside the walled settlement open for cultivating crops, and, most importantly, to leave room to accommodate the nearby villagers in case of emergency. Also, absence of planning and dynamic growth are common features of new cities from the 8th century onwards, and houses are small, irregular and very simply constructed, see Bouras (2002), pp. 508, 521. Apalirou appears to

the regular position of towers and the gate, and the use of natural cliffs and terrain as an integrated part of the wall all point to a uniform planning of the defences from the beginning.<sup>24</sup> In this respect Apalirou conforms well to the imperial emphasis on urban fortifications on naturally defensible and inaccessible sites in the Early Byzantine period.<sup>25</sup> The only identified modification to the original plan was the later addition of the large bastion in the lower part of the northern tip of the site. The high number of cisterns confirms the importance of the site, and the significant capacity can also possibly be seen as part of a defence strategy of the original planning, even though the large community cisterns were a later addition.<sup>26</sup> One aspect of the site that is worthy of discussion is the focus of visual and defensive attention towards the surrounding landscape, which may have changed from the earliest to the latest phase. We noted that an early phase might have been a lookout or signal station at the highest and southernmost point of the site overlooking the landing beaches on the south shore of the island.<sup>27</sup> The last addition to the fortifications was the bastion and rampart added to the north-western and lowest point of the fortified settlement. Significant resources were invested at these stages. One could possibly consider this development as an orientation towards the northern landscape compartment towards Chora (even though Chora is not visible from the bastion at its present height), or it could simply have been a significant investment in the defensive capabilities of the site. However, the chronology and function of the enlargement and renewed building activity in later periods on Kastro Apalirou must be established before we can reach firm conclusions.

The location and construction of Apalirou clearly bears witness to the settlement's military significance. Following the common pattern of Byzantine *kastra* and fortified settlements and cities we must expect that a standing garrison was present at the site at all times. Military officials and staff must also have been present.<sup>28</sup> However, we do not know the size or organization of the military forces, or how the military and civil arrangements worked together. In periods of little tension, conflict, and threat, civilians could probably serve as guards and watchmen at the towers and gate.<sup>29</sup>

Defensive reasons alone cannot explain the extent of urban planning, infrastructure and the number and quality of houses on Kastro Apalirou.<sup>30</sup> The settlement is clearly more complex and densely built than the average Byzantine *kastron*. Wider changes in socio-economic conditions, commerce and sailing routes in the late 6th and 7th century must also be taken into account when the function of Apalirou is considered.<sup>31</sup> The growing body of archaeological evidence suggest that life on the Cyclades flourished until the middle of the 7th century even in the face of the increasing Arab threat.<sup>32</sup> The

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have been planned on a larger scale from the beginning, with stepped streets and drainage, a connected system of large cisterns, solidly built houses of regular measure (both internal and external wall thickness, room size and overall dimensions).

24. See Hill, this volume, for more details on the infrastructure of the settlement.

25. Petersen (2011), p. 255.

26. More than 50 cisterns have been documented, Hill, Roland, Ødegård (2017), p. 284. This in contrast to e.g. Kythera, with only one documented cistern, see Ince *et al.* (1987), p. 106. See Hill this volume for the construction of large community cisterns in a later phase at the site.

27. Panermos on the south coast was probably the most important harbour from the early Byzantine period until the 10th/11th century and later. A recent survey by the Norwegian Maritime Museum in cooperation with the Ephorate of Underwater Antiquities has documented significant constructions, ballast piles and other finds at the site. Several shipwrecks are also observed off the southern coast. Another anchorage is attested further west. The important results of this survey are under publication. Pers. Comm. Sven Ahrens, March 2018.

28. Haldon (2008) for a survey of the Byzantine army and further references.

29. Petersen (2011), p. 292 with references.

30. See Hill this volume.

31. See Laiou, Morrison (2007), p. 15. E.g. the importance of the church must be taken into consideration: "There is much better and fuller appreciation of the vital role of the Church in ordering, and indeed, in redefining townscapes with new foci of patronage, social attention, and even economic activity", Christie (2004), p. 3.

32. Penna, Magdalino this volume, and Vionis (2017), p. 174.

construction of a large fortified settlement on an inaccessible hilltop might just as well be a sign of affluence rather than crisis and economic and communicative retraction.<sup>33</sup> Settlement continued to exist in coastal areas, and some trade and monetary supply can be attributed to periodical contact between insular communities and Arab settlement.<sup>34</sup> Kastro Apalirou remained in continuous use for more than half a millennium. Pottery and coins attest its existence from the 7th century until its takeover by Marco Sanudo around 1207. A continuous occupation at the site is attested by the later addition of a bastion and rampart to the north, significant building activity and the addition of large cisterns probably in the 10th century. The excavation of the small, doubled-aisled church to the south has revealed pottery from the 7th to the 11th-12th century. Recent surveys have also revealed considerable building activity outside the fortification on Apalirou. The large church complex on the southwest ridge<sup>35</sup> and several houses and small churches have been documented at the foot of the mountain.<sup>36</sup> Historical sources indicate that Naxos rose from a Bishopric to Metropolitan shortly after 1083. We must assume that the island had a flourishing urban settlement at that time.<sup>37</sup> A significant number of new churches, an extensive rural settlement and agricultural intensification bear witness to viable communities on the island from the 10th century until the Latin invasion in 1207.<sup>38</sup>

Further examination of the Kastro is needed before firm conclusions on building phases and absolute chronology can be reached. One problem is the local variation in Byzantine fortifications in general. Technical aspects like wall size, masonry, gates, towers and construction method vary too greatly to make sensible comparisons regarding chronology.<sup>39</sup> Further studies on the function of Kastro Apalirou are needed, as well as excavation to establish the chronology of the site more firmly based on stratigraphy, pottery, coins and other dateable objects.

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33. E.g. Niewöhner (2007), p. 144.

34. Vionis (2017), p. 169.

35. Ødegård, this volume.

36. Cf. The Apalirou Environs Project, Newcastle University/Edinburgh University; see Manonopoulou, Lekakis, Jackson and Turner, this volume.

37. Dimitrokallis (1968), p. 283. See also Panayotidi-Kessisoglou and Konstantellou this volume.

38. Vionis (2017), p. 176.

39. See Bouras (2002), pp. 505-6 and Petersen (2011), pp. 258-59. For a general account of 7th century Byzantine fortifications, see Lawrence (1983), pp. 200-204.

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Figure 1. Overview of Kastro Apalirou.

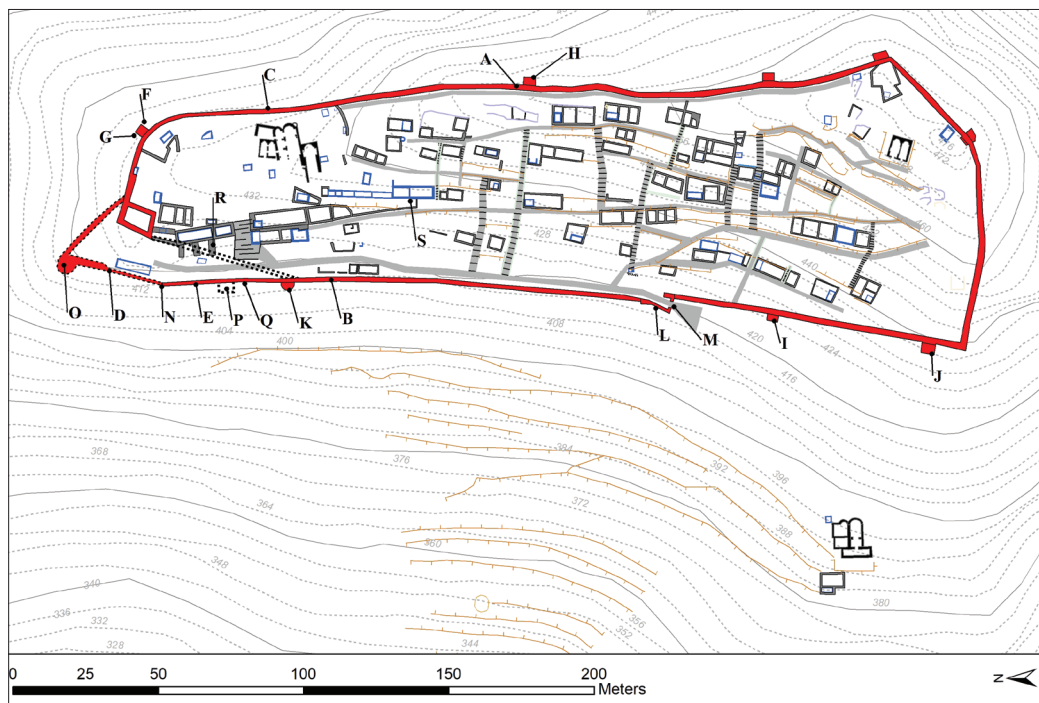


Figure 2. Plan of the fortifications (by D. Hill).



Figure 3. Narrow part of the wall (1.40 m) heavily mortared behind tower on the east side. A on fig. 2.



Figure 4. Masonry type 1.B on fig. 2.





Figure 5. Masonry type 2. C on fig. 2.



Figure 6. Masonry type 3. D on fig. 2.



Figure 7. Foundation of (collapsed) tower. E on fig. 2.



Figure 8. Enforced back wall of tower. F on fig. 2.



Figure 9. Front of tower on north-eastern side. G on fig. 2.



Figure 10. Drystone wall on eastern side. H on fig. 2.





Figure 11. Tower on the western side. I on fig. 2.



Figure 12. Tower on the south-western edge. J on fig. 2.



Figure 13. Semicircular tower on the north-western side.  
K on fig. 2.



Figure 14. City gate, front to the west. L on fig. 2.



Figure 15. City gate, entrance. M on fig. 2.



Figure 16. Junction between the bastion and curtain wall  
running southwards. N on fig. 2.





*Figure 17.* Bastion. O on fig. 2.



*Figure 18.* Rebuilt and partly collapsed wall on the western side. P on fig. 2.



*Figure 19.* Drystone (and partly collapsed) wall on the west side. Q on fig. 2.



*Figure 20.* Rebuilt building, later converted into a cistern, with buttresses. R on fig. 2.



*Figure 21.* Systematic destruction of cistern. S on fig. 2.

