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RED MONASTERY CONSERVATION PROJECT 2015

TECHNICAL REPORT 3: 26th November 2015

1 TECHNICAL REPORT ON SITE ACTIVITIES: SEPT 28 – NOV 26

Foreword:

The architectural conservation project at the Red Monastery commenced on 01 September 2015. The project was designed by Dr. Nicholas Warner and implemented by Mahmud al-Taiyyib. Monitoring was provided by Inspectors Hassan Hussein Kallad Imam Hassan, Mustafa ‘Ali ‘Abd al-Karim [conservation], and Ahmad Nasser Muhammad ‘Abd al-Aziz [conservation] all from the Sohag Taftish of the MoA. The work was supervised by Mr. ‘Ali Zaghoul [Chief Inspector], Mr. Saad Osman [Director of Islamic and Coptic Antiquities, Sohag Inspectorate] and Mr. Nur ed-Din Mustafa Ahmed [Director, Foreign Missions in Sohag]. Special thanks are owed to Inspector Rashed Muhammad Badri for his assistance throughout the project.

1.1 Schedule and scope

Following ARCE approval of extra items required by changes in the scope of work, detailed in correspondence dated 22nd September, the scope was extended accordingly. Notable additions to the scope were six extra limestone column bases, and the setting of six additional column fragments above them, installation of a timber lintel for the south portal, and the design, fabrication and installation of steel display furniture for the new lapidarium. In the course of the work, it also became possible to carry out the alterations to the church of al-Adhra requested by the Monastery [detailed below]. The schedule of work was adjusted accordingly to include the new program elements. Work commenced on site after the Eid holidays on September 28th, with completion expected in the first week of November.

The schedule of work was temporarily disrupted on October 15th owing to the fact that Mr. Nur, the Director of Foreign Missions in Sohag, was not informed of the planned absence of Nicholas Warner from site from the 12th-16th October. This had previously been discussed and approved by Mr. Saad Osman [General Director MoA Sohag Coptic & Islamic Inspectorate] in view of the fact that the only activity on site would be new paving work executed in accordance with a drawing. At the time, Mr. Saad did not indicate that further approval from Mr. Nur was required. Work recommenced on the 17th October. It should be noted that Mahmud al-Taiyyib has been included on the 2016 security list to avoid this occurrence in the future.

1.2 Site Meetings

1.2.1 On October 11th, a meeting was held on site between Nicholas Warner, Michael Jones, Mr Saad Osman, Mr Ali Zaghoul, and Abuna Shenoute to discuss details of the 2016 draft application to the Permanent Committee, and make comments and suggestions for present and future work. The following points were noted:

- Mr. Saad still wanted to have some beam holes filled at roof level with timber beams projecting 30cm from the face of the wall to assist in the comprehension of the original structure. It was agreed to add this to the 2016 SOW, in a limited area above the shelter.
- All work to date on site was approved, including the modifications to the Church of al-Adhra.
- Modifications to the Arabic SOW were made.

1.2.2 On October 17th, a meeting was held between Nicholas Warner and Abuna Antonious in which the future conservation of the tower was discussed. Abuna

Antonious was only recently made aware by Mahmud al-Taiyyib of the fact that ARCE has permission to strip the tower. Apparently he had not seen a copy of the SCA permission. He is now willing to vacate the tower, which means that work here can proceed. This represents substantial progress, and future discussions of the re-use of the tower should focus on monastic needs that do not involve the use of water eg. administrative offices for the monastery, classrooms for children, a bookshop, internet facilities etc.

1.2.3 On October 21st, a meeting was held on site between Nicholas Warner, Dina Bakhum, and Janie ‘Abd al-Aziz to discuss present and future works. Subsequent to this, final reporting requirements were clarified.

2 SITEWORK PHASE TWO: SEPTEMBER 28 – NOVEMBER 26

2.1 Tasklist

1 Nave preparation including excavation and levels

The final preparation of the nave for paving required [A] cleaning work, [B] the disposal of unwanted worked stones, [C] the display of carved architectural fragments previously lying on the surface of the ground and [D] the removal of surplus concrete from around the thresholds to the north portal and Church of al-Adhra.

[A] Three new carved limestone blocks were discovered during the continuation of cleaning carried out in the nave before paving works. They are as follows:



Frieze block with acanthus scroll and central rosettes [92cm long x 37cm high x 16cm deep]



Left: block with carved cross and rosette, with traces of blue and red paint [34cm long x 25cm high x 20cm deep]. Right: block with entrelac and lozenge motif [34cm long x 21cm high x 20cm deep]

The blocks were cleaned and included in the new display of fragments near the well. [see below, page 5]

[B] A further element of work related to the establishment of final levels prior to paving was the reburial of unwanted worked stones. On 29.09.15, a total of ten worked stones were reburied inside the nave under the supervision of Inspector Hassan. The location for reburial was at the west end of the nave in the backfilled area of the excavation carried out in 2010. The pieces were buried at a depth of one meter below the finished floor level of the nave. These stones were mostly fragments of column shafts that could not be re-assembled or other pieces that could not be put on display or used in the anastylosis of the colonnade at the west end of the church. They are listed as follows:

- 1 Square Aswan granite block, 70 x 45 x 60, unknown purpose
- 2 Square Aswan granite block, 65 x 65 x 20, base block or foundation for column
- 3 Broken limestone column shaft, 2m long x 50cm diameter
- 4 Broken Aswan granite column shaft, 2m long x 45cm diameter, including top
- 5 Broken Aswan granite column shaft, 1.2m long x 35cm diameter, including top
- 6 Broken Aswan granite column shaft, 1m long x 38cm diameter, including top
- 7 Broken Aswan granite column shaft, 55cm long x 38cm diameter, from center shaft
- 8 Broken Aswan granite column shaft, 45cm long x 38cm diameter, from center shaft
- 9 Broken Aswan granite column shaft, 2m long x 50cm diameter, from center shaft
- 10 Broken Aswan small granite column shaft, 60cm long x 20cm diameter, from center shaft

Note: 7 and 8 join together



Photos showing site of reburial

[C] The final part of the preparatory work related to the nave was the creation of a new lapidarium for the display of worked stones. This was located south of the nave, adjacent to the well. Three new painted steel frames 1.4 metres high and 30 cm deep were designed to carry the large cornice blocks deriving from the nave. These frames were filled with brick and plastered, with three smaller blocks being inset into the masonry. The stones include:

- 1 Vesicular basalt millstone diameter 1.2 metres [covering well]
- 2 Three column bases of different materials [on limestone mastaba to south of well]
- 3 Limestone column shafts [on limestone mastaba to south of well]
- 4 Two newly discovered small frieze blocks [see Section 8, above, within south frame to west of well]
- 5 One block with a pharaonic cartouche [within north frame to west of well]
- 6 One large marble statue base [?]
- 7 One granite pivot block
- 8 Two fragments of column capitals [high mastaba to north of well]
- 9 One limestone column base [high mastaba to north of well]
- 10 One newly discovered acanthus frieze block [on axis with well]
- 11 One corner pilaster capital from a door [high level, south of well]
- 12 One granite cornice block [high level, south of well]
- 13 One limestone corner cornice block [high level, south of well]
- 14 Three limestone cornice blocks [high level, west of well]

Additionally, a large limestone sarcophagus, re-worked as a water trough, was displayed on the edge of the south wall to the east of the south portal.



Photos showing sequence of construction of display stands for carved limestone fragments



Frontal view of the completed display of stone fragments

[D] To complete the preparation for the paving, reinforced concrete beams were removed from the threshold areas of the north portal and the entrance to the church of al-Adhra.

2 Foundation and brickwork for wall separating nave from south hall

This item has been cancelled due to lack of MoA permission, and will be applied for again.

3 Strip water installation from tower

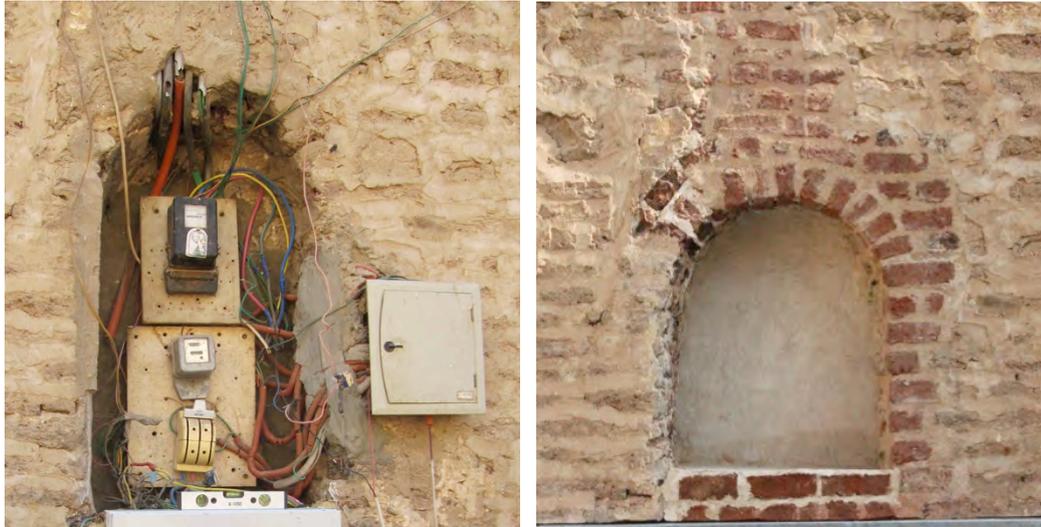
This item has been cancelled due to lack of permission from Monastery, although recent discussion with Abuna Antonious indicates that they now accept the proposed work as a requirement for the complete conservation of the tower.

4 Electricity final fix

All works in this category were completed, as detailed below:

4.1 New supply cable and associated work

A new heavy-duty reinforced brass-core cable was installed, running from a high-level post supply on the north side of the church under the north portal threshold to the location of the existing motherboard on the south side of the nave. The new line of supply is directly connected to the monastery's own substation and generator. This action permitted the removal of the former supply line and posts on the south side of the church, and the removal of redundant electricity meters and override switches from the niche above the electrical cupboard on the south side of the nave.



Niche above electrical cupboard on south wall before and after intervention

4.2 New power and lighting circuits in mastabas

New power and lighting circuits were run to the new mastabas on the north and west walls of the nave. Three new waterproof brushed aluminium sockets and nine new lights were installed. The LED uplights are located directly below arched windows, and provide ambient light for the nave as well as accent light for the windows.



Recessed electricity socket and uplight installed in perimeter mastaba



Photo showing uplighting installed in perimeter mastaba

In the future, it is intended to supplement the uplighting with further illumination provided by LED spotlights mounted on the proposed shelter at the west end of the nave.

4.3 Provision of low-level path lighting

Low-level path lighting was provided in the form of recessed LED units to the area of the well, and along the edge of the church of al-Adhra.

4.4 Provision of future lighting circuits

Provision for future lighting and power circuits was made against the probability that permission will be forthcoming in 2016 for the construction of the shelter at the west end of the nave and the construction of the separating wall between the nave and the south hall.

4.5 Temporary electrical supply to tower entrance and tower

The tower requires the provision of a further sub-distribution board, and detailed electrical design after a decision has been taken on the extent of any proposed intervention in this area. In the interim, a temporary provision has been made that will allow for use by conservators cleaning the south portal, as well as continuing use in the tower itself.

5 Plumbing works final fix

All works in this category were completed, as detailed below.

5.1 Removal of existing water cooler and all associated pipework.

5.2 Clearance of garbage in the well, and vertical installation of a six metre long perforated 8” PVC pipe surrounded by gravel to act as a ventilated sump for surface water and air-conditioning condensate.

5.3 Installation of two lines of surface water drains with perforated limestone covers in stainless steel frames, one line serving the nave [three drainage points] and one in the south hall [four drainage points] with pipework laid to fall to well [see attached paving plan in Section 7, below, for location of pipe runs].

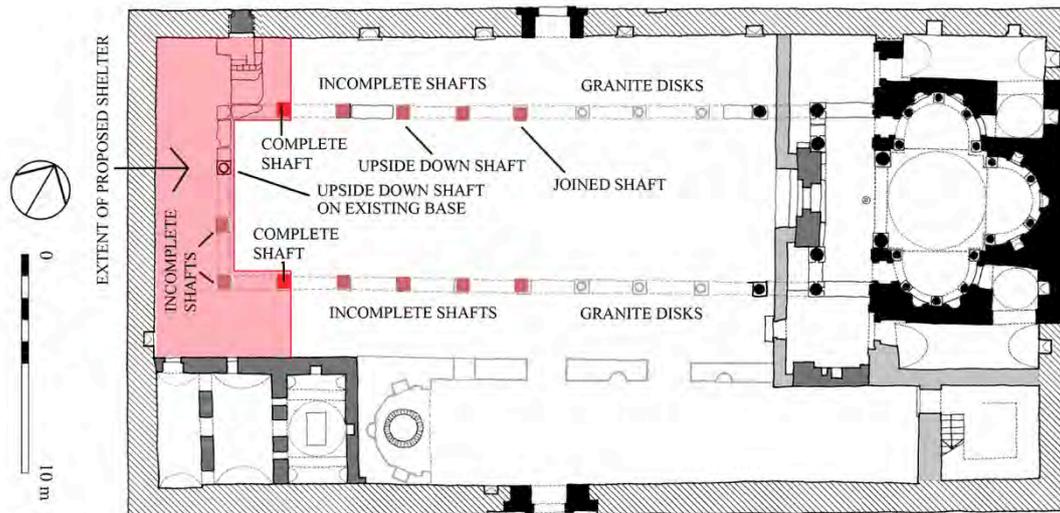
5.4 Installation of a new concealed polypropylene 1” diameter pipe from relocated air-conditioning units in the church of al-Adhra into the well.

6 Foundations and bases for columns

Six new foundation pits for the additional column assemblies were dug, and six new limestone bases were installed. Wherever traces of original limestone foundations were discovered, these were re-used, sometimes with additional new blocks. Where no presence of original bases could be found, new concrete pad foundations were poured, approx. 1 x 1 meter and 30 cm thick.

7 Installation of additional column fragments

Six additional fragments of granite shafts were installed, and the anastylosis was thus completed. The final arrangement is shown on the attached drawing as well as in the cover photograph of this report.



Plan showing final arrangement of granite column shafts and fragments of shafts

8 Cleaning of columns + fragments

Cleaning of all the granite column shafts/fragments by mechanical abrasion was undertaken following their re-erection. Dilute ammonium carbonate poultices were applied to the large limestone cornice as required.

9 Paving

9.1 Levels and thresholds

The thresholds to the church were determined by the following factors:

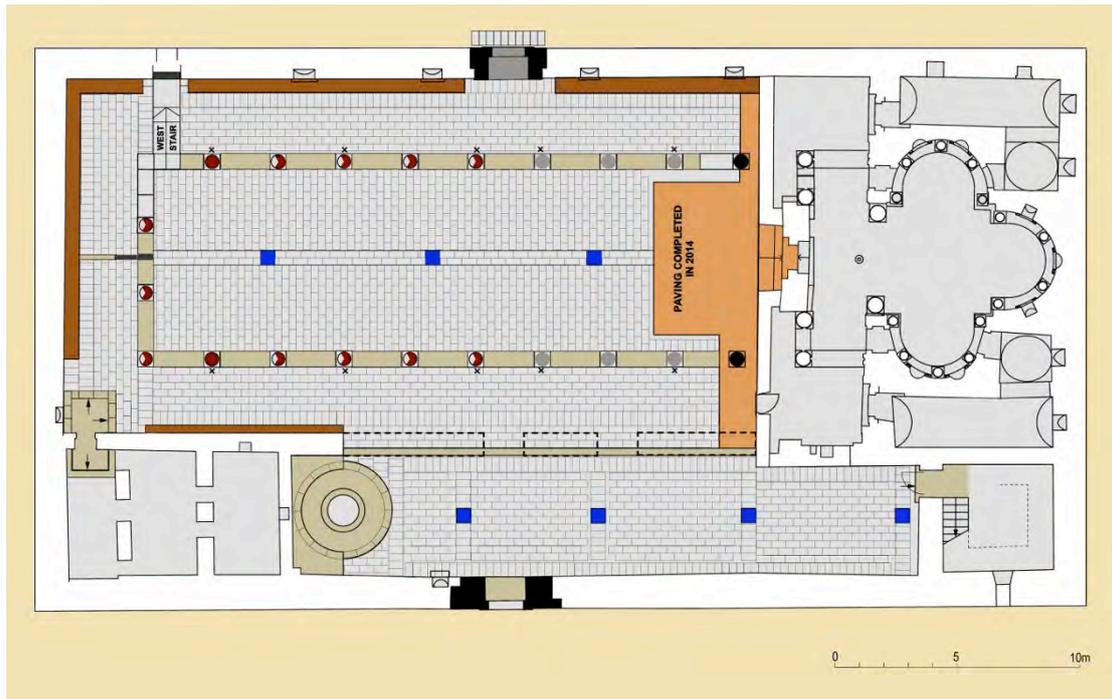
A - the existing original paving level inside the south portal

B - the existing original paving stone at the northwest corner of the nave

C – the existing level of the steel doors inside the north portal that could not be moved

D – the existing levels established by the paving carried out in previous campaigns in front of the Comité wall at the east end of the nave.

Taking these criteria into account, two basic levels were established: one for the south hall determined by the original paving within the south portal, and the other in the nave determined by the level of the paving already installed at the east end of the nave as well as the single original paver at the northwest corner of the nave. These two levels differed by 18 cm – the equivalent of a single step. A new limestone step was therefore created along the edge of the presumed separating wall between the south hall and the nave, which will be incorporated into the reconstructed wall on this line, if approved, in 2016. Two localized levels were adopted in addition to these two general levels. One of these in front of the door leading to the church of al-Adhra, 18 cm below the general nave level, and the other inside the north portal 15 cm above the general nave level.



Paving plan of the nave

9.2 Materials

All paving was executed using 7 cm thick 60 x 30 cm or 60 x 40 cm hand-polished limestone pavers set on lime mortar. Blocks following the lines of the colonnade were made from 15 cm thick limestone, 65 x 30 cm, which were also hand-polished. Steps and other raised elements were generally finished with a toothed hand-adze. Inside the threshold of the north portal, where no existing paving remained, granite thresholds were installed. A layer of lime was spread on the surface of the ground prior to paving in order to discourage the activity of termites. At the west end of the nave, two original rectangular granite paving stones were set into the floor to mark the central axis of the nave.



Laying limestone pavers in the south hall

10 Timber lintel over South Portal

A secondary 20 cm x 20 cm treated azizi pitch pine timber lintel was installed in front of the new stainless steel angle installed in Phase 1 in the position of the original timber lintel in this location. Empty mortar joints around the lintel were filled locally using lime mortar.



Condition of lintel to south portal after installation of secondary timber lintel

11 Steps leading to blocked door in north wall

The treatment of the steps leading to the blocked door at the west end of the north wall had not been considered prior to arriving on site as a separate task, but it became clear that it would require more attention than previously suspected following the clearance of debris from the nave.

Existing Condition:

The steps were built directly over the paving of the nave, also covering the original limestone mastaba that ran along the inside face of the north wall. It consists of two landings with a step in between. The lower landing is at the height of the original raised stylobate at this end of the church, and the upper landing is 21 cm lower than the threshold of the blocked doorway in the north wall. The structure is made of fired brick set in lime mortar with surviving limestone pavers.

Treatment:

The brickwork of the staircase was repaired using a lime mortar, and new limestone treads were installed as required. Existing limestone features were consolidated with a lime mortar.



The steps leading to the blocked door in the north wall prior to intervention



The steps leading to the blocked door in the north wall after intervention

12 The church of al-‘Adhra

Existing condition:

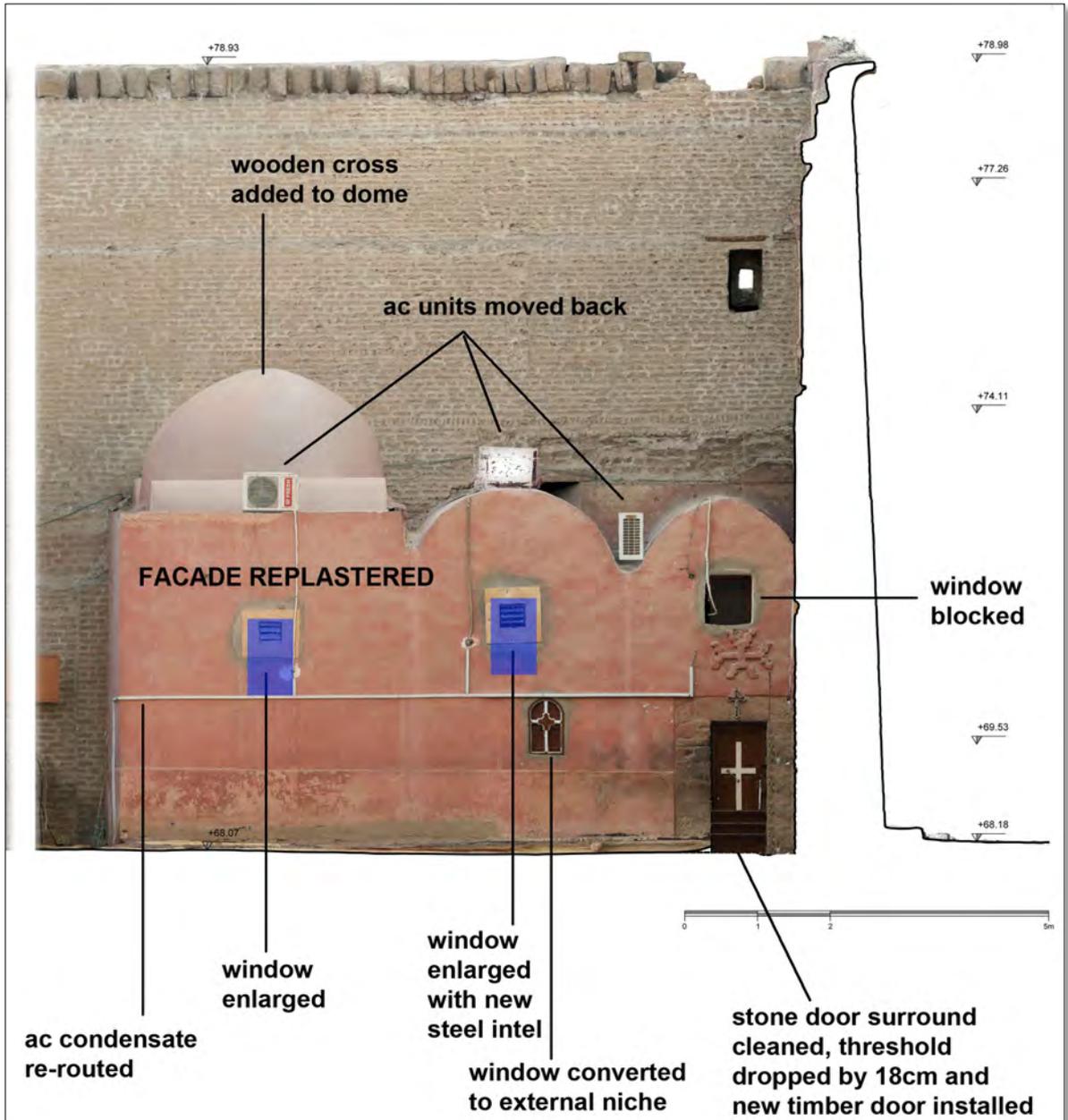
The Church of al-Adhra was almost totally rebuilt in the 1980’s, more or less following the footprint of the earlier building that stood in the southwest corner of the nave. Its walls were plastered with cement, inside and out. Traces of the earlier building can be seen in the limestone doorframe and lower sections of brickwork. This masonry employed a silt mortar. The building is highly serviced, with three ac units and two extract fans, all installed in a rather ad hoc manner. It was the intention of the monastery to retain these services, and the monastic authorities also made specific requests that certain features of the building be adapted to present needs.

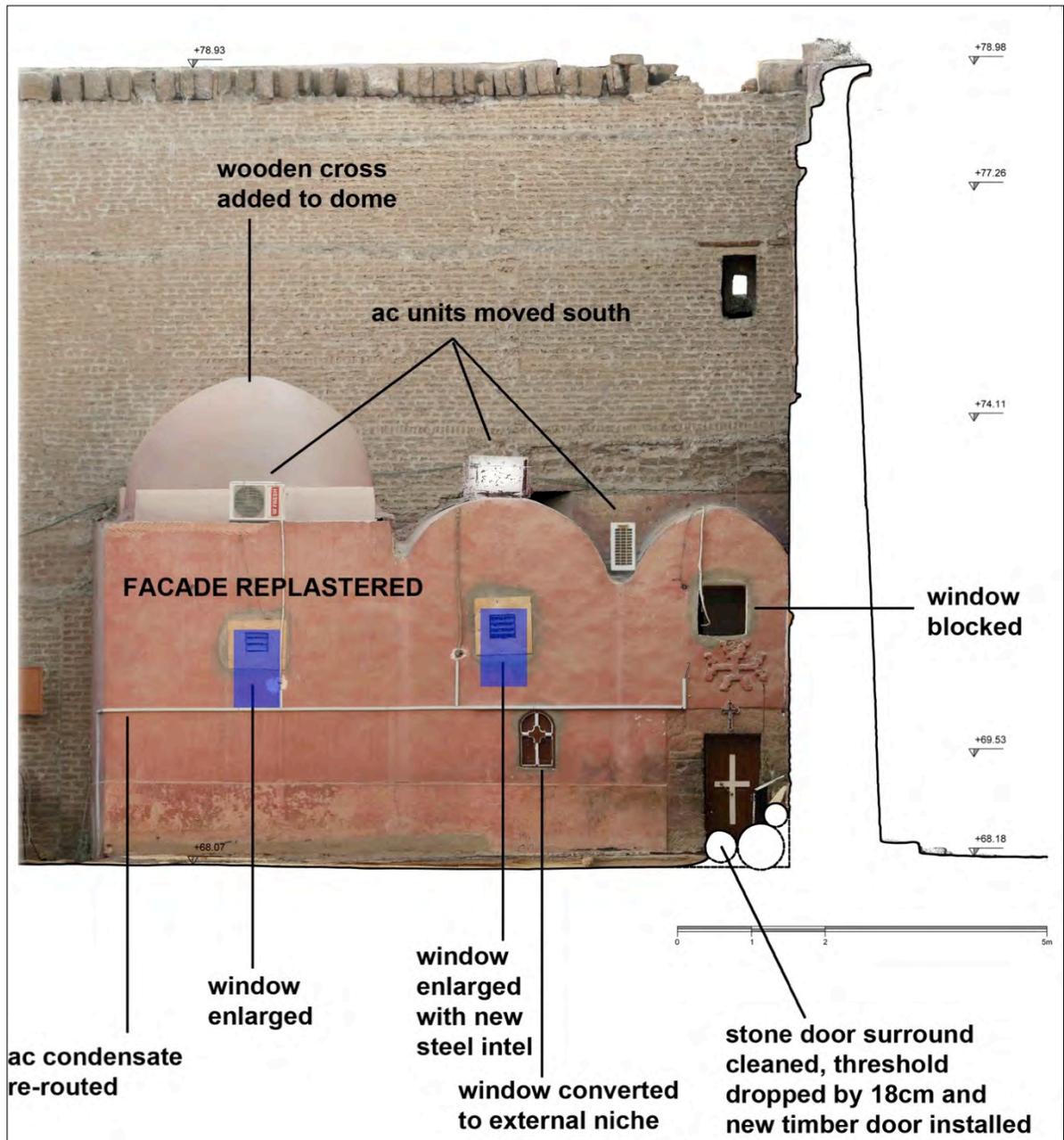
Treatment:

All secondary plaster was stripped from the façades of the church and the exterior was re-plastered with a lime render. Modifications were made on the north façade as detailed on the attached drawing. The most significant of these was the insertion of a new steel lintel over the central window. This was done in order to strengthen the opening in case the south wall of the proposed shelter at the west end of the nave would be built over it. Windows were modified to accommodate both extract fans and panes of fixed glazing. The position of the air-conditioning split units was modified so that pipework for the condensate was concealed from view, running in a new polypropylene pipe to the well. A wooden cross was added to the dome, matching the design of the larger cross over the main church. The paving level immediately in front of the door of the church was also lowered by 18 cm in order to increase the height of the door opening. This required the partial removal of subsurface concrete in this area. The limestone doorjamb and lintel of the entrance to the church were severely encrusted by dirt and cement, and were cleaned by mechanical abrasion before being re-pointed with lime mortar.



Photos showing the process of cleaning and repointing the limestone doorway of the church of al-Adhra





Scanned elevation of the church of al-Adhra showing 2015 interventions

13 East end of the South Hall

At the east end of the south hall, a section of limestone rubble wall measuring 2.2 metres in height was mechanically cleaned and all cement removed from joints prior to re-pointing using lime mortar. A new limestone step was installed to the staircase area beyond, and the existing door was refurbished. The original paving level of the area at the base of the east stair was exposed at the bottom of the stair. A new terrazzo floor had been installed by the Monastery 15 cm above this at some point in recent history. It is recommended that this later floor at the bottom of the stair well be removed, and the original floor level restored as necessary.



Re-pointing the cleaned section of limestone masonry at the east end of the south hall



Original and later flooring in the area of the east staircase

2.2 Milestones

Given the fact that the planned project milestones were thrown into disorder by permit problems, there is little sense in trying to correlate projected and actual outcomes. At the close of work, the following substantial project achievements can be listed:

1 Structural conservation of north wall interior and exterior faces complete except for recessed brickwork inside blocked west door [included in 2016 SOW submitted to MoA].

2 Structural conservation of west wall interior face completed. Exterior work partially completed, pending 2016 approval of cornice block replacement.

3 Conservation of south wall interior partially completed, pending 2016 approval of cornice block replacement.

4 Anastylosis of nave colonnade completed. Note that six extra column positions were created, improving the overall effect of the project. Column capitals could not be installed owing to lack of agreement from local MoA inspectors [this has been included in the 2016 application].

5 New Lapidarium completed. This was a response to the fact that construction of the south wall, intended as the location for the display of many of these pieces, was not included in the permission received from the MoA for 2015.

6 All electrical works completed as far as possible within the permit.

7 All planned plumbing works completed.

8 All planned paving works completed.

9 Restoration of the Church of al-Adhra completed.

2.3 Scope of Work for 2016

Outstanding, as well as some additional, project tasks are listed in the new Scope of Work submitted to the MoA Permanent Committee on the 22nd of October. As far as works inside the main body of the church are concerned, the following elements are deemed critical:

1 Construction of the shelter at the west end of the nave

2 Provision of new doors for the north and south portals

3 Cornice block re-instatement

4 Completion of conservation works on the south, west, and east perimeter walls [delayed until permission is granted for item 3].

2.4 Sub-grantee level of effort

Contractor working outside the church from 28th September till the 4th November all days per week. Sub-grantee on site 28th September – 12th October, 17th – 21st October and 26th October – 3rd November, all days per week.