

IMTO – Italian Mission to Oman

University of Pisa

SUMHURAM

Preliminary Report

January – March 2009 (SUM09A)



ARCHAEOLOGICAL PRELIMINARY REPORT (SUM09A)

January – March 2009

The first IMTO's campaign of 2009 (SUM09A), directed by Alessandra Avanzini, started on 17.01.09 and finished on 12.03.09.

The main goals of this campaign were focused on excavations inside the Monumental Building 1, in Area A and Area F and on restorations on the north-eastern corner of the city wall (A102; A103). The excavations were conducted by prof. Alexander Sedov, as chief-archaeologist, and by dr. Said al Mashani, dr. Michele Degli Esposti, dr. Alessandra Lombardi, dr. Alexia Pavan with the collaboration of Marilena Scuotto and Silvia Zago.

Dr. Said al Mashani was responsible of the working operations in Sumhura; Arch. A. Massa and R. Bonino have been responsible of the topographic survey.

The consolidation and restoration of the ancient masonry structures have been done on the field by eng. Marco Andreini and eng. Andrea Casini.

The Mission guested two teams of botanists: Prof. Mauro Raffaelli and Marcello Tardelli from "Erbario Tropicale", University of Florence and Prof. Marta Mariotti and dr. Cristina Bellini, University of Florence, paleo-botanists involved in the reconstruction of the ancient natural environment.

The work of IMTO has been possible thanks to the collaboration of the Office of the Adviser of His Majesty the Sultan for Cultural Affairs in Muscat and in Salalah. In particular, we would like to thank Ghanem al Shanfari, Said al Mashani, Said al Salmi, Hassan al Jabri and all the Museum's team for their kind helpfulness.

Salalah, 12.03.09

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January- March 2009

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New investigations inside the Monumental Building 1: the original layout (Trench supervisor: Michele Degli Esposti)

As we already planned after the cleaning conducted in SUM08A campaign, the restoration works carried out on the Monumental Building 1 (from here MB) walls during last November and December allowed us to undertake further stratigraphical excavation inside the building (fig. 1-2).

A trench was opened north of walls M265, between this latter and the well, extending northward along the eastern side of the well and following M22's western face; at first this implied the reopening of the trench that we had found aside M22, probably originally excavated by the American mission, even though we have no information about it. This allowed us to pick up the big limestone basin already visible in section (S1277) whose other fragments were collected with ongoing excavations (fig. 3).

The trench has been conducted to a maximum depth of c. 4,5 m. from the lower step of the well's upper structure (named M300), and permitted a partial view of the original setting of the well and of the bedrock laying at its bottom.

First period of occupation (low phase)

The bedrock already showed a descending inclination toward the inside of the MB after the deep sounding conducted in Area A, against the walls M15 and M16, and comparing the foundation level of M17's southern face with its northern's (not reached, but US262 floor already is lower than the bedrock in room A108). Now we have evidence of the fact that the hill formed a deep hollow in this point, slowly reclimbing in correspondence of Area F. Most important, some feature indicate that in an initial phase, before the structure M300 of the well was built, this natural hollow had already been exploited with the purpose of gathering water: its morphology seems to indicate that some cutting of the rock occurred and, most of all, a white plaster, made up of lime and small size gravel, still covers the rock.

This plaster is by no means linked with the later filling of the void between the well and the surrounding walls, since this was obtained throwing rough stones without any type of binder (that's to say US46).

Whether or not this kind of natural cistern was meant to collect water from a previous well feature or just to drain rain water cannot be ascertained so far; the location suggest anyway that it was chosen so that a thinner layer of rock had to be cut through to reach the water table.

Another feature suggests that a first phase could have exploited an original well/cistern placed at the lower level we reached: directly above the cut bedrock, bearing an almost circular shape (actually visible for a very small portion), stands a sort of step realized laying down big roughly hewn limestone blocks, M303. This ring shaped step seems not to be functional to the building of the newly unearthed walls, which in most cases do not insist directly on it. It also seems to go under the base of M265. Furthermore, among the new walls we unearthed, differences are visible that seems to point to their belonging to different constructional phases.

The more ancient ones ("low phase A") are M22, leant against M16, and M313, leant against both the city wall M19 and the same M22;. While the former already was visible in its southern portion, and the new excavation showed that it continues till it reaches the internal face of the city's curtain walls (M19 in this point), the latter has been discovered during this campaign. Its technique is the same as for the other walls, with roughly hewn stones set with clay as a binder and probably some mortar only to hold the external face, with a rough stones filling.

The foundation of M22 lays above some medium size stone scales that were found directly above M303, with a quite uneven setting.

Related to wall M22 is the main evidence that a previous "low phase" existed: in the central part, that's to say the one just brought to light, the wall had crumbled before the filling US46 was put into place. That is clear from the continuity shown by this filling in all its investigated extension and is further underlined by the position of the basin S1277 and its fragments, thrown amidst

US46's stones and located both on top of M22's remains and outside its western's face original limit (fig. 3). Besides, the presence of US46 would have obviously in itself prevented such a collapse.

This gives us a hint on the reasons that forced to such a substantial intervention as is the one witnessed by the raising of the living floor up to US262 floor height: that's to say, avoiding the numerous reconstruction works needed to provide the "low phase" layout with an acceptable stability. The first of this restorations can be related to the building of the L shaped structure M266/M265, meant to sustain the southern corner of M22 (we could define this "low phase B").

In a later moment this structure needed consolidation too, supplied by the erection of wall M315. This wall, unlike the others above mentioned, bears abundant remains of plaster on its faces, and an accurate plastering of its top. Clear resemblance it shows with another newly excavated wall, M314, placed perpendicular to M22 and with a height that is almost half than this latter's. It was meant to prevent M22 from collapsing westward but proved useless. Both M315 and M314 exploit all M303 width, and are accurately laid down above it, thus indicating a greater care in their building than the more ancient walls. These features could be due to the awareness of the weakness of M22's M266's and M265's foundations and dry masonry structure gained through time. These two wall share the same features of the pillar (?) M317, all three constituting a new constructional phase ("low phase C").

M317's top already was visible prior to new excavations, interpreted as a part of the walls alignment M266 (side) – M265 – M316 – M317. A sounding conducted along its western face revealed that its foundation lies far beneath M316's one, thus indicating that even this wall has to be related to some kind of exploitation of the building prior to US46's laying down. As said, M317 bears abundant remains of a strong plaster both on its face and on its uppermost row of stones, just alike M314 and M315.

Second period of occupation (high phase)

The operation defining the passage between the low and the high phase definitely is the building of the impressive well structure M300, with subsequent (and probably kept at pace with) throwing of the filling US46.

A number of floors have been distinguished above US46, defining four other phases inside the building.

The massive filling US46 led to an impressive raising of living floors, the first belonging to the new "high phase" being US262 floor (fig. 4). This layer, made up of white sandstone chips set in a not homogeneously spread mortar, had already been reached while cleaning the area, under a yellowish loose filling. For what will be discussed below, what was previously identified as US262 filling has to be considered as one with US293, since it just covered floor 262 only in its higher part (near the well), when US293 floor was set at the same height of US262 floor, as a result of repeated raisings of one part of the building's living ground.

Actually, in the area investigated this season, the real US262 was characterized by a remarkable amount of ash and charcoal, witnessing repeated burning activities in the building. The fact that the chips constituting floor US262 are of the same material of the stones used for US46 filling bears further evidence for their contemporaneity. US262 floor height is slightly higher nearby the well than it is right at the entrance of the building, that must have always been in correspondence with the zig-zag way A11. Thus, there probably was some kind of step linking these two parts, that could still be buried under the later floors in the area we left untouched (namely the western half of the MB).

While US262 floor was in use as the internal floor of the building, the gap between its level and the outside was overcome by means of the stairs M302 in all their length, consisting of a number of steps we cannot figure out, since it is actually covered by the small platform M301 belonging to a later arrangement of the area. Anyway, we were able to uncover the three lower steps of this stairway; probably three other steps linked the topmost of these to the threshold visible at the end of

A11 (one is actually visible at the bottom of the platform, where some earth has been removed). During this phase the bench hadn't been built yet, and the walls M266, M265, M316 and M317 probably stood higher delimiting an entrance corridor. The most likely possibility for the entranceway leading to the previous "low phase" would be that the stairs M302 actually belonged to a longer stairway; no real sounding has been made under floor 262, but a gap originated by the accidental removal of one big flake showed an empty space that seems to be inconsistent with the presence of further steps. Thus, the problem of the way down still remains, unless we hypothesize the use of a wooden removable ladder.

Wall M316 was erected in this phase, apparently to link M265 to M317, with its northern face laid directly above US46, with no accurate setting; the southern stands at a lower level, in accordance with the different heights of US262 floor.

Above US262 filling, US294 floor was laid down, partially filling the gap between the two parts of US262 floor. This floor covered the lower step of the stairs M302, thus diminishing their overall height. Its filling consists of a rather thick layer of quite loose earth mixed with a remarkable quantity of sandstone scales and gravel, serving as a base for US293 floor. This filling seems to have completely filled the gap between the two parts of the wide area inside the MB; US293 floor is the level above which the benches were first set, and is still *in situ* in the western half of the building, probably with some remains of its filling. Furthermore, the slowly westward biased US294 (filling), obliterated all the visible and the supposed steps of the stairs M302, allowing the erection of the small earthen platform M301, defined on its western side by a regular row of squared limestone blocks. It is worth to remark that the big stone forming the stairs leading above the preserved part of M22 were put into place at least in this moment, and were accessible from platform M301.

After these three phases (corresponding to the three floors in the corridor), identifiable with three different floor, came the realization of floor 264, still visible only close to M21 bottom. This floor, laying above US293, almost reached the height of the lower step of M300 and raised the internal level of the building of *c.* 25 cm.

The currently visible layout of the channel (and of the basin) running from the well to the outside of the building and then of the city walls, is connected in its first phase to floor 293 (as is clear in the north-western corner of the building), when the side of the channel were laid down and the basin stood at a lower level, while the raising of this latter (as we saw, resting on reused fragment of other basins) came into place when US293 and floor 264 were laid down.

Finally, some information has been gathered digging the sounding along M317, apart from its structure. That is, in this point the floor 262 is not resting upon US46, but is underlain by a quite thick (around 30 cm. only for the exposed part) layer of loose light brown – yellowish sand.

Side works in Area A. Rooms A85, A108 and general cleaning

Following the deep sounding dug during the previous campaign, room A108 has been brought back to its first phase layout, dismantling the late wall M242 as well as US260 floor and removing US282, thus bringing to light US282 floor, still very accurately plastered in some portion, though in the majority of its extension severely damaged and disrupted.

In order to get a nice picture of the two adjacent rooms, room A85 has been cleaned from the dust and little stones fallen inside it after the excavation; even the stones originally belonging to wall M241 and collapsed as a consequence of summer 2007's monsoon have been removed (figs. 5-6).

The removal of US260 floor and of US282 revealed the existence of a second threshold for room A108 entrance, that can be correlated with the living phase testified by US260 floor. The door, defined by the eastern end of wall M241 and the corner between M192 and M193, shows a slightly tapered, almost triangular shape, probably due to the westward tilting of wall M193. A similar shape was borne by the door of room A85, but it seems that even in this case it should be related to some tilting of M192.

During these operations a coin (Co51) was retrieved in a corner of room A85, buried in a yet unremoved part of US214, really close to its floor. Five other coins (Co515 to 519) came to light from US282, together with a bronze ring (MB546).

Aiming to allow a clearer understanding of the general layout of Area A and of the central part of the city, more to the south, a general cleaning of the topmost loose earth and heavily weathered tumbled stone has been carried out over a wide area, bringing to light a series of new walls (yet unnamed) immediately south of rooms A108 and A85 and preparing the ground for further excavation between Area F and Area A, west of room A110.

Some notes on the Monumental Building 1 (A. Sedov)

Excavations inside the Monumental Building 1 carried out during SUM08B and SUM09A campaigns revealed several ancient structures in the inner courtyard (A9), which raised some hypothesis about original construction of the well and surrounding structures.

1. The original well was built in the very deep depression of the natural outcrop. For this purpose a circular pit (circular structure with flat stones on the bedrock, M303) with top diameter of *c.* 6 m was dug inside depression down to the water table. The shaft of the well was constructed inside this pit, and original structure was square on top, had low plinth, and towered slightly above the surrounding bedrock, which was the original floor of the entire structure (on the height of *c.* 1.0 m or less).

2. Walls M16, M17, M18, M19 and M22 represented, probably, the original construction surrounding the well. The foundations of M16, M17 and, probably, M18 were placed on the bedrock, on the ridge around the depression (which was rather high in comparison with depression). The foundations of walls M22 and, probably, M19 were placed on the bedrock inside depression, which is rather low in comparison with ridge used as foundation for the other walls. There were additional structures surrounding the well, which foundations were placed on the bedrock inside depression. Some of these walls were carefully made and their internal surfaces were plastered. Most probably, they represent some compartments, which originally surrounded the well.

3. The entrance to the Monumental Building 1 was always located in the wall M16 and, most probably, was originally designed as zigzag passageway (A11). It seems quite probable that the access to the well was through the staircase built from the entrance in western direction between the wall M17 and the partition wall M265 down to the level of the original well. It is not clear was the wall M22 originally used as foundation of the staircase leading on the top of the walls of the Monumental Building 1 or it was used for such purpose later. For the moment, the first possibility is more probable.

4. It seems that from the very beginning the weakest point of the construction of the Monumental Building 1 was the northern wall M19, which foundation was placed above long depression running from the well's shaft towards the northern edge of the outcrop on which the ancient city had been built. The foundation of the wall was not strong enough and M19 started to collapse rather soon after its construction. In this case the ancient builders were obliged to strengthen the wall M19 as well as other walls of the Monumental Building 1 by constructing the additional external walls (M24, M25, M167 to strengthen wall M19; for other walls see, for instance, the wall M18, which was strengthened by constructing the additional "skin" M276; see report of Chr. Darles from SUM08B). At certain point they were obliged also to re-arrange completely the design of the inner courtyard (A9).

5. To re-arrange the design of the inner courtyard, the ancient builders significantly raised up its level – now it was even above the upper step of the stairs constructed along the wall M17 (US262floor, US294floor, US293floor). The space between original (bedrock) and upper floors was filled with rough stones mixed with compact loam (US46). The inner partition wall M265 was converted into a sort of parapet marking the passageway from the entrance for the visitors. A stone bench was built along the walls M17 and part of the wall M18. The shaft of the well (structure M300) was also significantly raised up (there is a little irregularity in the masonry of M300 in its lower part, which could mark the level, from which the final structure of the well was built up), stone basin and altars were placed around the well, and drain channel was constructed through the wall M18. It is not clear did this channel exist during the first constructional phase of the

Monumental Building 1, and if not – how was the water drained out from the inner courtyard A9 during the first constructional phase? The final phase of rearrangement of the inner courtyard is represented by the construction of the wall M20/M21, again to strengthen the northern wall of the Monumental Building 1.

Area A (trench supervisors A. Pavan and S. Zago)

During SUM09A excavations in area A have been carried on with the purpose of checking the probable existence of a staircase/platform connecting the space on the southern side of the Monumental Building (square h9) with the top of the structure (fig. 7). The researches did not allow to confirm certainly this hypothesis - also if a staircase leaning on M17 has been brought to light (see below), but let us discover numerous rooms, belonging to different phase of construction and reconstruction (fig. 7a). The comprehension of the space and its evolution during the various building phases has not been completely clarified: it will be necessary to remove the later structures to have a better understanding of the architectural lay-out of the area and this will be done during next campaign (SUM09B) after the completion of the topographic survey.

Considering the relations among the walls and the stratigraphy at least three phases – with some sub-phases – have been individuated in SUM09A and they will be described here down.

The area extends on squares h8/9 and i8/9 for a total surface of *circa* 60 sq. meters.

First phase (sketch 1)

During the first phase we suppose the existence of a wide open space, voted to productive activities, delimited in the eastern side by wall M237, belonging to room A108 and in the northern side by the massive southern wall of the Monumental Building 1, M17. The sector on the west -which later on will be closed by room A109- was an integral part of the area, as attested by the presence of the installation US323 (fig. 8), connected with the two basins in the western short side of the niche in M17. At the moment this relation is not perfectly clear because of the presence of the small partition wall M319 which will be demolished during next campaign. However, considering the elevations of the two floors, the position of the basins and of installation US323 and, above all, the existence of a channel of which just the plastered gutter is visible, the two elements demonstrate a clear connection. The area extended also southward, as attested by the remains of a big stone basin reused for the foundation of the later wall M254, but to define the southern edge we need to enlarge the excavation area, removing the later structures, as planned for next mission.

We supposed that all the space was totally plastered (floors and walls) from the first phase also if the very good preserved lime-covering visible on the lower part of M17 seems to have been a later remaking, since the area was in used during a considerable period of time.

In the first phase of occupation the activities should have been connected with water (dyeing?) as attested by the following elements: basins along the short side of the niche in M17, installations in the eastern side, basins in the western side and the fragmentary stone basin in the southern one.

In the niche of Monumental Building two couples of basins have been found but, of the four tanks, just one – in the north-western corner- is preserved (fig. 9). The couples of basins have a total length of 1.50 m, for a width of 0.94 m. and an height of 0.40 m. The partition wall was 20 cm in thickness with an internal depth of 22 cm. The structure was in mud-bricks, covered by a thick layer of water-proof plaster. No holes or channels coming from the basins have been noticed but this could be due to the bad state of preservation of the tanks.

Installation US323 is now not perfectly understandable because of the presence of the foundation of wall M251 and of the staircase M320. Both the structures have been built later than the installation US323, covering the draining channel for the water. It probably run along M17 and joined the draining channel coming out from the well to flow definitively outside the city walls.

Structure US323 is circular in shape and covers a total surface of 0.80x0.80 metres. The central part is now in a poor state of preservation while the external channel, made from mud-bricks and covered by water-proof plaster is very good preserved. A small truncated-conical pillar (diam. top 14 cm; h. 19 cm) is placed below the foundation of M251 and was part of the installation.

Another very interesting productive structure has been discovered in the eastern sector of the open space (fig. 10). It's a basin, also in this case completely plastered, discovered near wall M237 and

almost square in shape (measures of the long sides: 1.43 and 1.17 metres) with, inside, a kind of platform in mud-bricks, measuring 0.68x0.40 m.

Probably a second structure, specular to this first one, was placed northern from it as it seems attested by the traces of plaster and mud-bricks still visible. Unfortunately it's very difficult, at present time, to make hypothesis about the function of these basins.

The arrangement of the space southward in this first phase was not clarified during SUM09A campaign but the fragmentary stone basin re-used in the masonry of M254, leaning on a floor placed at the same elevation it's a clear confirmation of the contemporaneity of the installations. The visible dimensions of the basin are the following: l. 1.74 m; h. max. of walls. 0.53 m.; th. 0.10-0.16 m.).

Second phase (sketch 2)

During the second phase the space was subjected to various re-arrangements and the area was not anymore completely open but divided by partition walls which changed its architectural lay-out. Now it's possible to recognize a room in the northern part (A121), two spaces dividing the main central sector (A122 and A123), a room in the western side (A109) and one or two rooms in the southern side (A128 and A133?).

A121 was closed southward by the partition wall M305 (total length 4,17 m.; h. max. 1.36 m.; w. 0.65 m.) with a door, enabling the entrance to the space, placed almost in the centre (w. 0.64 m.). Wall M305 was built according to a different construction technique with only one face (and not the usual two - internal and external-) completely covered by plaster. On the eastern side M305 ties to M304 (which leans to the older wall M237), built with the same technique (measures: length 4.60 m; h. max. 1.5 m.; th. max. 0.54 m.).

We are not able to say if the activities performed during this second phase have been changed: in the northern sector (room A121) the basins should have been used along the time, also if in the north-eastern tank (almost completely destroyed) we found the complete ring-bases of two storage jars (type I.2.6) which could be put in relation with this second phase of occupation. The plaster in M17's niche was probably replaced and the two irregularly circular holes (diam. 14 cm; diam. 12 cm. *circa*) visible in the eastern part of the niche, placed at an height of 1.20 m from the floor seem to be connected with this second phase. They could be used to sustain wooden poles or straws for a kind of roofing or, most probably, just to fix some objects inserted in the wall.

For what concerns the central space of the area in this second phase we argue it was divided in three different rooms: A122, A123 and A109 from east to west. Rooms A128 and probably room A133 (to be excavated) occupied the southern part.

A122 was delimited in the northern side by the eastern sector of M305, in the eastern side by M304 and in the western side by small wall M334 (measures: l. 0.73 m.; h. 0.44 m.; w. 0.46 m.). In the southern side it was closed by wall M253 (l. 3.10 m.; w. 0.30 m.) with a quite large opening toward M249. It's not possible to say if the plastered basins were still in use: probably some of them maintained the original function –also if with some modifications - while the northern section (closed by M334 and M305) was re-arranged. The small base for pillar recognized near wall M304 (dimensions: diam. 22 cm; h. 5 cm) could belong to this second phase.

Some maintenance works should have been connected with the construction of wall M253 and probably the frame of the basin in the southern portion of A122 was a little bit raised. The excavation of the part joining the basin to wall M253 let us to understand the construction technique used for this structure: the basin was delimited by a series of regular stones of medium size (five visible), placed in semi-circular way and with a total length of 1.30 m, covered by mud-bricks and very compact earth.

Room A123, delimited by walls M319, M305 and M334, is not characterized by installations or findings able to clear its function. A large amount of animal bones have been discovered on the floor (US299 floor, see below), which let us to argue it was connected with food preparations or meal consumption.

The most visible changes concerned the eastern part which was now partially closed by wall M319 (i.e. room A109). The connection between the basin in A121 and the installation US323 was for sure obliterated because of the presence of walls M305, M319 and M251 founded above the structure.

In this phase the double staircase (M320) leaning on M17 and directed westward and eastward has been built (fig. 11) but it has to be used just for a short lapse of time as attested by the construction of wall M251, built almost at the same level. The staircase, of which 13 steps have been discovered – 5 for the eastern ramp, not completely excavated, and 8 for the western one - has a total length of 2.90 m and a maximum width of 0.75 m. The maximum height reached in the eastern side is 1.70 m from the first step; 0.8 m. in the western side. At the moment it's not possible to understand where this stair was directed and which floors it joined, but the idea it was used to reach the upper part of the Monumental Building is very attractive. Just with the enlargement of excavations towards area F, digging down in square h8, it will be possible to have more information, but we were not able to perform it during this campaign because of logistic reasons.

In a sub-phase of this second period walls M333 and wall M321 are supposed to have been constructed as well as room A123 was closed, southward, with irregular rows of mud-bricks placed directly on a layer of rather compact soil (*sketch 4*).

M333 is a sort of retaining wall built in the corner between M304 and 253. It stands on the external frame of the basin in A122 and it's made from sand-stone blocks, quite irregular, with limestone blocks of small dimensions and mud-bricks. It seems to have been built when the corner between M304 and M253, probably weak because of the construction technique, started to collapse.

In the meantime a secondary intervention was made in A123, closing the space between M319 and M247 (belonging to A110) with some limestone blocks placed directly on a rather compact accumulation of soil: it's wall M321 (*sketch 5*).

It seems sure that this intervention was performed contemporary with the closing of A123 southward as confirmed by the stratigraphy (both have been built on US299).

Third phase (sketch 3)

A general and complete re-arrangement concerned the area in this phase. The space delimited in the second phase by walls M319, M17, M237 and M253 was not more occupied by rooms but just by pits, which have been named with the denominations adopted for the rooms (A121, A122 and A123). The presence of pits is testified by the existence of "walls" which have been plastered but without a masonry structure below.

Probably after a period of obliteration, in a quite later phase of the occupation of the city, back from Monumental Building 1, the soil have been dug creating three big pits which could be used to store foodstuff or similar products. The plaster (except in the case of walls M305, M17, M304 and M253) was placed directly on the mud walls and for this reason it was not preserved.

The roof of these pits was made by straws of trunks as attested by the impressions left on the plaster discovered at a maximum elevation of 29.34 between the two pits A122 and A123. The same system was still used, not so many years ago, in Yemen (figs. 12-13) (Arch. Ch. Darles, personal communication).

After the completion of excavations in h9, we decided to enlarge the soundings southward making a trench of 1.3x8.9 m. from the corner between M248 and M249. We completed the excavation of room A128, while we did not reach the foundation levels of room A133, stopping at US316 floor (28.90) also in the southern portion of the trench where a collapse of stones (US325) has been removed.

A128

Room A128 was delimited on the northern side by wall M253 and its prosecution, westward, made from mud-bricks, on the eastern side by wall M254, on the southern side by M322 and on the

western side by wall M249. Walls M254 and M322 are tied each other but they lean respectively on M249 and M253, so they were built contemporary but later than the structures A110 and A122/123. While the external faces are well-preserved, the internal ones are in a poor state of preservation. Wall M254 employed, for its foundation, the part of the stone basin mentioned above (l. 1.74 m, h. 0.53 m, th. wall. 0.10-0.16 m.).

A133

Eastern from A128 we proceeded with the excavations of A133 delimited in the northern side by M253, in the western side by M254 and in the southern side by the two steps M331. Westward the room was closed by a building not yet named.

A110

While excavations have not been undertaken in room A110 during SUM09A, the researches performed during this campaign allowed us to clarify the layout of its eastern wall M249 and its relations with the northern one, M247.

The amazing discovery was that the two walls do not have any relations and if they seem related to each other on the top, below they neither lean to each other. It's possible that on the corner a pillar or column, circular in shape, was placed as attested by the shape of the hollow space between the walls.

Stratigraphy (sketch 6)

Considering the numerous rooms excavated in area A during this campaign we decided to describe the stratigraphy in relations with them. A reconstruction of the absolute dating of the different phases described above will be possible only after the study of the material.

A121, A122, A123

We started the excavations in the area delimited by walls M255 (phases of later premises A109 and A109A – see report SUM08B -), M17 and M237 removing US254 floor covering all the area at an average elevation of 29.90. The space below this floor resulted characterized by two different layers: US289 (sup. elevation: 29.80, inf. elevation: 29.40), concentrated in the niche of M17 and a little bit southern, and US290 (sup. elevation 29.80, inf. elevation 29.26) in the southern portion of the space. US289 is a brownish layer and considering the quantity and the size and shape of the stones found in the layer (medium/big size limestone blocks good worked), it has been interpreted as a collapse. Traces of plaster, not interpretable as floor, with a circular hole on the surface have been individuated on the lower part of the layer. Any kind of object has been found in the layer. US290 is instead characterized by an accumulation of earth mixed with pottery and bones. On the lower part (sup. elevation of US295: 29.34) numerous traces of plaster are visible, with concave impressions (signs of straws) to be related with the roofing of the pits above described, spread, above all, in the western part of the layer, and a fragment of channel in very bad state of preservation. Four coins (Co520, Co529-Co531) and a fragmentary crucible (G123) have been found in the layer.

The succession of US individuated in the various pits was not marked by the presence of floors but by thin deposits of ash.

A121

All room A121, below US289, was characterized by an homogeneous medium-compact layer, US291 (sup. elevation 29.40; floor 27.80), brownish in colour with pottery, fragments of plaster and quite a lot animal bones. Some coins (Co521, Co525, Co528), four fragments of crucibles (G122, G124, G126, G130), bronze objects such as rivets (MB547) or rings (MB550) or with unclear function MB548, MB549 have been found together with fragments of soft-stone vessels (S1286,

S1287, S1288, S1289) and a fragment of millstone. The lower part of the layer (40 cm *circa*), in correspondence with the basins or their remains, is more compact and shows traces of lamination but colour and composition are the same. On the north-eastern corner of the room, above US291 floor, two jars (type I.2.6), with just the ring-bases preserved, in situ. The elevation of the floor in this room is about the same that in the near room A108, where US 282 floor is placed at an elevation of 27.84.

A122

Rooms/pits A122 and A123 were both covered, in the upper part, by layer US290, already described above. Below this stratum we individuated US292 (sup. elevation 29.40, inf. elevation 28.65), a medium compact layer with small crushed fragments of plaster spread in all the filling. Lenses of ash, pottery, shells and animal bones were scattered in the stratum. One coin (Co532), fragments of soft-stone vessels (S1281, S1282, S1292 and S1293), part of a millstone (S1291) and a whetstone (S1278) have been discovered as well as quite a large amount of iron slag (kg. 3.30) and some probable slag of bronze.

US292 covered US296 and US300. The first one (sup. elevation 28,65; inf. elevation 27.90), more compact than US292, was composed by earth, ashy lenses, charcoal and plaster flakes. Some pottery shards, shells and animal bones have been discovered together with fragments of soft-stone vessels (S1294, S1295) and a stone lid (S1299). On the top of this stratum we found quite big blocks of plaster with impressions (straw mats?), probably collapsed from the top and concentrated in the northern part of the space, near wall M305.

In the northern part of A122, US292 covers also US300 (top 27.90, floor 27.80), a very compact layer with some broken mud-bricks and very hard earth. Probably it could be the preparation of the second basin (broken and not preserved), placed northern from the one still *in situ*.

A123

In room/pit A123 the sequence of US, below US290, is the following: US295 and US299.

US295 (sup. elevation 29.34) it's a medium-compact brownish layer composed by earth, ashy lenses, animal bones, pottery and shells. Fragments of two decorated shell lids (Sh327, Sh329), as well as a coin (Co53) and an oil lamp (Sh330) have been discovered. We signal, besides, a great quantity of iron slag (Kg. 3,5). Under US295, we discovered US299 (sup. elevation 28.32) with the related floor (27.80), characterized by the presence of pottery and by a large amount of animal bones and numerous shells (family of *Cymatium*).

The floor is compact and brown in colour: traces of a fireplace and a big bone of a mammal have been found near wall M305. For what concern the small finds just a fragment of soft-stone vessel (S1279) and a fragment of glass vessel have been found (G125).

A109/A109A

Rooms A109 and A109A are two small premises belonging to the quite late building BA8, individuated in SUM08B. Excavations during this campaign started with the removal of US248 floor placed at an elevation of 29.80 m.

The two rooms were divided by wall M251 (sup. elevation 29.90, inf. elevation 27.72), which was dismantled during SUM09A, leaving just the first row of stones used as foundation: for this reason we named the US in A109 and A109A with different denominations even if they are equal.

In room A109A, below US248 floor (29.80), we found US298 (sup. elevation 29.80, inf. elevation 28.87), a medium compact layer with pottery, bones, shells and stone of medium-small size. US298 is equal to US297 (sup. elevation 29.80, inf. elevation 28.89) in room A109. Wall M250, probably built in a later phase and used to sustain structures in perishable materials, was in use contemporary with US297, and its foundations were individuated on the upper part of US304. The wall was completely dismantled during SUM09A in order to reach the most ancient level of the rooms. Any object has been found in US298 as in US297.

Covered by US298 and US297 we unearthed respectively US303 and US304, both with an inferior elevation of 27.72. Also in this case the US present the same kind of composition, even if US303 is just a little bit more ashy. US303 cover completely staircase M320 (sup. elevation 28.88, inf. elevation 27.72), but the same kind of stratum seem to be recognizable also below the staircase. This makes very difficult to formulate any hypothesis about the moment in which the staircase has been built and its relation with wall M251.

Beside pottery, bones and shells in US303 just a mortar (S1306) have been unearthed; in US304 quite a large amount of small finds have been discovered: some bronze objects (the finger ring MB551; the nail MB552; the plaque MB553), a shell pendant (Sh331), a probably iron handle (MI143) and some stone tools (the rubbing stone S1300; the whetstone S1301). One coin (Co541), a fragment of crucible (G129) and a soft-stone vessels (S1325) have been found.

Below US304 a new stratum with related floor (27.54), US312, has been discovered. The consistence of the layer is not homogeneous. In the eastern part – in correspondence with the plastered installation placed in the corner between M251 and M255 (i.e. US323) – it was compact and brown and covers US 323 (sup. elevation 27.83, inf. elevation 27.54). In the western part instead it covers a kind of pit (US317) placed in the corner between M247 and M270, with ash and charcoal (a sample of charcoal have been taken) which stands on US312floor. US312 was, then, the accumulation deposited after the obliteration of US312floor on which stands both walls M251 and M320.

A128

We started the excavations of the area removing US249 – lighter brown-greyish - not very compact, already unearthed during SUM08A and discovering, below the floor, at an elevation of 29.63, US305. This is a medium-compact layer with traces of ash and stones of small-medium size. The related floor, reached at an elevation of 29.37, is rather compact and presents, in the centre, a yellowish lens, with softer consistence and white traces (plaster?) scattered all around. Beside pottery, marine shells and animal bones, a bronze object (MB558) has been found. Below US 305 we unearthed US307 (sup. elevation 29.37, inf. elevation 28.74), medium-compact in consistence, with masonry blocks of medium-big size found above all near the walls and probably coming from the collapse of the walls M254 and M322. Under US307 we discovered US324 (top 28.74; floor 28.30), softer in consistence and grey-brownish in colour with fragments of mud-bricks, few amount of animal bones, few marine shells and pottery (also some amphora shards). US324 covers US327 (top 28.30), similar in colour and consistence to US324, but with a bigger concentration of stones of medium dimensions and crumbled mud-bricks. The related pavement, US327floor (with an elevation which varies between 27.97 and 27.92), is compact in consistence and graysh in colour. On it stands a large amount of stones, probably the remains of some kind of installations. Near by wall M322 a sandstone block (measures: 0.57x0.24x0.14) which could be connected with the couple of steps M332 leaning on M322, has been found as well as a sandstone platform (0.56x0.67x0.90)

A133

Works in A133 started with the removal of US203 (top 29.61), already excavated during previous campaigns (SUM07B and SUM08A) – a garbage pit with large amount of ashes, charcoal, animal bones and fish bones, reaching the floor at an elevation of 29.33. The pavement has been individuated not just inside the room but also outside, in the southern trench partially investigated during SUM09A.

Below US203, US316 has been discovered. It's rather compact in consistence with pottery, animal bones and shells. Very few objects have been found in layer US316: a whetstone (S1310), a coin (Co541) and an iron rod (MI144). This layer has been excavated until we reached the floor, at an elevation of 28.90.

Area F (trench supervisors A. Sedov and M. Scuotto)

During the 2009A season in Sumhuram (17.02 – 02.03.2009) the excavations at the Area F were carried out in the squares g/7-8. We succeeded to remove several strata in the street A80 along the wall M18/M276 of the Monumental Building 1, to open part of the perpendicular street A129, and to excavate several rooms of the building BF6.

Streets A80 and A129.

The street A80 was closed from the south by the walls M297 and M298 (excavated during SUM08B season), leaving between them a narrow entrance, 0.7 m wide, which gave the access to the square between the Monumental Building 1 and the city-wall M23 with drain channel A12. Both walls were constructed from the US187floor, and represented the last constructional phase in this part of the city. The width of the street A80 was *c.* 5.0 m (between wall M18/M276 of the Monumental Building 1 and wall M188 of the building BF6) and *c.* 6.0 m (between wall M182 and M18 of the Monumental Building 1); its length was *c.* 9.2-11.3 m (between offset of the city-wall M23 and walls M297 and M298) (fig. 14).

Perpendicular street A129 run from the SW corner of the Monumental Building 1 in west direction. It was 2.5-2.7 m wide, and was traced on 5 m length. It was located between walls M297 and M298, and the northern wall M307 of the new building BF7 (see report of A. Lombardi). The cultural deposits in the street A129 were identical to the deposits in the street A80: US80 on the top, and two strata below, US187 and US196. During excavations, the walls M297 and M298 connected with US187floor were removed in order to open the external structures of the building BF6 (see below). In general the surface of the US187floor was rather soft, but near the corner of the Monumental Building 1 – rather compact including flecks of lime-plaster. The following small finds were discovered in US80: fragment of soft-stone vessel (S1312), stone loom-weight (S1311), and bead made from shell (Sh334). Two small finds were discovered in the street A129 in the stratum US196: oil lamp made from marine shell *Chlamys townsendi* (Sh332), and bronze coin (Co538). One more find was discovered on the US196floor next to the exterior of the wall M324: fragment of gutter with stylized bull's head (fig. 15), probably part of stone offering table (S1307).

Building BF6.

Ruins of the building BF6 are located to the west of the Monumental Building 1, between this structure and a huge open square in front of the temple *intra muros* (building BF3). On the north it was separated from the city-wall M135 by the street A68, on the east – by the street A80, and on the south – by the street A129. In the present season we were succeeded to open its eastern part with three internal and two external rooms.

Rooms A125 and A130. Complex of two external rooms was built against the eastern walls M188 and M295 of the building (fig. 16). Room A125 is 2.15x2.50 m in size. The entrance, *c.* 0.65 m wide, is located in its SE corner. The floor of the room (US308floor), placed at an elevation of 27.76 m, was made from very well packed mud mixed with flecks of lime-plaster (fig. 17). Thin stratum (*c.* 10 cm thick) above the floor was designated as US308. It consisted of very hard compact light brown loam mixed with flecks of charcoal and fragments of lime-plaster. The foundations of the southern, eastern and western walls (walls M324, M323 and M299 accordingly) were made from vertically placed sandstone slabs. The foundation of the northern wall M325 was made from rough stones placed in two rows. All walls were 0.4-0.45 m thick. It seems that the upper parts of the walls, above the foundations, which were not very high (probably, *c.* 0.5 m), were made from packed clay or bad quality mud-bricks. Interior and exterior of the walls were carefully plastered – fragments of plaster were found in abundance both inside and outside of the room. There were two layers of plaster – the rough grayish layer, *c.* 4-5 mm thick, which outer surface

was covered with incised net, and very smooth thin (c. 1.5-2 mm thick) white external layer with glossy surface.

The room A130, adjacent to the room A125 from the north, was very badly preserved. Probably, it was similar in size – c. 2.15x2.6 m. Only one row of external stones preserved from the foundation of its eastern wall, M189. The foundation of its western wall M326 could be only traced, while the northern wall was demolished completely. We may suppose also that the northern wall was not existed and the room had a wide opening towards the north. It might be also that M325 was not a wall, but a sort of step dividing two adjacent rooms – traces of a wooden beam covered with mud were found above stone foundation of the wall M325 (fig. 18). Two circular (35 cm in diameter) stone bases for pillars (?) were found on the floor of the room close to its SE and SW corners.

A row of four square stone bases (26x26 and 30x30 cm in size, and c. 25 cm high) for pillars was found against exterior of the wall M323 of the room A125. They were placed on the US196 floor of the street A80. Traces of wooden trunks of pillars, square in section, were found on the top surface of the stone bases (fig. 19).

It seems quite probable that both rooms A125 and A130 constituted a sort of external light structures with roof supported by wooden pillars on one side. It might be also that such construction was erected close to the main entrance of the building BF6.

Room A126. It is internal room of the building BF6 occupying its SE corner (fig. 20). The room is rectangular in layout, and 1.75x2.30 m in size. The entrance, c. 1.0 m wide, is located in SW corner. Two rows of rough stones and flat sandstone block placed vertically above them blocked the entrance (wall M327). There are traces of lime plaster on the interior walls especially in the SE and NE corners of the room. The room was delimited by walls M296 (from the south), M295 (from the east), M330 (from the north), and back side of staircase M328 (from the west). The wall M295 is projecting to the east and not followed the line organized by the eastern external wall M188 of the building BF6 and the corner of external wall M296, which is the southern external wall of BF6. It shows that probably originally the room A126 had a wide opening towards external room A125, and only later was closed from the east. The floor of the room (US314 floor), placed at 27.78 m of elevation, was made from hardly packed mud mixed with flecks of lime-plaster. A stone block, 22x24 cm in size and 18 cm high, occupied the NE corner of the room. The filling of the room was designated as US314, and consisted of crumbled compact brownish loam mixed with medium and small size stones, fragments of lime-plaster (from the walls), flecks of charcoal, few animal bones and limited number of pottery fragments. Fragment of large limestone mortar (S1309) was found close to the NE corner of the room (probably, once it stood on the stone blocked place in the corner).

Room A127. It is adjoining room located west of the room A126 (fig. 21). It was only partially excavated. The width of the room is 1.0-1.1 m. A staircase M328 occupied the NE corner of the room. Its width is 0.9 m, and it consisted of five (?) steps made from flat sandstone blocks. The height of the staircase (from the floor) is c. 1.0 m. Steps are 20 cm high, and 20-22 cm wide. The northern wall of the room, M330, against which the staircase was built, was constructed from mud-bricks, 25x25x5-7 cm in size. Probably the main entrance to the building BF6 was from the street A129, where it was traces in the wall M296. It has a threshold made from sandstone blocks. The excavated width of the entrance is 0.6 m. The floor of the room (US319 floor) was made from hardly packed mud. A circular base, 35 cm in diameter, was discovered on the floor of the room, near the main entrance. The filling of the room was designated as US319, and consisted of very compact brown loam mixed with fragments of lime-plaster, flecks of charcoal, and very limited

number of animal bones and pottery fragments. Fragment of small bronze plaque (MB557) was found in the stratum US319.

Room A131. A small part of rectangular room located north of the rooms A126 and A127 was excavated this season. The length of the room is *c.* 2.9 m. Its southern wall was M330, and its western wall – M329 (only small part of this wall was excavated). The top part of the floor of the room, designated as US322, consisted of crumbled mud mixed with medium size stone.

Future research

In the next seasons it is absolutely necessary to complete excavations at the Area F in following directions:

- 1) to complete excavations of the building BF6, which occupied a rather important place in the western part of the ancient city closing the “market” square in front of the temple; it seems it was one of the earliest buildings in the city and its state of preservation (the northern wall of the building, M 180, preserved on the height of more than 3.0 m) looks very promising;
- 2) to continue excavations of the street A129, which help us to understand how the access to the temple’s square from the Monumental Building 1 was arranged.

Area F: squares h7-8 (trench supervisors A. Lombardi and M. Scutto)

During the 2009A campaign in Sumhuram (07.02 - 13.03.2009), in order to clarify the relation between the two main sectors of the town (Area A and Area F), we opened a large trench from the western limit of the Monumental Building 1, aligned – in south direction – with the building BA8. The trench – measuring 5x5 m during a first working phase – has been successively enlarged of others 4.5x6.6 m towards west, up to rejoin with the other investigated sector in g7-8 squares (see report of A. Sedov).

The excavations revealed a large portion of a new building (BF7), placed in the southern part of the trench; the southern sector of the street A80 and a large portion of the crossing street A129. In addition, the SW corner of the Monumental Building 1 has been completely brought to light (fig. 14).

Streets A80 and A129.

The excavations of southern part of the street A80 and the western part of the perpendicular street A129, revealed the same stratigraphical sequence already traced in Area F during the previous seasons (*sketches 6, 7*). The unique difference is constituted by the presence of the new top stratum US302, covering the known occupation level US80 (now called US306). US302 is a destruction layer with a large amount of stones and blocks collapsed from the Monumental Building, mixed with aeolian deposition. Just in the eastern part of the trench the stratum ended in a compacted irregular floor with evident traces of occupation: a circular fireplace, widespread traces of burning, animal bones, marine shells and a few pottery shards. Inside this stratum a bronze coin (Co535) has been found.

Both the streets A80 and A129 have been excavated until the same occupation level: the compacted floor US313 (=US196). The elevation of this floor is varying between 27.87 (in A80) and 27.72 m (in A129). The street A129, with a maximum width of 2.90 m, was traced for 9.30 m, in western direction.

At *circa* 0.30 m west to the corner of the open room A125 of BF6, two symmetrical pairs of bases of columns, compacted inside the floor, have been unearthed. They were 0.30-0.35 m in diameter (just one of the bases was irregularly squared and not rounded). We can suppose that, during this constructional phase, the large street A129 linking the Monumental Building 1 with the Sin temple (BF3) was regularly bordered by pairs of columns, showing a monumental appearance (Fig. 22).

Building BF7.

The new building BF7, developing parallel to the street A129, has been only partially brought to light. During this campaign we were able to unearth its north-eastern part (7.60x3 m), delimited by two perimeter walls: M306 and M307. The northern wall, M307 (0.55 m wide), was traced for 7.60 m; the eastern wall M306, with the same width, was unearthed for 3.0 m. Both the walls, clearly tied at the N-E corner and preserved for a height of 1.70 m, were built with medium size roughly worked stones tied with a clay mortar. Their masonry appears not much careful and the walls faces (especially the internal ones) are not straight. In addition, the northern wall M307 is completely deformed, especially on its western portion. To judge from the evidence unearthed up to now, BF7 was a modest private house.

Neither the entrance from the exterior, nor any internal doors connecting the various rooms, have been found. The entrance of BF7 was probably located on the southern (unexcavated) side of the building; it is difficult, in fact, to imagine an access to a house of this kind placed along the monumental street A129.

The building BF7 revealed three aligned rooms: A124, A134 and A132 (Fig. 23).

Room A124. The larger room A124, occupying the N-E corner, was 3.0 m long. It was delimited by the two perimeter walls M306 and M307 and, at the western side, by the partition wall M338. This wall (0.40 m wide), very badly preserved, was constituted by a single row of roughly worked stones.

The room A124 was filled by three different layers (see *west section*): a thick destruction layer (US310), composed by a large amount of collapsed stones of medium and small sizes, soft earth, iron slag and fragments of mud bricks. Unearthed also a few pottery shards and a fragment of limestone basin (S1329). US310 covered another stratum (US311), that together with some collapsed stones, contains the first traces of occupation, with thick ashes lenses, charcoals, a few pottery shards, animal bones and marine shells. Inside this layer a glass bead (G128) and some stone tools have been found (a pestle, S1313; a net sinker, S1314; a whetstone, S1323 and a rubbing stone, S1324).

The last thick occupation layer, US318, was composed by greasy soft loam mixed to ashes and charcoals, animal bones, marine shells and pottery shards. In the layer has been found also some collapsed stones of large and medium sizes, iron slag, a *chlamys townsendi* shell used as oil lamp (Sh335) and a large amount of stone tools: four handstones (S1316, S1317, S1322 and S1355); two rubbing stones (S1318 and S1356); a pestle (S1319); a whetstone (S1320); a polisher (S1321); a loom weight (S1357); a fragment of limestone basin (S1315). The layer ended in a compacted and uniform floor (27.13 m of elevation), brown-yellowish in colour (with greenish stains), on whose surface a bottom of a local jar with straw temper (US318,1) and a lower stone of hand mill (S1376) have SUM09A; US318, been found.

It is important to note that the rim with portion of the wall of another local jar (US318,2) of reddish and coarse fabric unearthed next to the floor US318 belongs to a same vessel, whose fragments have been unearthed also inside the destruction layer US310. This fact confirms the absence of intermediate floors inside the room.

Rooms A134 and A132. The small central room, A134 (1.75 m long), was delimited by the northern wall M307 and by two partitions walls: M338, from the east, and M336, from the west. M336 was constituted, like M338, by a single row of roughly worked stones, some pebbles, pieces of mud bricks and a large amount of clay mortar. It was preserved for 2.0 m of height.

A staircase, M337 (2.60x0.80x1.25 m in size), leading to the upper storey, was located along the wall M307 and it was leaning to it (Fig. 24). The staircase was, probably, composed by nine steps of limestone (0.70x0.25x0.16 m in size), seven of which still *in situ*, while the others two have been found inside the destruction layer of the room A134 (US326).

The filling of the room consisted in three different layers: the upper destruction layer US310, unearthed also inside the room A124; a thick stratum of burning (US326) and an occupation layer with floor (US328), corresponding to the US318 of the adjacent room A124, placed at the elevation of 26.99 m.

The thick burning layer US326 (between 28.32 and 27.57 m in elevation) was composed by soft black-reddish loam, with ashes, charcoals, a large amount of big iron slag, mixed with numerous collapsed stones. Inside the layer a large amount of pottery shards, animal bones, marine shells and stone tools (five whetstones: S1336, S1337, S1341, S1347, S1349; five rubbing stones: S1339, S1342, S1344, S1345, S1360; a pestle: S1338; an anvil: S1346; four polishers: S1340, S1343, S1350, S1351; a hammerstone: S1335; a handstone: S1348; a pressing stone: S1361 and two fragments of limestone basin: S1353, S1354). In addition, the US326 produced a bronze coin (Co544) and two *chlamys townsendi* shells used as oil lamps (Sh337 and Sh338).

The last occupation layer US328 consisted in crumbly loam, mixed with medium and small size stones, fragments of mud bricks related to the collapsing of the partition wall M338 (and probably to the upper storey), ashes, animal bones, marine shells and pottery shards. The US328 produced two shell beads (Sh339 and Sh340); a *chlamys townsendi* shell used as oil lamp (Sh341) and a large

amount of stone tools (three handstones: S1365, S1366 and S1367; three pestles: S1368, S1369 and S1370; two whetstones: S1371 and S1372; a rubbing stone: S1373 and two fragments of soft-stone vessels: S1374 and S1375). The layer

The last western room A132 has been only partially excavated, either in extension or in depth. It was delimited by the perimeter wall M307 on the north - for a length of 1.30 m - and by the partition wall M336 on the east. In this room, after removing some flat stones (at 28.2 m of elevation) belonging to the late occupation phase related with the US306 (=US80), the filling US321 (0.30 m in thickness) consisted in crumbly brown earth with a few pottery shards, animal bones, sea shells and a *chlamys townsendi* shell used as oil lamp (Sh336). The filling ends in a compacted floor - unearthened in the northern part of the room - that very probably constituted the landing of the staircase M337 (elevation: 28.31 m).

Although the building BF7 has been only partially unearthened, some considerations about its use and its occupation phases can be suggested.

It appears very probable that during a first constructional phase the two rooms A124 and A134 were a single room. In fact, the two partition walls M336 and M338 are leaning on the floors US318 and US238; in addition, the wall M338 was leaning on the stair M337, whose first three steps are placed inside the room A124, while the entire structure was inside the room A134.

The partition western wall M336 was closing the access to the landing inside the room A132. But, it is also possible that the wall was raised in a later phase, probably corresponding with the burning layer US326, during which the staircase was not in use. In fact, observing with particular attention its eastern face, we can see a sort of rebuilding (from 28.13 m of elevation) in the upper part of M336 of 0.80-0.90 m in height. In particular above the staircase, at the junction with the perimeter wall M307, the wall M338 consisted in a heap of clay mortar with a few small size stones (Fig. 25). As regards its function appears very probable that the single room A124+A134 was a kitchen, as suggested by the small finds and the type of pottery unearthened inside the rooms and by the traces of burning with small fireplaces found on the floors US318 and US328. It is not to be excluded that this single room was an open area, a courtyard, as suggested by its large size (the southern limit is still to define) and the irregularities in the level of the floors.

The main phase unearthened in the building BF7 (related to the floors US318 and US328) appears in relation with the building BF6 and with the floor of the two crossing streets A80 and A129 (US313=196). The fact that the floor inside the building was deeper in comparison with that of the exterior represents an usual characteristic of Sumhuram.

On the contrary, the location of a staircase inside a very large room, as A124+A134 (before the later subdivision), appears completely unusual in Sumhuram, where the rooms with the staircase were always of small dimensions.

But, to understand the structures and the arrangement of the BF7 rooms it is necessary to complete its excavation during the next season, enlarging the trench in southern and western directions. It is also important to excavate the building in depth, under the occupation level now reached (US318 and US328 floors), to verify the possibility of existence of more ancient constructional phases.



Fig. 1 Area A, Monumental Building 1 before excavations (from top of M17)



Fig. 2 Area A, Monumental Building 1 after excavations (from top of M17)



Fig. 3 Area A, Monumental Building 1, limestone basin (S1277) in trench near M22



Fig. 4 Area A, Monumental Building 1, US262 floor, the first living floor of the second period of occupation (from top of M22)



Fig. 5 Area A, rooms A85 and A108 before excavations (from top of M17)



Fig. 6 Area A, rooms A85 and A108 after excavations (from top of M17)



Fig. 7 Area A before excavations (from south)



Fig. 7a, Area A, general view after excavations (from top of M17)



Fig. 8 Area A, US323, installation connected with the basins in A121 (from west)



Fig. 9 Area A, plastered basins in the niche of M17 (from east)



Fig. 10 Area A, basin with platform in the eastern sector of the square (from top of M17)



Fig. 11 Area A, room A109, double staircase leaning on M17 (from room A110)



Fig. 12-13 straw impressions belonging to the covering of the pits in Sumhura; trunks used as covering in Yemen (picture of Ch. Darles)



Fig. 14 Area F, general view of the excavated structures (from north-west)



Fig. 15 Area F, limestone gutter with bull's head *in situ*



Fig. 16 Area F, building BF6, rooms A125 and A130 (from north)



Fig. 17 Area F, building BF6, lime plaster



Fig. 18 Area F, building BF6, traces of wooden trunks from top of M325



Fig. 19 Area F, building BF6, stone base outside A125 with traces of wooden trunk



Fig. 20 Area F, building BF6, room A126 (from south-east)



Fig. 21 Area F, building BF6, rooms A126 and A127, with the staircase (from south)



Fig. 22 Area F, street A129 (from west)



Fig. 23 Area F, building BF7, general view (from north-west)



Fig. 24 Area F, building BF7, staircase on room A134 (from south-west)



Fig. 25 Area F, building BF7, particular of wall M336 (from east)

Field research in Wadi Dowka Natural Park and Al-Balid Botanical Garden (M. Raffaelli, M. Tardelli, Tropical Herbarium Studies Centre, University of Florence)

The main points of our program in Dhofar were:

- 1) the control of the growth of the young plants of *Boswellia* in the “transplanting area” of the Wadi Dowka Natural Park.
- 2) the identification (with latin names) of the plants of the Al-Balid Botanical Garden.
- 3) the collection of wild plants around the territory of Salalah to increase the number of the plants in the Botanical Garden.
- 4) The collection of wild plants to increase the scientific knowledge of the flora of Dhofar.

Our mission in Dhofar has been carried out in cooperation with the Office of the Cultural Affairs of Salalah.

Control of the transplanting area in Wadi Dowka Natural Park

In February 2009 (during our visit), the transplant intervention showed a positive result of over 80%. The young plants of *Boswellia sacra* (the frankincense tree) showed a positive ratio of growth with abundant production of new shoots and leaves.

The observation on the positive annual growth increase of the transplanted plants of *Boswellia* in the fenced area of the Park, is the evident proof that grazing was one of the principal cause of the past plant degradation. The rapid growth of the young plants of *Boswellia* in the fenced area confirms the good natural regenerative capability of this species.



A plant of *Boswellia sacra* in the fenced area of the park: note the good condition.

Al Balid Botanical Garden

We revised the scientific names (latin names) of the plants of the Al Balid Botanical Garden. The plants are now disposed in 9 rows. The order of the rows goes from west (row 1) to east (row 9).

Row 1: 27 plants

Row 2 :16 plants

Row 3: 27 plants

Row4: 27 plants

Row 5: 16 plants

Row 6: 28 plants

Row 7: 17 plants

Row 8: 11 plants

Row 9: 17 plants

The plants of the Botanical Garden are in this moment about 186. The complete list (row per row) is deposited in the Office of the Botanical Garden. For each plant of the Garden we took a picture and wrote over the picture the latin name and the relative position of the plant in the Garden (row number and hole number in the row).



Example: *Euclea schimperi*: a plant of the Garden (Row 1, plant 5)

Collection of new plants for the Botanical Garden

During our mission we collected wild plants in the vicinity of Salalah; these plants have been planted in the Botanical Garden.

Adenium obesum

Jatropha dhofarica

Jatropha pelargoniifolia

Nanorrhops ritchieana

Euphorbia larica

Aloe dhufarensis

Periploca aphylla

Campylanthus mirandae



Example: *Ficus vasta*: a plant of the Garden (Row 7, plant 11)

Our program developed as follows:

- 19 February 2009: Botanical research and collection of wild plants near Khor Rori.
- 20 February 2009: Visit to the *Boswellia sacra* population near Sadh and collection of wild plants for the Botanical Garden.
- 21 February 2009: Al Balid Botanical Garden: control of the scientific names of the plants.
- 22 February 2009: Visit to the Wadi Dowka Natural Park: control of the growth and health conditions of the young plants of *Boswellia sacra* in the transplanting area.
- 23 February 2009: Al Balid Botanical Garden: control of the scientific names of the plants.

- 24 February 2009: Al Balid Botanical Garden: control of the scientific names of the plants.

- 25 February 2009: Visit to the *Boswellia sacra* population near Wadi Adownib and collection of wild plants for the Botanical Garden.
- 26 February 2009: Al Balid Botanical Garden: control of the scientific names of the plants.
- 27 February 2009: Al Balid Botanical Garden: control of the scientific names of the plants.- Visit to the area of Al Mughsayl and collection of wild plants
- 28 February 2009: Al Balid Botanical Garden: definitive list with the scientific names of all the plants of the Garden, accompanied by digital pictures of each plant .

In some parts of the pollen sequence, the samples are characterized by high and oscillating pollen percentages of plants alternatively of wet and arid environments. Their pollen grains are very often found clustered in groups. Low pollen percentages of plants growing in the Oman desert areas and on the relieves of Yemen were observed, as well as other long-distance transported grains, perhaps from Africa and/or the Mediterranean area. Similar results were obtained by pollen analysis in other south Arabian areas.



Figure 2.

These results encouraged us to resample the same A68 stratigraphy at higher resolution. However, this resampling was only partially possible since the progress of the excavation resulted in the elimination of the upper part of this stratigraphy (US 172) and the removal of a significant portion of the central part (US 162) (Fig. 2). This situation makes it impossible to correlate the old and new samples and to insert the new samples in the previous pollen sequence. Therefore it will be difficult to obtain a high-resolution study of this specific stratigraphy.



Figure 3.

A new sampling was also carried out near the Monumental Building, in the laminated layers above the “spring” (Fig 3). Of the two previously collected samples, only one was suitable for pollen analysis, even though the pollen concentration resulted quite low, but the state of preservation of the grains was good. This sample, like the ones described above, shows high percentages of long-distance transported grains. The origin of these laminated sediments is under study.



Figure 4.

A new short sequence was sampled in the Monumental Building (US 262, 294, 293) including three floors and the fillings between them (Fig 4).



Figure 5.

8/03/09

The “sezione Est-trincea H8” sequence was sampled (US 313, 309, 306, 302), along a vertical axis (Fig 5). Also some samples from the “pit” were collected on the left side.



Figure 6.

9/3/09

Some samples from a newly excavated pit, A122, were collected from US 296 and US292. The sampled sediment is formed by the filling of a plastered basin preserved in a corner (Fig. 6).

In the same days, another sampling strategy for pollen analysis was carried out in the surroundings of the archaeological site and other natural and/or cultural landscapes. The aim was to obtain useful parameters for the reconstruction of the relationship between the present pollen rain and the vegetation. This study was carried out using natural pollen traps like moss cushions (where available) and algal or herbal turfs and also superficial sediments. The significance of this investigation resides in the availability of the pollen image of the present vegetation of the study area, which is directly verifiable, to compare with the pollen images of the past vegetation.

Areas investigated:

Wady Darbat banks near the coast, just below Sumhura, and inland;

Wady Darich between Saadh and Had been

Wady Dahariz, near Salalah

Wady “Cormorano” between Taqah and Mirbat, 8 Km east from Khor Rori

Taqah cultivated fields