

IMTO -Italian Mission To Oman-

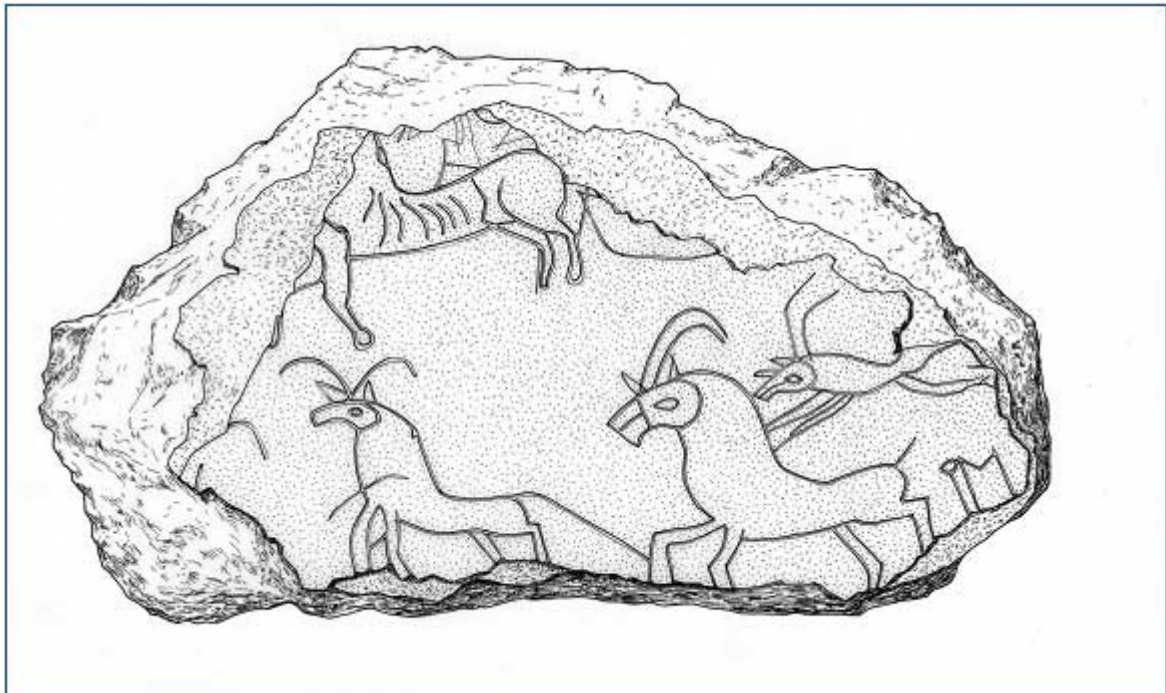
University of Pisa

SUMHURAM

PRELIMINARY REPORT

January – March 2006

(SUM06A)



ARCHAEOLOGICAL PRELIMINARY REPORT (SUM06A)

January-March 2006

During the campaign in the spring 2006 (SUM06A), which started on January 29th and finished on March 18th, the field activities were focused on the diggings at the ancient town of Sumhuram. The excavations were concentrated in several areas: in the Area A to the south of the Gate Complex, in the Area B in the south-eastern part of the city, in the Area F in the north-western part of the city, and in the Area E outside the north-western defence wall of the ancient town. In addition, a structure located in a few hundred meters south-east of Sumhuram (SUMS) was completely excavated.

The main objectives of the present campaign were to continue wide scale explorations of different parts of the ancient town, to arrange the most convenient trespassing roads for visitors, to beautify the general view of the site.

Area A (trench supervisors V. Buffa).

Square A75

In the Area A the excavations were limited at the small square in A75, which was left in situ at the end of the campaign SUM05B. The US22floor was exposed against the wall M58 of the building BF6. The continuation of canal running in south-west direction was found in the square.

In order to make some steps enabling visitors to pass through the Area A towards the Gate Complex, part of the cultural deposits was removed in A75 in front of the passage A57 (between buildings BA6 and BA7) and south-western corner of the building BA7 (the building excavated by AFSM): the strata US21 and US29. This action allowed to expose the outer face of the wall M184, which blocked the passage A57 from the south-west, and to clean the south-western corner of the building BA7 (with beginning of the wall M185, which constituted the outer wall of the building) (fig. 1). Wall M184 is 1.70 m long and 0.50 m wide. It was exposed down to US29floor without reaching its foundation. In the superficial deposit US21 a stone gutter, 0.80 cm long, was found.

Building BA6, “late complex”

In the “late complex” built upon the south-east corner of the ruins of building BA6, the walls belonging to this late phase were removed in order to expose the initial plan of the building. Upper part of the wall M183, which was the original external north-eastern wall of the building, was cleared and the original north-eastern corner of the entire structure was determined. It seems quite possible that huge limestone slab discovered on the floor of the room A64a of the “late complex” was placed upon the continuation of the wall M183 running towards south-west.

Gate Complex

In the SUM05B campaign huge blocks of stones fell down from the western bastion (M6) of the second gate were removed and the bastion itself was rebuilt. Thanks to this action during the SUM06A campaign it was possible to complete excavation of A3.

In the eastern part of A3, in the corner formed by the eastern bastion of the second gate and the wall M3, a portion of the uppermost floor of the Gate Complex was preserved (US66floor=US67floor=US10floor). It composed of hardly packed grey loam topped with lime mortar (part of the floor was very well preserved along the wall M3). The floor was placed upon the pavement, which was made from medium size undressed stones mixed with a reddish brown

crumbled soil. It seems that structure previously denoted as the wall M29 was, in fact, more regular part of this pavement. In order to check the foundation of the south-western part of the wall M3, the preserved part of the US66floor against the above-mentioned wall was removed. We discovered that the internal or western face of the south-western part of the wall M3 stopped at the level of US66floor, while the base of the eastern bastion was not reached (it seems that the eastern bastion was set up directly on the bedrock, which is at least half a meter deeper). It looks quite probable that at least the south-western part of the wall M3 was quite “late addition” to the structures of the Gate Complex. But its exact correlation with the rest of the wall M3, which is, in fact, the south-eastern external wall of the rather ‘early’ tower A6, could be determined only in the future, during the planned excavations along the south-eastern face of the wall M3.

In the central part of A3, under the removed stone blocks of the western bastion (M6), cultural deposits accumulated above the US66floor (the stratum was denoted as US65) as well as earlier layers (US28) were found still in situ. During the present campaign this part of A3 was excavated down to the level of US35floor, which was, apparently, the earliest floor of the Gate Complex. The US35floor was constructed upon the bedrock from greyish hardly packed soil reinforced with small stone. No artefacts were found in the above-mentioned strata.

Area B (trench supervisors S. al-Mashani and V. Buffa)

Excavations were concentrated in two parts of the area: in the trench started in the season SUM05B (‘street A74’ and square A77 in the middle of the storage quarter) and outside the so-called ‘Small Gate’.

Square A77

Part of the square located between two complexes of the storage ‘bins’ and east of the building BB1 was unearthed during the present campaign. Wall M167 from the north, wall M186 from the south, and walls M163 and M168 from the west delimited the square (towards the east it continued till the ‘Small Gates’). Two strata were determined in the A77 during the previous campaign SUM05B: US188 representing relatively ‘late’ or ‘recent’ accumulation, and US183 (with related US183floor) representing the abandonment of the site and last phase of its existence (equal to US21 in the Area A).

In the present campaign the size of excavated area in A77 was extended towards the east for another 3 m and cultural deposits were removed down to the bedrock. The following stratigraphy was determined in A77 (from top to down). The ‘recent’ accumulation US188 and related US188floor continued in the excavated area. Very disturbed ruins of stone structures connected with US188floor were unearthed in the south-eastern corner of the trench. The thickness of US188 was 0.25-0.4 m, and rather thick (5-10 cm) ash layer was traced upon the US188floor. The stratum underneath (US183) representing the last phase of existence of Sumhuram was discovered all over the area. Its thickness was 0.2-0.5 m, and the stratum was composed of rather compact greyish loam mixed with stones, few fragments of pottery and small amount of animal bones. Well-trampled US183floor covered the top of the north and south walls of A77 (M167 and M186 respectively). The western walls M163 and M168 were in function and the passage between them was carefully blocked with stones. The stratum US195 discovered under US183floor consisted of brownish compact loam mixed with medium and small size stones and pebbles, pottery fragments, animal bones and marine shells (it was 0.3-0.45 m thick). It covered US195floor and with this level the construction of two-stepped staircase in front of the passage between walls M163 and M168 was connected. The deepest deposit revealed in A77 was the stratum US198, litologically similar to US195. The thickness of the stratum was 0.4-0.5 m. It covered the US198floor, carefully plastered with lime mortar in some areas (for instance, against the wall M167). Construction of the ramp,

circa 1.0x1.5 m in size with maximum height of about 0.5 m, discovered under the previous staircase in front of the passage between walls M163 and M168, was connected with this floor. It seems that US198floor was the initial floor of A77, and it was constructed upon the 'foundation filling' or levelling US202 placed above the bedrock. The 'foundation filling' US202 (0.2-0.3 m thick) composed of packed dark brown loam mixed with small stones and limestone chips. Retaining wall M187 made from one row of double undressed stones was discovered in the US202 running in east-west direction. It was set up directly on the bedrock as well as the foundations of the walls M163, M167, M168 and M186 (fig. 2).

As we can judge from the results of the excavations, initially the square A77 was constructed between two symmetrical complexes of storage 'bins' located to the north and south of square: their south-western and north-western corners formed by the walls M167 and M186 accordingly were unearthed in the area. From the west the square was closed by the walls M163 and M168, and was accessible from the interior of the ancient town only through the narrow passage, 0.7 m wide, with high (0.5 m) threshold, which was constructed between the walls. A steep ramp made from roughly dressed stones was built in front of the passage in A77. All above-mentioned constructions were connected with US198floor, i.e. with the first period of the city existence (equal to the 1st and 2nd constructional phases in the Area A). Later, from the level of US195floor, which completely covered the ramp, the threshold in the entrance was raised up, and two external doorsteps made from sandstone slabs were constructed (equal to the 3rd and 4th constructional phases in the Area A). During the final phase of the city existence the entrance was blocked and square A77 was completely isolated from the interior of the city (US183 and related floor, which are equal to the 5th constructional phase in the Area A). After the period of abandonment, the re-occupational level was traced in A77 (US188, which could be denoted as 'post-Sumhuram' phase).

'Street A74'

What is supposed to be 'street' A74 running between the building BB1 and room IX K 3 (according to AFSM nomenclature) of the southern complex of storage 'bins' towards the west or towards the living quarters of the ancient town was partially excavated in SUM05B season. In the present campaign we succeeded to explore the complete sequence of cultural deposits in this part of A74.

Nicely plastered platform connected with US181floor was discovered in the south-western corner of the excavated area against the wall M169. The platform was irregular in shape (1.7-1.9x1.8-2.2 m in size) and from the north was delimited by a row of vertically placed stones. The wall M176 discovered in SUM05B bordered the platform from the east. The south-eastern corner of A74 was occupied with the ruins of another structure of completely unclear character, which was also, apparently, connected with the same floor level. The stratum US197 was discovered under US181floor. It was 0.5-0.6 m thick and consisted of very hardly packed dark brown loam mixed with small stones and pebbles. The stratum was traced upon US197floor, from which a small two-stepped staircase (0.7x1.0 m in size) discovered in the north-western corner of the excavated area was constructed. It seems that the staircase led to the entrance located in the wall M165 and connected the room A73 of the building BB1 and the 'street' A74. The foundation of the wall M165 was also placed on the US197floor. Under US197floor one more stratum US199 was discovered. It composed of very hardly packed dark brown loam mixed with small stones. In north-eastern corner the stratum covered remains of totally destroyed stone structure, on which the foundation of wall M165 was partially set up. The stratum was almost totally 'sterile': no pottery shards or animal bones were found in it. The US199floor covered the 'foundation filling' US200, which in this part of the trench composed of hardly packed dark brown loam mixed with limestone chips.

There are some grounds to suppose that US199floor in A74 was contemporary to US198floor in the square A77, while US197floor in A74 could be somehow correlated with US195floor in A77. The

construction of the US181 floor and plastered platform in the south-western corner of the trench might be correlated with the final phase of the city existence when the entrance leading from the interior of the ancient city to the square A77 was completely blocked (US183 and related floor in A77). The construction of the room A73 of the building BB1 should be correlated with US197 floor in A74 (most probably the room was also in function during the last phase of the city existence when additional walls M164 and M166 narrowed the space of the room).

‘Small Gates’

In square p14, in front of the ‘Small Gates’ in the south-eastern corner of the ancient city, the excavations were carried out during SUM01B and SUM02A campaigns. A portion of the outer bedrock was exposed to the south and to the north of the gates, removing the deposit US106. During the SUM06A campaign the area of excavations was extended towards south-west along the city-wall M140 and towards the south-east along the slope of the bedrock. The badly damaged ancient surface of the bedrock in front of the ‘Small Gates’ was exposed: it was lined up with thick lime mortar of which few portions remain. Portions of similar mortar were traced also at the base of the city-wall M140, where they were exposed on the length of about 2 m. The deposits, US106, composed, as before, of dumps of the AFSM excavation, and collapsed blocks from the city-wall M140 revealed marine shell of *Chlamys townsendi* (Sh266), two fragments of soft-stone vessels (S943, S945), fragment of hammer stone (S944) and very few fragments of pottery and animal bones.

Area E (trench supervisor A. Sedov).

The work at the Area E was carried out in order to beautify the external view of the ancient city and to determine the phases of construction (or re-construction) of its fortification system. To match these objectives, the dumps remained outside the external wall M25 of the Monumental Building 1 (fig. 3) and outside the city-walls M23-M135-M134 as well as dumps against the south-eastern wall of the corner-tower A62 were removed.

The overall impression is that that it was a single event to consolidate the northern outer wall of the Monumental Building 1. We can suppose that for some reasons the M19, the initial northern outer wall of the Monumental Building 1, has been collapsed (because of its insufficient construction upon the natural depression or, probably, because of intentional demolition during, for instance, military campaign) and the attempts to consolidate it with the help of internal additional structures like M20/M21 and A10 (mud-brick filling between M20/M21 and M19) were not successful. For this reason the ancient builders decided to enlarge significantly the wall M19 from the exterior by constructing consecutive structures: the wall M67, which consolidate the offset between M15 and M19, and the wall M25 with additional plinth M178 around its north-western corner (the major construction intended to reinforced the Monumental Building 1 from outside). The space between northern face of the old wall M19 and the new reinforcement wall M25 was filled up with stone wall M24 and with special mixture made from loam and medium and small size stones (filling of A15 and A16). The lower part of M15, circa 2.3 m high, was built vertically, while its upper part was inclined towards the interior (probably, the inclined part of M25 was capped with the other vertical construction, which didn't preserve). On both sides of the wall M25, in the corners formed by the walls M15 and M8 on the east and by the walls M18 and M23 on the west, special structures made from hardly packed loam mixed with lime and pebbles were erected. They formed a sort of rather steep slopes, circa 1.8-2.2 m high, on both sides of M25 (the slope constructed in the corner formed by the walls M15 and M8 was reinforced from the north with retaining wall M96). Two additional walls, M79 on the east and M190 on the west, were set up upon these slopes to reinforce both ends of M25. Probably later, the outer north-western corner of M25 and its inclined curve was

additionally reinforced with perpendicular small wall M177. It seems quite probable, that all these consolidation works were a single building event and were carried out at the beginning of the KR II period, contemporary with extensive renovation of the Area A and with re-arrangement of the Gate Complex (mid 1st cent. AD?). We can suppose that construction of the external tower A61 and enlargement of the corner tower A62 were also carried out during these extensive renovation works and were also a part of single building concept (fig. 4).

Fragments of lime plaster (D21A) with carvings representing the hunting scene (running ibexes) and head of horse were found in the dumps removed outside the wall M25.

Area F (trench supervisor A. Sedov).

In the present season the works were concentrated in the north-eastern part of the Area, along the city-walls M135 and M23, and along the part of the wall M18 of the Monumental Building 1. The “late” wall M159 was removed, and the street A68 and its continuation towards the south, the street A80, were partially exposed. The north-eastern corner of what supposed to be the building BF6 was also discovered (fig. 5).

Street A68

The continuation of the street A68 running in the eastern direction along the city-wall M135 was excavated. The top stratum US187 and upper part of the stratum US172 were removed. The street was 3.0-3.2 m wide, and its exposed length was a bit less than 15.0 m (14.8 m). It seems that from the east the wall M182 built perpendicular to the city-wall M135 blocked the street A68. Short pylon M181 was constructed roughly in the middle of M135 dividing the street into two parts. The outer wall M180 of the building BF6 bordered the street from the south. Three holes were discovered in the southern face of the city-wall M135. Their dimensions are: the eastern hole – w. 35 cm, h. 32 cm, d. 28 cm; the middle hole – w. 27 cm, h. 15 cm, d. 29 cm; the western hole – w. 45 cm, h. 17 cm, d. 40 cm. Apparently the holes were intended to hold the wooden beams, which indicate that the eastern part of the street A68 was, probably, roofed.

Street A80

New street was discovered in the eastern part of the trench, along the western facade of the wall M18 of the Monumental Building 1. The wall M182 with nicely plastered inner surface separated it from the A68, at least during the upper phase of the city existence. The eastern wall M188 of the building BF6 bordered the street A80 from the west. The width of the street was circa 3.5 m. The following stratigraphy was determined so far in the A80.

The topmost stratum, 0.25-0.4 m thick, was US80 like in other parts of the Area F. Very thick stratum US187 (thickness from 0.65 to 1.6 m) was discovered underneath. It composed of compact dark brown loam mixed with medium and small size stones and pebbles, which formed a sort of lenses (the high concentration of pebbles). A lot of animal bones and rather few fragments of pottery shards were found in the US187, which covered hardly packed US187 floor. Most probably, the US187 should be correlated with US71 traced in the western part of the trench (square A20 and street A19) in the previous seasons. The stratum US196 (0.5-0.75 m thick) accumulated upon very hardly packed US196 floor, which was plastered in some area with lime mortar, was discovered under US187 floor. Most probably, it should be correlated with US56 discovered in the western part of the trench (square A20 and street A29). US196 composed of rather compact dark brown loam mixed with flecks of charcoal, few pottery fragments, animal bones and marine shells. Part of one more stratum US201 with top part of the new wall M189 running parallel to the wall M18 of the Monumental Building 1 was discovered under the US196 floor. The street A80 was excavated down

to the level of US196 floor (in fact, the major part of A80 was excavated by the AFSM mission, but the results of this diggings were not presented in the Albright's report).

Remains of stone construction, which looked like a staircase, were discovered in A80 around the north-eastern corner of the building BF6. It was built from the US196 floor and led, if our identification of it as staircase is correct, probably, to the roof built above the eastern part of the street A68. A fireplace with remains of tanur made from thick-walled pottery vessel was discovered on the US196 floor in the corner formed by the above-mentioned structure and the eastern facade of the wall M182. The fireplace was separated from the rest of the street by a row of vertically set up stones.

The outlet for the water (A12) drained from the well located inside the Monumental Building 1 opened to the street A80 (fig. 6). It was 0.8 m wide and circa 2.5 m long, and had a stone bench along its southern side. The outlet was closed with apparently wooden door (using as sluice frame?): an offset for the door-frame and a number of different cavities for the door-lock were discovered on the stone blocks of the outlet's opening.

Building BF6

Outer faces of two walls of the building BF6 were unearthed in the season SUM06A: the northern wall M180 and the eastern wall M188. It seems that the south-western corner of the building BF6 formed by the walls M152 and M155 was also discovered in the square g6.

Sumhuram South (SUMS) (trench supervisor A. Pavan)

During the intensive survey made by M. Cremaschi and A. Perego, ruins of building situated in the south-eastern part of the Khor Rori were discovered. The site was numbered as 1176/1182. It lies about 1.2 km south-east of Sumhuram, on the bank of one of the offspring of the lagoon, and before excavations looked like several wall alignments visible on the modern surface surrounded by huge accumulation of stones. A number of masonry blocks including profiled pieces and worked stones with intentional holes were found scattered around the site (fig. 7). In order to understand the character of the building and to determine tentatively its period of existence one week excavations were carried out at the site.

The total dimension of the excavated building was 8.2x10.0 m with orientation roughly along east-west axis. A sort of porch, circa 0.8x2.8 m in size, and a staircase (at least four steps are preserved), circa 0.8 m wide, running down towards the water table of the offspring of the lagoon were added to the north-western corner of the structure. It seems two constructional phases of the building were determined.

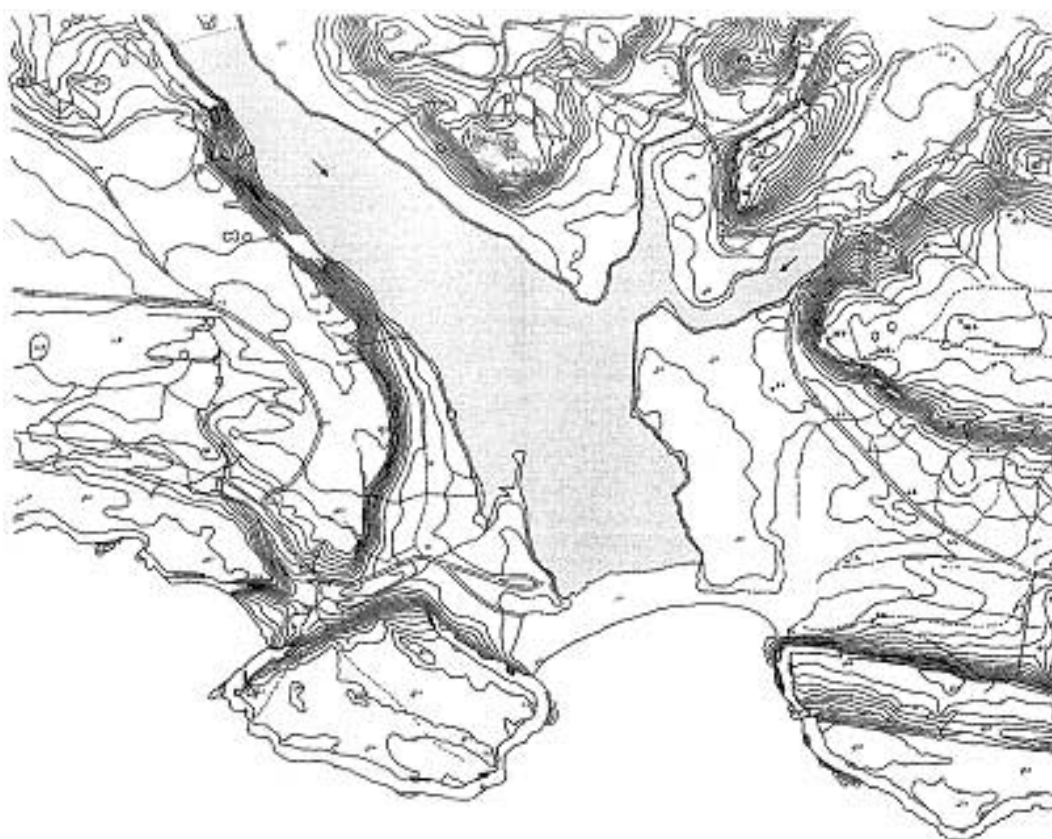
1st phase

A sort of platform, 8.2x10.0 m in size and 0.3-0.5 m high, was built on the bench of the lagoon. A perimeter wall, 0.7-0.75 m wide, running along the edges of the platform delimited a single room of the building, which was 6.4-6.7x8.6 m in size (internal dimensions). The entrance to the room, because of very poor state of preservation of perimeter wall, was not determined. The floor of the room was nicely plastered with lime mortar. A semicircular niche, mihrab, 0.8 m wide and 0.6 m deep, was built in the centre of the inner face of the western wall of the building. Two sandstone slabs used as bases for pillars supporting the roof were placed in the centre of the room along its main axes (intercolumniation is 2.85-3.0 m). In the heaps of stones scattered around the building it is possible to recognize several profiled sandstone blocks, which were apparently used as capitals and/or bases of pillars.

2nd phase

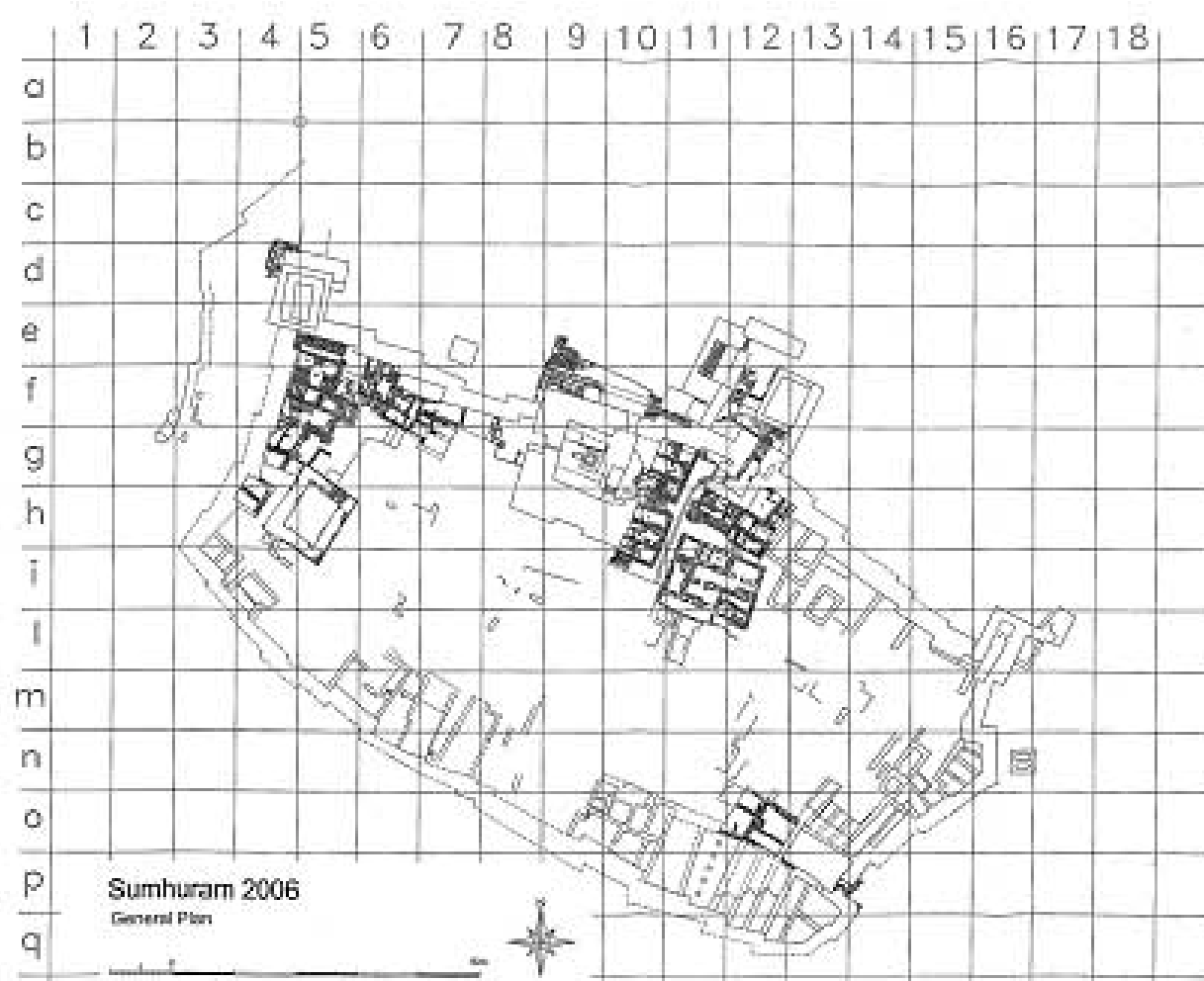
During the second phase a smaller building was constructed upon the previous structure. For this purpose, the parts of the northern and southern walls of the previous building were demolished, and new parallel walls were built inside the platform narrowing the width of the new room. The western wall with mihrab remained intact, whilst the eastern wall with entrance in the middle, 0.85 m wide, was built on the axis of the second pillar using its base as threshold of the door. The total internal dimensions of the new room were 4.5-4.8x5.3-5.6 m (in fact, the room was rhomboidal in plan). One of the pillars of the previous structure was remained intact served now as the central pillar of the new room. The eastern part of the previous building was used now as antechamber, 2.25-2.5x8.6 m in size (internal dimensions), oriented along north-south axes. Because of the poor state of preservation of the surrounding walls, it was not possible to determine the entrance to the antechamber with certainty, but probably it was in the northern wall. Thus, the new structure was arranged as T-shaped two-rooms building with wide plinths along external parts of the northern and southern walls (fig. 8).

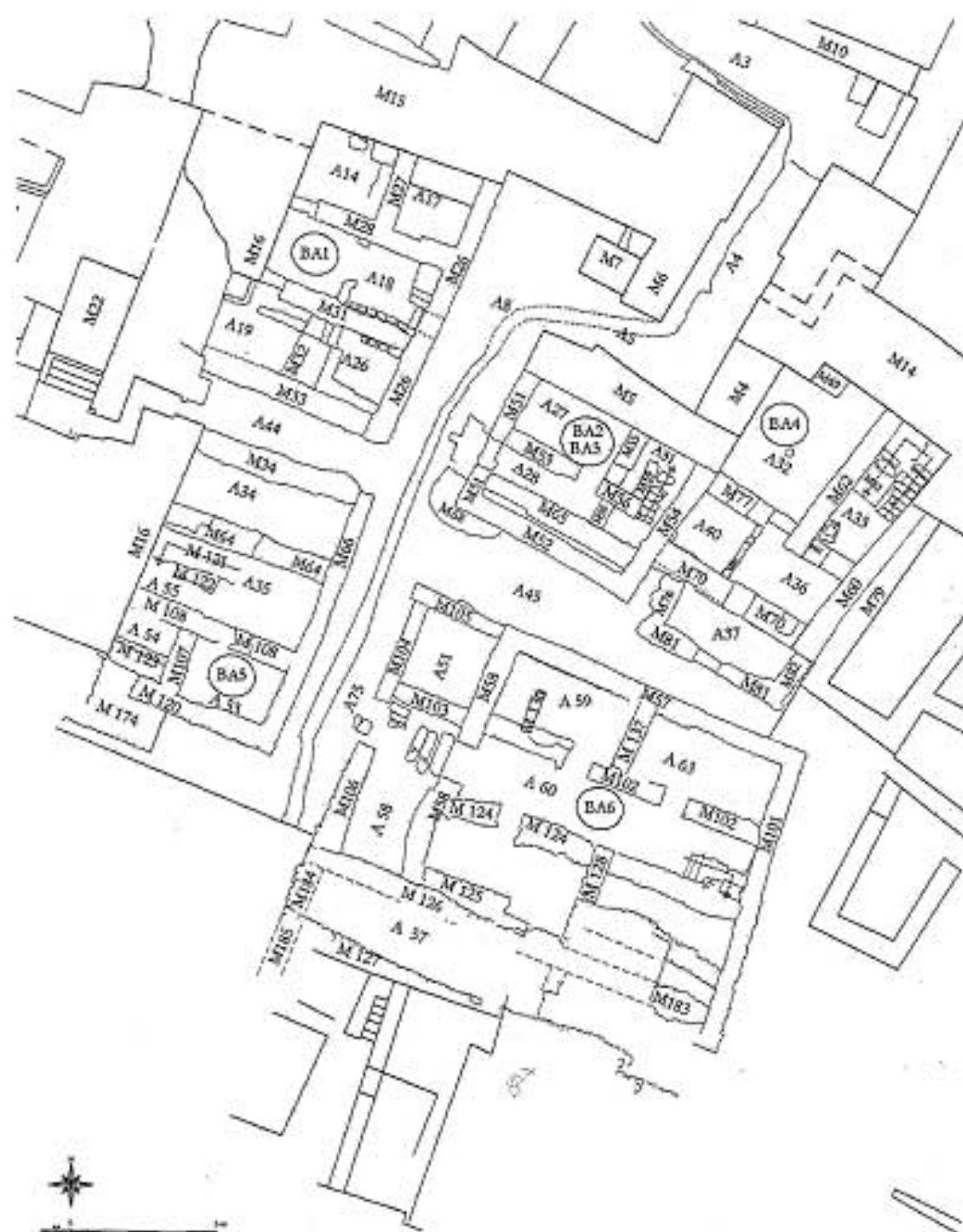
The deposits unearthed inside both rooms of the second phase building composed of medium compact sand mixed with small and medium size stones. The thickness of the stratum denoted as US1 was circa 0.5 m. Traces of fireplace with thick lenses of ash and scarce presence of flecks of charcoal were found in the filling of antechamber, a few centimetres above the plastered floor. Fragments of two pottery vessels, a bowl and a jar with impressed decoration (the so-called 'rice grains') as well as few animal bones and marine shells were found in association with the fireplace. It is not clear do this fireplace belongs to the second phase of the building or it could be interpreted as remains of the re-occupation of the site. In any case, the interpretation of the excavated structure as remains of mosque is without doubt. Its construction could be contemporary to the remains of Islamic fortress discovered on the top of Inqitat Mirbat.



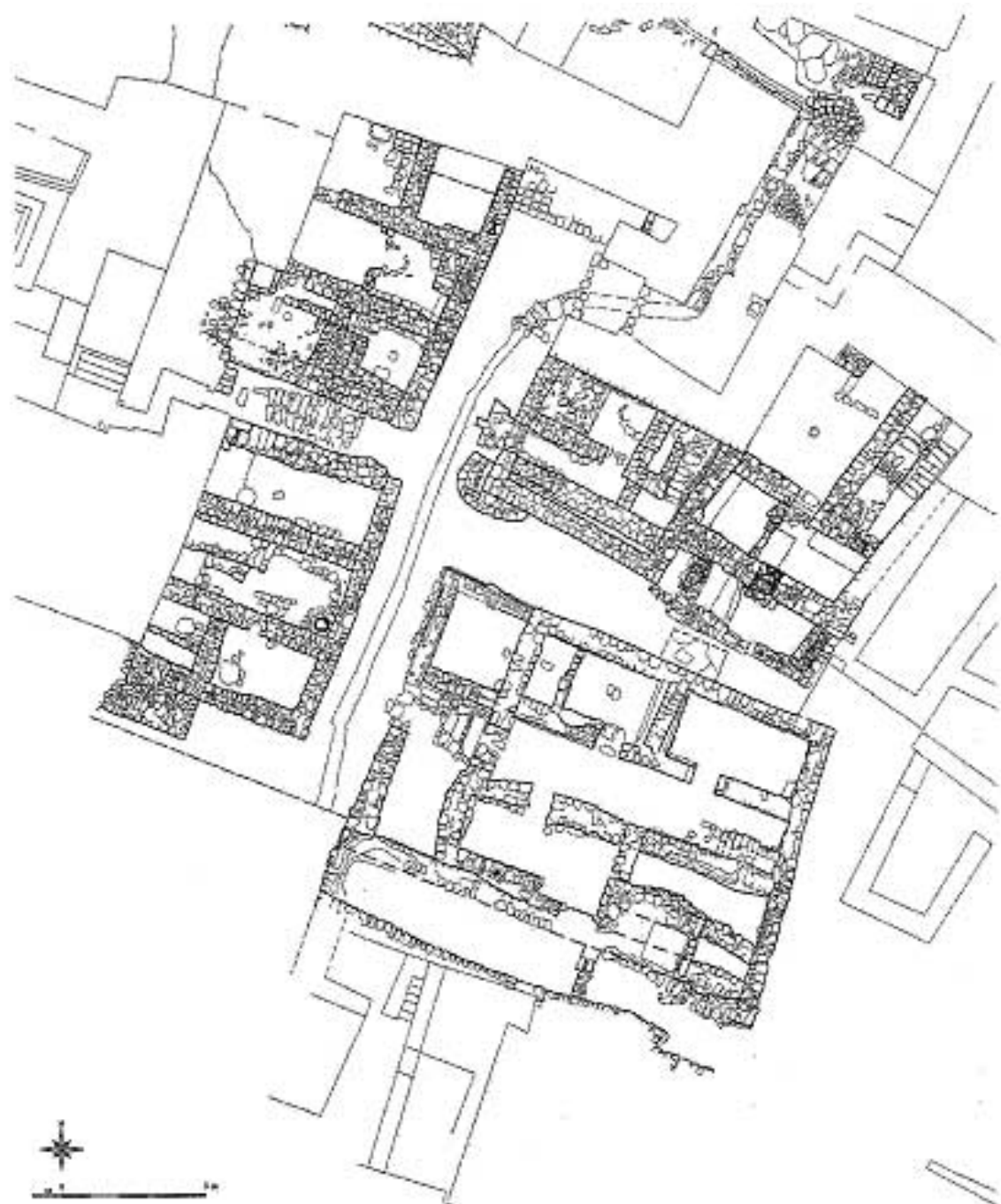
Sumhuram 2006
Topographical Plan



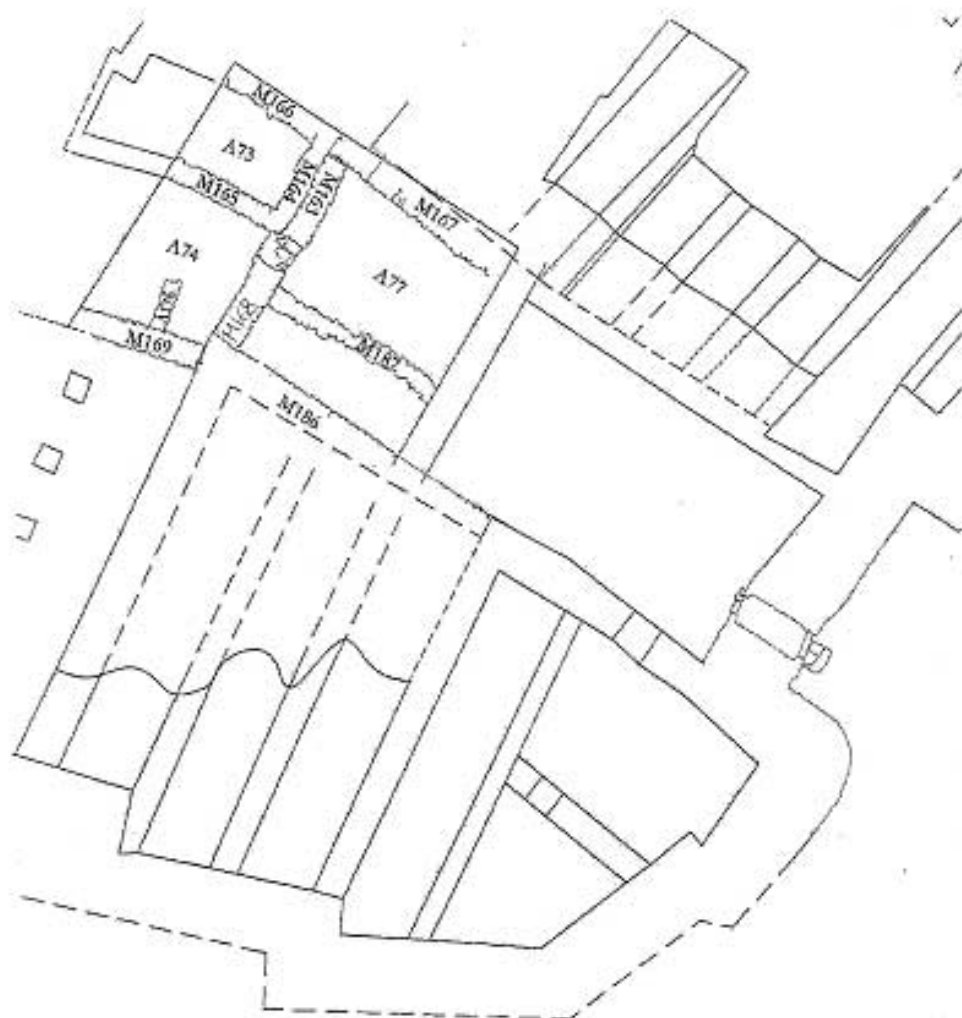




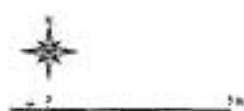
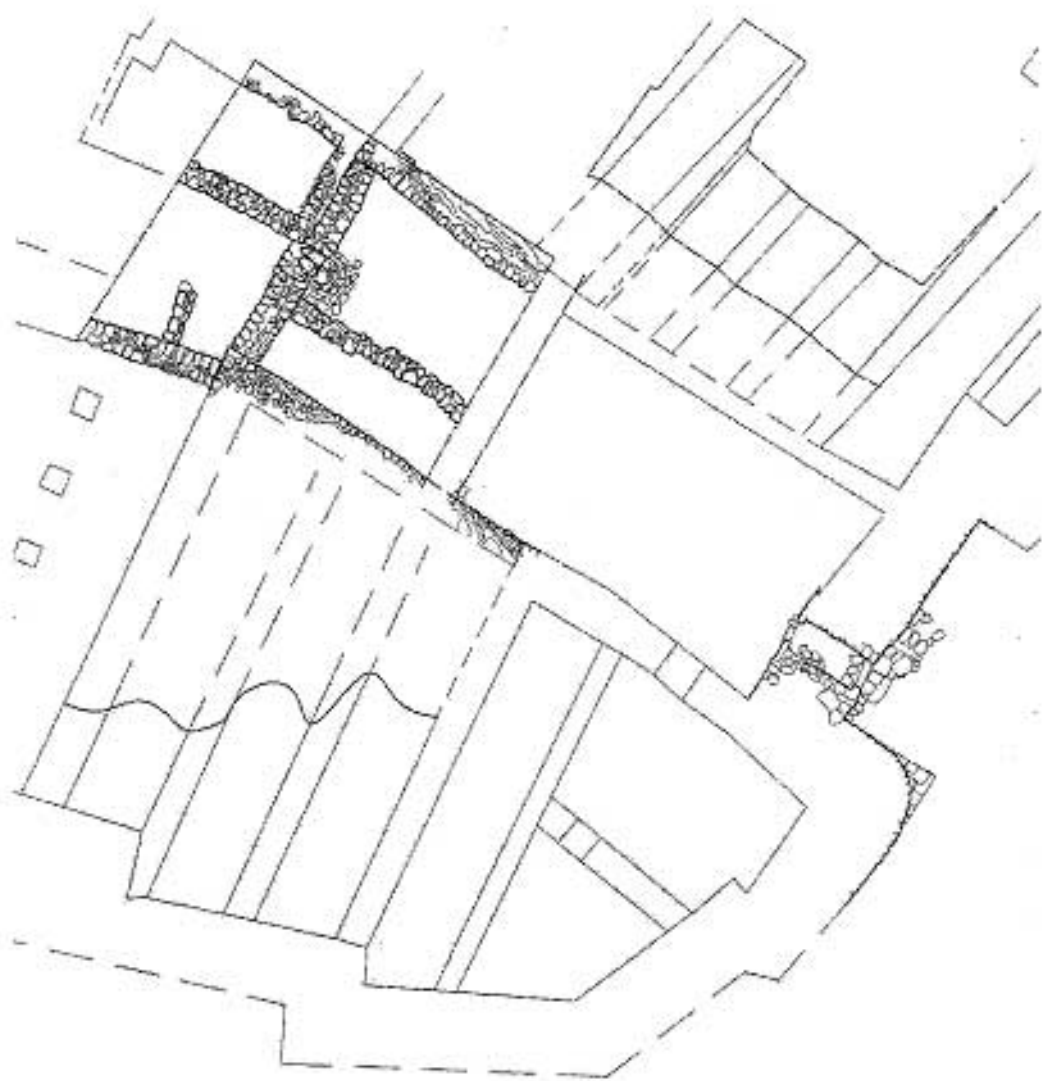
Sumhuram, Area A. General plan of excavated structures



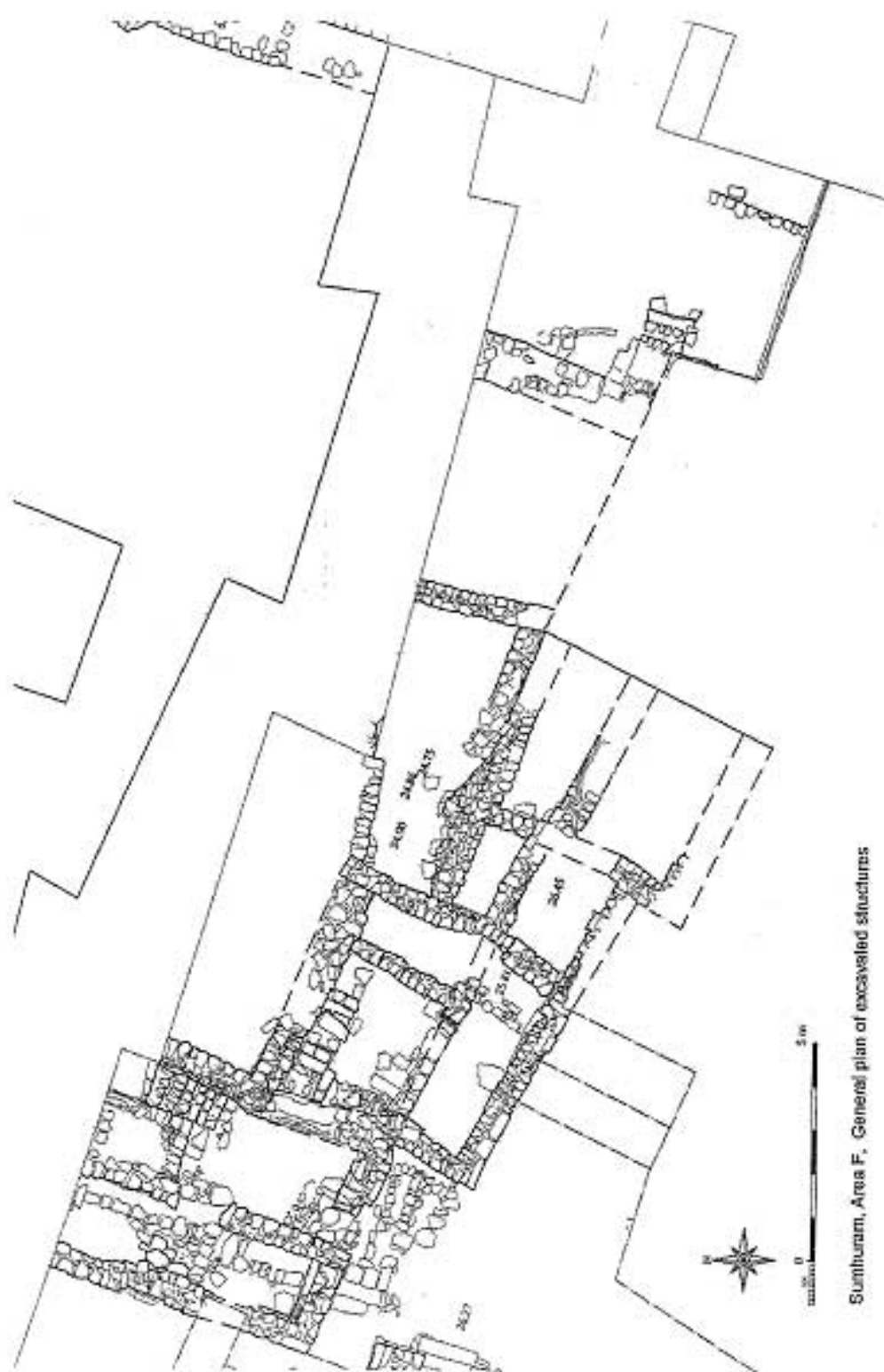
Sumhuram, Area A, General plan of excavated structures



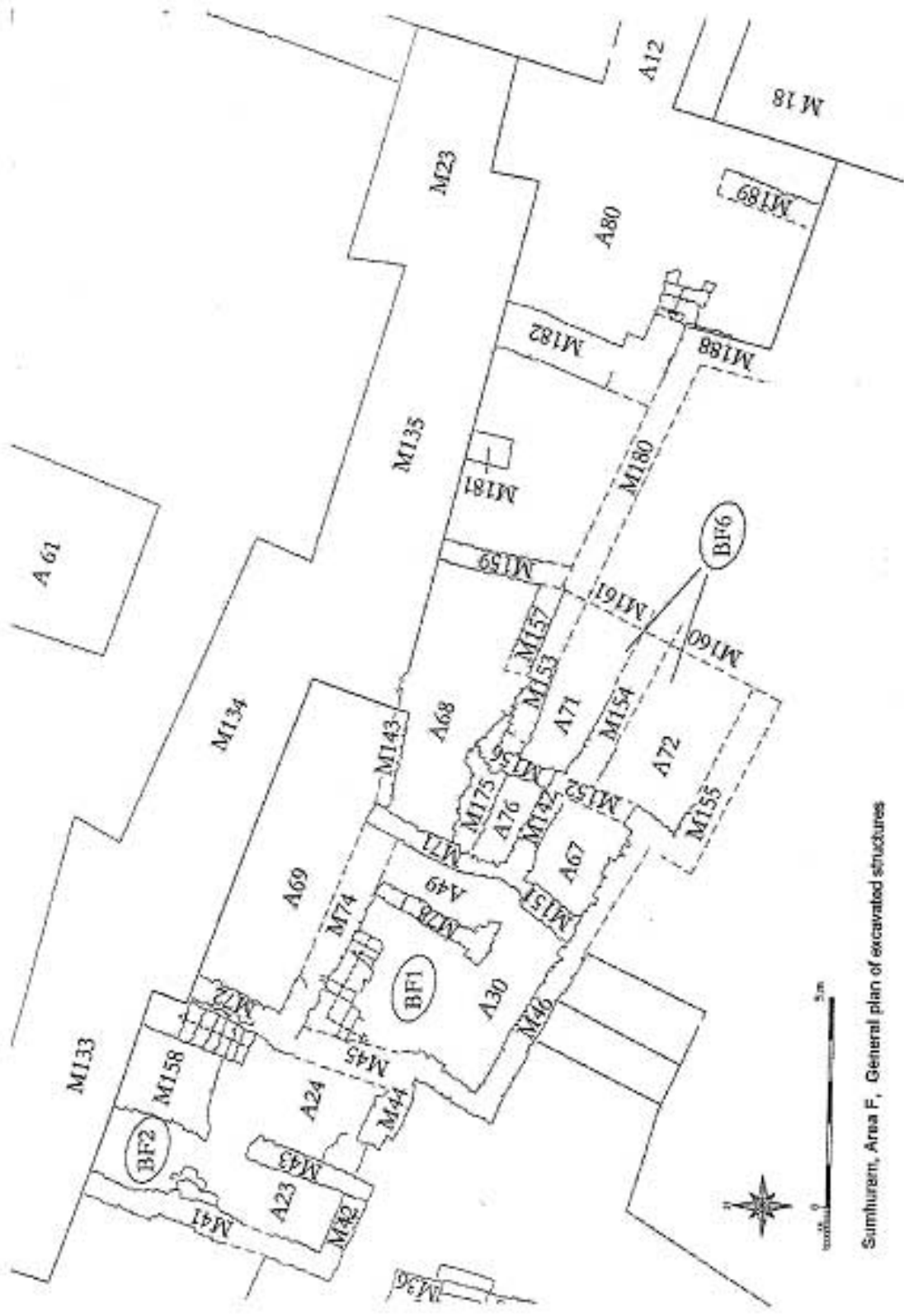
Sumhuram, Area B, General plan of excavated structures



Sumhuram, Area B. General plan of excavated structures



Sunthum, Area F. General plan of excavated structures



Sumhuram, Area F. General plan of excavated structures



Fig. 1 Area A, corners of buildings BA6 and BA7, passage A57, the wall M184 (view from west)



Fig. 2 Area B, Square A77, entrance between walls M163 and M168 with ramp, retaining wall M187 and remains of plaster on the US198 floor (view from south-east)



Fig. 3 Sumhuram, general view of the wall M25 (view from north)



Fig. 4 Sumhuram, Area E, tower A61, the outer facades of the walls M135, M134, M133 and M189 (view from north-east)



Fig. 5 Area F, streets A68 and A60 (view from east)



Fig. 6 Area F, outlet for the water A12 in the wall M18 of Monumental Building 1 (view from west)

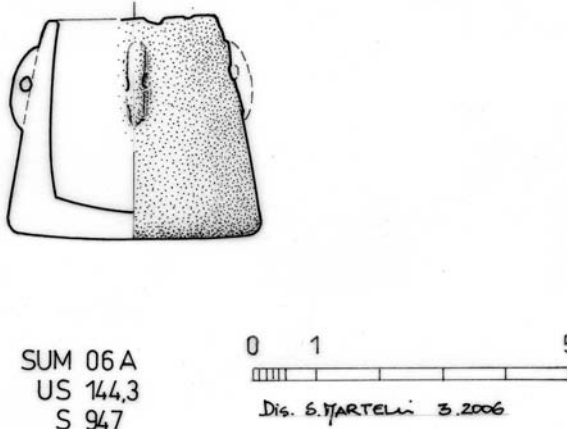


Fig. 7 Sum South, ruins before excavations (view from south)

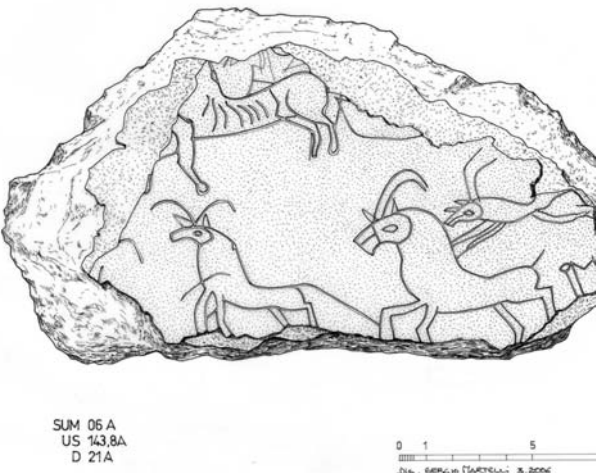


Fig. 8 Sum South after excavations (view from south)

Object Index Card 1

Registration Nr. SUM06A US144,3 S947			
Provenance Area E, f8, outside city M134			
Definition miniature vessel	State of preservation good	Measures l. 3.4 w.	Shape tronco-conical
Material alabaster	Preserved part complete	h. th. 0.4 diam. 4	Section
Description Flat-bottomed miniature jar with pierced ear-handles (2 preserved). The shape is tronco-conical (diam. rim 2.4.; diam. base 4). The walls are thicker toward the base. The tiny pierced handles are 0.4 cm below the rim. Interior and exterior very carefully smoothed.			
Responsible A.P.		Date 08/03/06	

Object Index Card 2

Registration Nr. SUM06A US143,8A D21A			
Provenance Area A, e-10, outside city wall M25			
Definition graffito	State of preservation fair	Measures l. 23.5 w. 11 h. th. 3 diam.	
Material plaster	Preserved part fragmentary		
Description <p>Fragment of graffito depicting a probably hunting scene. The animals represented are recognizable as ibexes. On the top, body of animal with forelegs and hindlegs preserved. Lines on the lower part of the body indicate the presence of ribs.</p> <p>On the lower part three animals of different size are recognizable. On the left very schematic animal, with horns represented by means of lines slightly curved. The body is slim and elongated. On the middle larger ibex with high curved horns and, on the right, ibex of small dimensions with the body completely flexed.</p>			
Responsible A.P.		Date 08/03/06	

LAND USE AND SETTLEMENT PATTERN IN THE ARCHAEOLOGICAL SUMHURAM – an intensive survey at Khor Rori (Salalah, Sultanate of Oman):report of the field season February 2006.

Mauro Cremaschi & Alessandro Perego Dipartimento di Scienze della Terra dell'Università di Milano

Foreword

The fauna collected in the excavation of Sumhuran (Wilkins 2002) indicate that the subsistence of the town was based mainly on sea resources. However the 17,8 % of the faunal consumption is constituted of land mammals. They consist mainly of domestic animals: bovines (*Bos Taurus*, 27.02 %), caprovides (71.47 % : *ovis aries* 5.09 %, *capra hircus* 7.2 %, *ovis vel capra* 59.18 %), an episodic occurrence of pig (0.05 %), dromedary (0.66 %) and a very little wild animal represented by a gazelle (*gazela* sp. 0.51 %).

On an ecological perspective, these data suggest around the site, beyond the wet environment existing along the khor (Horn and Cremaschi, 2004), a dry open landscape, devoted to nomadic or semi nomadic pastoralism. Relatively high amount of bovines points to in situ breeding and demand for agricultural labours.

Furthermore, recent pollen analysis of samples collected inside the excavations (Mariotti, 2002; Mariotti et al. in press) revealed cultivated cereals (*Triticum* group – *Hordeum* group *proparte*) together with palms (*Phoenix dactylifera*) and therefore cultivated fields and gardens in the surrounding of the city .

Today the area, up to the fringe of Gebel Qara, is deprived of soil suitable for cultivation, because the stone bedrock large dominates and it is coated by thick dark lichens. Fine sediments are limited to depressions or to conical mounds interpreted as the remnant of termite nests. Furthermore the water resource, which is the critical factor for cultivation, is lacking at present, because of absence of precipitation during the dry season. During the monsoon, due to lack of soil and scarcity of vegetal cover, rainfall is instantly removed by underground drainage or runoff. The location of the agricultural land which may have supplied the Sumhuran city and the mapping of the settlement pattern in its surrounding countryside has been the main goal of the 2006 field

season. Beyond scientific purposes, the intensive survey was also minded to support protection of the archaeological heritage in the perspective of the Archaeological park and of further projects of tourism development.

Previous surveys and methods

The area of Sumhuram has been surveyed by Zarins (2001) in 1992, and by one of the Authors (M.C.) in 1996, 1997, 1998 in cooperation with D. Morandi Bonacossi and F. Negrino (Morandi Bonacossi, 2002, Cremaschi & Negrino 2002). During these campaigns the research was more focused on geoarchaeological aspects and on palaeoenvironmental reconstruction. During the present season we performed an intensive survey: the whole area (fig.1) has been covered through transects by car and walking, whose density has slightly changed according to the physiography of the landscape and to the concentration of the archaeological features. More than 1400 sites (fig. 2) has been recorded by means of a pocket GPS and put on the map through a GIS software. The cartography was based on the 1 : 50 000 scale map, sheet Taqah and on the sheets 1 : 5 000 BD – 2484 and BD 2486 of the Omani National Survey Authority. A limited sample of archaeological material has been collected to date the evidence and it has been classified by A. Sedov.

The archaeological evidence which has been mapped

The main monuments which have been excavated in regular campaigns during the last 10 years (Avanzini ed. 2002), are recorded in the map, but not surveyed in details: the Sumhuram citadel, the temple at its north western side, the Islamic citadel on the Inqitat Mirbat. The archaeological evidence recorded in the field is mainly composed of stone structures and of the following site types:

-Cairns; they are composed of large unworked rough blocks (fig.3), smooth edges, coated by lichens, when observable they are disposed in concentric rows. The size may be estimated in 3/5 m in diameter, 0.6 to 1.5 m in height. The cairns appear to have been subjected to weathering post depositional processes, which flattened their upper part. They are systematically associated with microlithic flint industry. A test excavation in a cairn performed during the 1998 season, revealed at the base of the monument, protected by its mass, a silt clay reddish soil. The grave was dug in the soil in the shape of a shallow depression, just a few human bones were found (Cremaschi &

Negrino, 2002) and the grave goods consisted of a corniola beads. A pre – protohistorical age (Late Bronze – Iron Age) may be attributed to these monuments (Zarins, 2001).

-Megalithic monuments ('Dolmens'), (fig.4) they are constituted of standing stones disposed on an elongated , roughly rectangular or circular plan, and are covered with horizontal flat stones. The state of preservation (very thick and very dark lichens coat) is the same of the cairns and consequently they may be attributed to the same age, while in absence of certain correlation to any archaeological context.

-Hut bases (fig.5), they are generally composed of circular structures 3 to 6 m in diameter, the wall is constituted of double stone blocks of large size and the door defined by standing large stones. They are often connected in cluster of several (up to ten) individuals, lined along some morphological feature (rock cliffs for instance); sometime they are clustered by a circular wall of 10, 15 of diameter (compound). This type of structure is quite similar to those described for the site of Taqa (Zarins, 2002). In some cases these structures are on the way to be dissected by present erosion processes and therefore they appear linked to a fossil landscape. They are systematically associated with microlithic flint industry (fig.6) and pottery, decorated with incised lines and circles (fig.7) which, according to Zarins, 2002 may be attributed to the Late Bronze/ Iron Age. It is therefore possibly that a part of these structures may date to the Protohistorical period.

-Flint scatter, concentration of flint artefacts unconnected to stone structures; they consists mainly of the Protohistorical flint assemblage (fig.6), they lye on bedrock surfaces and are often associated to shell fragments, in several cases, *Terebralia palustris*.

-Classical age (walls) buildings. Alignment of squared stones and part of walls, which being constructed by means of squared stones may be related to the classical occupation of the area, further researchers are needed to establish their actual age. They are often associated with amphora fragments and imported pottery (fig.8).

- Pottery scatters, only three sites of this type have been found and they are all in the surrounding of Sumhuram, they consist of discarded fragments of imported amphorae (fig.8), in two cases they are associated to fragments of small stone anchors.

-Shell middens (fig.9), about ten sites of this kind has been recorded , at the base of the Inqitat Taqa and on the top of the Inqitat Mirbat and at it base. They are more than ten metres in diameter and some 1.5, 2 m thick, the stratification is typically composed of shells, fish bones, ashes and charcoal. A part the case of the Inqitat Taqa in which the shell-midden has at its top fragments of pottery and some stone circles, they are very poor of artefacts which are limited to flint tools of the late Protohistorical period. They appear rather different from the shell middens of the II and III millennia BC of the central coast of Oman which are much richer in the cultural context (Hammocks, pottery, fishing net weights). A radiocarbon dating performed on the KR10 shell midden (Cremaschi & Negrino, 2002) gave an age of 2285 + - 85 yr BP , indicating that these structures may be roughly contemporaneous to Sumhuran.

-Stone alignments, they consist of unworked stone, often in vertical position, fitted on the ground and coated of black lichens. They have been found on the alluvial plain surrounding Sumhuran and in the lower part of the wadi converging in it (fig. 10). Sometime they form incomplete and irregular circles 10/15 metres in diameter, more frequently they border the interface between the bedrock outcrop and the alluvium. In some other cases, they cross the wadi valley perpendicularly to the wadi itself (fig.11). Also in the case they are round in shape, they cannot be interpreted as enclosures to keep animals, because too small to be suitable for this purpose. Our interpretation is that they represent a delimitation of cultivated fields and were constructed as dam or barrage with a double purpose: a) to retain and distribute the water input from the small and ephemeral wadi converging to the Sumhuran plain and (b) to keep the fertile soil in order to protect it from erosion. Many similar examples of soil protection are known in archaeological landscape of the Mediterranean and of the Near East. There are no direct means to date these alignments directly, however they appear fossil structures not in equilibrium with the present geomorphologic processes as the braided pattern of the wadi cut and dismantled a part of them. Furthermore they are related to a phase in which the area was devoted to agricultural practices and therefore, notwithstanding a shadow of circularity in this argument, they should be considered contemporaneous to the Sumhuran city in which agricultural practices are attested by pollen analyses.

-Stone circles; similar to the hut bases, they are built up by superposed stones and generally have no standing stones except than in correspondence of the doors. Stones have a fresh aspect, but the surfaces are completely coated by black lichens. Stone circles have been observed in association with green glassed pottery of late Sassanian-Abbasid and Islamic periods (X – XII centuries A.D)

and therefore this sites should be regarded as of Medieval period (fig.12).

-Medieval stone structures, these are the wall structures located on the Inqitat Mirbat amd Taqa; they are associated with medieval glassed pottery. Some cluster of burial of this same age have been found at the base of the Inqitat Taqa and on the erosional surface on the SE fringe of Sumhuram.

-Boat -shaped graves; they consist of large, often megalithic sized, unworked stones arranged in an ellipse-shaped plan, suggesting a boat or ship; the stones are black deeply coated by lichens and have a physical state comparable to that of the hut basis. Apart some scattered individuals, they are concentrated in a large cemetery composed of several hundred graves at the northern edge of the Khor Rori lagune. A radiocarbon dating on a bone from one of these burial (Morandi Bonacossi, 2002) gave the age of 880 ± 50 A.D. and suggested to attribute the cemetery to the Islamic period. However the age of these structure is far to be definitively established: the graveyard includes different types of funerary structures (cairns for instance which may be older) and a lithic Protohistorical assemblage has been found in the area of the cemetery a polished stone axe of giadeite type rock, typical for the Preislamic period, has been collected during the present field season (fig. 6).

-Stone structures and fire places, they are the minor cluster of stones, which derived certainly by human activities, but cannot be dated in any way.

Concluding remark and perspectives

The intensive survey has confirmed for the area of Sumhuram the complete absence of Epipalaeolithic and Neolithic frequentations, which on the contrary are well represented , from the edges of Jebel Qara, few kilometres to the north of the surveyed area. Radiocarbon dating available up to now and archaeological material indicates that the coastal shell middens, and some of the compounds of the Taqa type may be regarded as contemporaneous to Sumhuram. In this case the settlement pattern appears to indicate a sort of specialisation in the exploitation of the different resources, all cooperating to the subsistence of the city: shell middens were devoted to fishing and mollusc gathering, palm garden and irrigated fields in alluvial deposits indicate agriculture around the town and pastoral sites on the limestone hill to the north of the city point to pastoral

management of caprovides flocks. The possibility that the foundation of Sumhuraam interacted with a pre existing indigenous culture (cfr. Zarins, 2001 and Morandi Bonacossi, 2002) is not excluded by the results of the intensive survey. Some of the Taqa type constructions and related funerary monuments may date back to Late Bronze Age or to the Early Iron Age but new excavations supported by radiometric datings are badly needed to prove (or deny) this hypothesis as the material culture (while poorly known) connected to of the Taqa type monuments subsisted for a long period without apparent modification. The settlement of the medieval period consists of the fortresses built on top of both Inqitats by pastoral settlements, and by several group of burials attributed to the Islamic, mainly located at the base of the Inqitat Taqa. At least a part of the large cemetery of ship-shaped graves at the edge of the Khor Rori lagoon, should be related to this same period.

Assessment of the archaeological hazard

The construction of an hotel for developing the local tourism capacity, is planned at the northern side of the Inqitat Marbat. The hotel should be founded on the flat beach rock which connect the coastal cliff to the Inqitat itself. While the beach rock is almost empty of archaeological evidence, this is well represented both to the north of the area and consist of outstanding protohistorical dwellings and contemporaneous monuments and in the south where it consist of the largest shell midden of the area dating back at the same age of Sumhuraam. It is therefore highly probable that the building and its facilities may affected the monuments of the area. In order to promote protection of the archaeological heritage, the following steps should be taken:

- The area has to be topographically surveyed and a project of the building and connected facilities has to be done.
- An archaeological survey of the monuments in the area has to be performed at the same scale of the project.
- The existing monuments should be integrated where possible in the project and preserved , the monuments threatened of destruction should be excavated surveyed and removed.. A more detailed assessment of the archaeological hazard could be done when the construction project will be published.

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Captions

Cover: The structure of the classical age (site 1176/1182) in Khor Rori.

Fig.1 The itineraries performed in the intensive survey

Fig.2 The archaeological map of the surroundings of Summurham

Fig.3 An example of a cairn

Fig.4 An example of a megalithic structure (Dolmen)

Fig.5 An hut base of the Taqa type

Fig.6 The lithic assemblage of the Protohistorical facies. Two tools (sites 1530, 1630) obtained by late medieval bottle glass demonstrate that this chipping technique was used for a long period.

Fig.7 Local pottery associated with the huts of the Taqa type, they may date back to late Protohistorical period.

Fig.8 Imported pottery of the Classical Period: Aegean amphora (site 10); Egyptian amphora (site 1093); Indianware (site 1255, 1296)

Fig.9 Shell midden on the Intiqat Marbat.

Fig.10 Stone alignment damming a wadi bed in Khor Rori.

Fig.11 Distribution of the stone alignments.

Fig.12 Medieval pottery: sassanian-abbasid (site 496), green glassed (sites 1386, 1437, 1296),
graffiato(site1386)

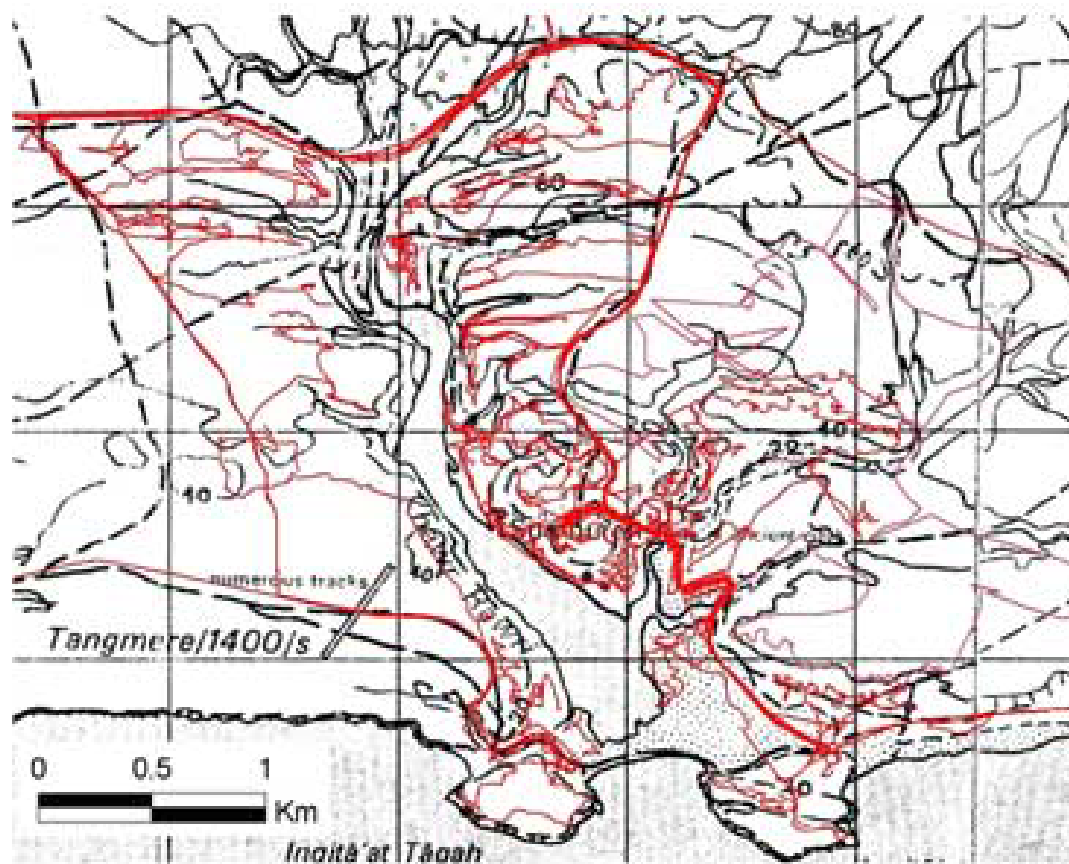


Fig. 1

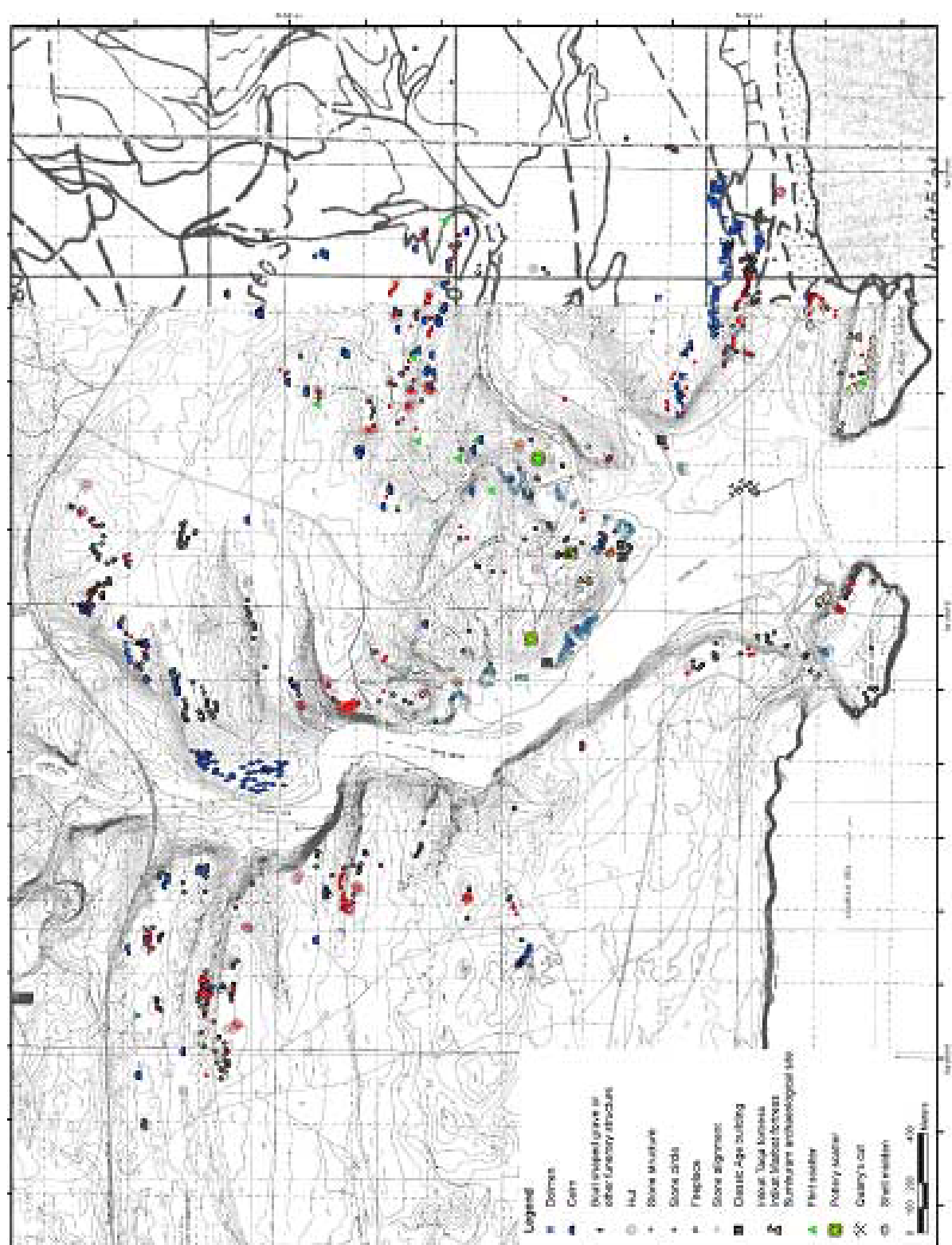


Fig. 2



Fig. 3



Fig. 4



Fig. 5

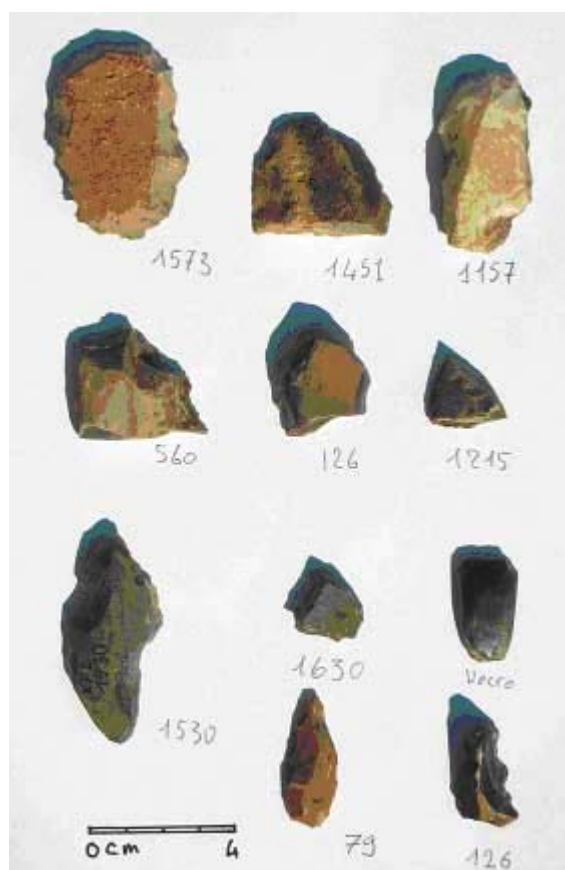


Fig. 6

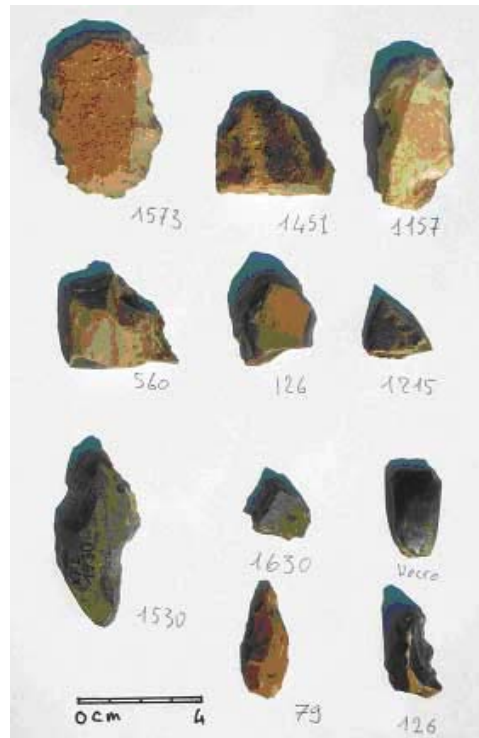


Fig. 7



Fig. 8

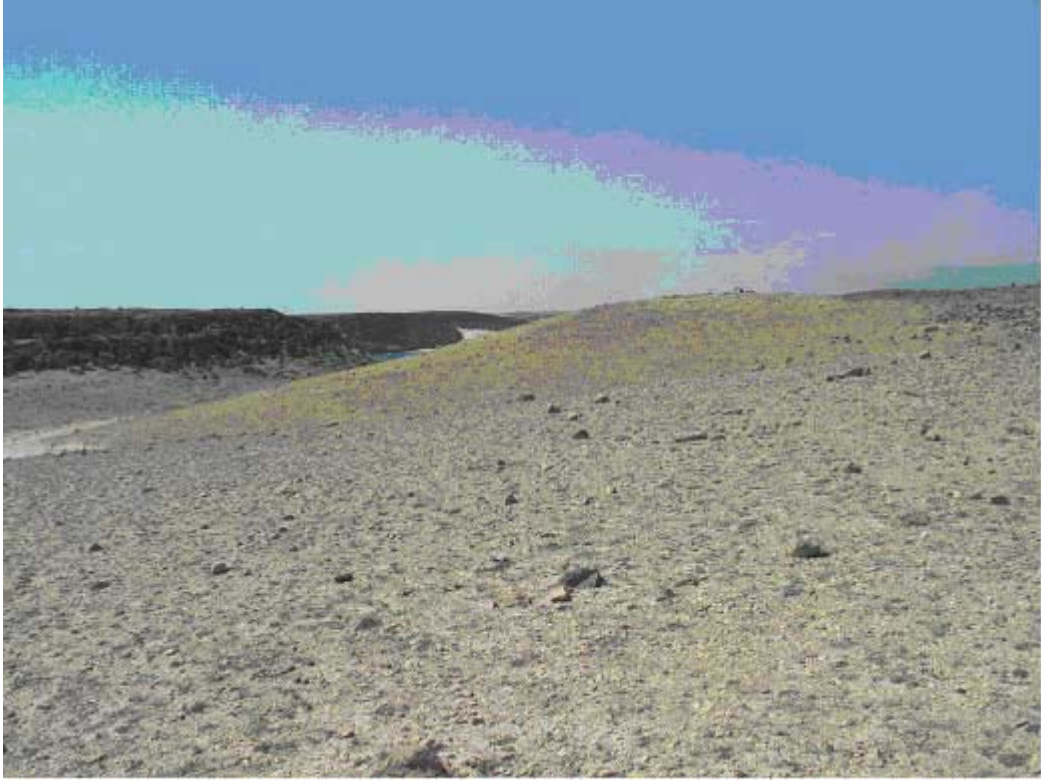


Fig. 9



Fig. 10



Fig. 11

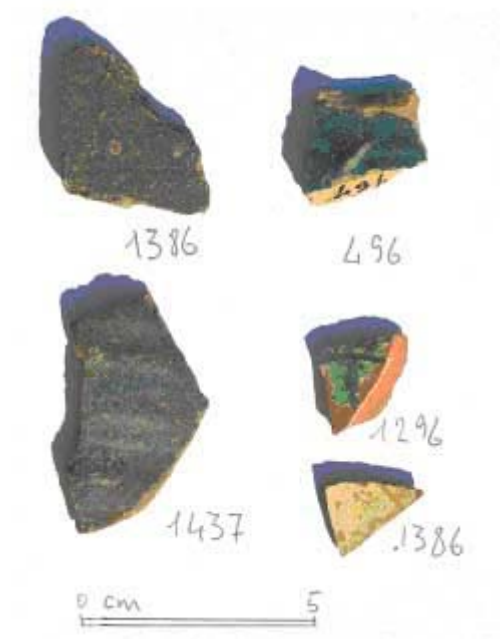


Fig. 12