Documentation Levels in Surveying the Lower Enclosure of the Citadel in Historic Cairo: A Beginning to Understand the Area's Future Potentials

Final Report, Cairo - April 2014
Prepared by Architect Nairy Hampikian, PhD

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Commissioned by

United Nations Educational, Scientific and Cultural Organization
منظمة الأمم المتحدة للتربية والعلم والثقافة

Historic Cairo
inscribed on the World Heritage List in 1979
القاهرة التاريخية
موقع مدرج في قائمة التراث العالمي عام ١٩٧٩

Urban Regeneration Project for Historic Cairo
مشروع الإحياء العمراني للقاهرة التاريخية

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Cairo has been a dominant political, cultural, commercial and religious capital throughout history playing a prominent role during Fatimids, reaching its golden age during Mamluks, and sustaining its cosmopolitan significance during Ottoman times. Due to its unique peculiar skyline, it has been known to scholars and historians as "City of the thousand minarets".
Historic Cairo was inscribed on the World Heritage List in 1979 recognizing its "absolutely unquestionable historical, archaeological and urbanistic importance." Upon ICOMOS recommendation, the inscription was based on the following criteria:

1. Several of the great monuments of Cairo are incontestable masterpieces;
2. The historic centre of Cairo groups numerous streets and old dwellings and thus maintains, in the heart of the traditional urban fabric, forms of human settlement, which go back to the middle Ages;
3. The historic centre of Cairo constitutes an impressive material witness to the international importance on the political, strategic, intellectual and commercial level of the City during the medieval period.

URHC Goals and Objectives In July 2010, UNESCO-WHC launched the Urban Regeneration Project for Historic Cairo (URHC) in the framework of a larger program of technical assistance to the Egyptian Government concerning the management of the World Heritage Site, focusing on the following objectives:

1. The preparation of a Conservation Plan for Historic Cairo's "Core and Buffer Zones", which would include the Management Plan required by the WH Operational Guidelines;
2. The establishment of an institutional framework to undertake and develop a sustainable urban conservation policy, promoting coordination and collaboration amongst different institutions, administrations and agencies concerned with the management of the World Heritage Site;
3. The creation of an appropriate and shared information platform for urban conservation.

To achieve these goals, an interdisciplinary team of local and international consultants is collaborating with the concerned bodies to develop a set of protection measures in order to uphold the site's Outstanding Universal Value, to prevent further decay of the historic urban fabric and to enhance the socio-economic conditions of Historic Cairo.

Introduction

According to the signed contract between UNESCO and Hampikian, the tasks of the team are summarized as follows:

1. Collect available material on the identified area and buildings.
2. Identify the buildings with heritage value.
3. Carry out a detailed survey and assessment of all the identified buildings of heritage value to be preserved, partially or totally, with schematic plans and sections (1:200 drawings), and information on period(s) of construction, architectural typology, building materials and techniques, state of conservation, and other information relevant to evaluate their heritage value. Identify critical issues and typical pathology.
4. Provide general guidelines for the physical restoration of materials, structures and decorative elements of the buildings of heritage value, propose adaptive reuse alternatives for the surveyed buildings, and, identify priority conservation actions and the technical feasibility of possible conservation/restoration projects for each building, including the legal and institutional aspects.
5. Carry out a light investigation on the rest of the buildings in the area limited to the presence of architectural elements (such as the malaqif/shukhshikas, windows, doors, decorations on the walls, different types of supports for the wooden ceilings, particularities of the masonry and the woodwork, etc.) and the decay.
6. Prepare a photo survey of objects or architectural items in need of quick salvage/emergency interventions, accompanied by a rough technical paragraph describing the possible types of intervention.
7. Participate in the Action Project workshops, tentatively planned at the end of December, to present and discuss results of the activity, and give inputs for the historic fabric regeneration of the Project area.

An interim report was handed in December 2013, which presented the following issues:

- Methodology used by the team, which explained the need for different degrees of documentation,
- The area seen within two clusters that are historically bound together, and, finally,
- A section where some of the architectural documentation already accomplished was handed over to the UNESCO team.

To avoid the unnecessary repetition, sections dealing with the methodology and the thinking processes, already handed in the interim report, are reproduced in this report, with some modifications, complying with the mild changes the team felt necessary to do during the progress of the work on site. Other than these small changes, the team has not changed its general approaches and strategies vis a vis the work assigned.
(Find below the cover page of the interim report)

Interim Report

Different Levels of Documentation on the Lower Enclosure of the Citadel in Historic Cairo

Commissioned by
UNESCO WORLD HERITAGE CENTRE
MANAGEMENT OF WORLD HERITAGE SITES IN EGYPT

URBAN REGENERATION OF HISTORIC CAIRO PROJECT

Prepared by Nairy Hampikian, PhD
Hampikian for Architecture and Heritage Management

Team members: Nairy Hampikian, Sumayya Othman, Ahmad ‘Abd al-Jawwad, Karima Isma’il, Marwa Hasan, Yasmin Solayman, Ahmad Fath al-Bab, ‘Ashri Jum’a, and, Ikrami Gharib.

Cairo - December 2013

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Methodology for documentation levels used by the team

The team has decided to work simultaneously on three degrees of documentation:
a. The full documentation of the eight buildings identified as heritage valued structures.
b. A comprehensive photo-documentation for:
- Remains of older buildings left enveloped inside newer structures, and,
- Remains of ancient/historical roads and interesting enclosures worthy of special preservation.
c. A light investigation on various structures and issues on the site in general, as a preliminary basis for a full investigation in the future. This includes: Some modern buildings to receive special attention, general/repetitive decay mechanism noticed on most of the buildings, architectural elements for aeration and or illumination of the structures, etc.
(Notice the color-coding as this will be followed consistently along the report)

a. Full documentation of the buildings identified as heritage valued structures

After discussions with the urban surveyor's team on site, we have decided that the eight buildings to be studied in depth and according to the requirements mentioned above are the following buildings highlighted in red in the following map of the area.

During the preliminary investigation of the area, two points became noticeable to our team scrolling around the different sections of the area:
- The first deals with issues related to the direct "architectural documentation/research on history/analysis of the state of preservation … " of each of the eight individual structures mentioned above in isolation.
- The second deals with the different proposals of how to regenerate 'an' urban fabric to this place now nearly void of such, and yet, fairly lived in through its history of survival by the different users of the place in the past. This necessitates our full understanding of 'use' of the buildings in isolation and the area in general that will later enable us formulate our new vision concerning the area.

To explain the first point, let us mention some examples clarifying how looking at the eight buildings in isolation from their immediate surrounding was a handicap in our full fledge understanding of these buildings. The team has realized that to understand these eight structures, other structures within the immediate vicinity of each of these eight, needed be looked at.

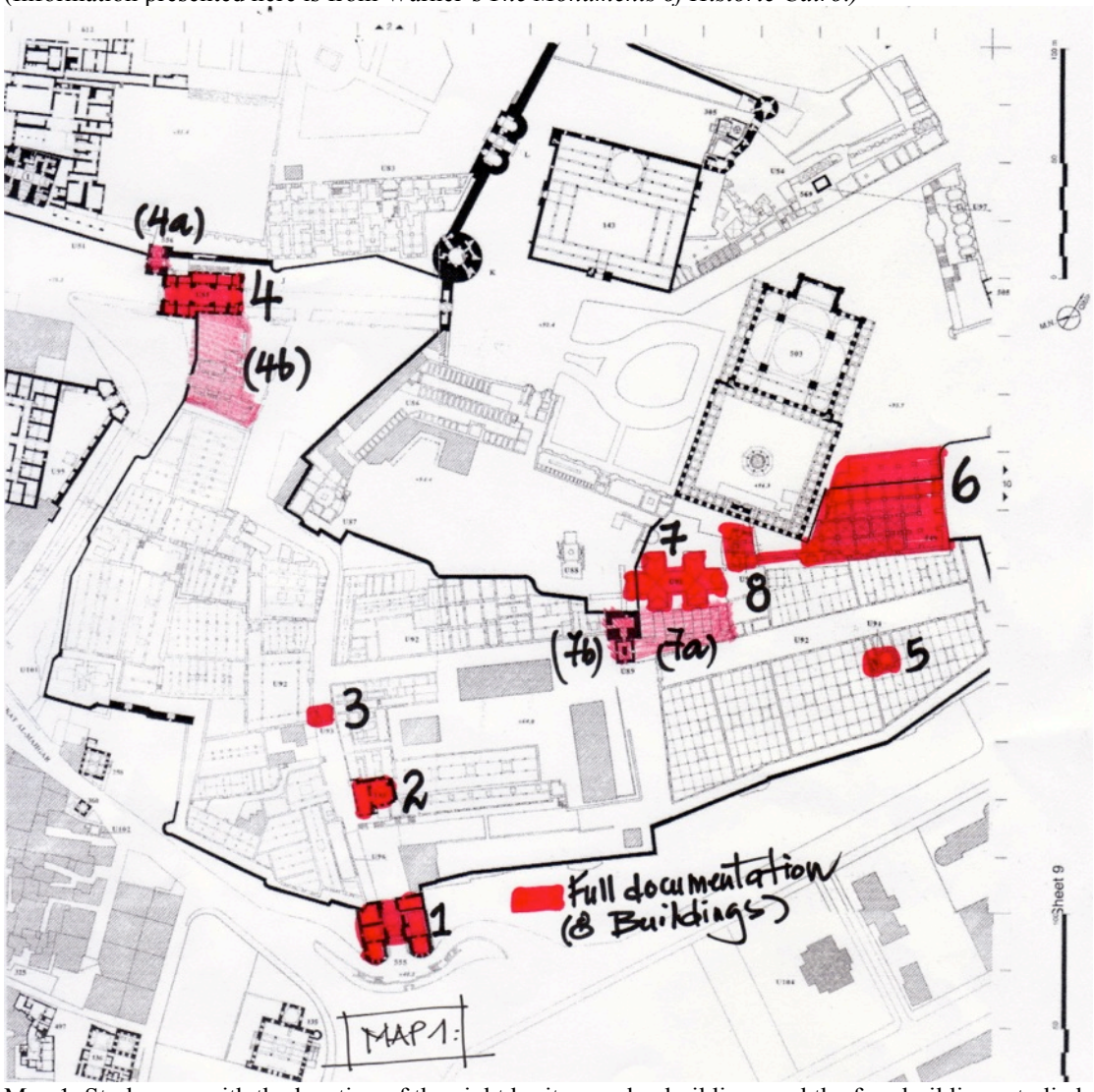
- For example, when looking around Bab al-Jadid, Bab al-Mudarraj lying on the northeastern corner of Bab al-Jadid, had to be taken into consideration, as well as the structure lying to the west of Bab al-Jadid, which seems to be a service area for Bab al-Jadid.
- The team would like to mention the case of Burg al-Rafraf, which although accessed from the upper level, is clearly connected to the structures on the lower enclosure of the Citadel, under study. Therefore, its investigation seems to be a must to understand the ensemble.

For this reason, four structures were annexed to the list of the eight buildings, because of our belief that their inclusion is directly linked to one of the eight

identified buildings (on the table below, the eight are in dark red, while the four are in light red):

1	555	Bab al-'Azab	AD 1754- AH 1168
2	145	Mosque of Ahmad Katkhuda al-'Azab	AD 1697 – AH 1109
3	U93	Bab Ahmad Katkhuda	AD 19th – AH 13th
4	U85	Bab al-Jadid	AD 1826 - AH 1242
4a	556	Bab al-Mudarraj	
4b		Structure West of Bab al-Jadid	
5	U94	Qubbat al-Biraqdar	AD 17th – AH 11th
6	549	Remains of the palace of al-Nasir Muhammad	AD 1314 – AH 714
7	U91	The double – Cross Hall	AD 1290-1314 – AH 689-714
7a		Corbelled façade	
7b		Burg al-Rafraf	
8	U95	Industrial area	AD 19th – AH 13th

(Information presented here is from Warner's *The Monuments of Historic Cairo.)*



Map 1. Study area with the location of the eight heritage value buildings and the four buildings studied with them

b. A photo documentation of remains of older structures left enveloped inside newer structures

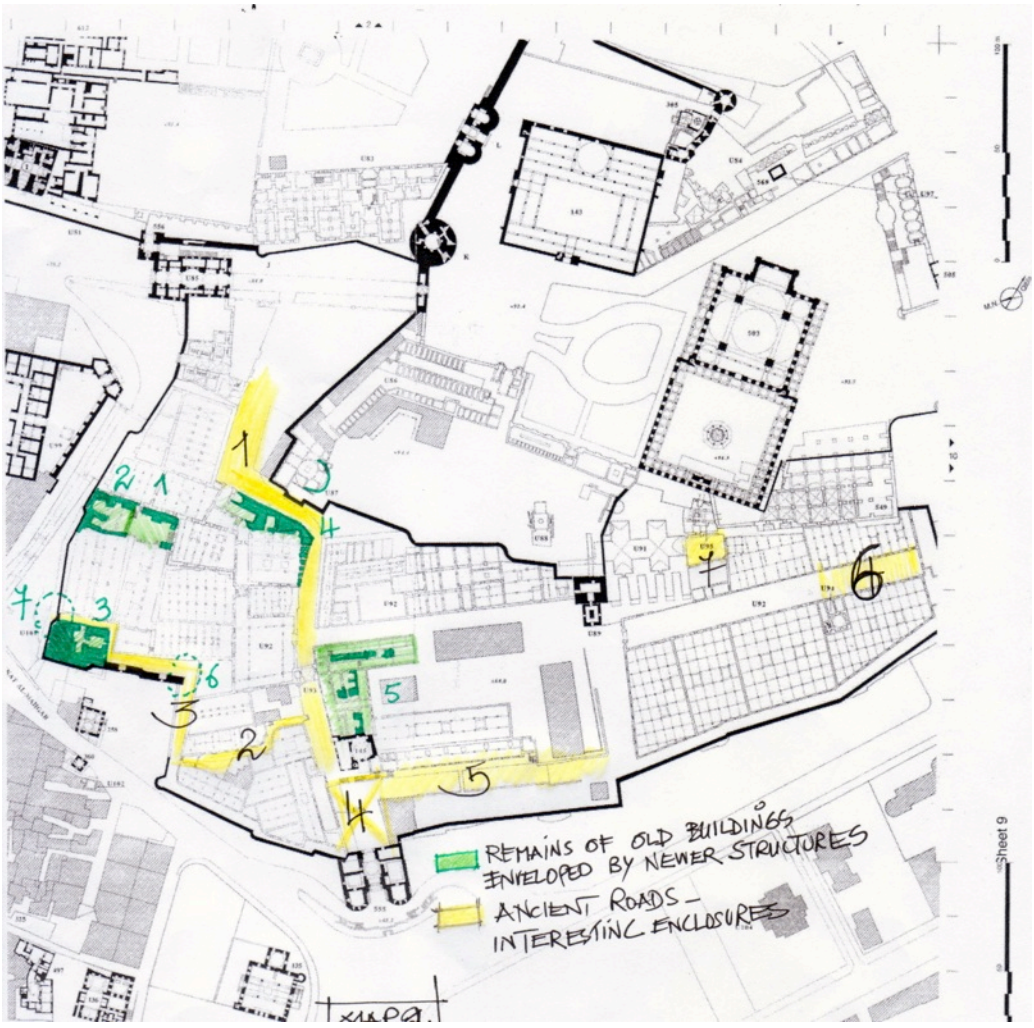
and

Ancient roads and interesting modern enclosures

Having scrolled around the site, the team felt the need to highlight an issue, which if left without proper attention might be disfigured, altered, destroyed or replaced by a new structure. (See map below that highlight these structures in green)

To clarify this point, we need to explain the case of structure No. 5 (green) on the map below. The research conducted on the mosque of Ahmad Katkhuda led to the fact that it was a Mamluk structure converted into an Ottoman mosque by a lot of changes (not only the addition of a minaret and a façade in front of a façade). The old structure shrank more when the modern structures were added around its eastern and southern sides. In this case, remains of thick walls were noticed on the plan inside the structure built later on the eastern side of the mosque. It would be just impossible to ignore this.

This survey includes 7 important cases of remains of older walls (in green on the map below) and 7 cases of ancient roads and interesting enclosures worthy of preservation and special treatment during the thinking for the future revitalization of this area.



Map 2. Study area with the location of the seven buildings with the remains of older buildings in them and the seven historical roads/interesting enclosures

c. A light survey on various structures and issues on the site in general as a preliminary basis for a full investigation

This includes:

A. Some modern buildings that are worth receiving special attention for different reasons,

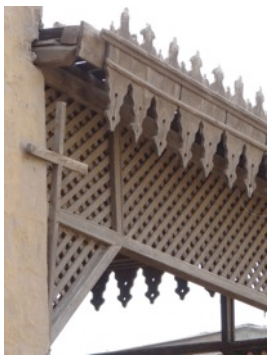
B. General/repetitive decay mechanism noticed on most of the buildings,C. Architectural elements for aeration and/or illumination of the structures, and,

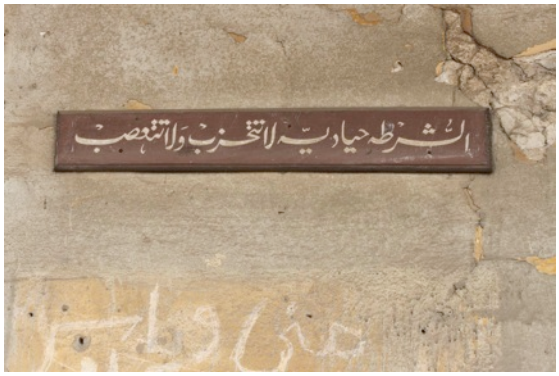
D. Survey of the stone masonry as a tool for dating of the walls

(See ***map 3*** with the location of the survey items mentioned above)

These are but some of the collectable data in the area that can serve as dating criteria. Among others the table below demonstrates other items not included in this report for its limitation:





Panels with slogans from past memories. In this case, the slogans of the Egyptian Army.

Pier - ceiling size and connecting details can act as dating criteria

Map 3. Study area with the location of the seven buildings with the remains of older buildings in them and the seven historical roads/interesting enclosures

Some clarifications

Clarifications on the report

The report is presented in its docx and PDF forms in the folder entitled **01. REPORT UNESCO FINAL 16 JUNE 2014**)

Clarifications on the text for each of the eight buildings

Each of the eight building has its text, pictures and drawings in a separate section of this report. To keep consistency of this report, information recruited for each of the ten buildings is offered within the limits of nine similar sub-titles repeated for each building irrelevant of the amount of information found under these sub-titles for the particular building. These sub-titles are:

1. About the founder of the building, 2. Location of the building, 3. Description of the building, 4. Architectural documentation of the building, 5. Photo documentation of the building, 6. Previous conservation activities, 7. Schematic guideline for the physical restoration of material and decorative elements of the building, 8. Proposed adaptive re-use alternatives, and, 9. Sources used.

Clarifications on the architectural documentation

Having gone through this voyage of thought, on practical matters, the team realizes that the basic architectural documentation is the key issue, on which, all further thoughts will be built. Therefore, the architectural documentation shapes the basic core of this work, and the rest of the work was built on the results attained by this documentation.

Architectural documentation was performed by a team of five architects, with twenty-five days of work on site, among which twelve were with a surveyor. The team followed the following method to realize the architectural documentation:

1. Preparation of a preliminary photo documentation and free hand sketches as the base for the work of the surveyor (sometimes we have used the architectural drawings from older publications, even if they were of bad quality, as our initial guidelines),

2. Points to be measured by the surveyor are highlighted on the preliminary data as a preparation for the surveyor's work on site,
3. Computerized recording of the three coordinates of all the points highlighted on the photos and the sketches to create the silhouettes of the facades or sections using a SOKKIA 330R NOM POISEM total station, with a laser point detector,
4. A final photo-documentation of the façades to be documented,
5. Using the Photoshop application to stitch and rasterize the photos taken, and sometimes applying a photo rectifier program, and, finally,
6. Combining / filling in the silhouettes created by the total station data with the rectified photos using the AutoCAD application.

Final touches are made either by the help of the photography or on site directly. Once the architectural documentation is accomplished a concentrated campaign will organized on site to make the last corrections. Details are measured manually and then drawn again using the AutoCAD application.

Finally, the team has been able to achieve the desired documentation of the eight assigned buildings and has added two more, because of our persuasion that these two are inevitably connected to some of the assigned buildings.

During the documentation, team has gone into full precision and detailing in the documentation, and hence the drawings produced are 1:100 scale, instead of the 1:200 mentioned in the contract. The team believed that in case of 1:200, most of the details of the fieldwork would have been obscured.

A final decision made by the team was to connect façades of five buildings together on one drawing, again because of our belief that the five were related closely to each other historically, moreover, together they belonged in the past to one ensemble. This was a challenge to the team and it was realized successfully.

The full architectural documentation is presented in a catalogue on hard copy (A3 format) in a dossier, except for the connected façade, which is on A2, folded inside the A3 dossier. The drawings are also handed to you in a software folder in their CAD and PDF forms entitled: **02. DRAWINGS OF THE TEN BUILDINGS**. An extra drawing is produced to connect the buildings together, with the a cloud of points represented in their three coordinates, to facilitate their integration into other drawing, if so desired.

(For the whole list of the drawings see the following pages of this report)

Clarifications on the photo documentation

Selected images are reproduced in this report to help the reader visualize, a quite complicated site, as is the Lower Enclosure of the Citadel. The full photo documentation is presented in jpg form in a folder entitled: **03. PHOTOS**. The folder contains the following four sub-folders:

A. Photos of the ten buildings - Each building's photos are placed in two folders. The first folder has the full-size in their originally captured resolution, and without any categorization. In the second folder, the same pictures are resized to a smaller size and categorized according to their location and orientation on the building to help faster search for those interested.

B. Survey of buildings that include remains of older walls in the study area - (See map attached where each building is numbered on the map to enable their location on the site). Each building's photos are placed in two folders. The first folder has the full-

size in their originally captured resolution, while the same photos are resized to a smaller size in the second folder. Both folders are not categorized.
C. Archival photos of the study area and the citadel in general – These include old photos scanned from books or downloaded from the internet.
D. Photos of the long façade elevation – These are the photos taken to prepare the long façade connecting a number of buildings together.
E. Landscape around the Citadel – These are photos of the study area taken from the surrounding of the Citadel

List of deliverables

Hard copies:

1. Volume One: The full report (A4 – color - … pages)
2. The full architectural documentation (A3 – B&W - …pages)

Software:

3. Folder entitled: **01. REPORT UNESCO FINAL 16 JUNE 2014**
4. Folder entitled: **02. DRAWINGS OF THE TEN BUILDINGS**
5. Folder entitled: **03. PHOTOS**
6. Folder entitled: **04. COLLECTED DATA**

As a last note in this introduction, the team would like to thank you for the trust you have invested in us to realize this work. We have learned so much and have become a fan of this place. The whole team is now a true devotee of this area, which has for so long being mal-used, neglected and insulted. The team has chosen for the cover of this report a picture of a keystone of a lintel from one of the structures of the study area, which we believe is struggling, for perhaps, its last minutes before "the collapse". The team hopes to give this keystone the respect and help it deserves.

List of drawings

1. Bab al-'Azab

Fig. 1. Ground plan (1:200),
Fig. 2. First floor plan of Bab al-'Azab (1:200),
Fig. 3. Layout of Bab al-'Azab (1:400)
Fig. 4. Western facade of Bab al-'Azab with and without the carriageway double ramp (1:200)
Fig. 5. Eastern façade of Bab al-'Azab (1:200)
Fig. 6. East-West section of Bab al-'Azab looking south (1:2000

2. Mosque of Ahmad Katkhuda al-'Azab

1. Ground plan (1:100)
2. Main northern façade (1:100)
3. Western façade (1:100)
4. N-S section through the domed-chamber looking east (1:100)
5. E-W section through the vestibule looking south (1:100)
6. Ground plan of the area around the mosque (1: 200)

3. Bab of Ahmad Katkhuda (al-Silsila)

Fig. 1. Ground plan of Bab of Ahmad Katkhuda (1:100),
Fig. 2. Layout of Bab of Ahmad Katkhuda (1:100),
Fig. 3. Looking up plan of Bab of Ahmad Katkhuda (1:100),
Fig. 4 and 5. Western and eastern façades of Bab of Ahmad Katkhuda (1:100), and,
Fig. 6. And 7. West east section looking north and south in the passageway under Ahmad Katkhuda Bab (1:100).

4. Bab al-Jadid

Fig. 1. Layout of Bab al-Jadid with Bab al-Mudarraj attached to its north-eastern corner (1:100)
Fig. 2. Ground plan of Bab al-Jadid (1:400)
Fig. 3. First floor plan of Bab al-Jadid (1:100)
Fig. 4. Southern façade of Bab al-Jadid (1:100)
Fig. 5. Northern façade of Bab al-Jadid (1: 200)
Fig. 6. North-south section of Bab al-Jadid looking west (1:100)

5. QUBBAT (MAUSOLEUM) AL-BIRAQDAR

Fig. 1. Ground plan (1:100),
Fig. 2-5. Four internal façades of the mausoleum (1:200)

6. THE REMAINS OF THE PALACE OF AL-NASSIR MUHAMMAD

Fig. 1. First level plan (1:200),

Fig. 2. Lower level plan (1:200)
Fig. 3. Western façade of the remains of the Palace of al-Nasir Muhammad (1:200)

7. THE DOUBLE-CROSS HALL AND 8. INDUSTRIAL AREA IN THE LOWER ENCLOSURE

Fig. 1. Ground plan of the double-cross hall (1:300)
Fig. 2. North-South section of the double-cross hall looking East (1:300)
Fig. 3. North-South section of the double-cross hall looking West (1:300)
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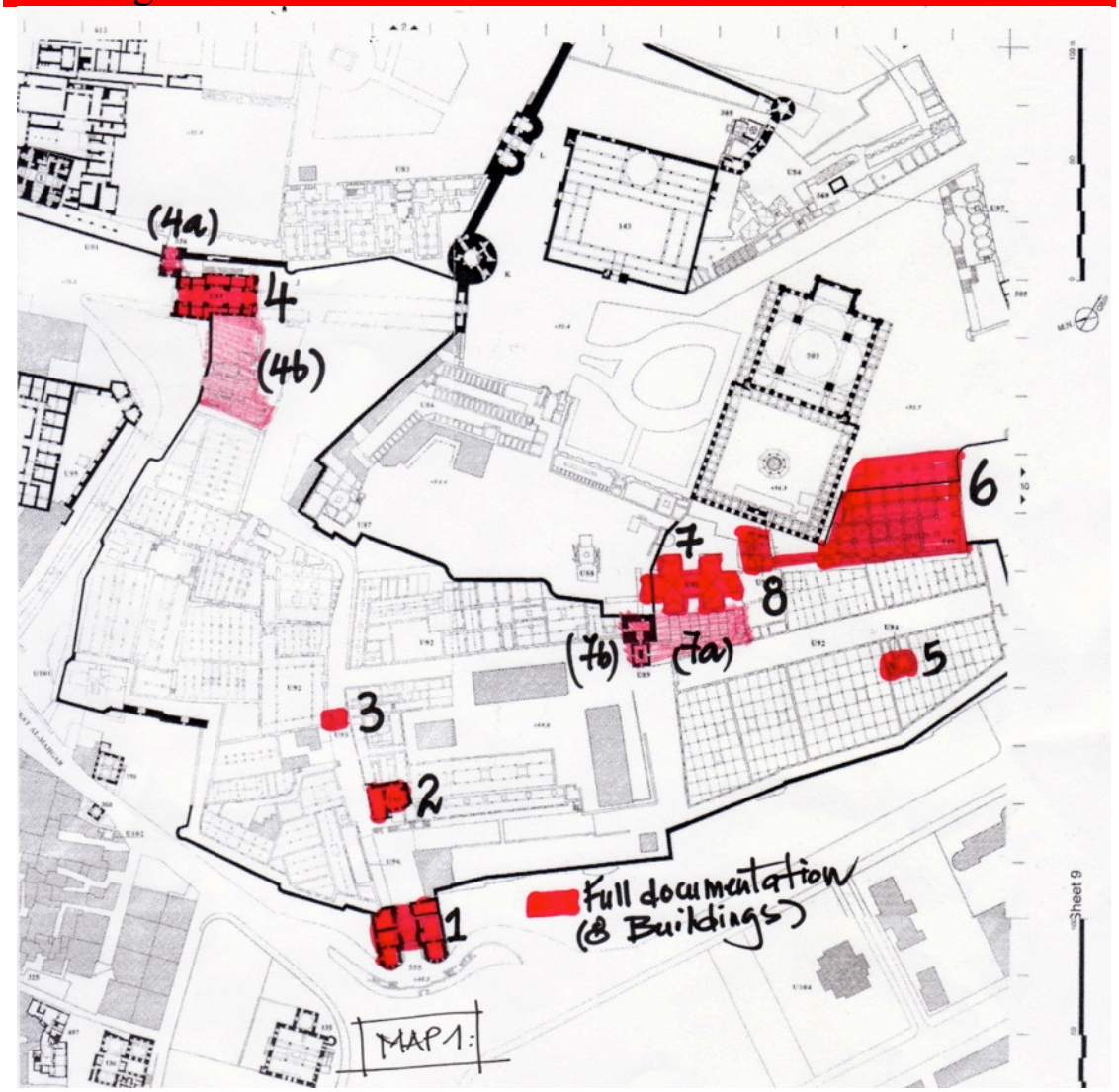
Fig. 8. Combined western façades of corbeled façade and Burg al-Rafraf (1:300)
Fig. 9. Plan of the industrial area (1:100)
Fig. 10.Western elevation of the chimney (1:100)
Fig. 11. Part of the western façade of the remains of the Palace of al-Nasir Muhammad showing the blocked entrance behind the chimney (1:100)
Fig. 12. Ground plan showing the double-cross hall and its surrounding structures as an ensemble (1:100)

Reporting on the eight buildings of heritage value (map 1)

1. Bab al-‘Azab
2. Mosque of Ahmad Katkhuda
3. Bab Ahmad Katkhuda
4. Bab al-Jadid
5. Qubbat al-Buraqdar
6. The remains of the Palace of al-Nasir Muhammad - The seven halls
7. Double cross vault hall
8. The industrial area – The chimney
9. The corbeled façade
10. Burg al-Rafraf



1. Bab al-‘Azab

1754 AD (1168 AH)
During the Ottoman Occupation of Egypt (1517-1798 AD)

Monument No. 555

1. About the founder of the Bab

Bab al-‘Azab was built to celebrate the rise of power of the ‘Azaban (local troops during the Ottoman rule in Egypt) and their Mamluk allies, the Gulfiyya, who under Radwan Katkhuda held a prominent position in the government. The ‘Azaban held the responsibility of protecting the lower section of the Citadel, which was the seat of the government then: *al-Wilaya al-‘Uthmaniyya* (Ottoman provincial government).
Founder of this gate is al-Amir Radwan Katkhuda al-Jilfi one of the heads of the *beks* in Cairo. With the blessings of Ahmed Pasha kur, who ruled over Egypt under the Ottoman reign from 1748 AD (1162 AH) to 1749 AD (1163 AH), Radwan joined Ibrahim *Bek* against their adversaries and succeeded in their defeat. The two *beks* were different in their character and, accordingly, in their style of handling political and military situations. Ibrahim *Bek* used aggressive and brutal means to target his aims, while Radwan *Bek* preferred peaceful processes and he listened to complaints of the people. The two *beks* were both able to maintain their positions for seven years and some months until Radwan was caught in a conspiracy and had to flee to Upper Egypt, where he died in 1168H/1754AD.

2. Location of the Bab

Today, Bab al-‘Azab is one of the three officially allowed accesses to the Citadel (Bab al-Jadid and Bab al-Jabal being the two others). It is located on the western external enclosure wall of the lower part of the Citadel, facing midan al-Rumayla (todays *midan* al-Qal’a or *midan* Salah al-Din) in front of Sultan Hasan and al-Rifa’i mosques.

The importance of Bab al-‘Azab lies in its being the face of the Citadel looking over the city. It is part of the Citadel and yet its presence is the unquestionable highlight of the silhouette of the city outside the Citadel. Moreover, it was in the past and still can be considered as the main gate to the lower enclosure of the Citadel, irrelevant of its present state, which will be surveyed later.
According to Rabbat and Husam, Bab al-‘Azab was constructed on the site of an older Mamluk gate, the Bab al-Istabl (Stables), which led to the area of the stables in Mamluk times.

3. Description of Bab al-'Azab
(Consult the full architectural documentation prepared by our team)

Bab al-'Azab, originally approached by a single huge ramp, is composed of two identical semi-circular towers flanking the huge wooden gates of the Bab. The interior of the Bab contains guards' rooms and meeting halls that were once decorated with arms, shields and regimental banners. The whole structure is almost square in plan, measuring 31.50 m along its NS axis and 30.30 along the EW axis.
Between the two huge wooden gates lies the internal passageway of the gate (measuring a total length of approximately 28m) with its central section covered by a shallow dome. On the western side, the wooden leaves of the gate open towards the city, facing al-Sultan Hasan and al-Rifa'i mosques. The wooden leaves of the gate on the eastern extremity of the internal passageway of Bab al-'Azab open towards the lower enclosure of the Citadel, facing the old ascending sloping road of the Citadel. The wooden leaves of the western side are not in situ. These are dismantled and the two leaves are left unprotected on the façade of the structure lying south to Bab al-'Azab, inside the lower enclosure proper.
Each of the two semi-circular towers is composed of two levels. Because of the difference of the ground level of the layout itself, the height on the outer *midan* al-Rumayla side is 15.00 m, while the inner height of the gate measures 13.80 m only. Each tower is composed of a frontal space equipped with arrow slits prepared for any aggression on the Bab and a rear space, which serves as a weapon storage area. The frontal and the rear spaces of each tower are connected by an open space, which besides serving as a weapon storage area, also acts as the vertical distribution zone for each of the two levels of the towers.
Some observations on the material and construction techniques used on Bab al-'Azab include the following:

- Limestone is the main building material used to construct the bearing walls of Bab al-'Azab, with the use of the *ablaq* decorative device, which is the use of two different colors of stones, each color used in consecutive rows (red and white limestone in case of Bab al-'Azab). Recurrent careless stone exchange activities during frequent conservation processes on the Bab have diminished the effect of the *ablaq* on the overall appearance of the façades of the gate.
- The average limestone block measures 50 x 22 x 35 cms and the thickness of the walls varies from 1.20m to 2.50m.
- No trace of plaster was observed on the walls and the binding material used for the construction of walls probably is a mixture of lime and gypsum mixed with ash, as observed by quick field inspection.
- As mentioned before the current crenellations are those substituted by Khedive Isma'il in 1870 AD and no trace of the original Ottoman-period style crenellations was observed.

4. Current architectural documentation

This included the preparation of the following drawings:
Fig. 1. Ground plan (1:200),
Fig. 2. First floor plan of Bab al-'Azab (1:200),
Fig. 3. Layout of Bab al-'Azab (1:400)
Fig. 4. Western facade of Bab al-'Azab with and without the carriageway double ramp (1:200)
Fig. 5. Eastern façade of Bab al-'Azab (1:200)
Fig. 6. East-West section of Bab al-'Azab looking south (1:200)

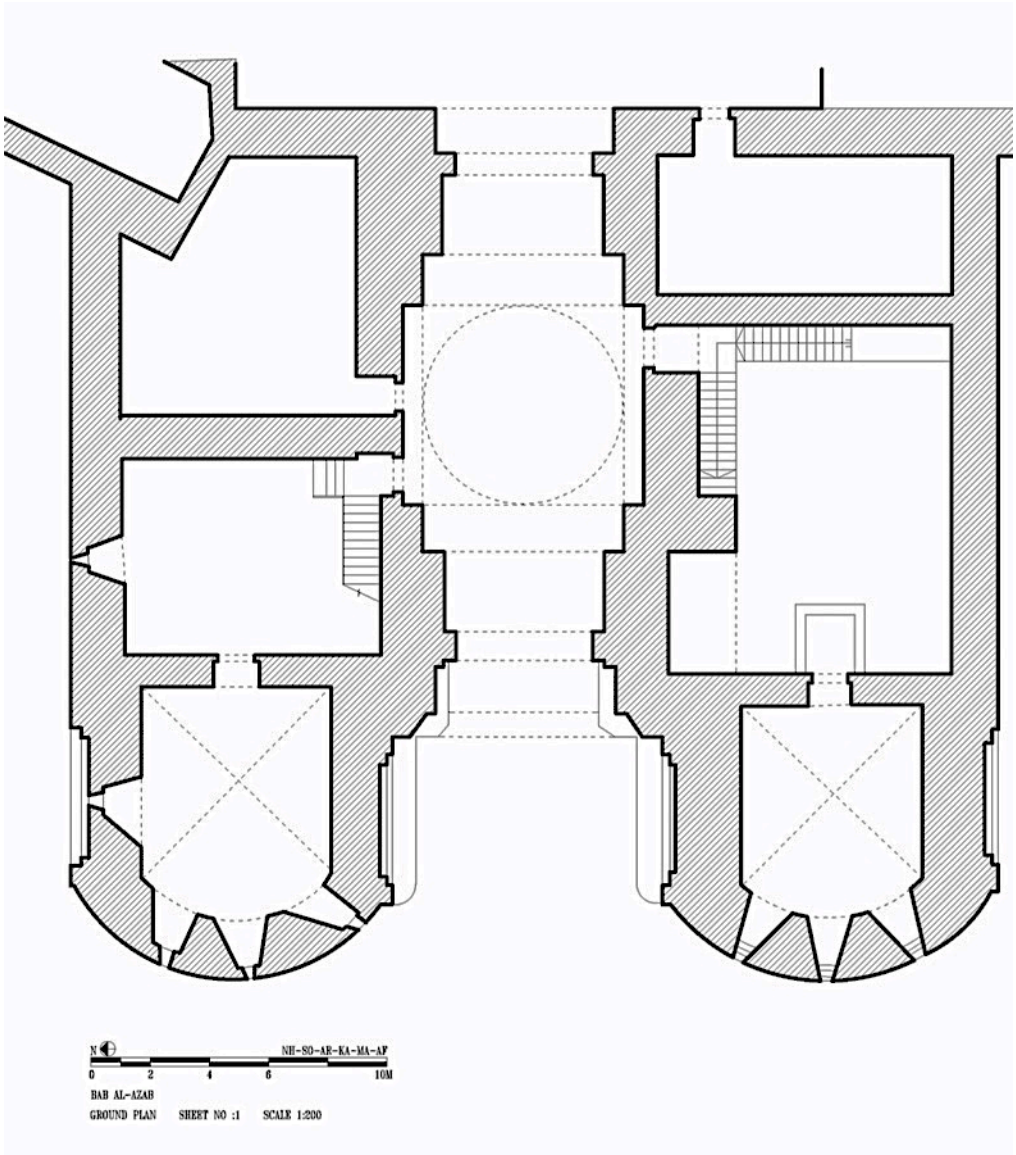


Fig. 1. Ground plan of Bab al-'Azab

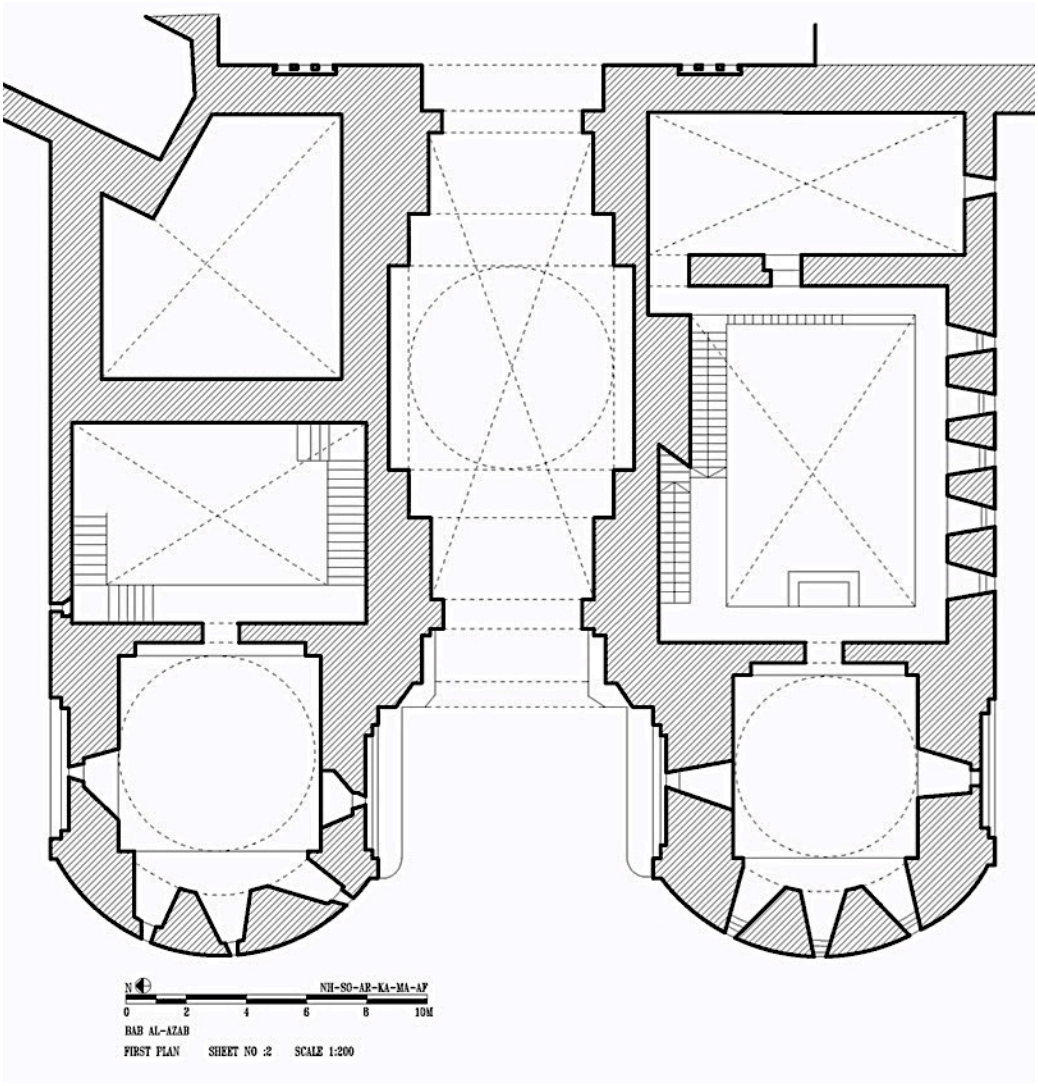


Fig. 2. First floor plan of Bab al-'Azab

Fig. 3. Layout of Bab al-'Azab

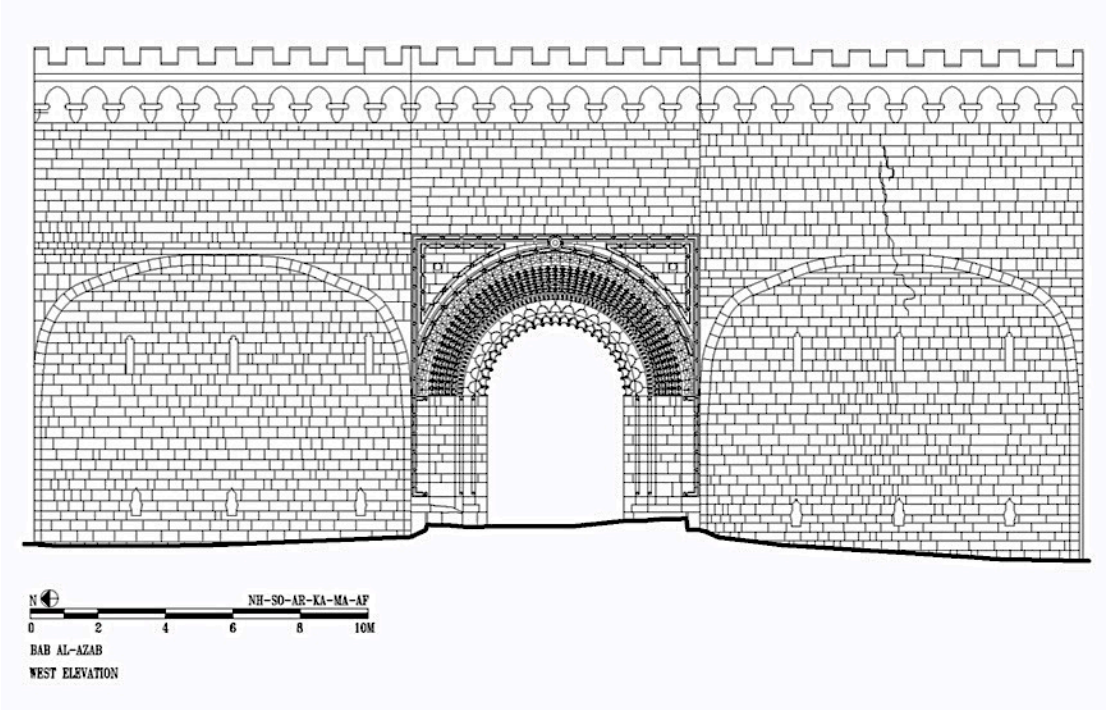
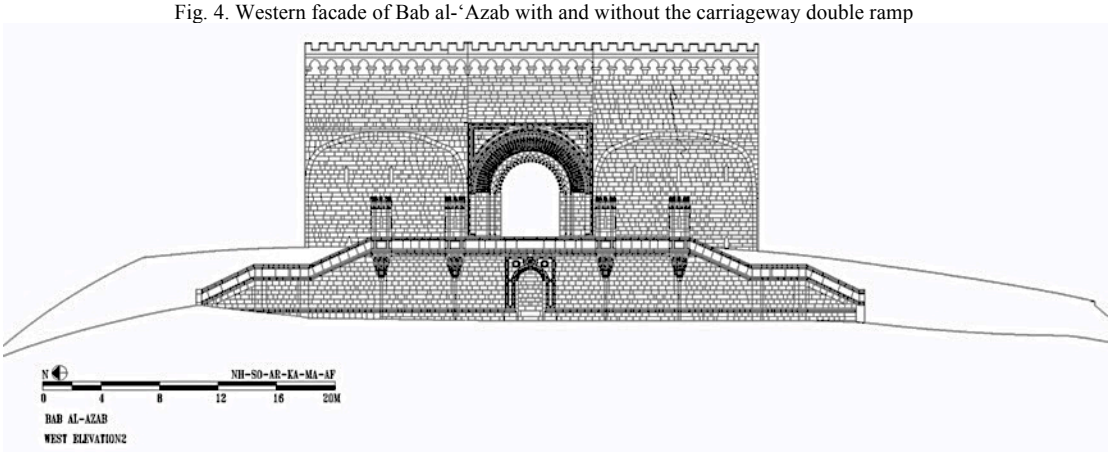


Fig. 4. Western facade of Bab al-'Azab with and without the carriageway double ramp



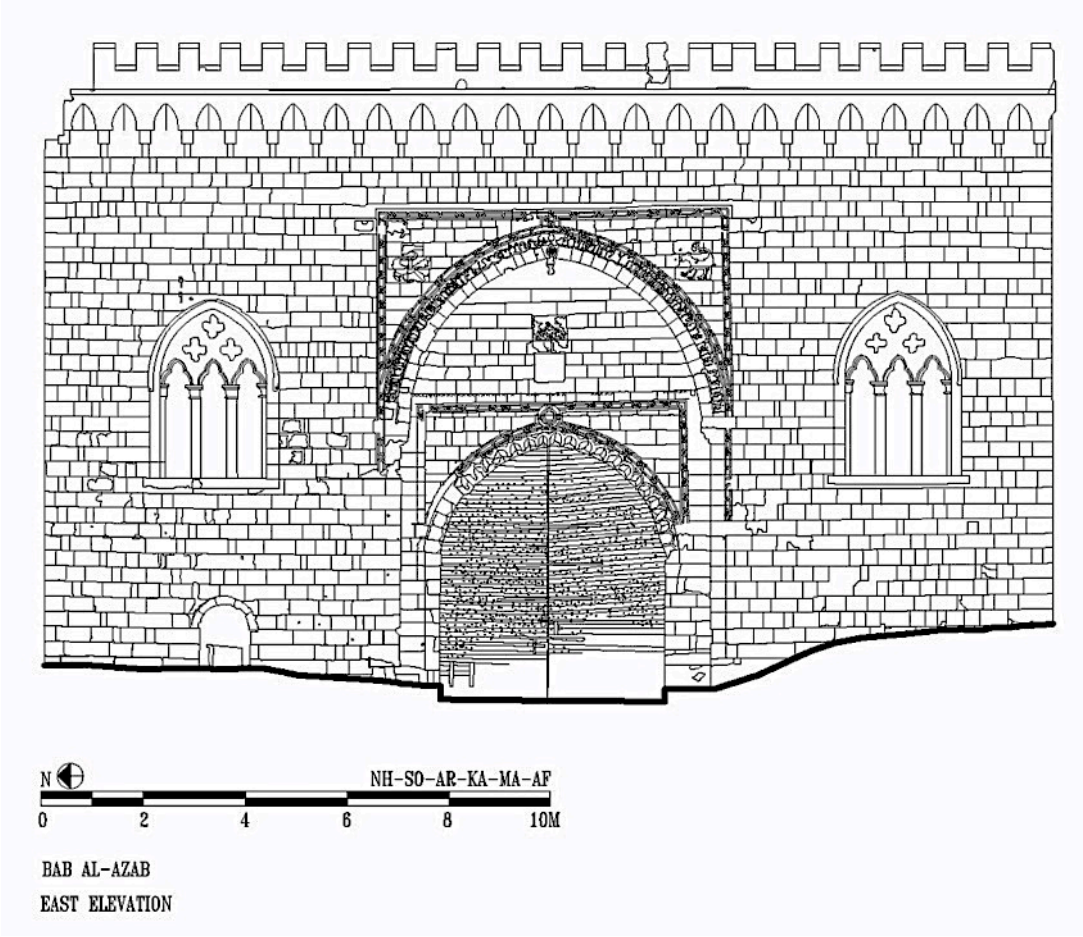


Fig. 5. Eastern façade of Bab al-'Azab

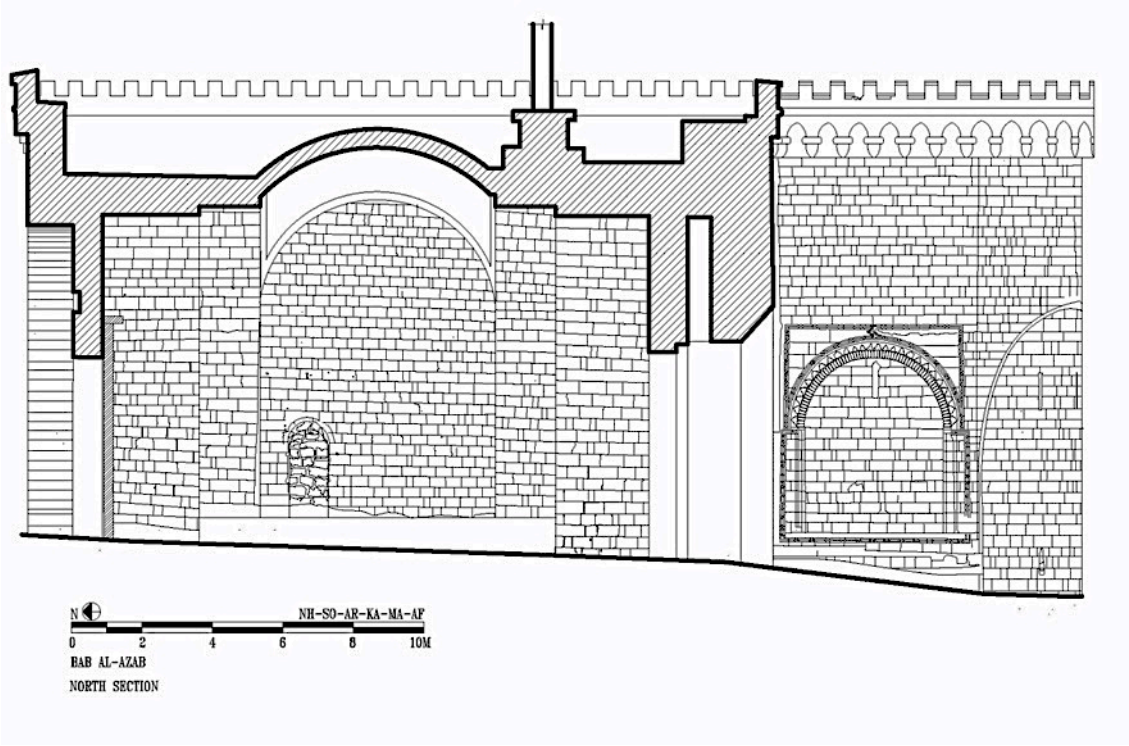
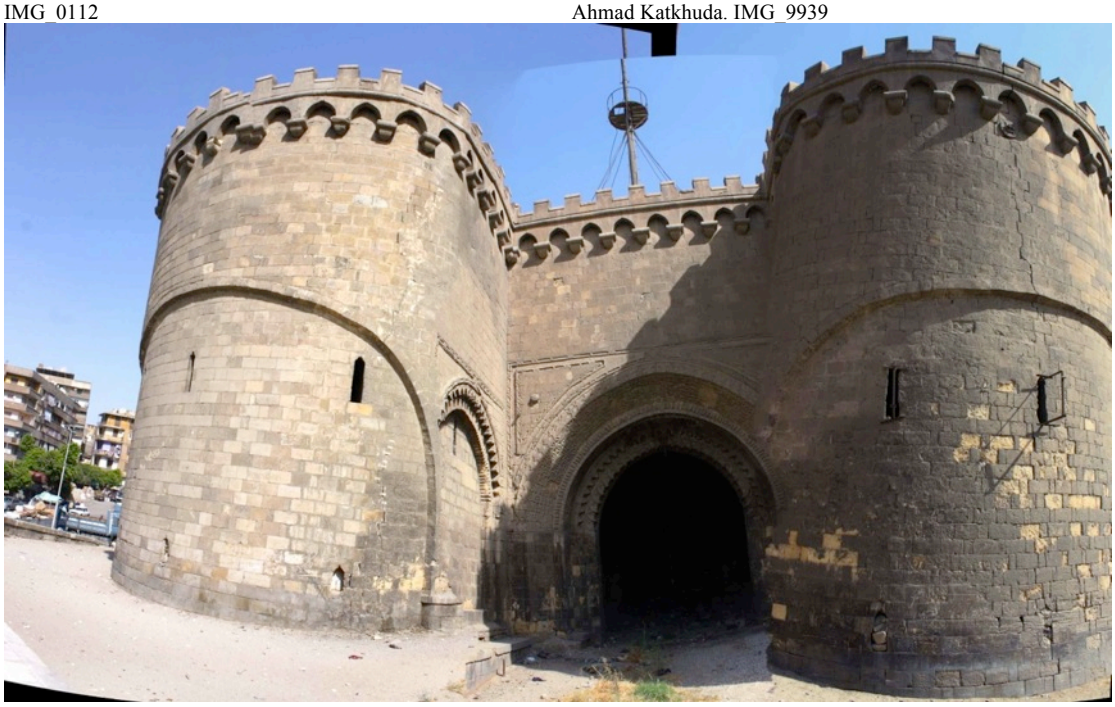


Fig. 6. East-West section of Bab al-'Azab looking south

5. Current photo documentation

Western façade of Bab al-'Azab from *midan* al-Rumayla. IMG_0112

Eastern façade of Bab al-'Azab viewed from the minaret of Ahmad Katkhuda. IMG_9939



Western façade of Bab al-'Azab proper without the raised ramp. IMG_0124, IMG_0125, IMG_0126, and IMG_0127 combined

The double chain frame around the central arch with a boss on each corner. IMG_1266

Intricate geometric pattern around the soffit of the main arch (similar to Bab al-Nasr). IMG_1269

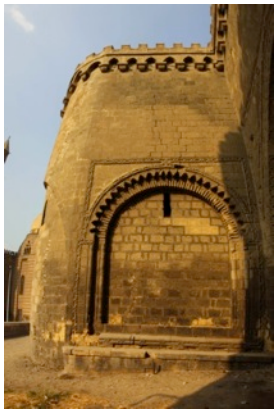
Detail of the opening to throw oil on the enemies under the soffit of the highly decorated concentric arches. IMG_1364

Western central arch and the façades of the flanking towers. IMG_0125

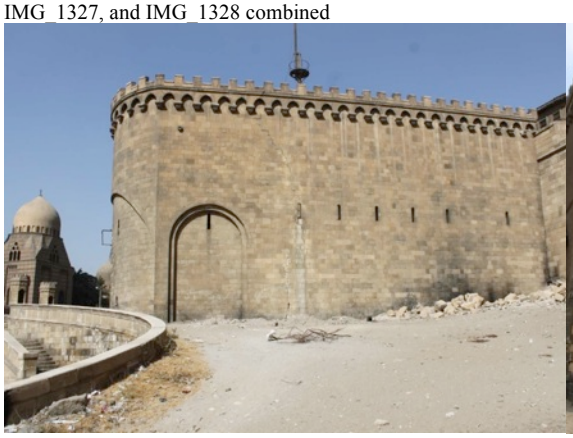
Details of the southern jamb of the entrance. IMG_0156

Crenellations added by al-Khedive Isma'il. DSC00607

Muhammad Ali's topping of the wall compared with Isma'il's. IMG_1788



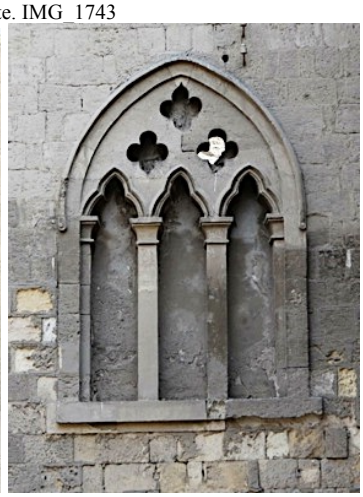
Three faces of the northern tower of Bab al-'Azab. IMG_0118, / IMG_0126 and IMG_0127/ IMG_1325, IMG_1326, IMG_1327, and IMG_1328 combined



Three faces of the southern tower of Bab al-'Azab. IMG_0118b / IMG_1780 / IMG_1369, IMG_1370, and IMG_1371 combined

Central flat dome covering the passageway of Bab al-'Azab. IMG_0144

Details of the pendentives, entrance tunnel vault and the entrance to the gate. IMG_1743



The eastern façade of Bab al-'Azab viewed from the staircase lying across the open space (DSC00645, DSC00646, and DSC00647 combined) and details of the neo-gothic blind window added by Khedive Isma'il (DSC00603)

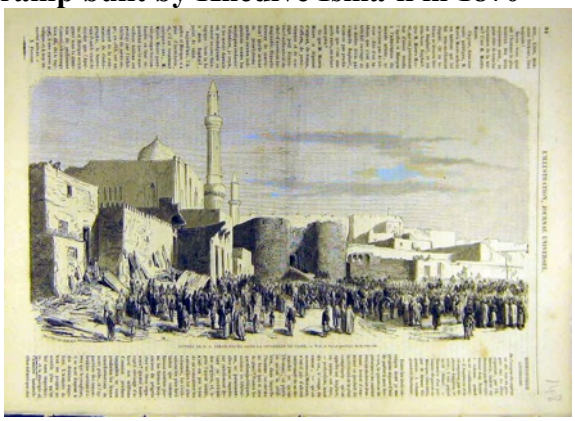
Original details of en relief royal lions on the corners of the central arched chain decorative frieze and the rectangular chain motif - DSC00605 and DSC00606

6. Previous Conservation Activities on Bab al-'Azab

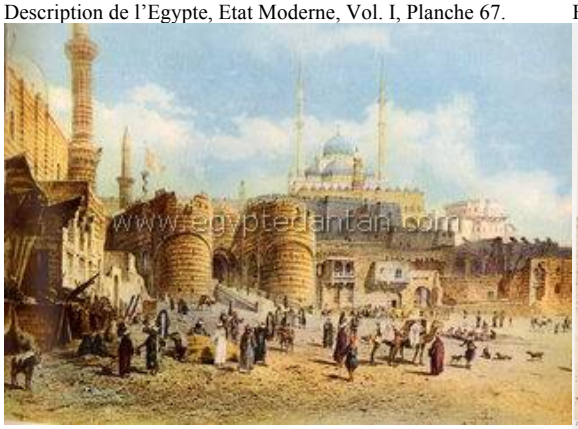
- According to Husam, referring to manuscript No 399, Bavarian State Library, Munich, an older gate existed in this location in 1685 AD (1099 AH). Most probably, this is Bab al-Istabl (Stables) mentioned by Rabbat.
- In 1754 AD, the older gate was completely demolished and was substituted by todays Bab al-'Azab that resembles Bab al-Futuh, built in 1087 AD, during the Fatimid Period, which still exists.
- In 1870, Khedive Isma'il renovated the gate as part of his program to modernize *midan* Salah al-Din.
    - The crenellations topping the projecting towers and the gate were removed and replaced by the current cornice.
    - The rear façade of the gate was rebuilt with two neo-Gothic styled blind windows.
    - Replacement of the single stretch central ramp into a raised double armed ramp leading upwards to Bab al-'Azab from its southern and northern sides.

Archival material showing the central ramp leading to Bab al-'Azab and its replacement by the raised double sided ramp built by Khedive Isma'il in 1870

Description de l'Egypte, Etat Moderne, Vol. I, Planche 67.



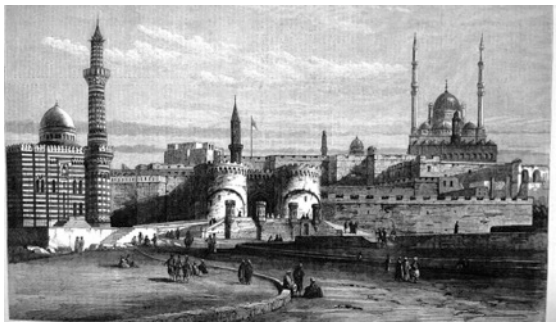
From a British magazine.

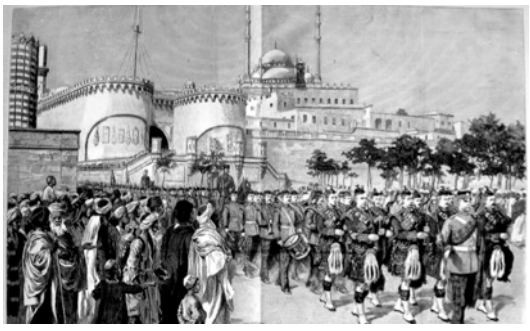


Gravure de Libay, montant le Midan Rimeilahe et Bab el Azab, entrée de la Citadelle en 1856.

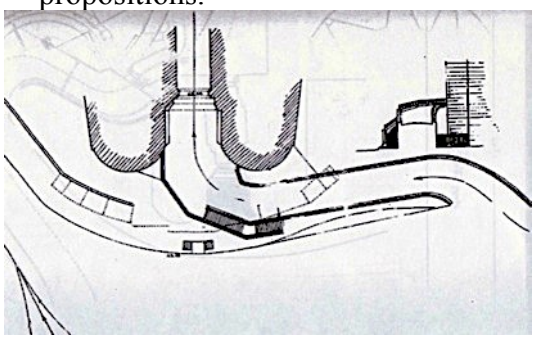
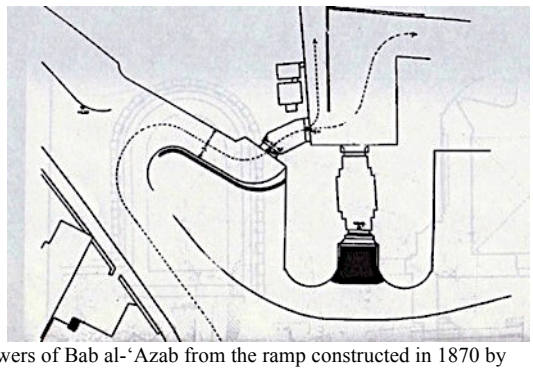
Frith, Francis, Sinai, Palestine, The Nile, ca. 1863, (title of photo: The Bab El-Azab Citadel Gateway, Cairo).

Archival photos after the reconstruction of the double armed raised ramp (All photos presented here are from the internet or from the archives of the SCA)



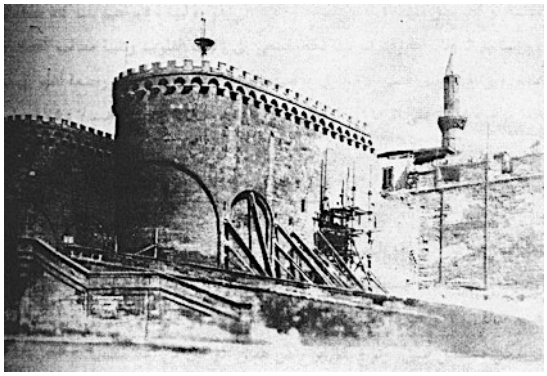



- The Comité de Conservation has worked on Bab Zuwayla in 1914. In one of the reports of this year, Prince Mohamed Ali proposes to move the ramps 3 to 4 meters away form the bases of the towers. The chief architect said that he will consider this proposal. In the same 1914 bulletin, the architect proposes that it would be appropriate to restore the one stretched ramp, which was, 40 years earlier from the date then, replaced by the double stretched lateral ramps. Hertz Pasha answered that he had examined the situation with M. Haswell and that this restoration of the old ramp was unrealizable, but proposes to keep only the sloping way of the ramp arm on the northern side. As to the southern arm of the ramp, he proposes its complete demolition and exposure of the southern tower base. In this context, a sketch was presented showing an alternative ramp solution. The technical section agreed to perform this modification in reverse order, meaning, to keep the ramp on the southern arm and demolish the one on the northern side as proposed by Sabri Pasha. The alternatives were approved and the drawings submitted to the Ministry of Pubic Works. More discussions and alternatives were conducted referring to the subject of the demolition of the ramp and the proposals were also sent to the Ministry of Defense then named as "Ministry of War". See below two of these propositions.

Two plans showing two alternatives to free the bases of the towers of Bab al-'Azab from the ramp constructed in 1870 by Khedive Isma'il (SCA archives)

- Between the years 1941-45, the Comité has done some restorations on the masonry of Bab al-'Azab (See the picture below). During one of their visits, members of the Comité expressed their worry concerning the damage caused by the damp on the lower courses of the towers.




Archival photos showing the extensive stone exchange on Bab al-'Azab in the 1980s

- Between the years 1983 and 1985, Bab al-'Azab was restored again by the efforts of Ahmad Qadri, then the head of the Egyptian Antiquities Organization (EAO, which was later renamed as SCA, and currently the MA). It is clear how heavy the conservation intervention was, the light color masonry of the northern tower indicates that most of its skin blocks were exchanged.
- During these years, or perhaps even earlier (this have to be checked), some structural interventions were obviously done. It is most probable that these are earlier Comité work because similar actions were observed in other Islamic monuments in the Qarafa.

An exposed bolting system betrays a major detachment problems solved by metal bracing of the walls. IMG_1282

This is yet another indication that the southern tower had suffered from a major displacement or structural instability, or perhaps sliding of the *jabal* (rock). In all cases, this issue needs serious investigation. IMG_1280 and IMG_1281

The crack patterns on the masonry of the rounded section of the southern tower indicates heavily stressed masonry and perhaps differential settlement of the ground (IMG_1290)

- In 1989, the EAO documented the ground floor plan and the W-E section of the gate, while in 1995 Ahmad Husam prepared the rest of the documentation. Our team used these drawings as guidelines and prepared its own architectural documentation, presented below.

7. A schematic guideline for the physical restoration of material, structures, and decorative elements of Bab al-'Azab

In this section, the general state of Bab al-'Azab is followed by a rough condition survey and the state of its preservation/maintenance, finalized by my assessment of the situation vis a vis the current emergency actions needed and the future conservation / site preservation suggestions.

General state of Bab al-'Azab:

Before handling the current state of conservation/preservation, it is worth to mention the general state of the site. To comprehend the general state of Bab al-'Azab, it is enough to read pages from the current press where reviews are presented on the state of dilapidation that Bab al-'Azab has reached to. It is true that relying on similar sources does not seem to be scientific, but in this case, what is being presented here is very close to the reality, so I have decided to use two of these to demonstrate the severity of the situation around Bab al-'Azab and how it has aroused public dismay.

- The first is an article from "kallimni" (Talk to me), where an article and a video on Bab al-'Azab are presented. The article is entitled: "al-Qal'a abode for child prostitution, and the government is sleeping". Needless to translate the article, but I have reproduced it in Arabic, just for the record.

الغريب أنني عندما أجريت حوارا مع تجار ومدمني المنعة الحرام المتواجدين بنفس المكان اعترفوا لي بأن سر انتشار الملابس الداخلية لحريمي بالمكان أن معظم من يأتي لممارسة الرذيلة بباب القلعة الأمن والبعيد عن عيون الحكومة وشرطة الآداب يكونون في حالة سكر تام ودائما ما يتركون ملابسهم الداخلية ويفرون بمجرد مداهمتهم من قبل الشرطة أو تجار الحرام أو البلطجية، كما أن الكثير من الفتيات يقمن بغسل ونشر ملابسهن الداخلية وتركها بالمكان لتجف، وهناك فتيات يتعمدن ترك ملابسهن الداخلية كنوع للدعاية والترويج وجلب الزبائن!!

خلاصة أنك عندما تقترب من باب العرب الكبير تجد في حنباته استراحتين كبيرتين وواسعتين يميناً ويساراً وهي الإستراحة التي كانت مخصصة للحراسات الخاصة بقلعة محمد علي، وعلي هذه الاستراحة ستجد مجموعة من المراتب الأسفنج الهلهلة والقذرة جدا والتي يفترشها تجار المنعة الحرام لممارسة الرذيلة عليها وبكل أسف تقام علي استراحة جنود محمد علي حفلات الجنس الجماعي شبه اليومية في غفلة وتستر كامل من هيئة الآثار المصرية.

أما إذا أردت ممارسة الرذيلة أو تعاطي المخدرات بكل أنواعها داخل حجرات القلعة فهو أمر عادي جدا وميسر ولا صعوبه حيث أن مفاتيح باب العرب موجودة أصلا في أيدي أطفال الشوارع الذين يقومون بفتح البوابة والدخول إلي عمق القلعة والاختباء بجميع حجراتها الأثرية وخاصة الحجرات المخصصة لعساكر المدرك والملاصقة لباب العرب الباب التاريخي الذي شهد أحلك موقعة في تاريخ مصر الحديث وهي مذبحة القلعة التي دبرها محمد علي باشا للمماليك.

في باب العرب التقيت بأحد العاطلين وكان بصحبته فتاتين ليل وكان يمارس معهما الرذيلة بكل معانيها، وكانت إحداهما تحمل طفلة رضيعة علمت منها أنها من سفاح بعد أن رفض أبوها الاعتراف نسبها.

وعلي مقربة من وكر الدعارة وجدت خمسة أطفال يتناولون البرشام والعقاقير المخدرة واعترفوا بالإجماع بارتكاب كافة الجرائم داخل باب العرب، وعندما سألتهم عن كيفية اختراق باب العرب أكدوا لي أن لديهم ثلاث طرق لدخول القلعة الأولي عن طريق المفاتيح الرسمية التي يمتلكونها بالفعل بعد أن قاموا بتقليش الأقفال الخاصة بابا القلعة وأصبح فتحها وإغلاقها بدون أي مفاتيح.

أما الطريقة الثانية فهي الدخول من أسفل باب العرب من خلال فتحة كبيرة أسفل الباب وذلك في حال تعذر فتح الأقفال بسبب الصدأ!!

أما الطريقة الثالثة فهي الدخول عن طريق الشبابيك المغلقة بقطع من الحديد المتآكلة والتي لا تمنع دخول الأطفال.

بهذه الطرق السلهلة والبسيطة يمكن لأي أحد دخول القلعة واختراقها وممارسة كافة الجرائم بداخلها دون أي وعي أو اعتراض من المسئولين بهيئة الآثار المصرية.

https://www.youtube.com/watch?feature=player_embedded&v=WlKMaStdF7g#t=0

http://klmty.net/121415...html

http://klmty.net/

في الحلقة الأولي من ملف الإهمال والفساد داخل قلعة صلاح الدين الأيوبي كشفنا بالصوت والصورة كيف تمكنت عصابات الإجرام والإنحراف وتجار الكيف والمنعة الحرام من اختراق أسوار قلعة صلاح الدين الإيوبي واتخذوا من القلعة الخصبة وكرا لممارسة الرذيلة والتجارة الحرام في غيبة تامة من مسئولي الآثار.

وقد كشفنا بالصوت والصورة أطفال الشوارع وهم يتعاطون العقاقير المخدرة والخرمة شرعا وقانونا، والتي تمثل خطرا داهما علي حياة الأطفال مثل عقار "الترامادول" و"الصراصير"، فضلا عن إدمان "الكلة" التي يدمنها معظم أطفال الشوارع داخل أسوار القلعة.

بكل أسف تحدث هذه الجرائم بكل سهولة علي شرف أخطر قلعة شهدت علي حكم مصر، القلعة التي شيدها القائد صلاح الدين الإيوبي، والتي صارت رمزا لحكم مصر في عهد الدولة الأيوبية ودولة المماليك، وفي عهد الولاة العثمانيين ثم في عهد الأسرة العلوية، واستمرت كذلك إلي عصر الخديوي إسماعيل حيث اتخذ قصر عابدين مقرا لحكم مصر.

في هذا التحقيق نكشف بالصوت والصورة كيف تسلل العصابات الإجرامية وتجار الكيف والمخدرات وتجار المنعة الحرام وفتيات الليل إلي القلعة الخصبة، وكيف يمارسون الدعارة بكل معانيها داخل حرم القلعة، وكيف يتاجرون ويبيعون المخدرات داخل أسوارها، وكيف اتخذها أطفال الشوارع مأوي ومكان آمن للمبيت بها بعيدا عن عيون الشرطة، وكيف اتخذت فتيات الليل باب العرب ليكون شعارا للدعارة فقاموا بتعليق "المايوهات، والسنتيانات، وقمصان النوم" علي باب القلعة في إشارة واضحة لجذب الزبائن وكأنه إعلان صريح "هنا باب الدعارة وليس باب العرب"!!!

إذا أردت اكتشاف هذه الجريمة بنفسك فما عليك إلا أن تتوجه الآن إلي قلعة صلاح الدين أو قلعة محمد علي كما يطلق عليها المصريون، وتحديدا إلي باب العزب فستجد كل ما يسرك، أطفال الشوارع، فتيات الليل، تجار البرشام والمخدرات وتجار المنعة الحرام أيضا.

بمجرد وصولك لحرم باب العزب وأبراجه الحربية الخصبة ستصطدم أولا بالمعلم بدوي العربجي الذي اتخذ من باب القلعة زبة حمير واسطبل للبغال والحمير الخصاري التي تتنول صباح مساء فوق تاريخ مصر العريق، وبعد أن تجتاز زبية العربجية بعد أن تحصل منه علي تذكرة عبور، ستصطدم بأكوام غير تقليدية من الزبالة وأشرطة البرشام الخرمة بكل أنواعها وسرنجات وحقن الماكس التي يتعاطها أطفال الشوارع داخل حرم القلعة.

أما المشهد الأكثر تميزا والذي ستجده معلقا علي بابا القلعة ومنتشرا في جميع أركانها ومداخلها وحتي في الأبراج الحربية الخاصة بها فهو الملابس الداخلية الحريمي وخاصة "المايوهات، وحمالات الصدر وقمصان النوم" التي تنتشر في كل مكان بأرضية وجدران باب العرب.

- The second is a post on the net about Bab al-'Azab, as a touristic guide.
http://www.tripadvisor.com/Attraction_Review-g294201-d460051-Reviews-Bab_al_Azab-Cairo_Cairo_Governorate.html

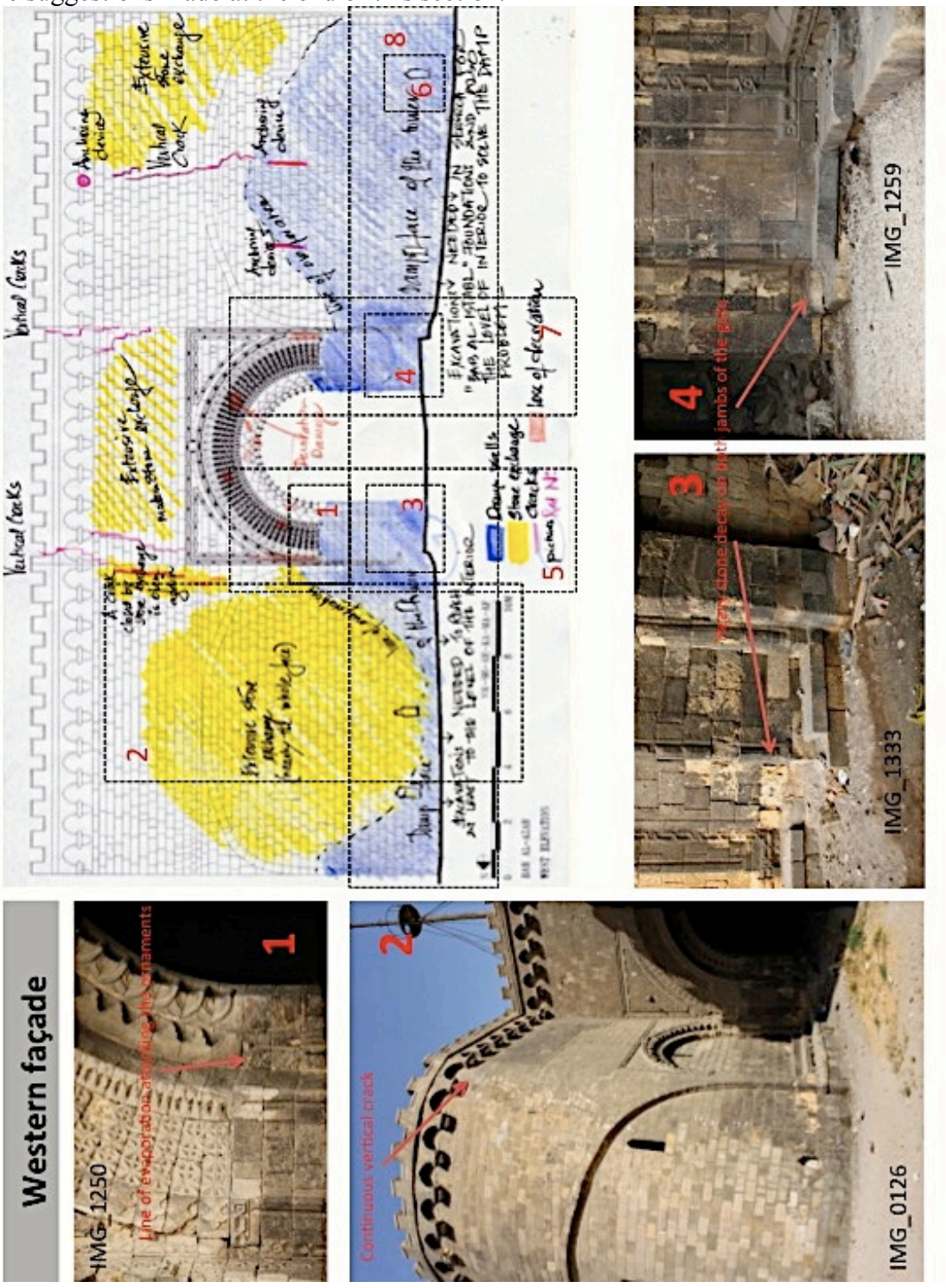
"Impressive but hazardously dirty"

Reviewed October 27, 2012

This is the front gate, so to speak, of the Citadel. It's an impressive and elegant fortified gate. Unfortunately, not only is it closed (access to the Citadel is from the visitors' entrance on the far side) but it's also very dirty: to climb up to the gate itself you have to watch for garbage, rubble, broken glass and the remains of small fires. If you're interested in medieval military architecture, it's still worth cautiously making your way up the steps to see it up close, but otherwise you can just see it and the rest of the Citadel walls from afar.

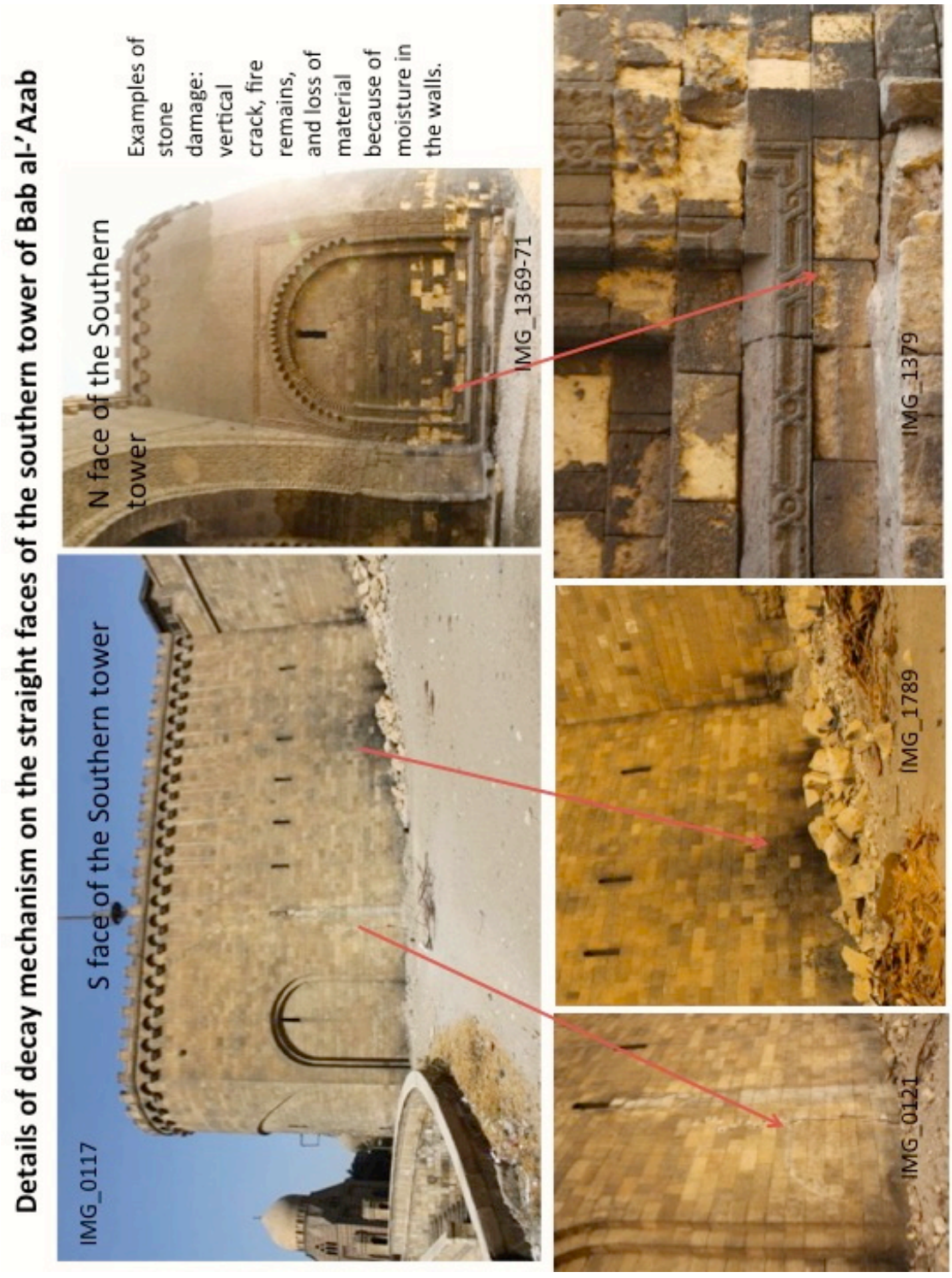
A rough condition survey and the state of preservation/maintenance of Bab al-'Azab

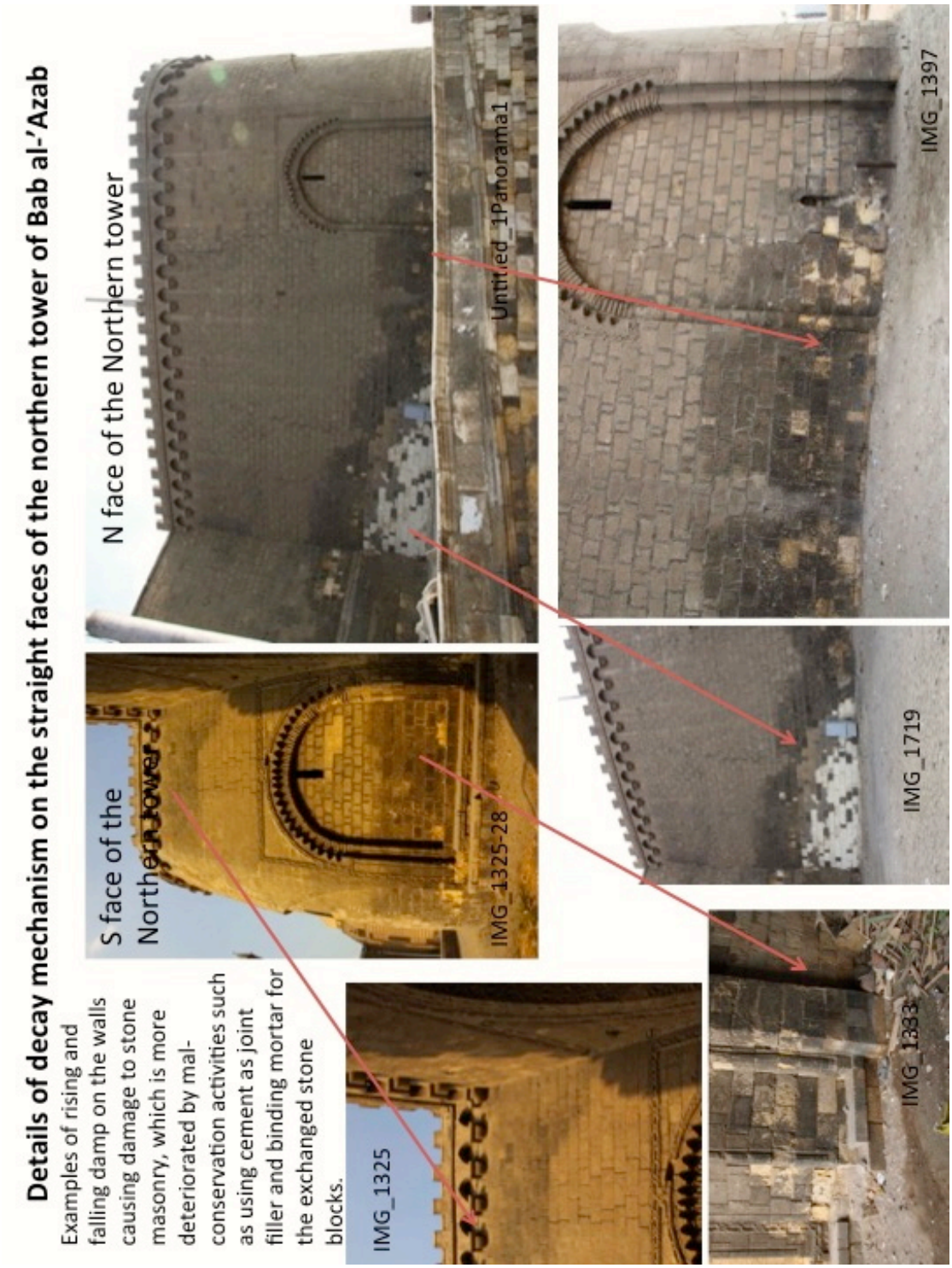
The aim of this condition survey is to summarize the team's observations on particular parts of the Bab. Therefore, the following charts represent the collected observations on the external towers (western face), the eastern façade, and the passageway of Bab al-'Azab. The condition survey notes the observations on the drawings and clarifies the points made by the photos. The main purpose is to justify the suggestions made at the end of this section.

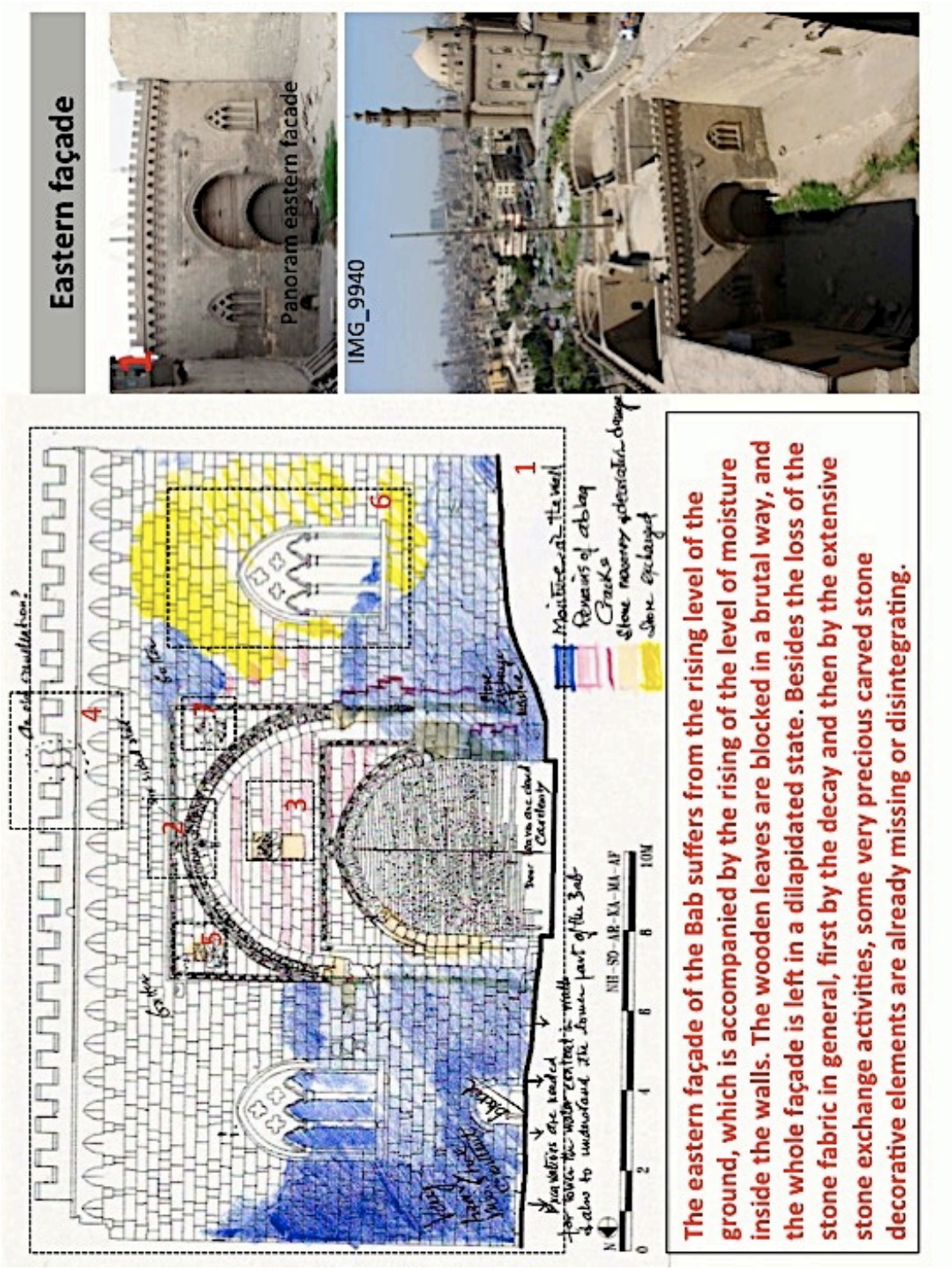


Details of decay mechanism on the rounded faces of the towers of Bab al-'Azab
Notice the vertical crack running vertically along the central axis of the tower façade .
Notice the metal additions on the top of the tower]under the crenellations and the ones set across the arrow slits. Most probably anchoring device added by the conservation activities of the Comité. These need to be
Notice the height of the damp front on the two faces. The reason for this rise of water on the masonry is a matter of further study because of the high level of the ground in this area that make "the high water table" explanation for historic Cairo nearly impossible.
Notice how the stone exchange has blocked the water rise on the northern tower. Most probably because of the use of cement as mortar, which blocked the water from rising on this façade and instead rise somewhere else, where there is still the weaker original fabric and thus making damage to the still authentic walls.
Southern tower
A crack, which was remedied by stone exchange around it
During the eighties, the stone on this façade was exchanged extensively by new blocks
Northern tower
This façade exhibits the two main urgent problems from which Bab al-'Azab suffers :
1. Structural Problems: The actual vertical crack on the southern façade and the anchoring devices used there show that this façade was already suffering from a structural problem, which was remedied at one point, but was not really cured. The northern façade confirms this point as the remedy there was to exchange the stone masonry of the whole façade. The structural welfare of Bab al-'Azab needs to be studies in the very near future, to find the reason for this disorder, before jumping into execution of more temporary remedies.
2. Controlling unwanted moisture: The line of evaporation on Bab al-'Azab cannot be properly explained. It might be rising damp or falling damp, or perhaps, the result of accumulation of water in a hidden area. This needs to be studied urgently to find the proper way of solving it. Exchange of stone of the whole face, as it happened on the rounded section of the northern tower, is just a way to steal away the authenticity of the historic fabric of the building without really solving the problem that had caused the stone decay at first place.

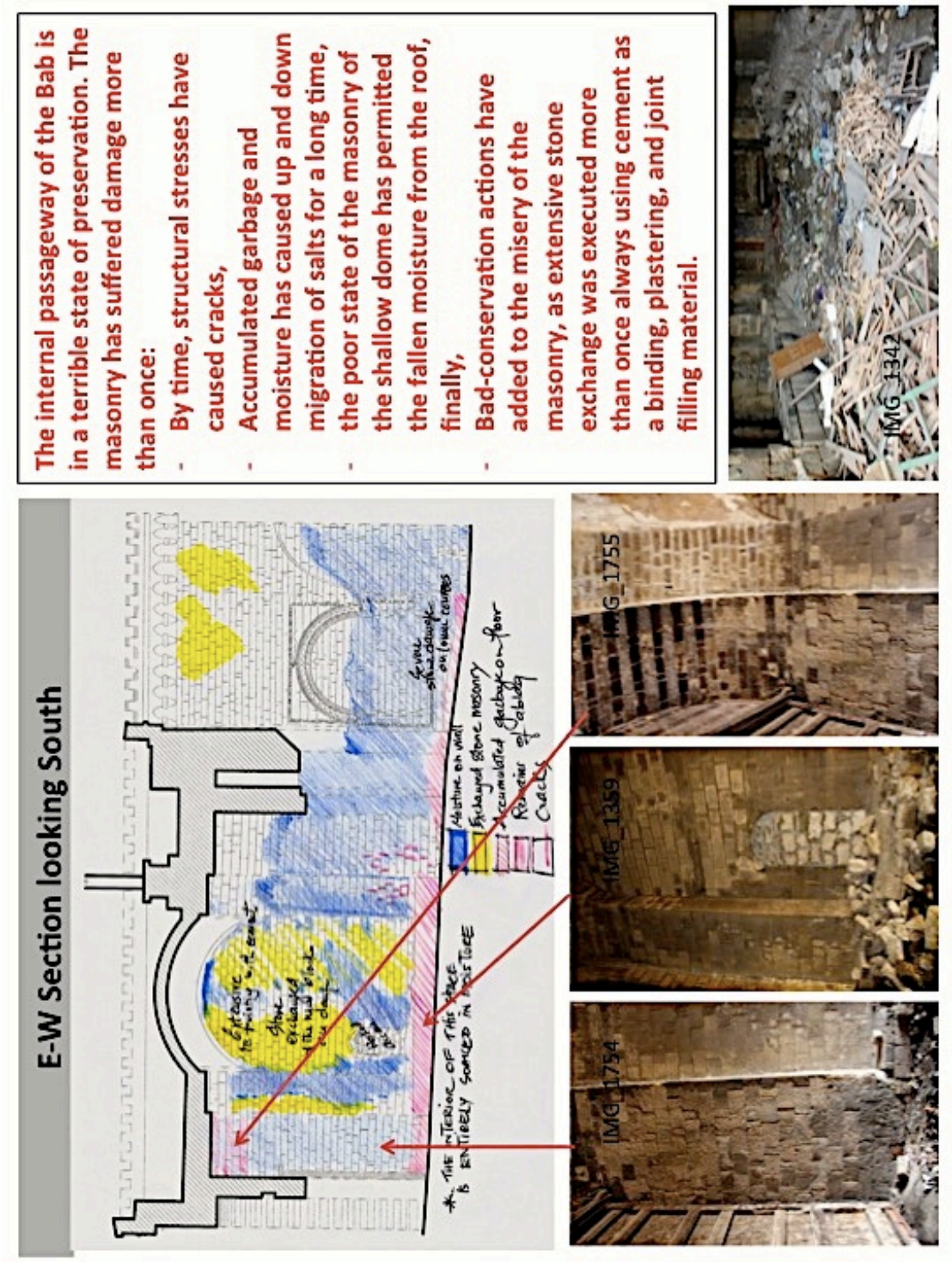

7
IMG_0156
6
IMG_1314
Blocked opening and traces of bars scratching the walls as they
5
IMG_1329
8
IMG_1247
Moisture along the lower fabric of the two towers
Crack running vertically upwards until the crenelation of the tower – it is located exactly on the transition of the rounded section of the tower with its side straight wall

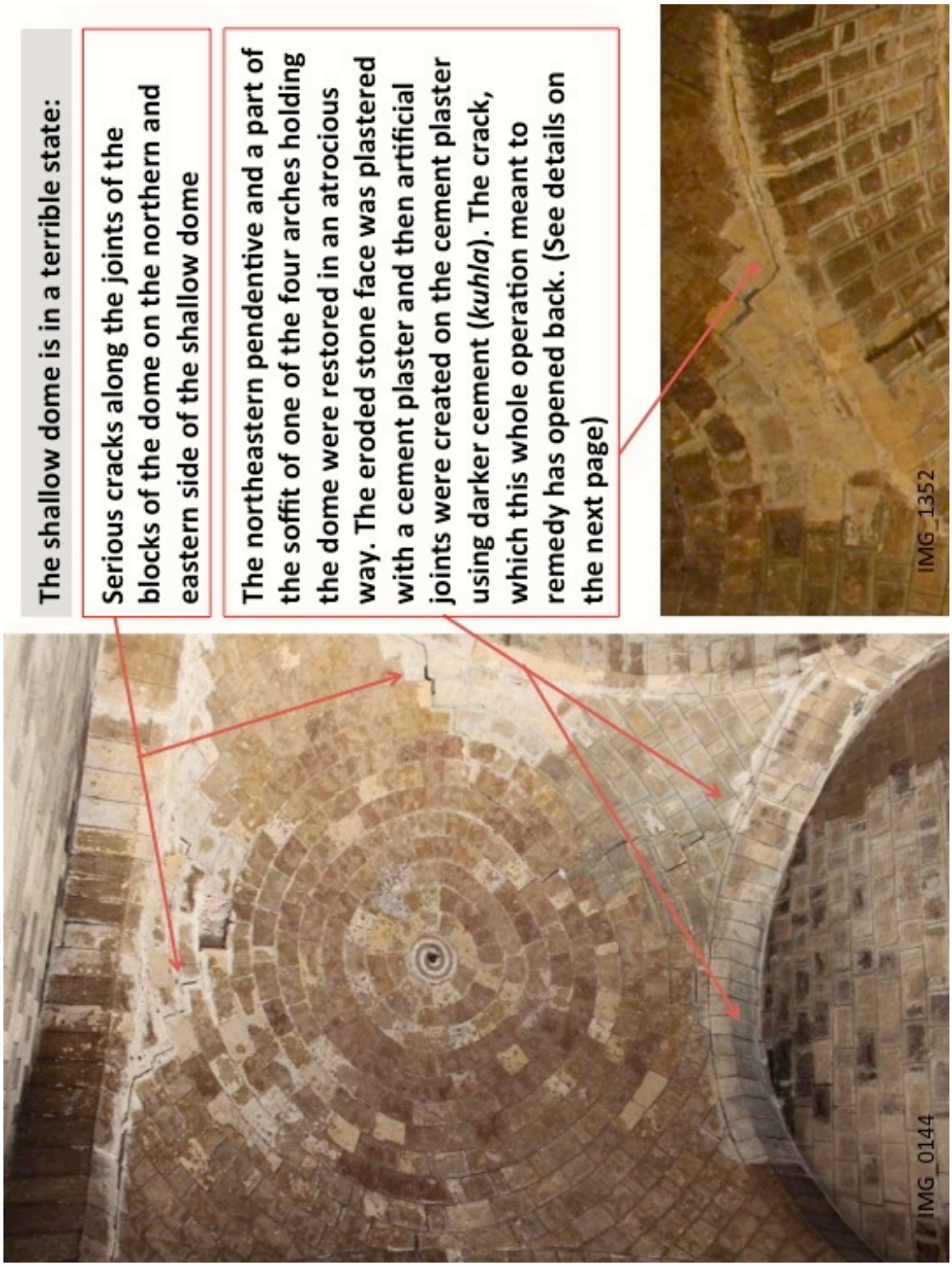

Details of decay mechanism on the straight faces of the southern tower of Bab al-'Azab
IMG_0117
S face of the Southern tower
N face of the Southern tower
Examples of stone damage: vertical crack, fire remains, and loss of material because of moisture in the walls.
IMG_1369-71
IMG_1379
IMG_1789
IMG_0121

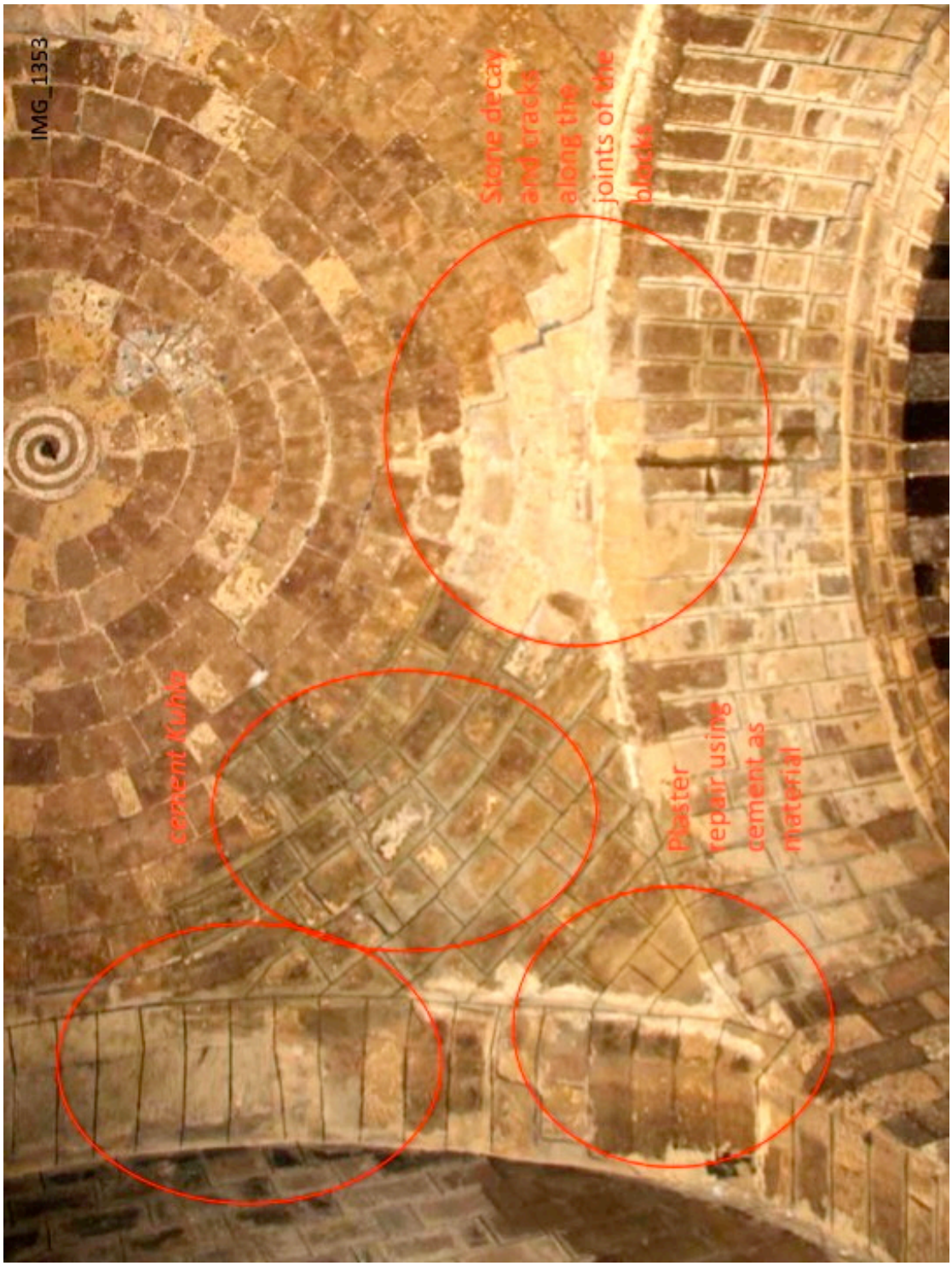

Details of decay mechanism on the straight faces of the northern tower of Bab al-'Azab
Examples of rising and falling damp on the walls causing damage to stone masonry, which is more deteriorated by mal-conservation activities such as using cement as joint filler and binding mortar for the exchanged stone blocks.
N face of the Northern tower
Untitled_1Panorama1
IMG_1397
S face of the Northern tower
IMG_1325-28
IMG_1719
IMG_1325
IMG_1333

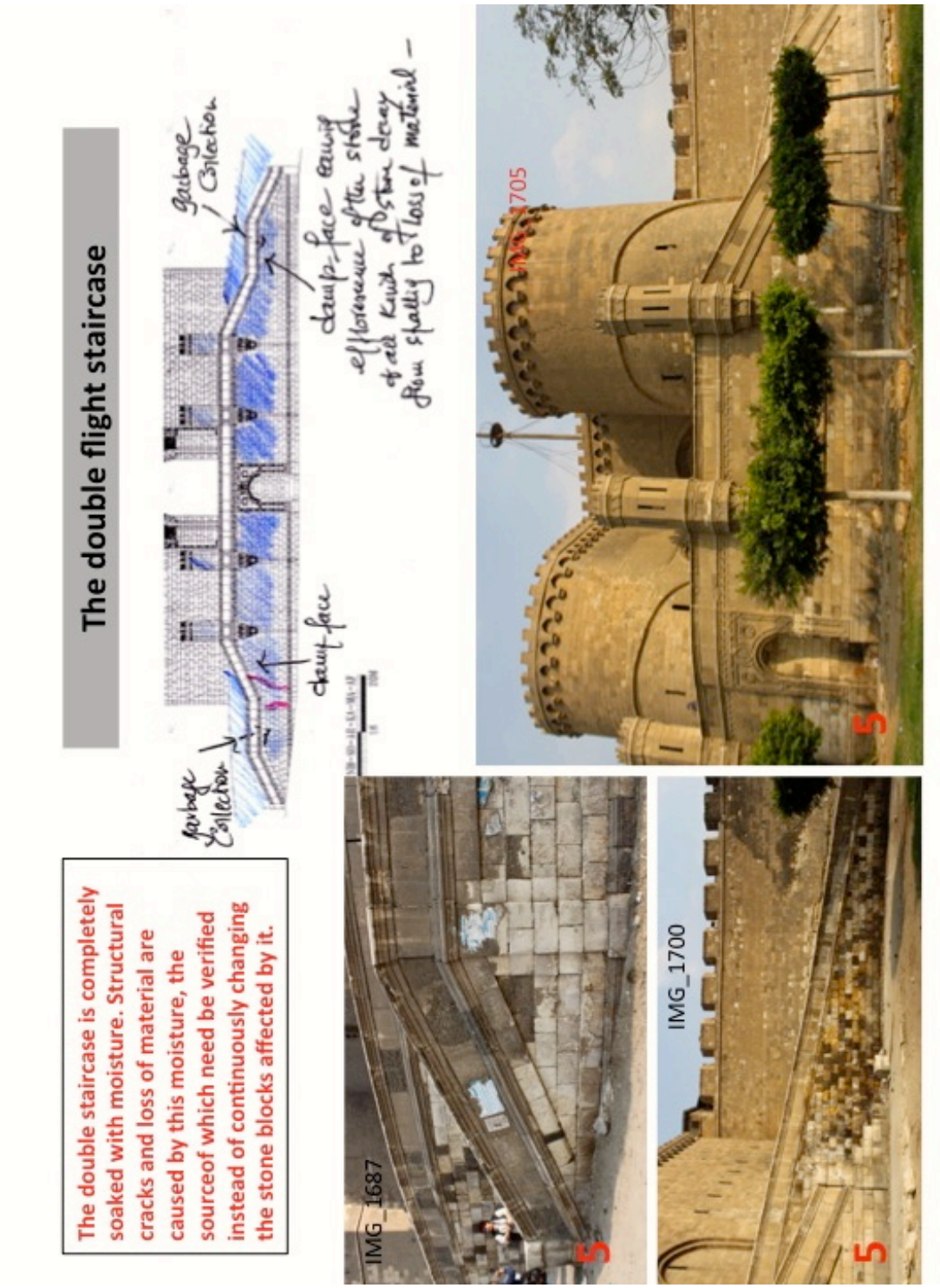

Eastern façade
Panoram eastern facade
IMG_9940
The eastern façade of the Bab suffers from the rising level of the ground, which is accompanied by the rising of the level of moisture inside the walls. The wooden leaves are blocked in a brutal way, and the whole façade is left in a dilapidated state. Besides the loss of the stone fabric in general, first by the decay and then by the extensive stone exchange activities, some very precious carved stone decorative elements are already missing or disintegrating.


Details of decay mechanism on the western façade of Bab al-'Azab
Some examples of the decorative stone carved blocks, which are either missing or being disintegrated
DSC00641
2
DSC00640
3
DSC00639
4
DSC00605
5
DSC00603
6
DSC00638
7
DSC00606
8


The internal passageway of the Bab is in a terrible state of preservation. The masonry has suffered damage more than once:
- By time, structural stresses have caused cracks,
- Accumulated garbage and moisture has caused up and down migration of salts for a long time,
- the poor state of the masonry of the shallow dome has permitted the fallen moisture from the roof, finally,
- Bad-conservation actions have added to the misery of the masonry, as extensive stone exchange was executed more than once always using cement as a binding, plastering, and joint filling material.
IMG_1342
E-W Section looking South
IMG_1755
IMG_1359
IMG_1754


The shallow dome is in a terrible state:
Serious cracks along the joints of the blocks of the dome on the northern and eastern side of the shallow dome
The northeastern pendentive and a part of the soffit of one of the four arches holding the dome were restored in an atrocious way. The eroded stone face was plastered with a cement plaster and then artificial joints were created on the cement plaster using darker cement (*kuhla*). The crack, which this whole operation meant to remedy has opened back. (See details on the next page)
IMG_1352
IMG_0144


IMG_1353
Stone decay and tracks along the joints of the blocks
cement Kunha
Plaster repair using cement as material


The double flight staircase
The double staircase is completely soaked with moisture. Structural cracks and loss of material are caused by this moisture, the sourceof which need be verified instead of continuously changing the stone blocks affected by it.
Garbage Collection
Garbage Collection
dampface
dampface
IMG_1687
IMG_1700
IMG_1705

Emergency actions:

1. The structural assessment of Bab al-'Azab is an emergency because the structural disorders noticed on the gate are not new. During previous conservation activities, these were noticed and accordingly, measures were taken. It goes beyond say that whatever was the made to stop further structural deterioration was not sufficient and the gate still suffers from the same problems. Therefore, it is urgent that a structural full assessment is organized to understand the cause before subscribing the remedy.

    One important issue to be mentioned here is the fact that the cracks appearing today seem to be the same, which were restored earlier. The building needs a proper structural assessment. This is a priority considering the fact that the structure is built on slopping terrain, on its E-W and N-S axes. Moreover, obvious signs of previous structural interventions are apparent, so it is very important that such previously applied interventions are assessed, understood and new precautions applied, if found required.

2. The ramp is also in need for proper structural investigation. Obviously the whole structure is suffering from differential settlement, which is causing the separation of the different architectural elements from each other.
3. The Bab and generally the area of Bab al-'Azab is in need of an exhaustive geological study. There must be more answers than the ones offered now concerning the general welfare of the *jebel*, on which the whole Citadel is built, in the light of the modern shocks it has received starting from the opening of the Salah Salem road and the quarrying activities on the *jebel* using dynamite, until the erection of the modern "al-Nosseir" building across the Citadel proper with its huge foundations dug inside the *jebel*.
4. The removed wooden door gates of the outer gate of Bab al-'Azab need be protected from the ground by raising them on wooden beams. These need be restored and made ready for their re-instatement on their original location, whenever, the gate is ready for that.
5. It is urgently needed to include the isolated space of Bab al-'Azab, described above, back to the control of the Citadel authorities by opening the blocked opening, and restoring the wooden outer gate back to its original space. If, for security reasons, access to the Citadel through Bab al-'Azab is still denied, it should be closed with its proper doors and opened every day and closed for maintenance and cleaning of the ramp.
6. Finally, it is urgent that Bab al-'Azab starts to be taken care of again. Dilapidation brings more deterioration. It should be at least maintained properly until a full conservation project is organized for the safeguard of Bab al-'Azab.

Suggestions for future conservation / site protection

Damp line on the lower levels of both towers of the western façade makes one speculate about the reason for this rise of water and question its source (Untitled_1Panorama1 / IMG_1371 / IMG_1380)

- Other than the mentioned above, the stonework on Bab al-'Azab is in need for a proper stone conservation project where conservation issues of stonework are accompanied by an exhaustive understanding of the building's past uses. The pre-requisite for this action is to understand the causes of the moisture inside the walls of the gate and stopping these causes before the initiation of any conservation project.
- Finally, it is of high importance to decide upon the reuse of Bab al-'Azab before the initiation of any conservation intervention as to include the prerequisites needed for the new use within the agenda of the conservation project proper.

8. Proposed adaptive reuse alternatives

- **The gate will serve as the main access to the lower enclosure of the Citadel as it has always worked as such since its foundation.**
- As such the spaces inside the gate can be the welcoming center to this enclosure, with panels and guidelines of what is expected to be seen behind the wooden gates of Bab al-'Azab.
- As a permanent exhibit, archival photos showing the development of midan al-Rumayla (al-Qal'a) might be an appropriate subject, considering the fact that visitors have just passed it to have access to Bab al-'Azab.

HAVING SAID THIS, IT IS DEFINITELY NOT A MISTAKE TO USE THIS GATE AS THE MAIN ENTRANCE TO THE CITADEL AS A WHOLE, AND NOT ONLY TO ITS LOWER ENCLOSURE.

THUS RECREATING THE PAST GLORY OF THE CONTACT BETWEEN THE OLD CITY AND THE CITADEL DURING ALL ITS PERIODS OF SURVIVAL UNTIL THE OPENING OF MODERN SALAH SALIM ROAD, WHICH HAS CAUSED A COMPLETE DEVIATION OF THE MAIN NATURE OF THE CITADEL AS BEING A FORTIFICATION, WITH FORTIFIED TOWERS SET AGAINST JABAL AL-MUQATTAM AND A MORE FRIENDLY FACE, STILL WELL FORTIFIED) TOWARDS THE CITY IT WAS SUPPOSED TO PROTECT.

FINALLY, THE USE OF BAB AL-'AZAB BACK AGAIN AS THE ACCESS TO THE CITADEL TELLS THE TRUER STORY OF THE CONFLICT BETWEEN THE CITADEL, AS THE MAIN FIXED GEOGRAPHICAL SEAT OF THE EVER-CHANGING RIVAL RULERS, DYNASTIES, AND ÉPOQUES. IT TELLS THE STORY OF HOW ONE FIXED SITE HAS BEEN ADAPTED AND READAPTED

ITSELF FOR A PERIOD OF NEARLY ONE THOUSAND YEARS OF TURMOIL BY BEING BUILT, DESTROYED, REBUILT, OVERLAPPED, REPLACED, MODIFIED, AND RECONSTRUCTED – MEANING THE REAL TASTE BEING OLD ENOUGH AND HAVING ENOUGH EXPERIENCES TO IDENTIFIED AS A MONUMENT.

THE STORY TOLD BY ACCESSING THE CITADEL FROM BAB AL-'AZAB UPWARDS VIA THE SLOPED ROAD AND MORE UP UNTIL THE MUHAMMAD ALI MOSQUE, REPRESENTS THE ASCENDING ORDER OF ITS DEVELOPMENT SINCE ITS FOUNDATION, WITH MUCH MORE HONESTY THAN WHAT THE SITE OFFERS TODAY, WHEN ENTERED FROM SALAH SALIM ROAD.

9. Sources used

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- Warner, N., *Monuments of Historic Cairo* (Cairo - 2005).

2. Mosque of Ahmad Katkhuda al-'Azab
1697 AD (1109 AH)
During the Ottoman Occupation of Egypt (1517-1798 AD)

1. About the founder of the mosque

According to the inscription (in Turkish language) on the main northern façade of the mosque, construction of this mosque is attributed to Ahmad Katkhuda al-Quyumji (blacksmith in Turkish). Ahmad Katkhuda was the head of the '*Azaban* corps of Janissaries and bore the title of Admiral of the Two Seas. '*Azabans* formed the corps of local Janissaries serving as the Ottoman armed forces, which also included the *Inkishariyyin*, which were the foreign corps of Janissaries that came with the Ottomans to Egypt.

2. Location of the mosque

The mosque is located inside the lower enclosure of the Citadel, halfway between Bab al-'Azab and the inner gate. It overlooks the rock-carved inclined sultanic road from the North and faces Bab al-'Azab from the West. It is left today between a group of administrative structures and storage areas built and rebuilt/reconstructed in different periods, which indeed is same situation of the mosque itself, which is believed, most rightfully to have been built originally in Mamluk times (Sultan Faraj Ibn Barquq or al-Mu'ayyad's times) and readapted to function as a mosque by Ahmad Katkhuda al-'Azab during the Ottoman period. This issue is discussed later in detail.

3. Description of the mosque
(Consult the full architectural documentation prepared by our team)

The main purpose of this descriptive section is to survey in words the different parts of the mosque today. But, as the structure had a previous life, there will be a distinction between the Mamluk elements surveyed and the Ottoman additions done, as these will be later visually presented in the accompanying analysis.

The mosque today is entered through a small door, reached by six steps. This entrance opens into a very small square space that leads into an oblong vestibule.

The eastern wall of the vestibule hosts a central miniscule niche probably used as a *mihrab* for the vestibule; the western face is adorned with an Ottoman-style set of superimposed double window (a small upper square window - in wooden straight elements, placed above a larger rectangular one – with wooden elements imitating Mamluk metal grilled windows and shutters).

This set of window is identical to the four windows, which with the main door pierce the northern face of this vestibule. Two niches serve as cupboards, similar to the one on the southernmost end of the western face of the vestibule.

The southern face of the vestibule, which opens into the **domed chamber**, is pierced with a Mamluk-style doorway [See the double joggled voussoirs decorated with alternate straight and downwards looking tri-lobbed flowers placing inside an S-shaped floral scroll], located approximately at the center of the vestibule's southern face. On the easternmost end of the southern face of the vestibule, a Mamluk-style window [See the *ablaq* voussoirs of the double lintel] is set in a rectangular niche, with the opening covered with the wood imitation of Mamluk iron grilles, a similar detail to the lower windows of the sets on the opposite side of the vestibule. On the westernmost end of the southern face of the vestibule, a rectangular section for the walls juts out indicating the existence of the northern face of the minaret attached to the Mamluk body of the structure during the Ottoman modifications to it.

The minaret of this mosque is a typical pencil-shaped minaret with an internal spiral staircase twining around the central spine.

The vestibule is covered with a simple wooden beam and plank-type ceiling, where the wooden beams are set along the narrower span of the vestibule supporting the wooden planks place above them. The wooden beams rest on the wall with wooden cushions and the wall ceiling connection is fixed with the installment of a wooden frieze running along the four sides of the vestibule.

The domed chamber is covered with a shallow dome that is supported by four pendentives, which in turn rests on the corner pillars of the room. The pendentives and the dome are stone painted in typical late Mamluk style. The whole structure is mediocre in the quality of the stone used and the decorative device utilized.

External façades of the mosque

The mosque today has two free facades: the western and the southern ones, while the northern and the eastern sides of the mosque are directly attached to neighboring modern buildings (Today, the mosque is entered through two entrances (one on the western façade and the other on the southern façade): the first lies on the easternmost side of the mosque's northern façade, while the other opens towards its West lying on the southernmost side of its western façade. The minaret is accessed from a narrow irregular plinth set on the western façade of the domed chamber.

The western entrance on the western façade is unreachable from outside because it is fenced for security measures.

4. Current architectural Documentation

This included the preparation of the following drawings:

1. Ground plan (1:100)
2. Main northern façade (1:100)
3. Western façade (1:100)
4. N-S section through the domed-chamber looking east (1:100)
5. E-W section through the vestibule looking south (1:100)
6. Ground plan of the area around the mosque (1: 200)

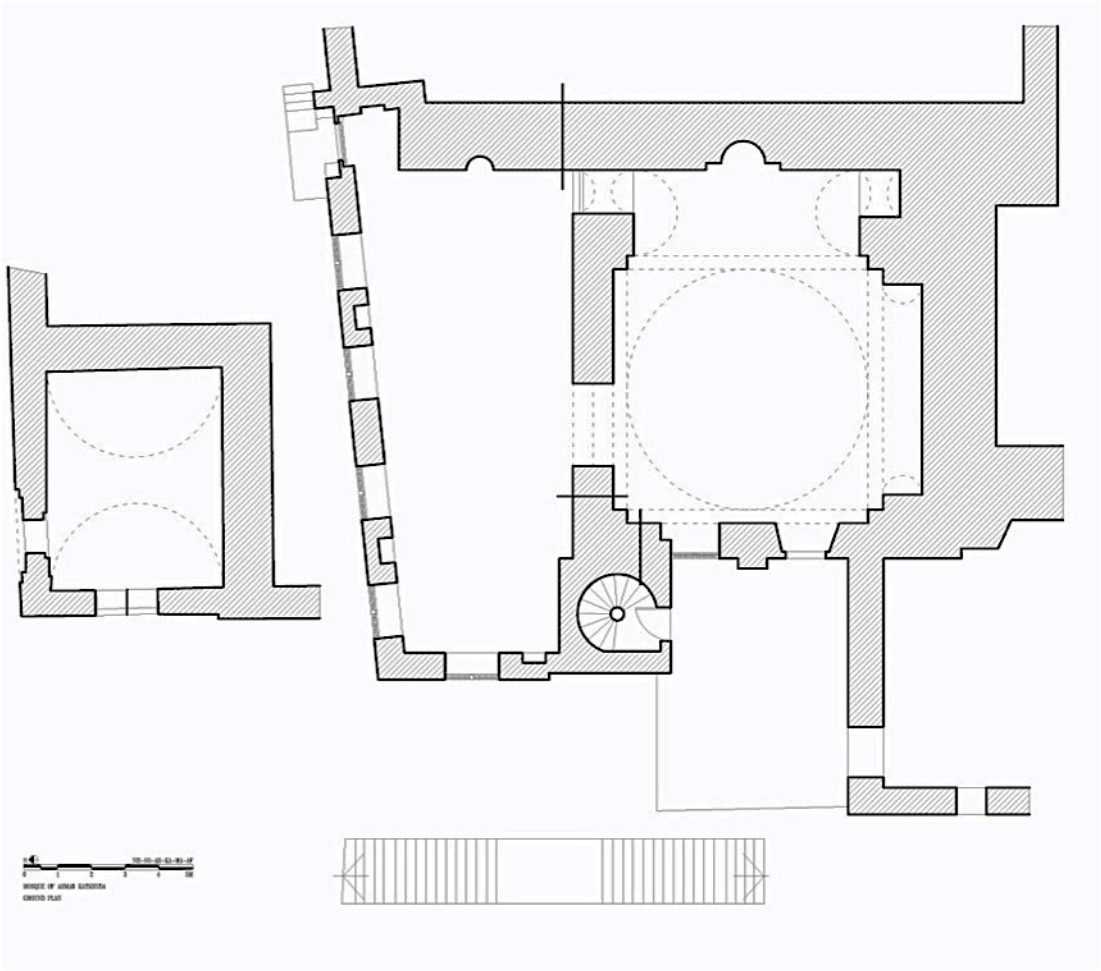


Fig.1. Ground plan of Ahmad Katkhuda mosque

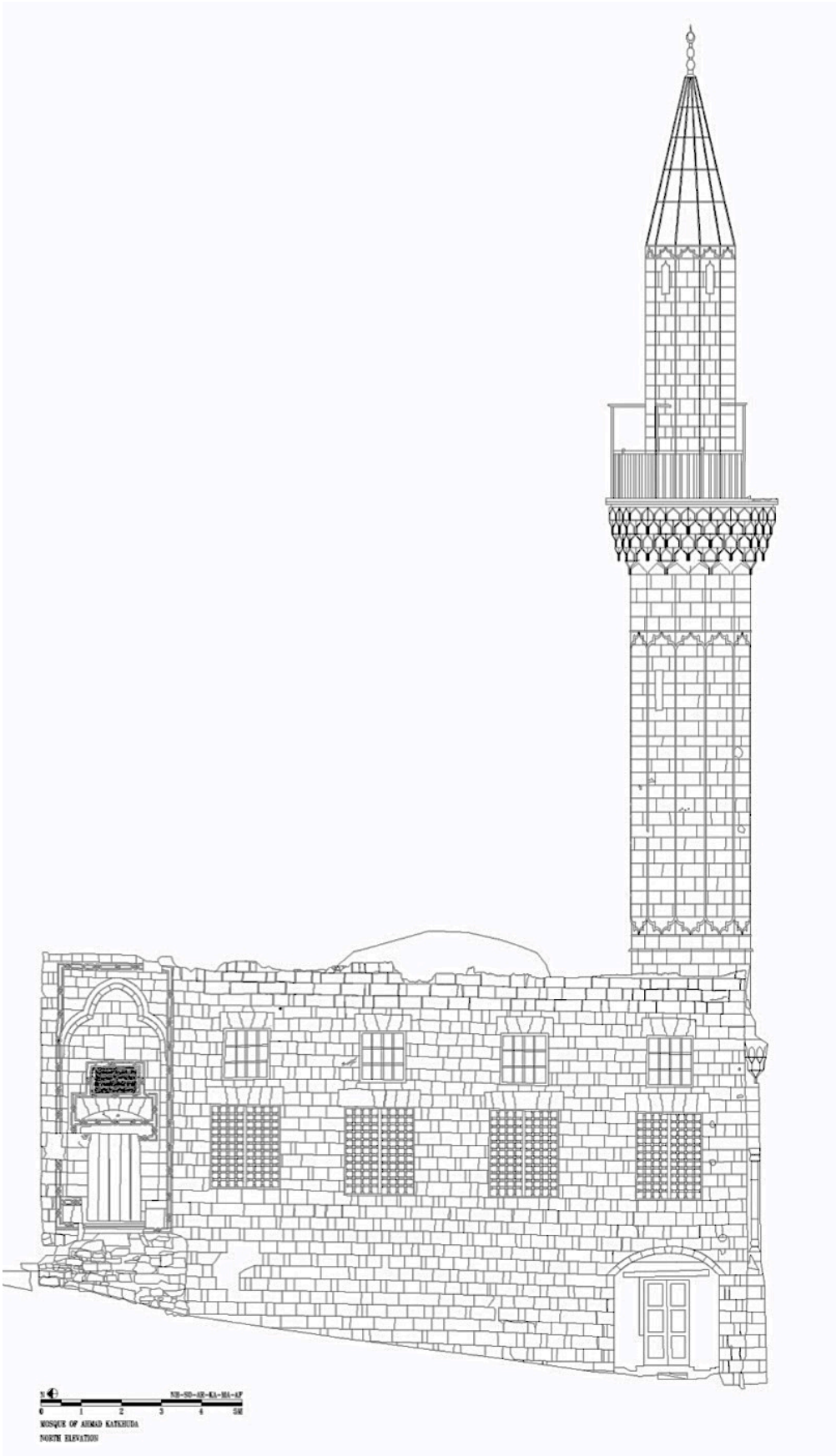


Fig.2. Northern façade of Ahmad Katkhuda mosque

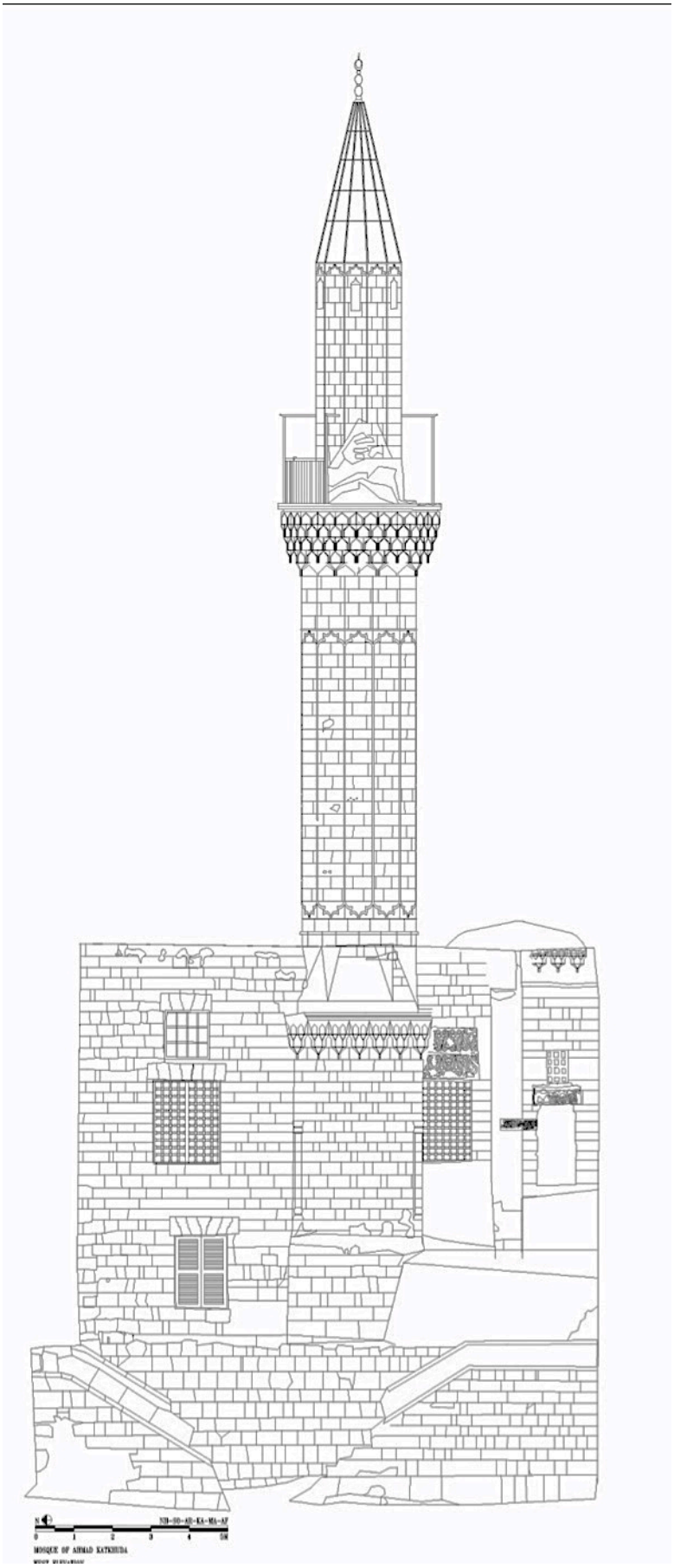


Fig. 3. Western façade of Ahmad Katkhuda mosque

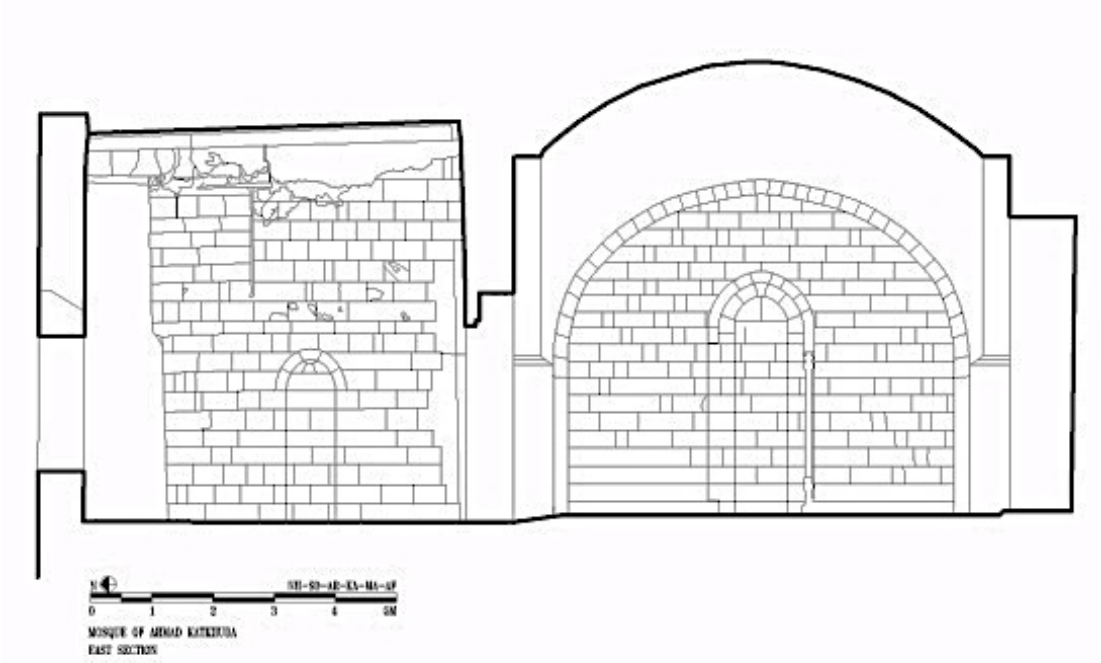


Fig. 4. North-south section looking east

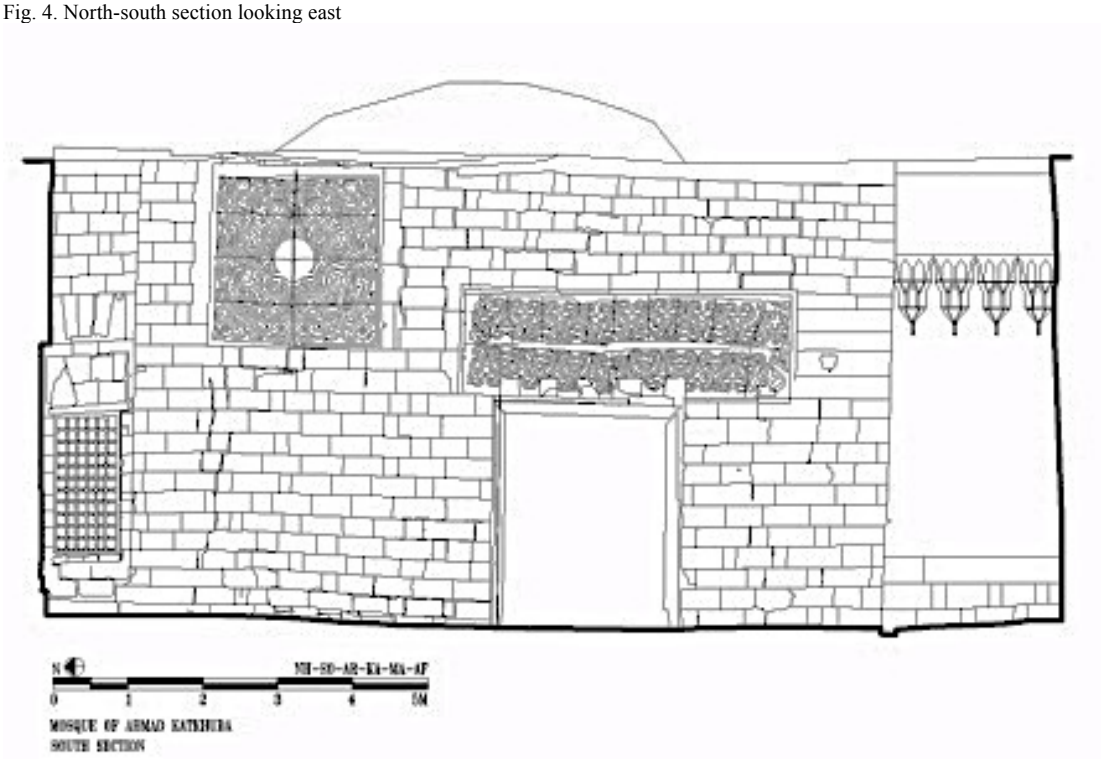


Fig. 5. Western façade of the vestibulr of Ahmad Katkhuda mosque

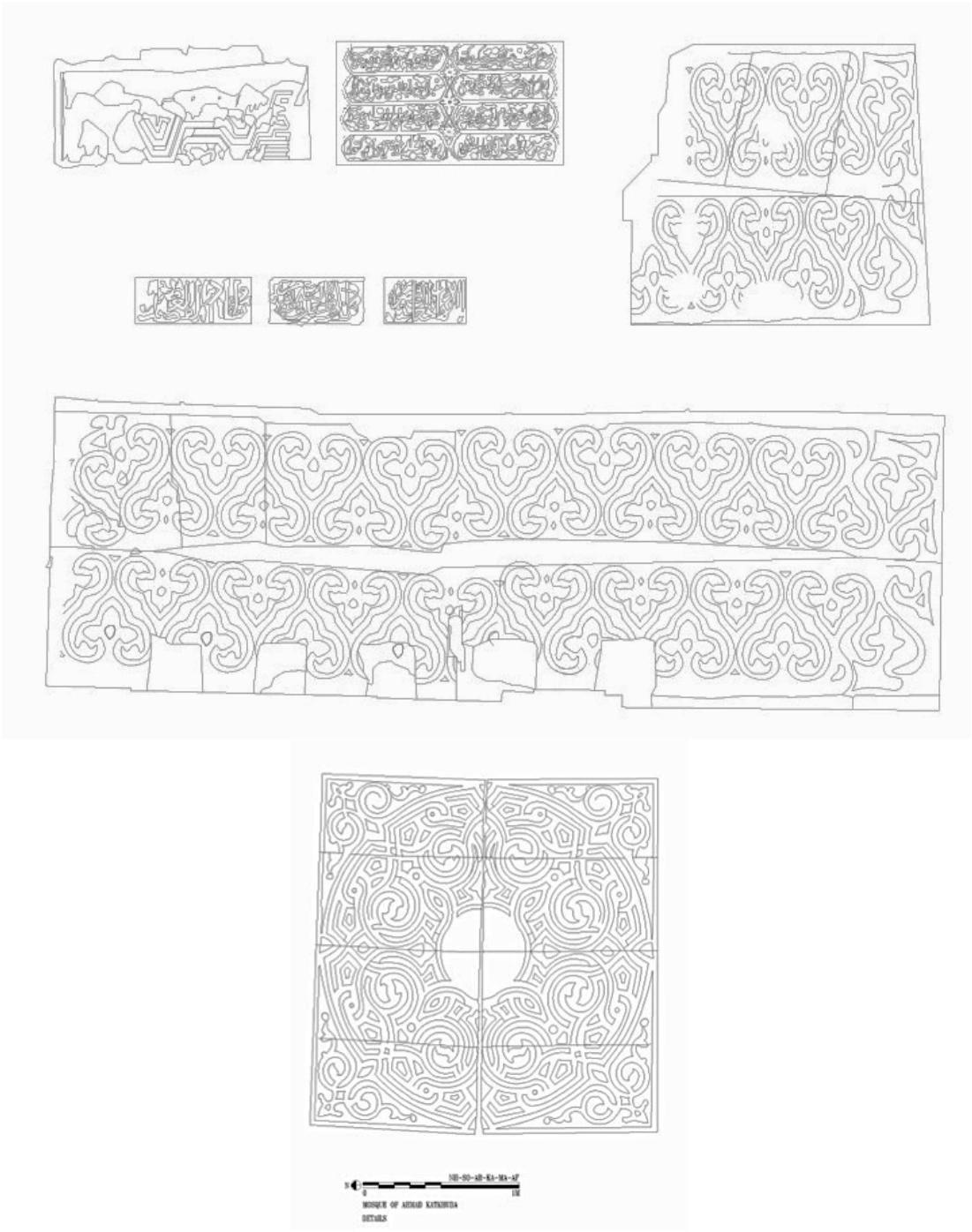


Fig. 6. Decorative details of Ahmad Katkhuda mosque

5. Current photo documentation

SOUTHERN FAÇADE OF THE MOSQUE

Southern main façade of the mosque of Ahmad Katkhuda. IMG_9d01.ASR

Southern main façade of the mosque of Ahmad Katkhuda with minaret

Main entrance to the mosque of Ahmad Katkhuda. IMG_9700

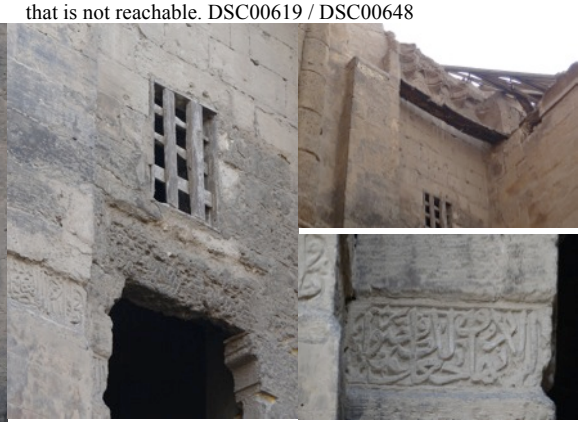
The small room on the westernmost corner of the southern façade, created to compensate for the level difference of the ground level from the entrance of the Ottoman mosque and this point. The room must have been used as storage area. IMG_97046 / IMG_9887 / IMG_9888 / DSC00769

THE WESTERN FAÇADE OF THE MOSQUE

Western façade of mosque of Ahmad Katkhuda with the double flight stone staircase added later. IMG_9730

The windows of the domed prayer hall. The right one is a door that is not reachable. DSC00619 / DSC00648

The double lintel is a typical Mamluk style and design DSC00741

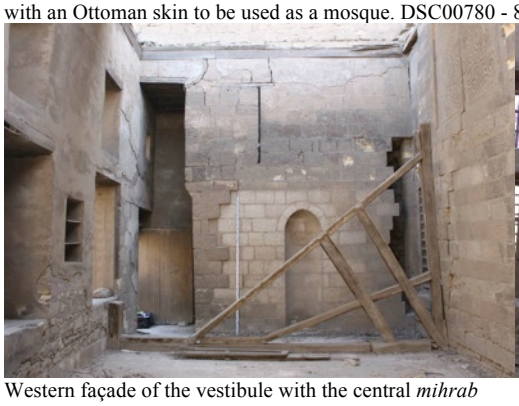


The small door with the window above pierced in the wall and crowned by a flat dripping stalactite hood is a typical design for a Mamluk *sabil* entrance as attested by the still surviving inscription on the northern jamb of the door. DSC00652 /

DSC00651 / DSC00650

THE VESTIBULE OF THE MOSQUE

The southern façade of the vestibule, which is unquestionable part of the earlier Mamluk structure, which was enveloped with an Ottoman skin to be used as a mosque. DSC00780 - 83

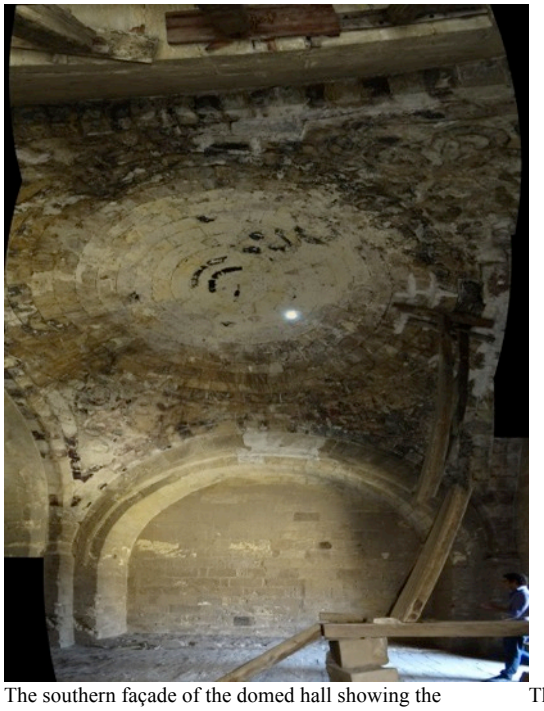


Western façade of the vestibule with the central *mihrab* IMG_9830

Part of the northern faced of the vestibule IMG_9849

Eastern façade of the vestibule with the minaret base on the left IMG_9802

THE DOMED CHAMBER OF THE MOSQUE



The southern façade of the domed hall showing the arches that support the pendentives that creates the circular base for the shallow dome. DSC00357 - 60

The *ablaq* arches, the pendentives and the dome - The arches are partially blocked because of the minaret constructed during the Ottomans behind them. IMG_9863

Four facades of the domed chamber

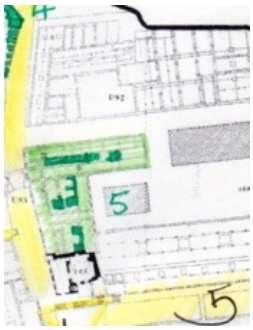
The Mamluk covering system with ablaq arches and painted stone dome and pendentives. During the Ottoman modifications, thickening the lower parts of the supporting system by enveloping the pillars on which the pendentives rest, was not a good idea. IMG_9858 / IMG_9866

The shallow dome viewed from the minaret of the mosque. IMG_9935

6. Building phases and prior conservation activities

Building phases of this mosque are quite obvious. A Mamluk structure is modified during the Ottoman period to become a mosque. Two questions will be addressed in this context. The first deals with the nature of the earlier Mamluk structure and its founder, while the second deals with the modifications done on the Mamluk structure to make it a mosque bearing the Ottoman style.

About the earlier Mamluk building:
Evidence on the building confirm that the structure, which now functions as a mosque was a *sabil-zawiya-madradsa* (drinking fountain, small mosque and theological school) built under the reign of al-Mu'ayyad Shaykh. Decorations on the southern face of the vestibule and the western façade of the mosque proper speak of the Mamluk nature of the original structure (See photos above). These two facades are unquestionably Mamluk-style very close to al-Mu'ayyad's esprit de grandeur expressed on his buildings in the city, as the mosque of al-Mu'ayyad near Bab Zuwayla, and his *bimaristan* (hospital) built just across al-Mahjar Street near the Citadel. But if Mu'ayyad was the founder of the remains that were modified to become the Ottoman mosque in question, is it possible that we find more of this earlier structure, which has now disappeared. During our investigations in the area, the team has noticed some thick walls left untouched inside the fabric of a modern structure close to the mosque. On the pictures below, notice the correspondence of these walls to the domed chamber of the present mosque. In the future, excavations around these walls might reveal much of the original Mamluk structure's details.


Modifications done on the Mamluk building to become an Ottoman mosque:
The Ottoman builders made the following modifications (consult the photos above and the first charts of the condition survey):

- It is not clear how much more still existed from the Mamluk older structure, and if so, why was it not included within the rest. One explanation might be the idea of using a solid ready-made dome, and ignore the rest. This might explain the two odd side openings on the northern and southern sides of the domed chamber. The northern being an earlier Mamluk layer, while the other is simply a niche added for symmetry around the *mihrab*. In all cases, one gets the feeling that the earlier structure did extend eastwards, as proven by the discovered remains.
- The addition of a pencil-shaped Ottoman minaret. In doing so, they had to partially block two arched windows from the earlier period, and they had to dig deeper to place the foundations of the minaret on solid ground.

- Apparently, the domed chamber of the previous structure was smaller than the space they desired. Therefore, a vestibule was constructed on the southern façade of the earlier structure. This newly added rectangular space was accommodated with a *mihrab*, and the majestic entrance of the earlier Mamluk structure was narrowed. This is why it looks odd in its proportions with the rest of the structure. In doing so, a new Ottoman skin was added to the Mamluk remains.
- The strangest of all is the thickening of the corner pillars inside the domed chamber. Whether this was done during the Ottoman modifications or during a more modern so-called, restoration is not clear. But the fact is that the corner pillars were riveted and thickened with new stonework.


(IMG_9781)


(IMG_9775)


(IMG_9779)

Information recruited from historical sources related to the nature of the previous structure that was transformed into a mosque

Nassir Rabbat believes that the flat dome and stone-carved decorations unmistakably belong to an earlier Mamluk religious structure. He then suggests that the Ottoman mosque was either the Istabl (stables) Mosque, the founder of which is unknown (as mentioned by al-Maqrizi, *Khitat*, 2: 245), or the *zawiya* added to it by the Mamluk Sultan al-Mu'ayyad Shaykh in 1421 AD. (Rabbat, The Citadel of Cairo, p. 23). According to Lyster, al-Mu'ayyad Shaykh constructed a small zawiya for a local teaching Shaykh next to the *Istabl* Mosque in *Midan* al-Rumayla. He also built the qa'a of Bahra (Basin Hall) in the *hawsh*. It was said to be a most beautiful structure with a large dome, overlooking the pond constructed by al-Sultan al-Nasir Muhammad in the sultan's private garden.

Depending on the visual comparison between the size and quality of the stonework and the vocabulary of the decorations still surviving on the areas clearly belonging to an older structure, our team believes that these remains were built by al-Mu'ayyad Shaykh, which were later modified, and enveloped by the Ottoman addition

Conservations works done by the Comité

Since the year 1905, the Comité has done consolidation works on this mosque, then between the years 1915 and 1919, and finally, between 1941 and 45. Unfortunately,

no detailing is available about the works, but arguments went on in their meeting whether they should pay or the Ministry of War (Defense).

7. A schematic guideline for the physical restoration of material, structures, and decorative elements of mosque of Ahmad Katkhuda

General state: The main problem of this structure is its Mamluk origin and its transformation into a mosque in 1697 AD

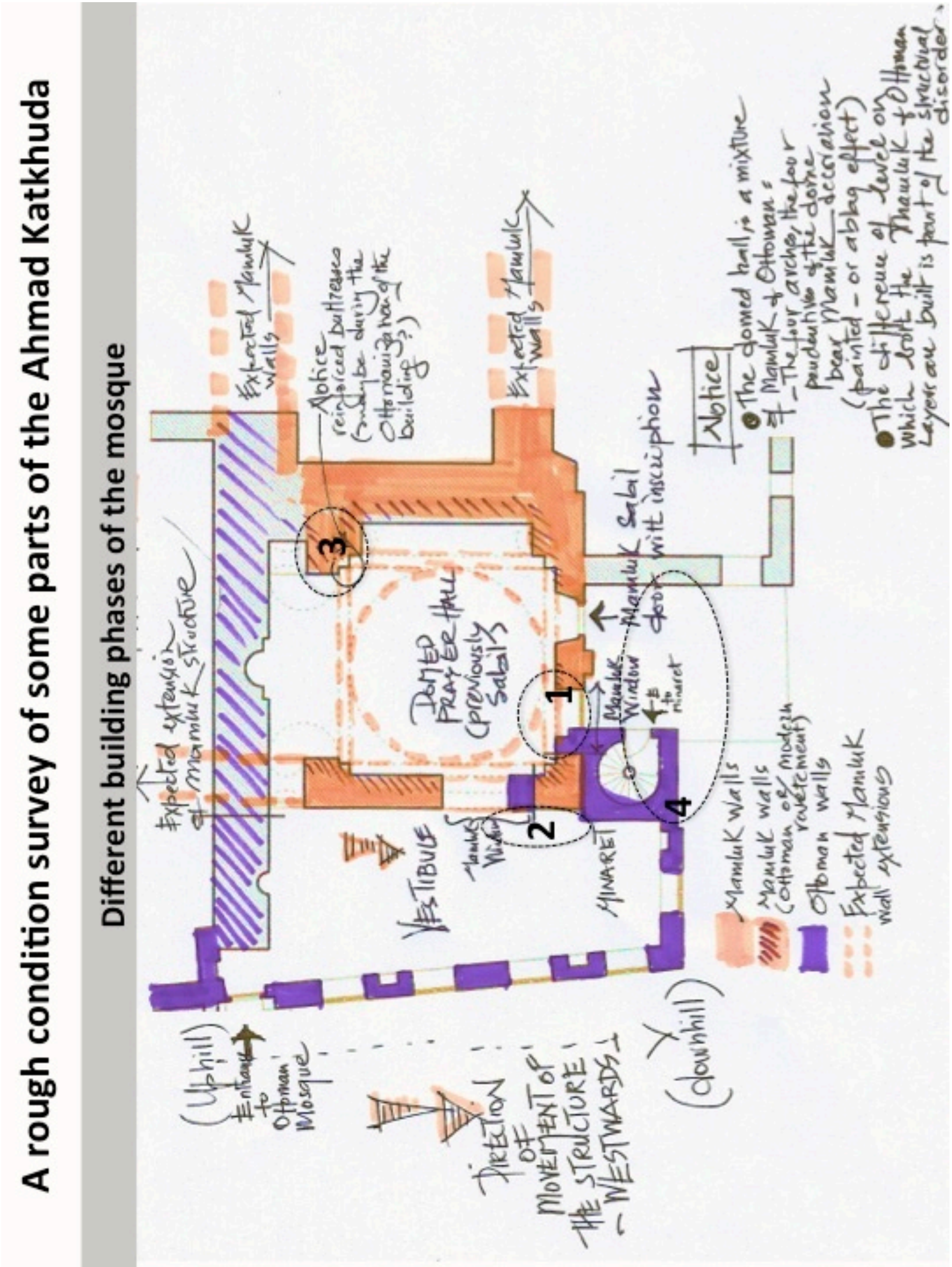
The main problem in understanding this building lies in the fact that some of its architectural elements are Mamluk-styled, although we are well aware of the fact that this structure became an Ottoman mosque in 1696 AD by Ahmad Katkhuda al-Quyumji.

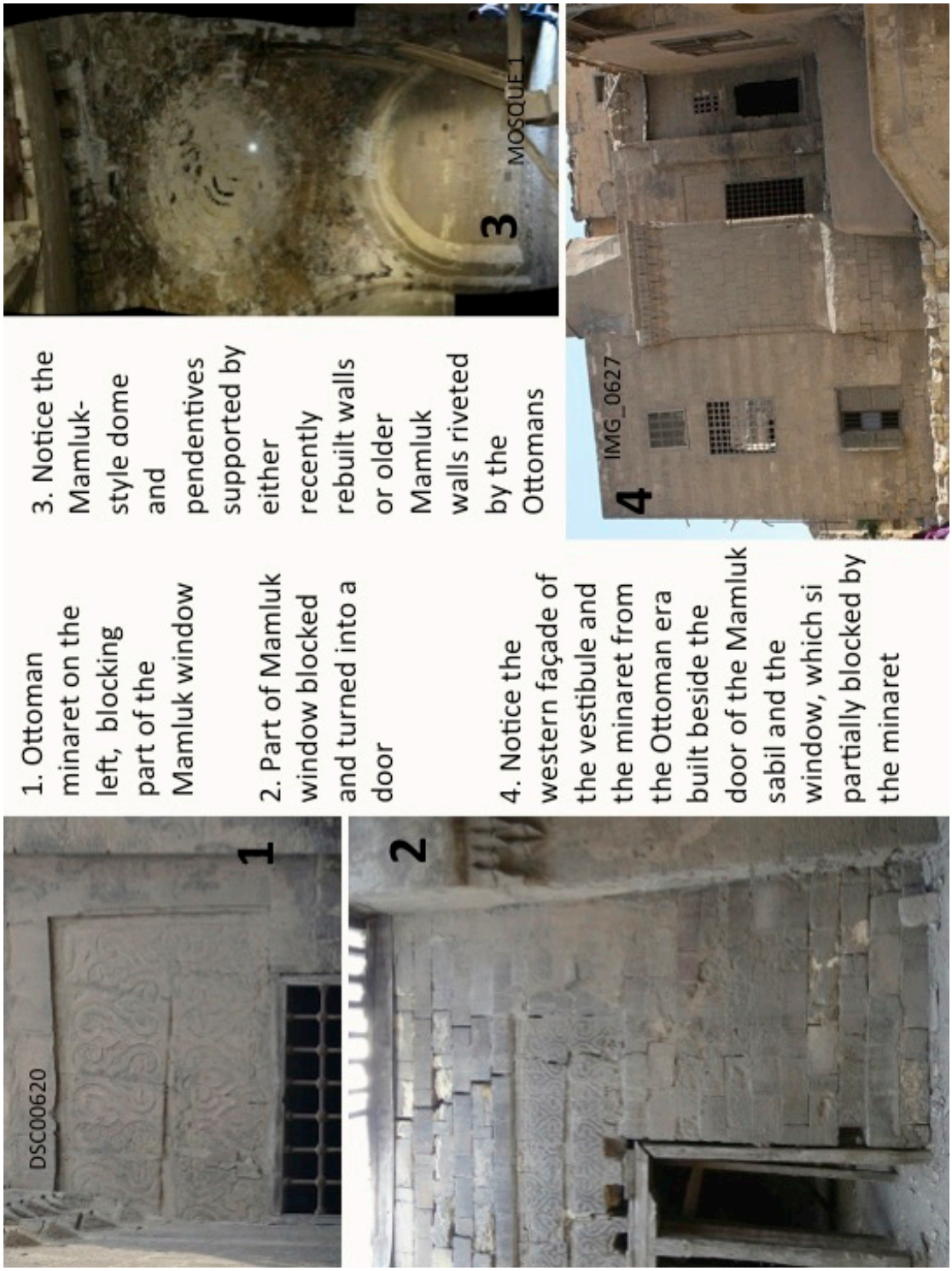
Usually, changing the function of a building into a new one should not be a problem, especially, when one is dealing with the architectural and urban development of Historic Cairo. Through the centuries, buildings in Historic Cairo were built overlapping on each other, superimposed or encroached on older facades, built inside parts of older structure, or bridge over the street with a structure on the opposite side of the street. In worst case scenarios, when buildings were destroyed or demolished, naturally or intentionally, to use the emptied space for the erection of a new building, foundations of the demolished building were used as the foundations for structure to be erected, and/or the debris of the demolition of the old structure was used as foundation fill for the structure to be newly built. In all cases, the logic of re-use, deliberate use of spolia, and any kind of transformation, be it functional, size-wise, material-wise, or style, has always been omnipresent in the logic of Medieval master builders in Histori Cairene. So, if this is the case, why is transformation of function a problem in this mosque, especially that we hold historical sources that mention the previous function of this mosque?

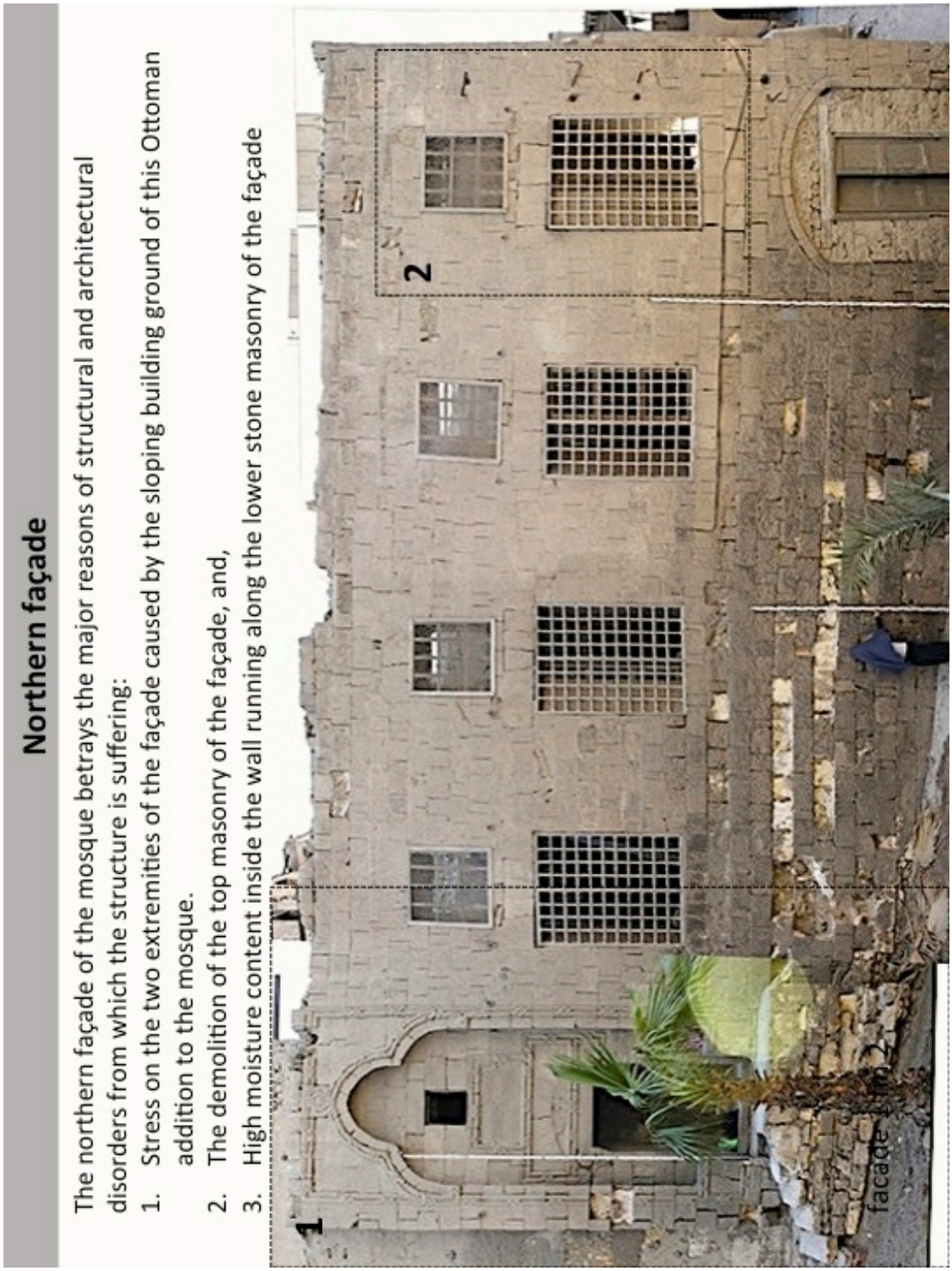
Historical sources present historical events and do not connect them to the actual building, so we are left with the fact that this was a Mamluk mosque which was later modified into an Ottoman mosque. More details are not available.

Condition survey

The following charts present a rough condition survey of the mosque. The survey starts with the team's observations related to the different building phases of the structure. This is followed by observations on the northern and western facades of the mosque. Finally, the two interiors of the mosque: the vestibule and the prayer hall are examined. The observations are clarified by accompanying photos. The purpose of this survey is to justify the suggestions presented at the end of this section related to the future short and long term conservation activities needed.

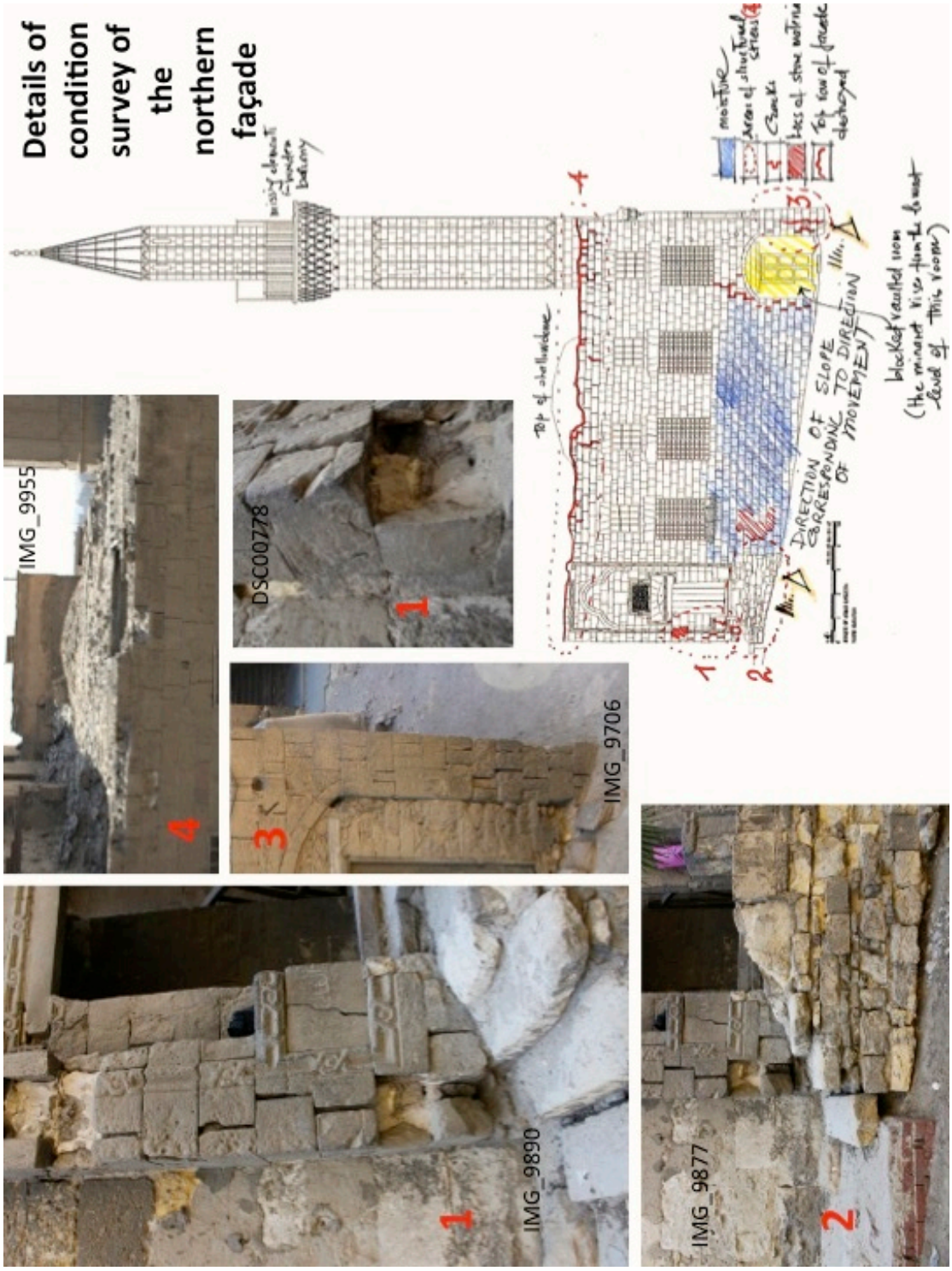

A rough condition survey of some parts of the Ahmad Katkhuda
Different building phases of the mosque
Expected extension of Mamluk structure
Expected Mamluk walls
Notice reinforced buttresses (maybe during the Ottoman phase of the building?)
DOMED PRAYER HALL (PREVIOUSLY Sabil?)
VESTIBULE
MINARET
Mamluk Sabil with inscription
Notice
The domed hall is a mixture of Mamluk & Ottoman
Mamluk walls
Mamluk walls (Ottoman or modern revetement)
Ottoman walls
Expected Mamluk wall extensions
(Uphill)
(downhill)
DIRECTION OF MOVEMENT OF THE STRUCTURE - WESTWARDS!
1
2
3
4

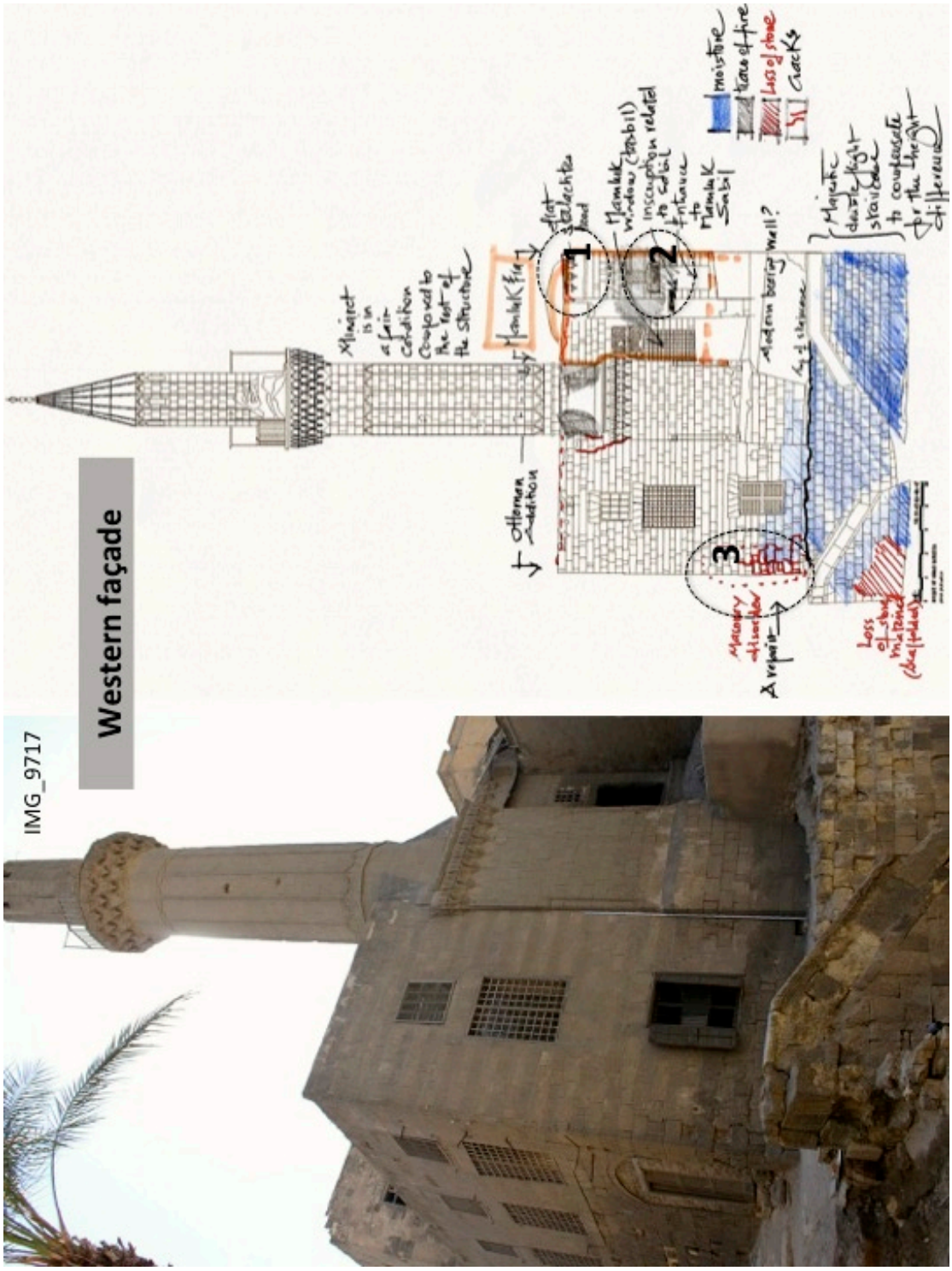

1
DSC00620
2
3
MOSQUE 1
4
IMG_0627
1. Ottoman minaret on the left, blocking part of the Mamluk window
2. Part of Mamluk window blocked and turned into a door
3. Notice the Mamluk-style dome and pendentives supported by either recently rebuilt walls or older Mamluk walls riveted by the Ottomans
4. Notice the western façade of the vestibule and the minaret from the Ottoman era built beside the door of the Mamluk sabil and the window, which si partially blocked by the minaret


Northern façade
The northern façade of the mosque betrays the major reasons of structural and architectural disorders from which the structure is suffering:
1. Stress on the two extremities of the façade caused by the sloping building ground of this Ottoman addition to the mosque.
2. The demolition of the top masonry of the façade, and,
3. High moisture content inside the wall running along the lower stone masonry of the façade
1
2
façade

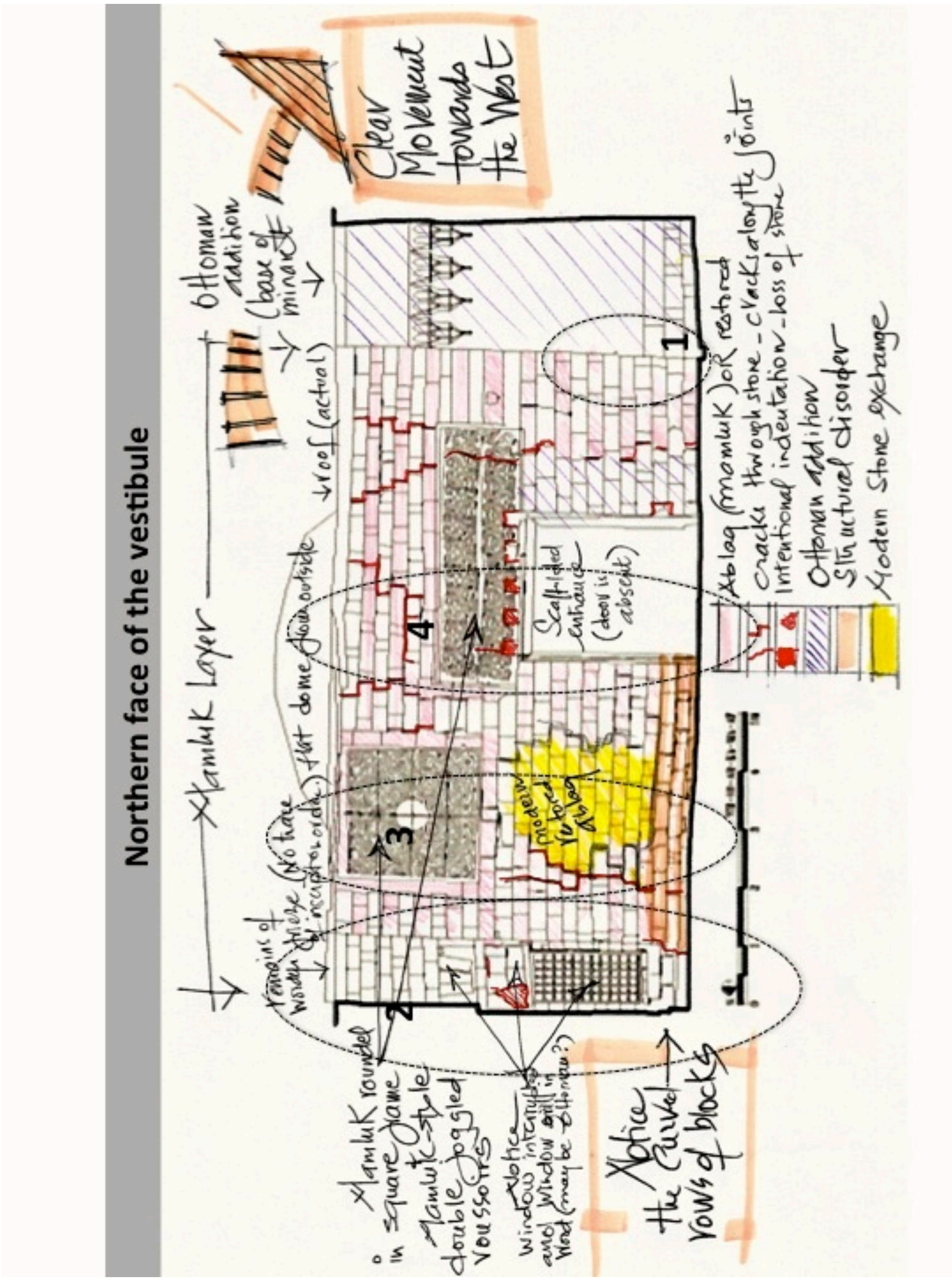

2
IMG_9962


1
IMG_9d01


Details of condition survey of the northern façade
IMG_9955
DSC00778
IMG_9706
IMG_9890
IMG_9877

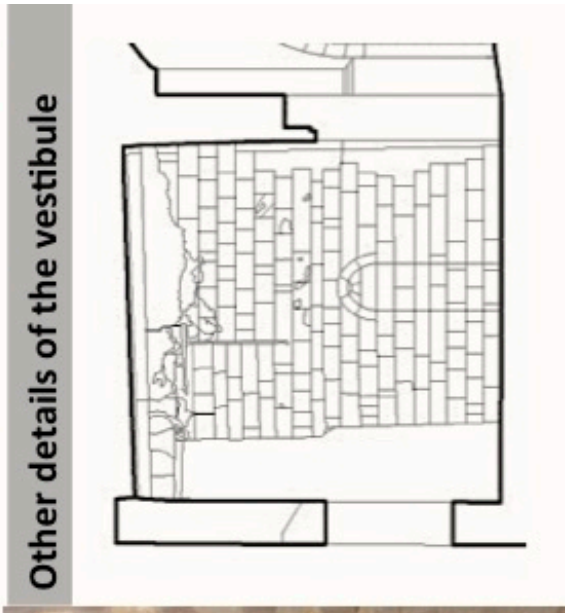

Western façade
IMG_9717


3
DSC00744
1
DSC00743
2


Northern face of the vestibule
Mamluk Layer
flat dome
roof (actual)
Ottoman addition
(base of minaret)
Clear Movement towards the West
Scaffolded entrance (door is absent)
modern restored Ablaq
Ablaq (mamluk) or restored
cracks through stone - cracks along the joints
Intentional indentation - loss of stone
Ottoman addition
Structural disorder
Modern Stone exchange
Mamluk roundel in square frame
Mamluk-style double joggled voussoirs
Notice the curved rows of blocks
1
2
3
4


1
DSC00355
4
DSC00782
Untitled_Panorama1
Details of the northern face of the vestibule
3
DSC00352
2
DSC00351


IMG_4232

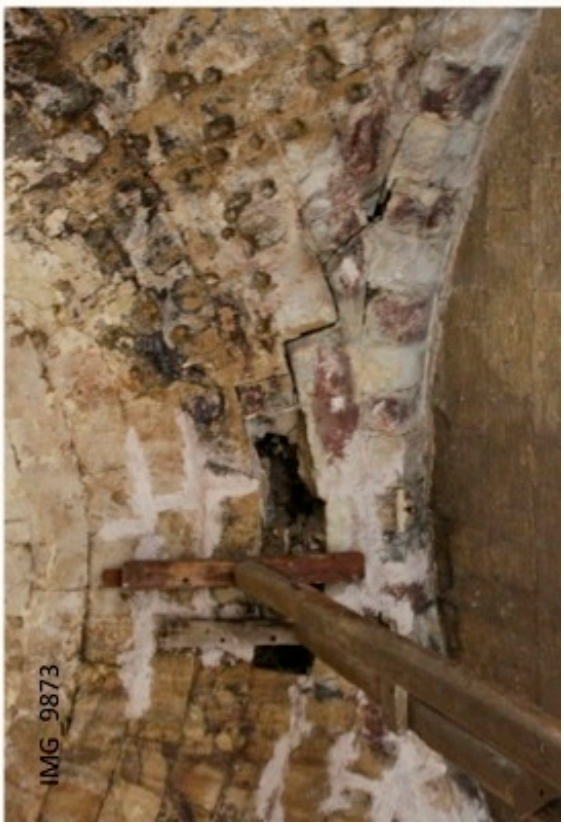

Other details of the vestibule


DSC00796


IMG_9830


IMG_9766
IMG_9797
DSC00359
Four faces of the domed prayer hall of the mosque

The shallow dome is suffering from serious structural disorder. It seems that this is not a new problem, but its dilapidation for so longa time has compounded the problem. The scaffolding erected in situ, not only for the moving blocks of the dome, but also for the lintel of the entrance to the prayer hall and for the leaning northern face of the vestibule, weaken the supporting systems they are placed to strengthen. These should be immediately revised.



State of preservation/maintenance of mosque of Ahmad Katkhuda

The mosque is in a total structural disorder:

- The dome bears serious cracks along its load carrying lines, and some of its blocks are already moving from their original positions.
- The southern wall of the vestibule is not stable and the scaffolding erected there is just adding to the problem.
- The lintels of the openings are nearly all suffering from extra pressure on them.
- Cracks on the southern façade betray the existence of differential settlement of the foundations under the façade.
- The wooden ceiling of the vestibule is nearly lost, which leaves the two side walls of the vestibule without real connection and hence apt to collapse by the slightest undesirable movement.
- This last damage has made its effect on the southern façade of the mosque, which has lost its lateral connection and stands nearly freely on its own weight.

The list can still go on, but these are the main damage mechanisms observed in the structure.

- THE STRUCTURE SUFFERS FROM ITS FOUNDATIONS, AS THESE ARE BUILT ON A SLOPING GROUND AND ALSO ON DEBRIS OF THE DEMOLISHED EARLIER MAMLUK STRUCTURE.
- THE STRUCTURE SUFFERS FROM UNPROTECTED EXPOSURE OF ITS TOP SECTIONS, SUCH AS THE SHALLOW DOME AND THE WOODEN CEILING OF THE VESTIBULE, WHICH CASE CONSTANT WEAKENING TO ITS ALREADY DISTURBED STRUCTURAL SYSTEM.
- AS WE HAVE NOTICED, THE PRAYER HALL WAS A SABIL, THEREFORE, WE MUST HAVE A WATER TANK UNDER THE GROUND. THIS MIGHT ALSO BE ONE OF THE TICKING BOMBS UNDER THIS STRUCTURE.

Emergency actions:

1. The mosque must be declared a restricted zone for visitors.
2. As soon as possible a structural preservative intervention need be planned.
3. The initiation of a structural study, armed by full information about the architecture of the structure and the geology of the terrain."

All other issues can be discussed afterwards.

8. Proposed adaptive reuse alternatives

Mosques in have not been reused for any other use but prayer, to date, in Cairo.

9. Sources used

- Rabbat, N., *The Citadel of Cairo* (Leiden, NY, Koln - 1995).
- Hussam, A., an MA unpublished dissertation, Ayn Shams University (Cairo – 1995).
- Lyster, W., *The Citadel of Cairo: A History and Guide* (Cairo, 1993).
- Rizk, 'A, *Mawsu'at al-Athar al-Islamiyya bil-Qahira* (trans. Encyclopedia of Islamic Monuments in Cairo) (Cairo - 2003).
- 'Azab, Kh., *Aswar wa Qal'at Salah al-Din* (trns. Walls and Qal'a of Salah al-Din), (Cairo - 2005).
- Warner, N., *Monuments of Historic Cairo* (Cairo - 2005).

3. Bab of Ahmad Katkhuda (al-Silsila)
1685 AD (1099 AH)
During the Ottoman Occupation of Egypt (1517-1798 AD)

1. About the founder of Bab of Ahmad Katkhuda

According to al-Jabarti, the gate is constructed by Radwan Katkhuda al-Jilfi al-'Azab in 1685 CE. The gate is rebuilt/reconstructed on the site where Bab al-Silsila existed during al-Sultan al-Nasir Muhammad (Mamluk reign in Egypt) in 1341 AD (738 AH). During this time, Bab al-Silsila was not part of the Citadel, but belonged to structures outside the Citadel, perhaps, the stables.

2. Location of Bab of Ahmad Katkhuda

The Bab lies on *al-mamar al-munhani al-Sultani al-dakhili* (The ascending internal sultanic passageway), which was the connecting road between the Lower and Northern enclosures of the Citadel during the Mamluk period. The gate is close to the mosque of Ahmad Katkhuda and is perpendicular to the remains of the zawiya and madrasa from al-Mu'ayyad times as mentioned by Lyster (See mosque in this report).

3. Description of the mosque
(Consult the Full Architectural Documentation Prepared by our Team)

The gate is rectangular in shape measuring 4.80 x 5.40. The passageway of the gate is composed of a cross-vault resting on two arched gateways, one on the eastern and the other on the western side of the gate, and one two blind arches on the two northern and southern side walls of the gate.

The façades of the gate betray the modifications done on this small gate through time. The machicoulis on each central part of the eastern and western facades betray the Ayyubid style, while the curved moldings show how the gate has been modified under later Ottoman times or even under the rule of Muhammad Ali. It is enough to watch carefully the northern jamb masonry of the western façade. The different size and kind of stone used is yet another indicator of how this gate has been rebuilt and readapted in different times. Unfortunately, it has neither been registered as a monument and neither has it ever ben documented. Therefore, it is a fresh piece of research to whoever gets to develop a thorough conservation intervention on it.

On the northern thick wing carrying the central dome of the gate, the wall is carved to host one of *awliya' al-salihin* (saintly person), and for this reason, the gate is named as Bab al-Arba'in. This is an Egyptian custom to name tombs for saintly persons whose name is lost as such referring to the forty walis named as the *arba'in waliyan min awliya' allah al-salihin*, irrelevant to the precise name of the buried saintly person. Today, the name of sidi Ahmad al-'Azab is written on the door, in spite of the fact that it is a well-known fact that the latter was the senior officer.

4. Current architectural Documentation

This included the preparation of the following drawings:
Fig. 1. Ground plan of Bab of Ahmad Katkhuda (1:100),
Fig. 2. Layout of Bab of Ahmad Katkhuda (1:100),
Fig. 3. Looking up plan of Bab of Ahmad Katkhuda (1:100),
Fig. 4 and 5. Western and eastern façades of Bab of Ahmad Katkhuda (1:100), and,
Fig. 6. And 7. West east section looking north and south in the passageway under Ahmad Katkhuda Bab (1:100).

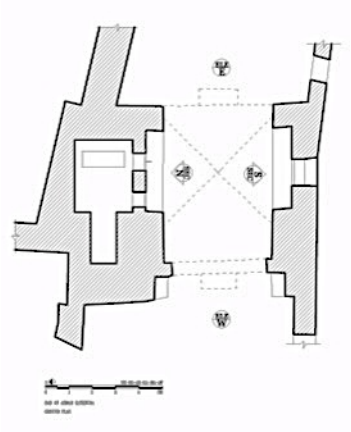


Fig. 1. Ground plan of Bab of Ahmad Katkhuda

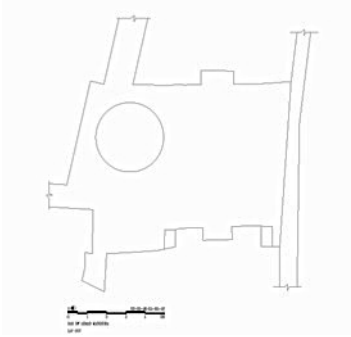


Fig. 2. Layout of Bab of Ahmad Katkhuda

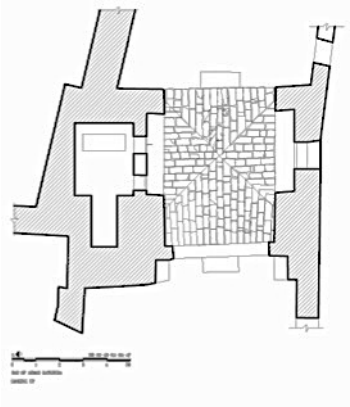


Fig. 3. Looking up plan of Bab of Ahmad Katkhuda

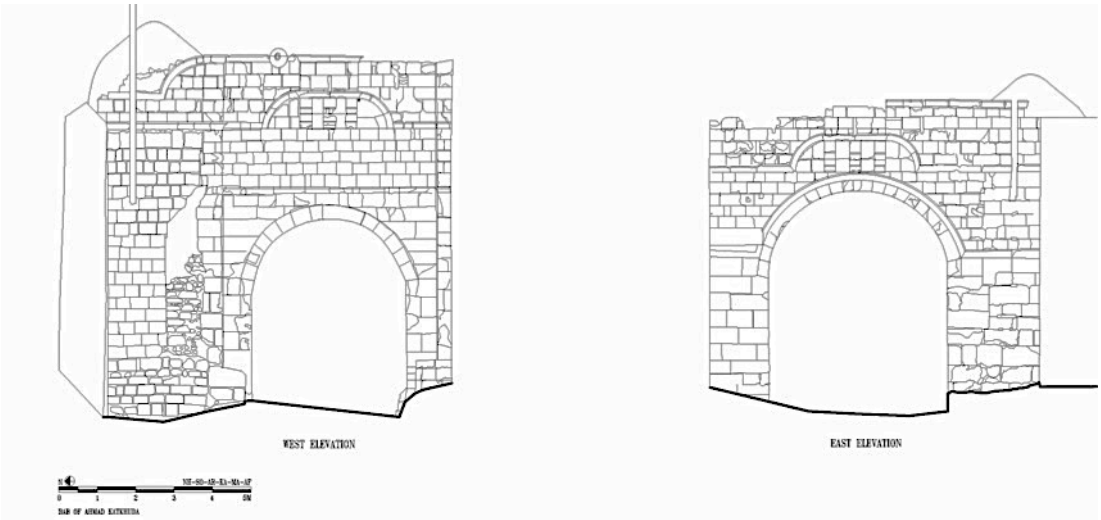


Fig. 4 and 5. Western and eastern façades of Bab of Ahmad Katkhuda

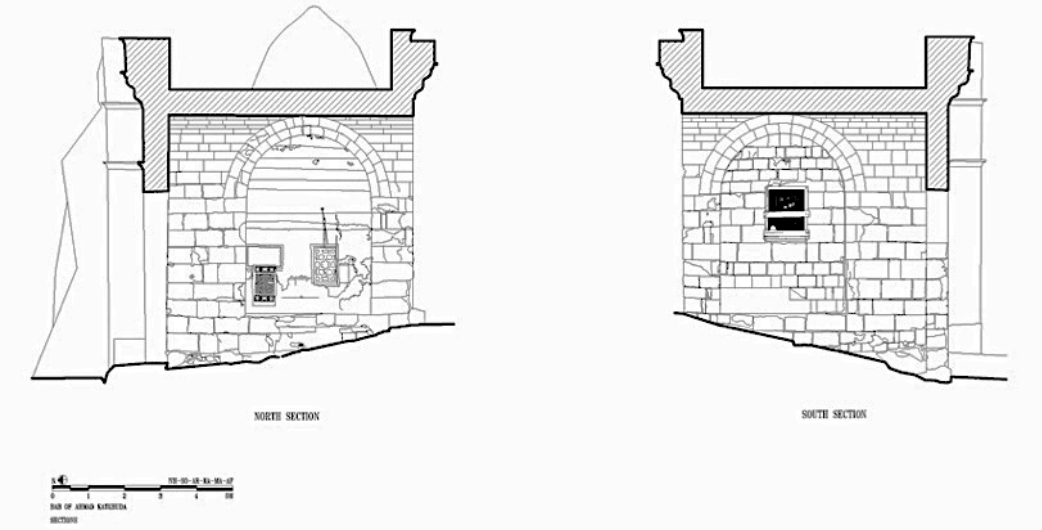


Fig. 6. And 7. West east section looking north and south in the passageway under Ahmad Katkhuda Bab

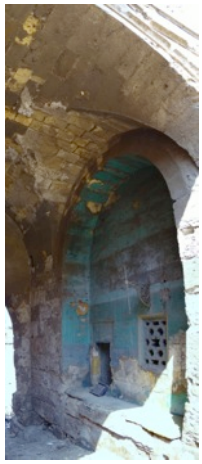
5. Current photo documentation

Western façade of Bab Ahmad Katkhuda. IMG_9674

Eastern façade of Bab Ahmad Katkhuda. IMG_7527

Western façade of Bab Ahmad Katkhuda with its surrounding. Notice the masonry on the jamb on the left of the picture and the rock-cut road on the right of the image. IMG_9679

The northern façade of the passageway (IMG_9622)



The southern façade of the passageway, pierced to locate the mausoleum of the Shaykh (INNER 3 and IMG_9658)

The cross-vault under the passageway of the gate (INNER 2)

Inside the mausoleum of the Shaykh – the small dome and the cenotaph (IMG_1465 and IMG_1464)

The roof of the bawwaba seen from the Southern Enclosure of the Citadel. Notice the dome of the Shaykh and the remains of

buttresses indicating the existence of a second floor to this gate (IMG_3624)

6. Previous Conservation Activities on the Mosque

Bab al-Silsila was the facing gate to the mosque/madrasa/mausoleum complex of al-Sultan Hasan during the Mamluk period and yet it was mentioned that Bab al-Silsila and the enclosure wall around it was never inside the Citadel proper, but was part of its extensions on the western side which included the Royal stables.

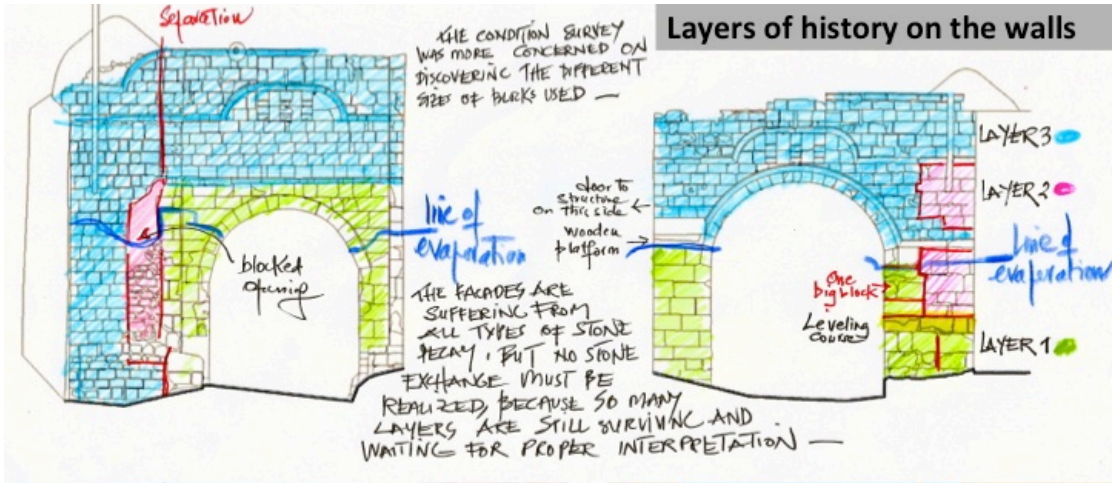
7. A schematic guideline for the physical restoration of material, structures, and decorative elements of mosque of Ahmad Katkhuda

General state and state of preservation/maintenance of Bab al-'Azab

Needless to say how dilapidated the situation is. Even the Shaykh's chamber was full of debris and all kinds of unacceptable objects in a mausoleum.

Condition survey

The condition survey on this Bab was more interested in deciphering the different stone masonry types used on the Bab. Year after year, this Bab was destroyed and rebuilt the later (in turquoise) was by Muhammad Ali. It will be interesting to understand all the layers.



WESTERN FAÇADE

EASTERN FAÇADE

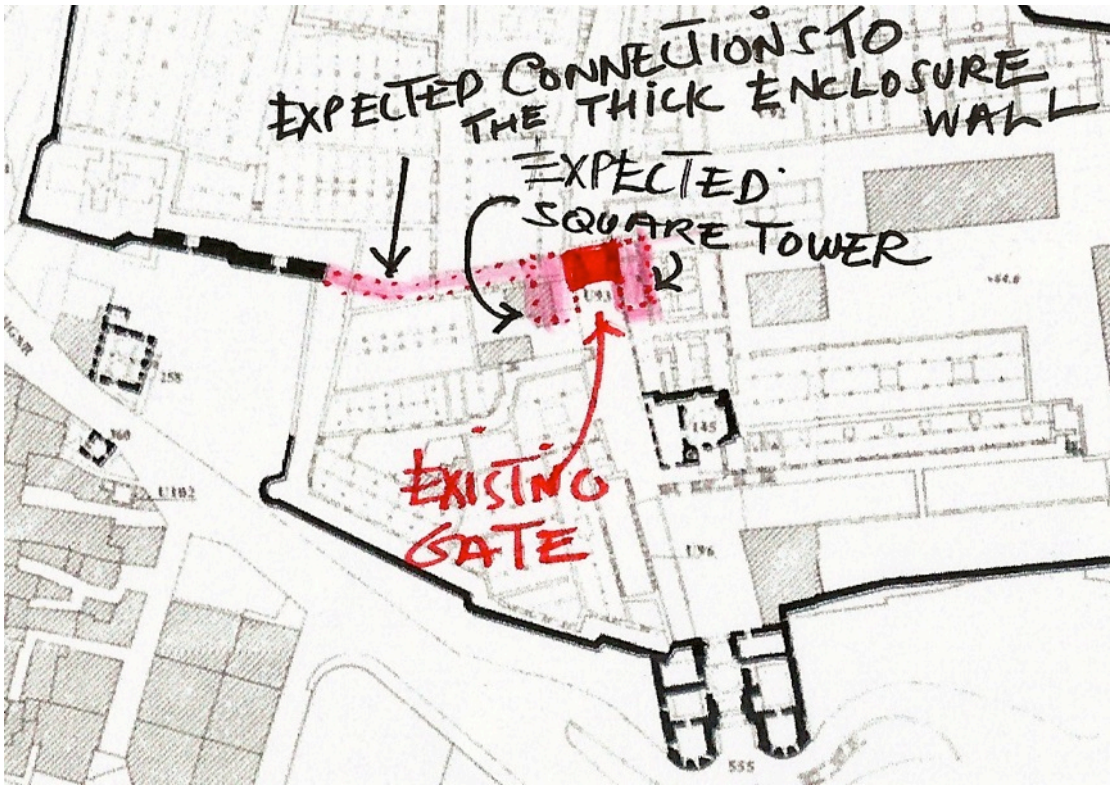
Emergency actions

The object is so small that the emergency action will be to do some stonework on it. No exchange of stone, just cleaning and some minor consolidation of the situation such as simple cappings, pinnings, and lime washing using the lime method to avoid further degradation.

Suggestions for future conservation / site protection

This charming gate has so many obvious layers of history; it is in the middle of all passersby, and yet nobody has done a thorough investigation on its history. As mentioned before, it is not even sketched. For the future, all that is needed is a nice piece of research and a nicer piece of stone conservation practice crowned with analysis of its historical layers. It is an object to be conserved as a mini conservation course. So many things need to be resolved: the connection between the northern and southern arms, the relation between the curved Muhammad Ali molding on the facades and the machicoulis, the second floor, the meaning of the door on the northern side of the eastern façade, etc.

But the gate hides most of its history. On the map bellow, theoretical square towers are added on its northern and southern sides. These need be investigated. On another direction, its connection to the enclosure wall of the Citadel is worth investigating, especially by noticing the thickening of a part of the enclosure wall on the north of the gate. One questions whether this was a part of the earlier – Pre-Muhammad Ali, Citadel wall, when this Bawwaba was the Ayyubid Bab al-Silsila - questions and hypotheses that can be verified only by conducting proper excavations around the gate. THEREFORE, PART OF THE FUTURE ACTIONS ON THIS STRUCTURE MUST INCLUDE EXCAVATIONS.



8. Proposed adaptive reuse alternatives

To be conserved as is to keep its charm and the layers of the centuries it carries.

9. Sources used

- Rabbat, N., *The Citadel of Cairo* (Leiden, NY, Koln - 1995).
- Hussam, A., an MA unpublished dissertation, Ayn Shams University (Cairo – 1995).
- Lyster, W., *The Citadel of Cairo: A History and Guide* (Cairo, 1993).
- Rizk, 'A, *Mawsu'at al-Athar al-Islamiyya bil-Qahira* (trans. Encyclopedia of Islamic Monuments in Cairo) (Cairo - 2003).
- 'Azab, Kh., *Aswar wa Qal'at Salah al-Din* (trns. Walls and Qal'a of Salah al-Din), (Cairo - 2005).
- Bulletins du Comité de Conservation de Monuments l'Art Arabe (BCCMAA): BCMAA 1914, p. 52, 65, 68, 83, 100; BCCMAA 1941-1945.
- Warner, N., *Monuments of Historic Cairo* (Cairo - 2005).

4. Bab al-Jadid

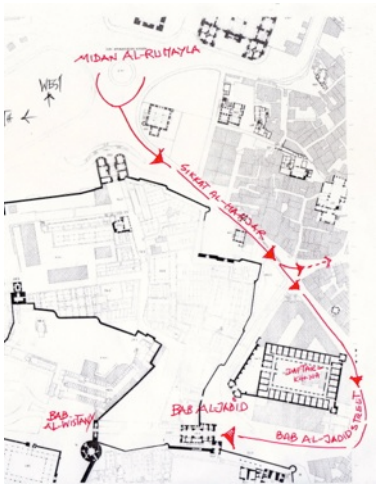
1826 AD (1242 AH)
During the reign of Muhammad Ali
U85

1. About the founder of Bab al-Jadid

The gate is founded by Muhammad Ali in 1826 to replace al-Bab al-Mudarraj (Gate of the steps), made wide enough to allow Muhammad Ali enter the Citadel driving his carriage. As Lyster mentions in 1826, Muhammad Ali owned the only carriage in Egypt, so he had to create the roads that can accommodate the passage of his carriage, especially from the Citadel to his suburban palaces.

2. Location of Bab al-Jadid

The gate is located at the northern end of the ascending road, which starts from *maydan* al-Rumayla (Qal'a / Salah al-Din). Rabbat gives a very precise orientation for this road's conduit. He describes how this road follows the old Sikkat al-Mahjar, up to the *daftarkhana* (archives) of Muhammad Ali (built in 1828), which is believed to occupy the site of the Mamluk *dar al-diyafa* (guest house), from where the road takes two pathes: one runs northeastwards towards northern Qarafa, while the other takes a right turn and following a road also constructed by Muhammad Ali in 1826 called Bab al-Jadid Street, for his carriage road and ends at the Bab al-Jadid.



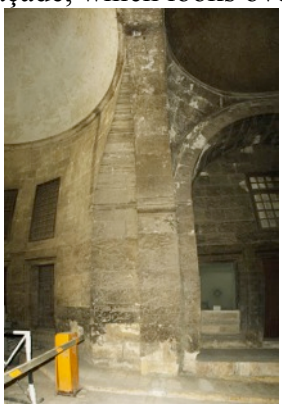
3. Description of Bab al-Jadid
(Consult the full architectural documentation prepared by our team)

The gate is built over the debris of earlier structures, which were demolished by Muhammad Ali to build his new gate. This was and still is a very important spot on the Citadel, as it is the entrance to the southern enclosure of the Citadel, as well as the beginning of the descending rock-cur road to Bab al-'Azab. This must have made Muhammad Ali more eager to have his own stamp on this spot. So, parts of Bab al-Mudarraj were destroyed and the debris flattened to make way to a new raised gate, named as such "the new gate". Little is left from the ancient Bab al-Mudarraj, but enough to appreciate its layers (This is shortly described below). It is connected to a

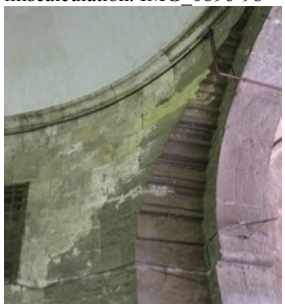
second gate also built by Muhammad Ali, Bab al-Wistani (the middle gate). These two gates built by Muhammad Ali were made wide enough to allow the passage of his new carriage through them.

The plan of the gate is rectangular from outside, while its interior, on the ground level, is composed of a series of vaulted chambers, flanked by side rooms for the guards with a second story above them. The internal space is designed symmetrically along its central West-East axis. Two smaller nearly circular domes flank a central huge flat oval dome, and these in their turn are followed by two flat pyramidal ceilings each located at one extremity of the tunnel like North-South axis of the internal passageway. The domes are supported by pendentives, which rest on four arches that form the base for their support. The arches rise from four pillars that serve as the basic supporting system for the whole structure. A very interesting detail is a fan like irregular molding placed around the northern and southern arches supporting the central huge dome. Apparently these were added to help the pendentives hold the elliptic-shaped flat dome. Two staircases located at the southern extremity of the eastern and western internal façades of the passageway, lead to the guardrooms located above the southern façade, which looks over the external face of the gate.

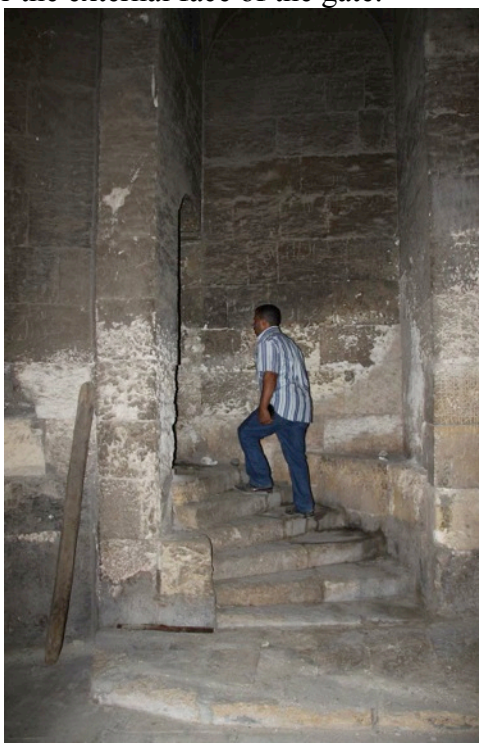
View of the interior from the North looking southwards, where the pyramidal ceiling is followed by the small flat dome, followed by the central huge (in white paint). IMG_0839-43



The molding placed to correct a structural architectural miscalculation. IMG_0896-98



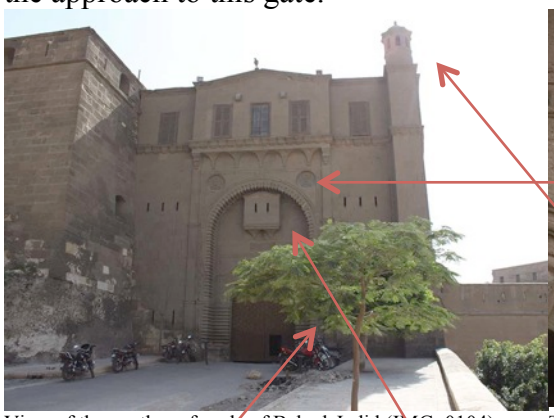
Location and detailing of the stepped molding placed between the round wall and the arches supporting the flat huge oval dome. DSC00560



The staircase leading to the guard's room on the southern façade. IMG_0849

The two façades of the gate bear typical Muhammad Ali style features with some neo-Mamluk decorative details. The southern façade, overlooking al-Bab al-Jadid Street, is square-like in form: 15.50m wide and 16.00m high. The semi-circular central arch is decorated by flat stalactite units and in its center a machicoulis juts out pierced with double arrow slits, which, with the set of three arrow slit openings located on each of the two sides of this arch, act as hiding screens for the men in charge of surveillance

and protection of this gate. The central arch of the gateway is framed with a rectangular, stone carved chain-like design, and in each of the two spandrels of the arch a roundel holds an intricately carved war shield representing all kinds of modern weapons of Muhammad Ali era. The background of the shield still bears turquoise colored paint, which makes one think that the whole façade might have been polychrome originally. On the western top corner of the façade an octagonal guardroom is build on the roof, located strategically to cover a wide angled view to the approach to this gate.

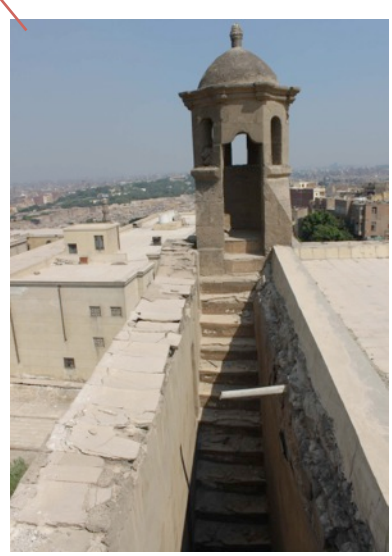


View of the southern façade of Bab al-Jadid (IMG_0104)

The roundel bearing a shield with different types of weaponry of the time (IMG_0859)

The molding running around the lower portion of the arched frame of the central opening of the southern façade IMG_9476

The machicoulis and a rectangular frame with a *naskhi* inscription reading: "*Ya mufattah al-abwab*", meaning (hail God) the one who opens the doors. IMG_9474



The guardroom on the roof of the gate and the steps leading to it IMG_9406

The northern façade of al-Bab al-Jadid has a more friendly nature, no arrow slits, but a michoulis-shaped upper window, which has no military function. The central semi-circular arch is composed of concentric series of arches decorated with three rows of flat stalactite rows running along the circular silhouette of the arches. The façade in general has a three-partite division, with the central large arch flanked by two smaller segments of semi-circular arches, each hosting a circular niche. The three-partite nature of the lower part of the façade is emphasized by the rise of thin pilasters running upwards towards for the central arch to the machicoulis of the second floor. The whole façade bears the military vocabulary, but with none of its elements acting as such.

The northern façade of al-Bab al-Jadid. IMG_9280

A machicoulis shaped window, which has no military function. DSC00288

Decoration of the central arch with it concentric. DSC00287

Rectangular frame with a *naskhi* inscription on a background of floral designs reading: "*Iftah lana khayr al-bab*" meaning open to us the best door. IMG_0740

The second floor is accessed from the passage on the eastern side of the gate that leads up to al-Bab al-Mudarraj. One needs to continue further up to reach this level. The level upstairs is renewed and serves today as the offices for two different governmental departments, both belonging to the Ministry of Antiquities. The southern half of the second floor is occupied by the Inspectorate for Islamic and Coptic monuments of the area of Giza; while the department of gardening in the Ministry of Antiquities occupies the other half.
The rooms around the passageway, in the tunnel-like section of the gate on the ground level, have become the storage areas for the police, and security employees of the Citadel. Access to these rooms is denied all the time. The gate itself is closed to the public and only used as access for the employees of the Ministry of Antiquities, who have their offices inside the premises of the Citadel.

4. Current architectural Documentation

This included the preparation of the following drawings:
Fig. 1. Layout of Bab al-Jadid with Bab al-Mudarraj attached to its north-eastern corner (1:100)
Fig. 2. Ground plan of Bab al-Jadid (1:400)
Fig. 3. First floor plan of Bab al-Jadid (1:100)
Fig. 4. Southern façade of Bab al-Jadid (1:100)
Fig. 5. Northern façade of Bab al-Jadid (1: 200)
Fig. 6. North-south section of Bab al-Jadid looking west (1:100)

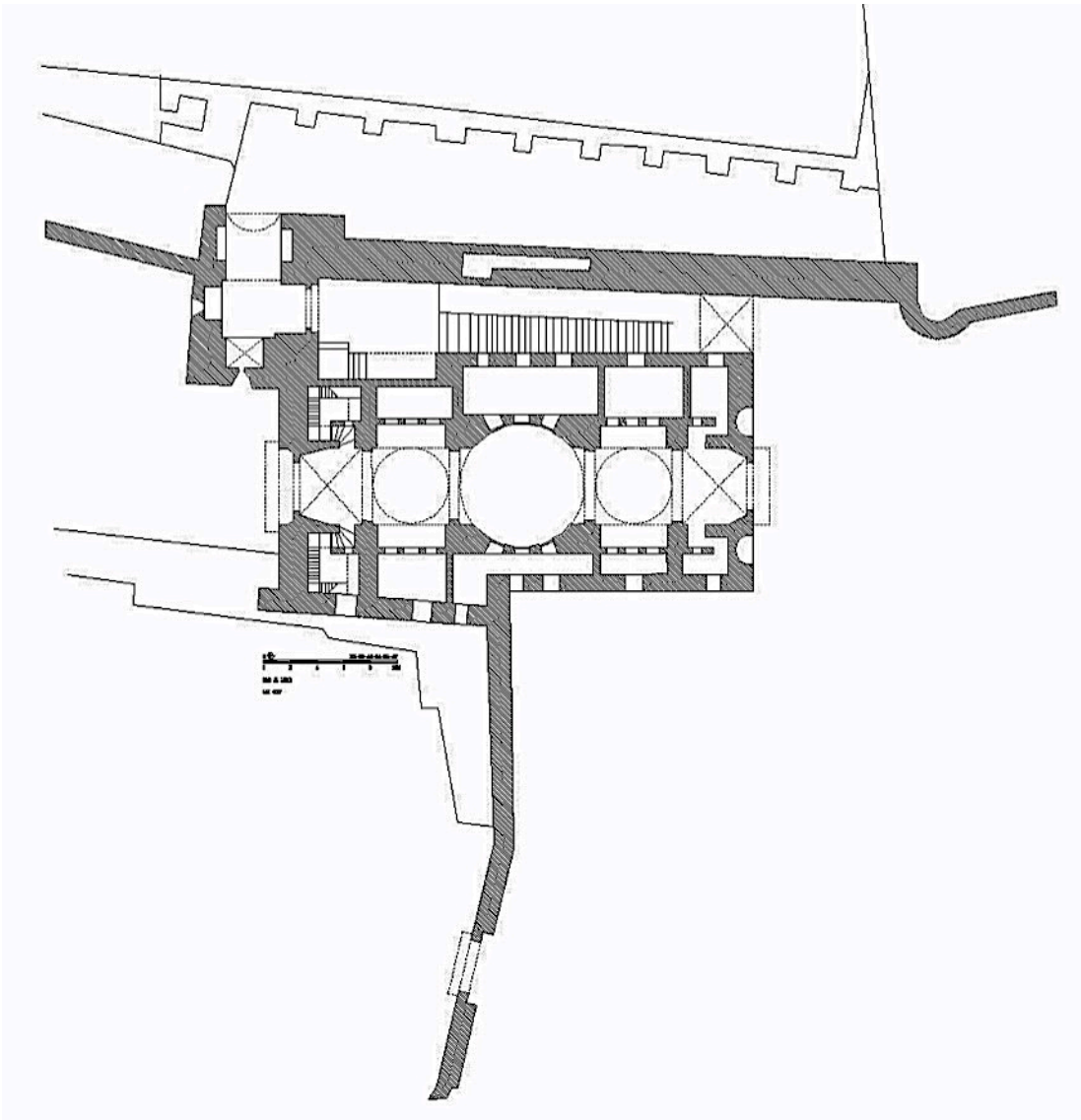


Fig. 1. Layout of Bab al-Jadid with Bab al-Mudarraj attached to its north-eastern corner

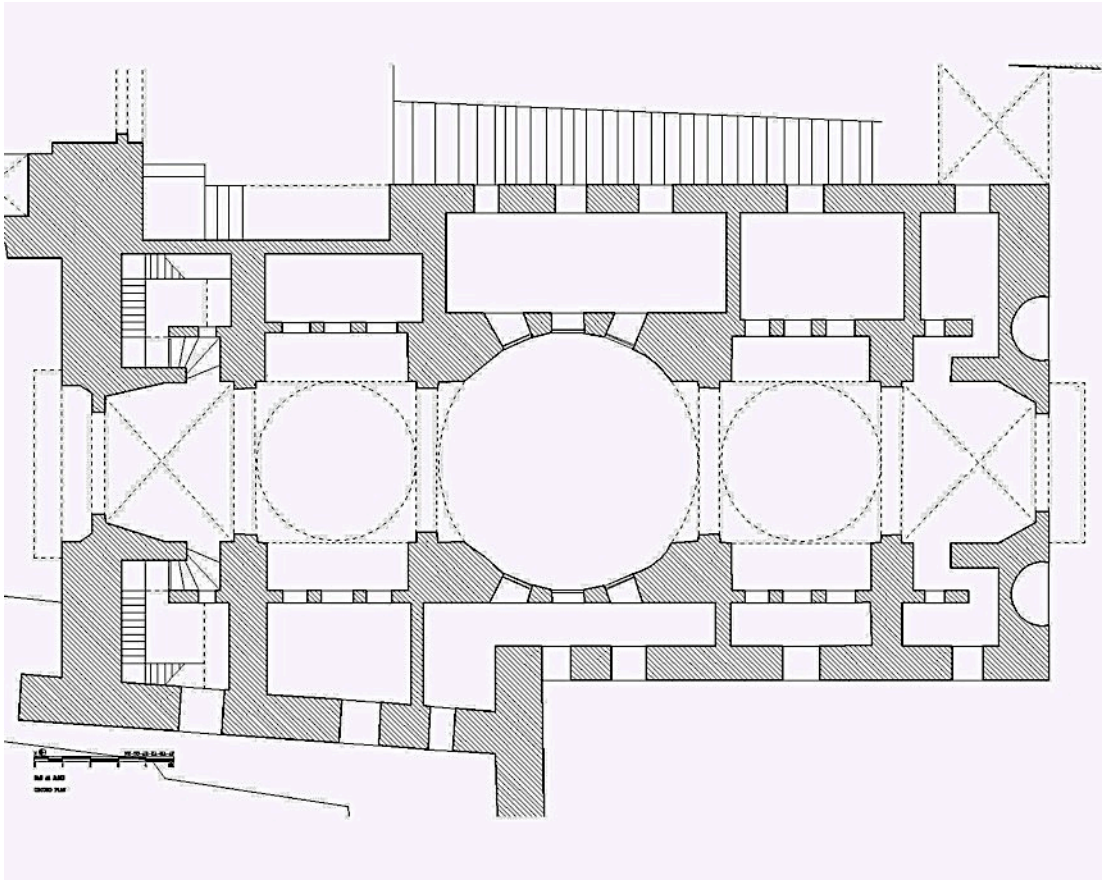


Fig. 2. Ground plan of Bab al-Jadid

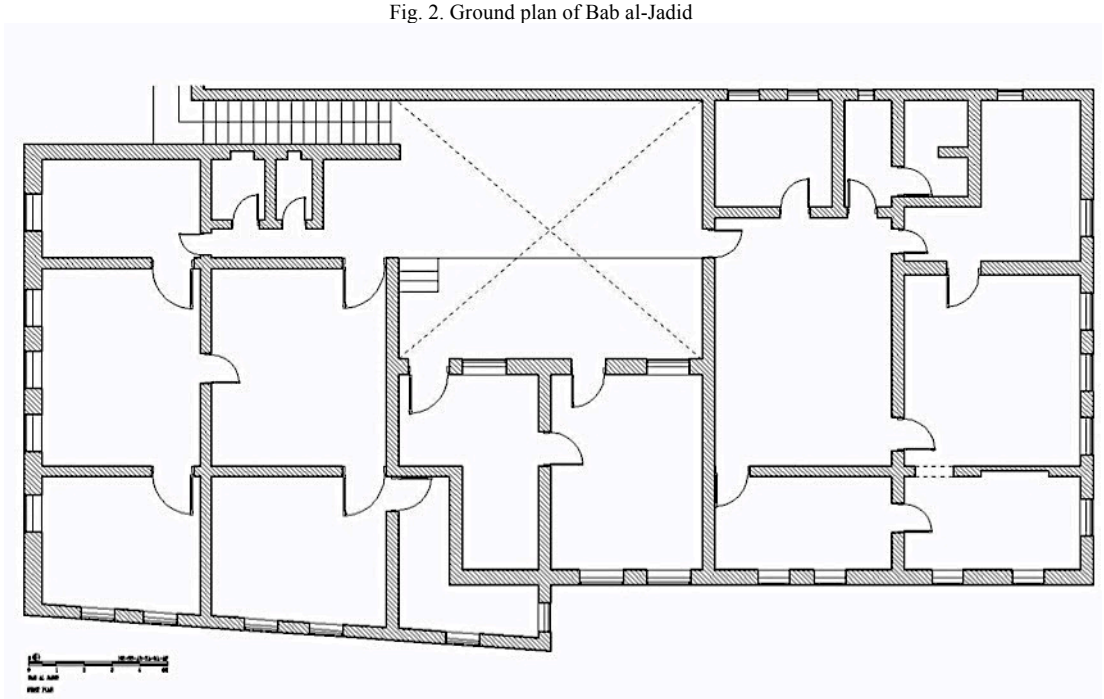


Fig. 3. First floor plan of Bab al-Jadid

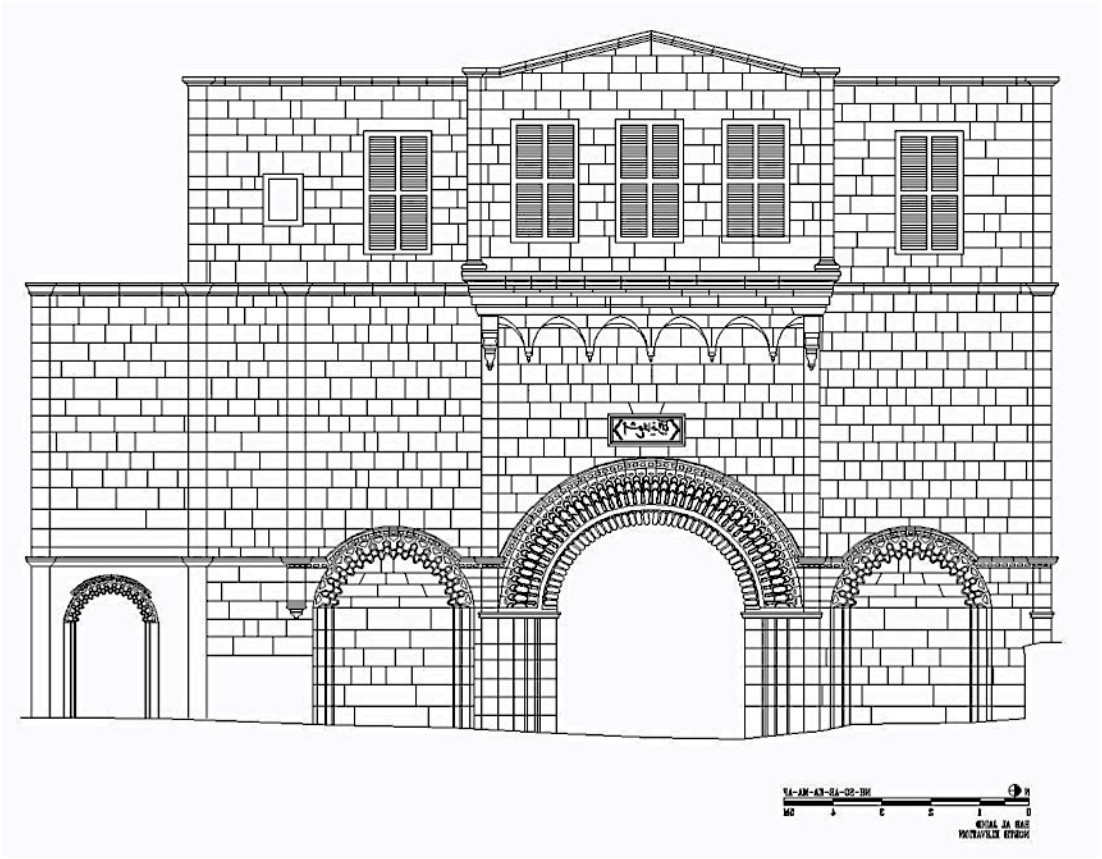


Fig. 4. Northern façade of Bab al-Jadid

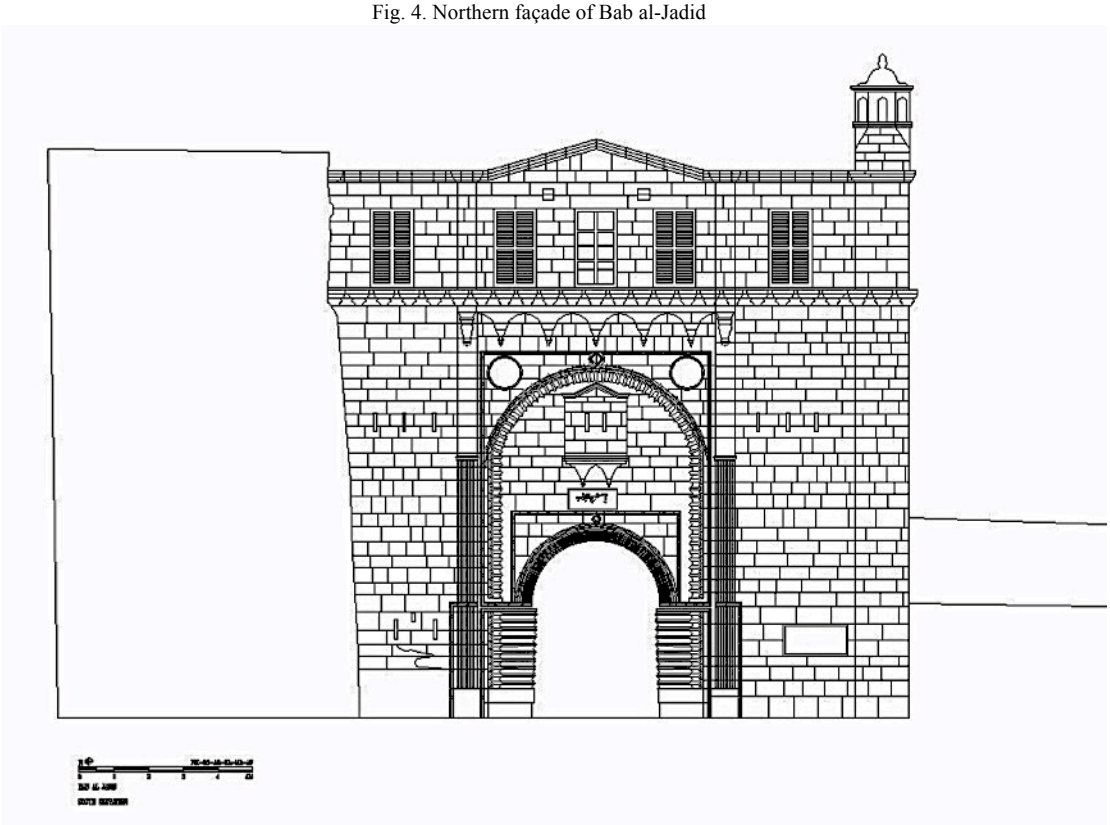


Fig. 5. Southern façade of Bab al-Jadid

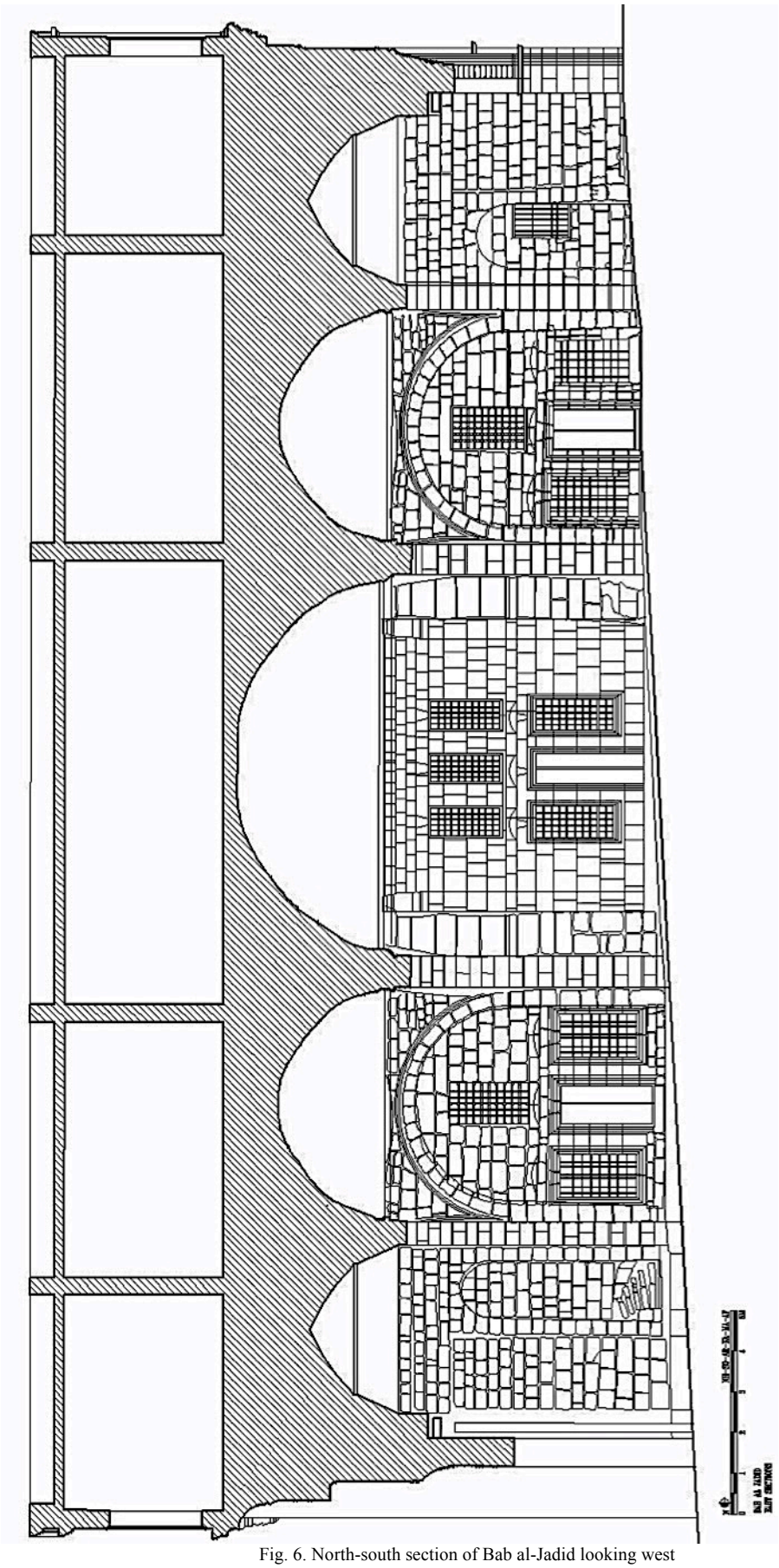
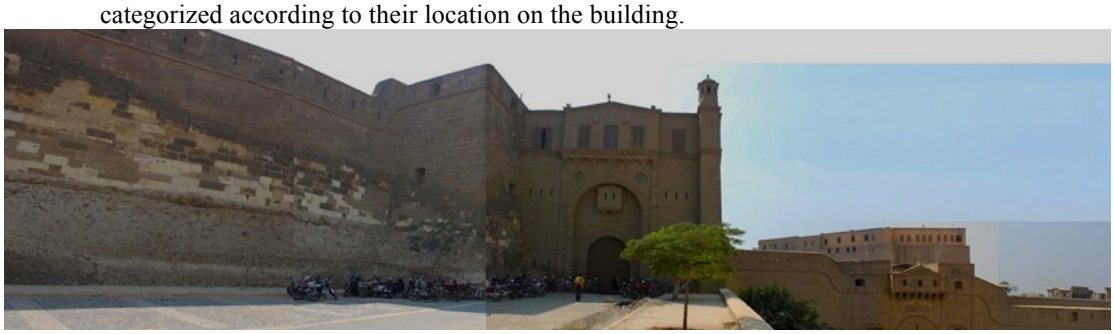


Fig. 6. North-south section of Bab al-Jadid looking west

5. Current photo documentation

A selection of photos are displayed in different sections of this report; for a full review of the photo documentation, visit the softcopy folder accompanying this report where images are presented in two folder:

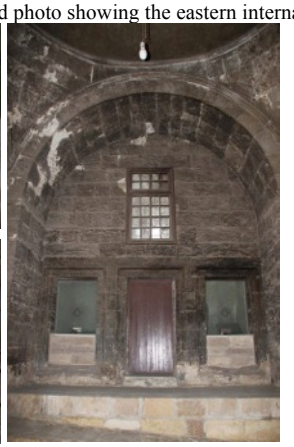
- The first folder contains all the images taken for the building in their full resolution and image size, and,
- The second folder contains the resized images with lesser resolution and quality size, categorized according to their location on the building.



Approaching Bab al-Jadid from the South. The gate is flanked by the remaining parts of al-Bab al-Mudarraj. IMG_9456-58

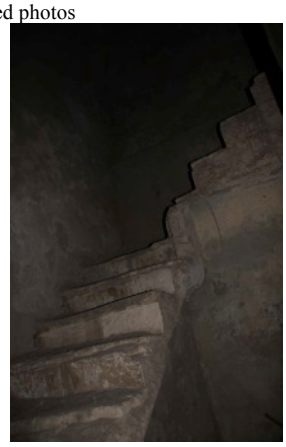
A rectified photo showing the eastern internal façade of Bab al-Jadid. Stitched photos

Floor of the passageway
(top) DSC00576
Brick domes plastered over
(below) DSC00570



Side rooms around the passageway. This was once the ticket-selling booth for the Citadel. IMG_0893

Wooden doors on the southern end of the passageway IMG_0874



Staircase detail leading to the guardrooms IMG_0852

The northern façade of Bab al-Jadid with the structure in question on its left and the enclosure wall of the Northern Enclosure of the Citadel to the right. On the left the beginning of the descending rock-cut road to Bab al-'Azab.

The middle staircase leads upwards from al-Bab al-Jadid to al-Bab al-Mudarraj, the staircase to the right continues upwards to access the second floor of the al-Bab al-Jadid. The straight leveled corridor leads to the small raised room at the upper end of the picture. The wall on the right is the enclosure wall of the Northern Enclosure of the Citadel. IMG_9394

The remains of al-Bab al-Mudarraj seen from the staircase leading to the second floor of Bab al-Jadid. It is interesting how even the masonry of Muhammad Ali is set on the remains of the Ayyubid gate. IMG_9353

View from North to South along the area between the enclosure wall of the Northern Enclosure of the Citadel (left) and the wall of the Harim Palace of Muhammad Ali (right). IMG_9336

Bab al-Jadid's northeastern corner viewed from the Northern Enclosure of the Citadel IMG_9381 IMG_9378

6. Previous conservation activities and building phases

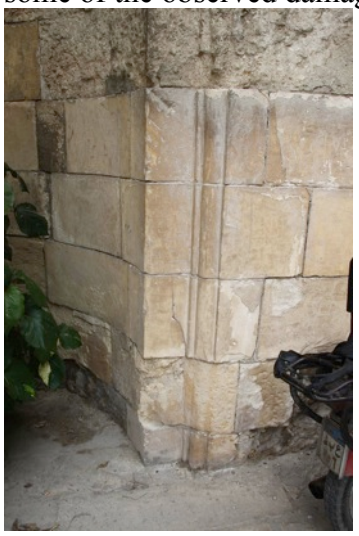
Bab al-Jadid is built on the debris of the ruins of parts of al-Bab al-Mudarraj, one of the original Ayyubid gates of the Citadel, the remains of which are now reached by a narrow passage located behind the eastern façade of Bab al-Jadid. Therefore, since 1826, date of its construction, Bab al-Jadid has not been subjected to a major modification. All that has happened in this structure is the change of its users, with no great change in its services with the new users, except for more negligence and lack of maintenance.

Not being exposed to a major conservation project does not mean that Bab al-Jadid was not subjected to minor conservation practice. These, as well as the fact that it is built on debris forming a high platform produced by the accumulation of the remains of the structures destroyed and flattened to act as foundation grounds for Bab al-Jadid are the main causes of deterioration of Bab al-Jadid today, as will be surveyed below.

7. A schematic guideline for the physical restoration of material, structures, and decorative elements of al-Bab al-Jadid

General state of al-Bab al-Jadid:

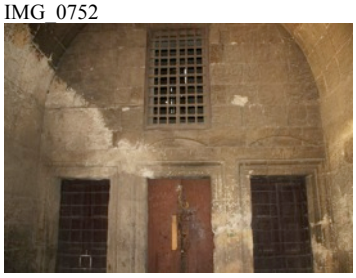
Bab al-Jadid suffers from all types of stone decay caused by migration of salts on the rising water inside the lower fabric of its walls and also from the mal-treatment of stone decay, like almost every other building on the Citadel. The following are just some of the observed damage types:



Stone exchange with cement mortar IMG_0752

Plastering on stone with gypsum and drawing joints with dark paint DSC00526

Plastic repair by applying cement mortar on stone



High line of evaporation caused by blocking the lower levels by cement mortar DSC00486

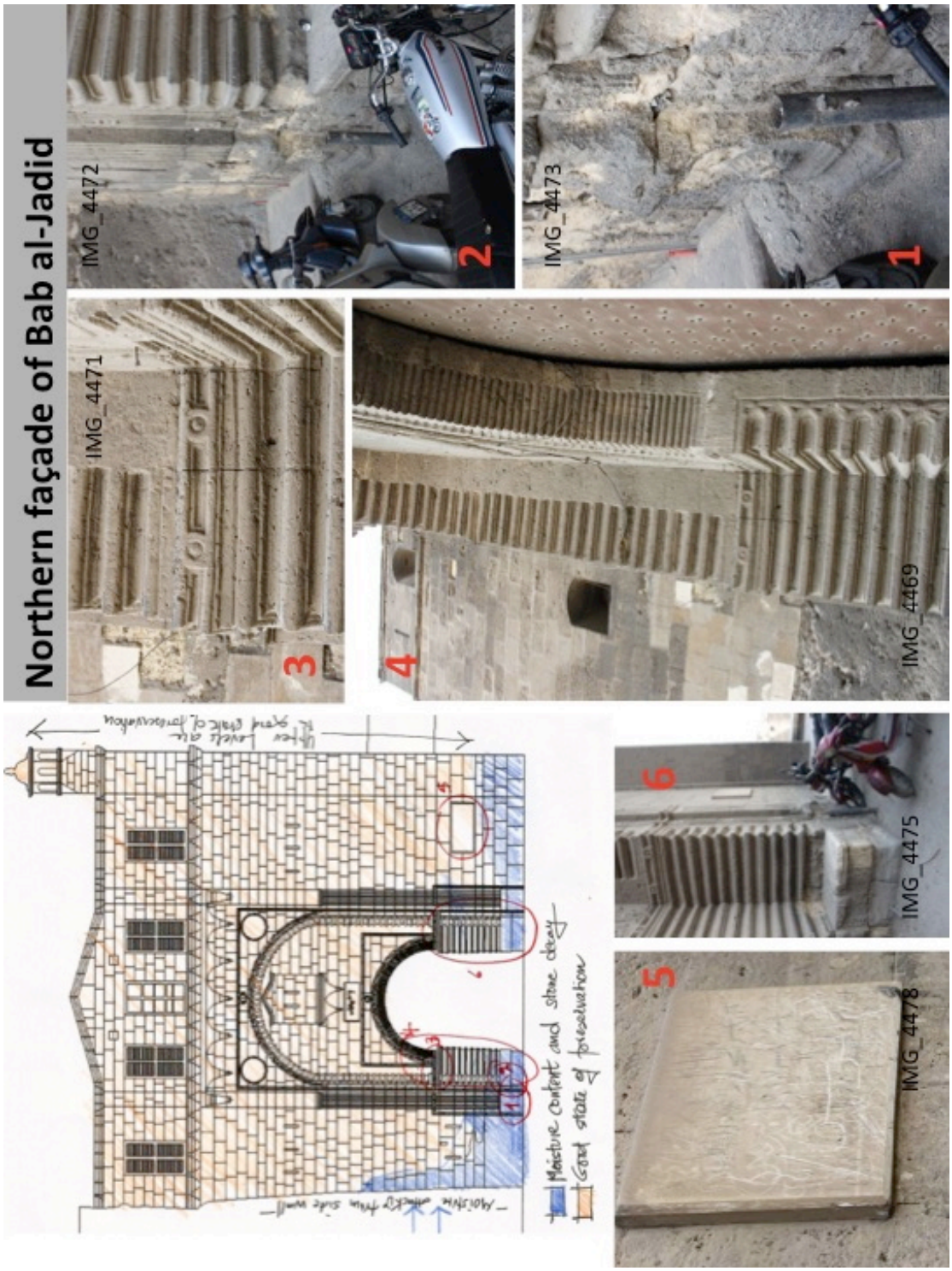
Mal-usage of the passageway with hazardous electrical connections DSC00283

The split unit of the air condition jutting upwards from the ceiling

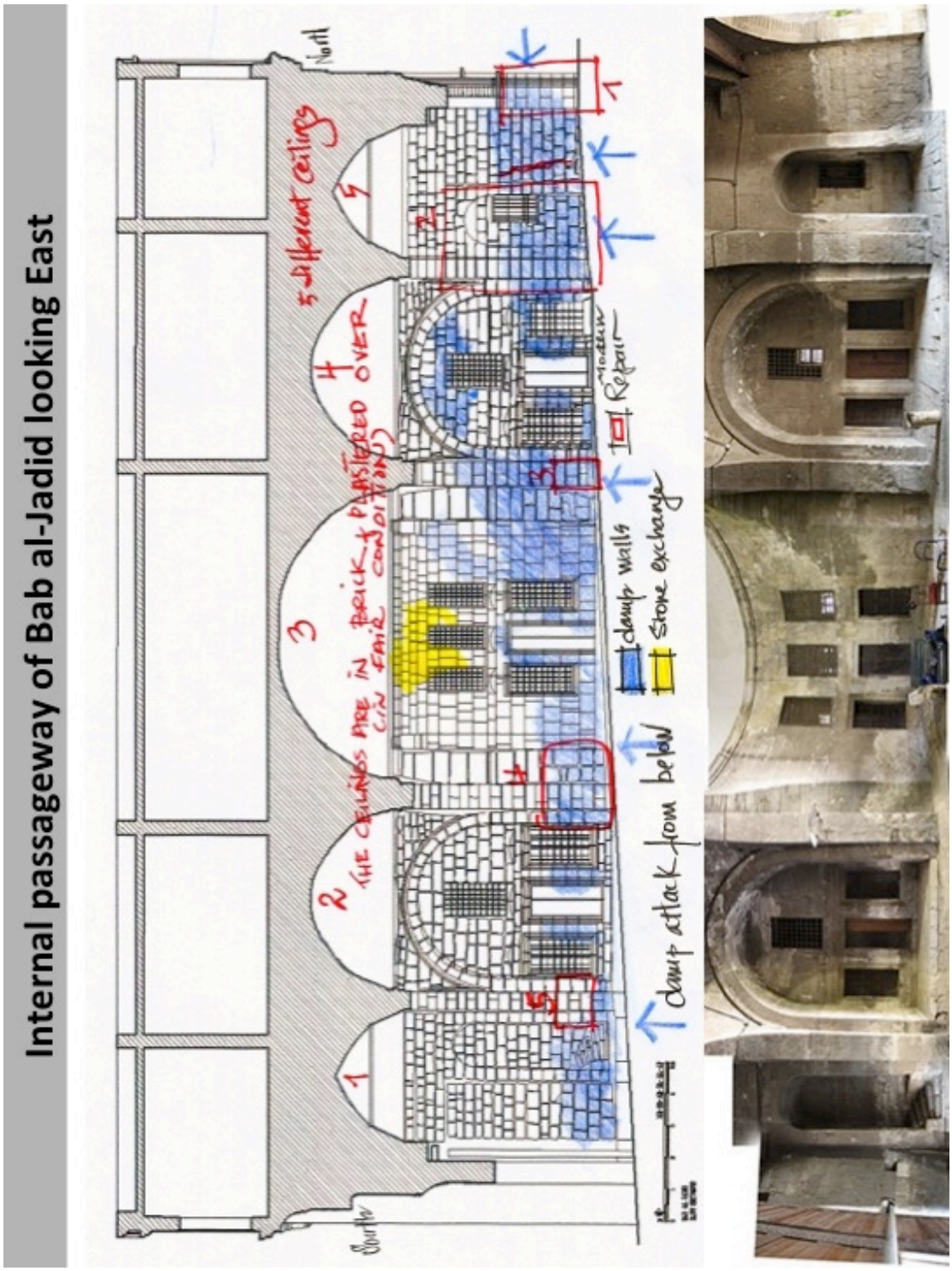
Having mentioned how the moisture content is causing the stone decay, and how the treatment of this decay is causing more problems, it should also be mentioned that Bab al-Jadid is in a good structural condition, judging from the state of the arches, pendentives and domes of the passageway, when compared to the other buildings in this report.

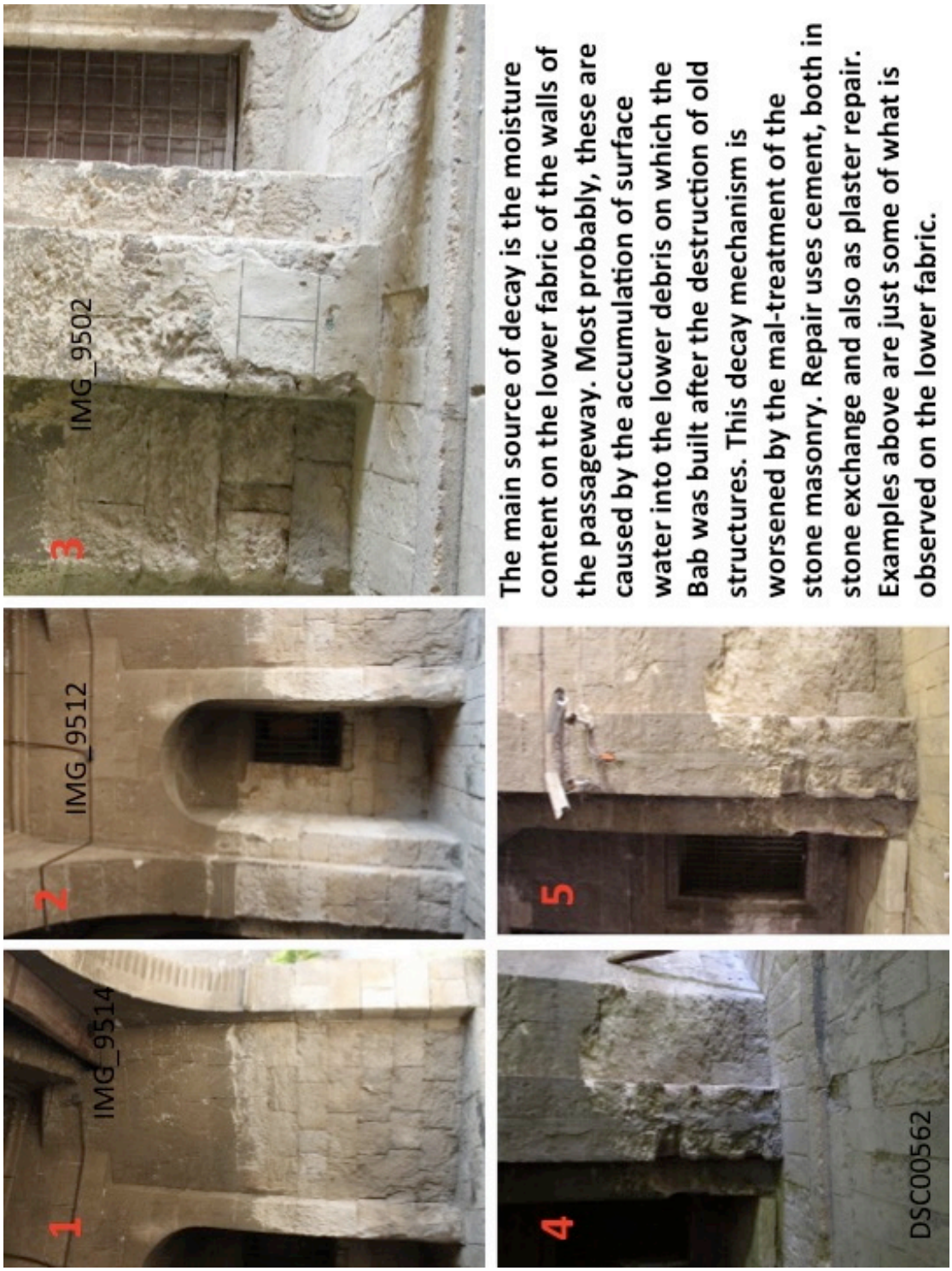
A rough condition survey conducted on Bab al-Jadid:

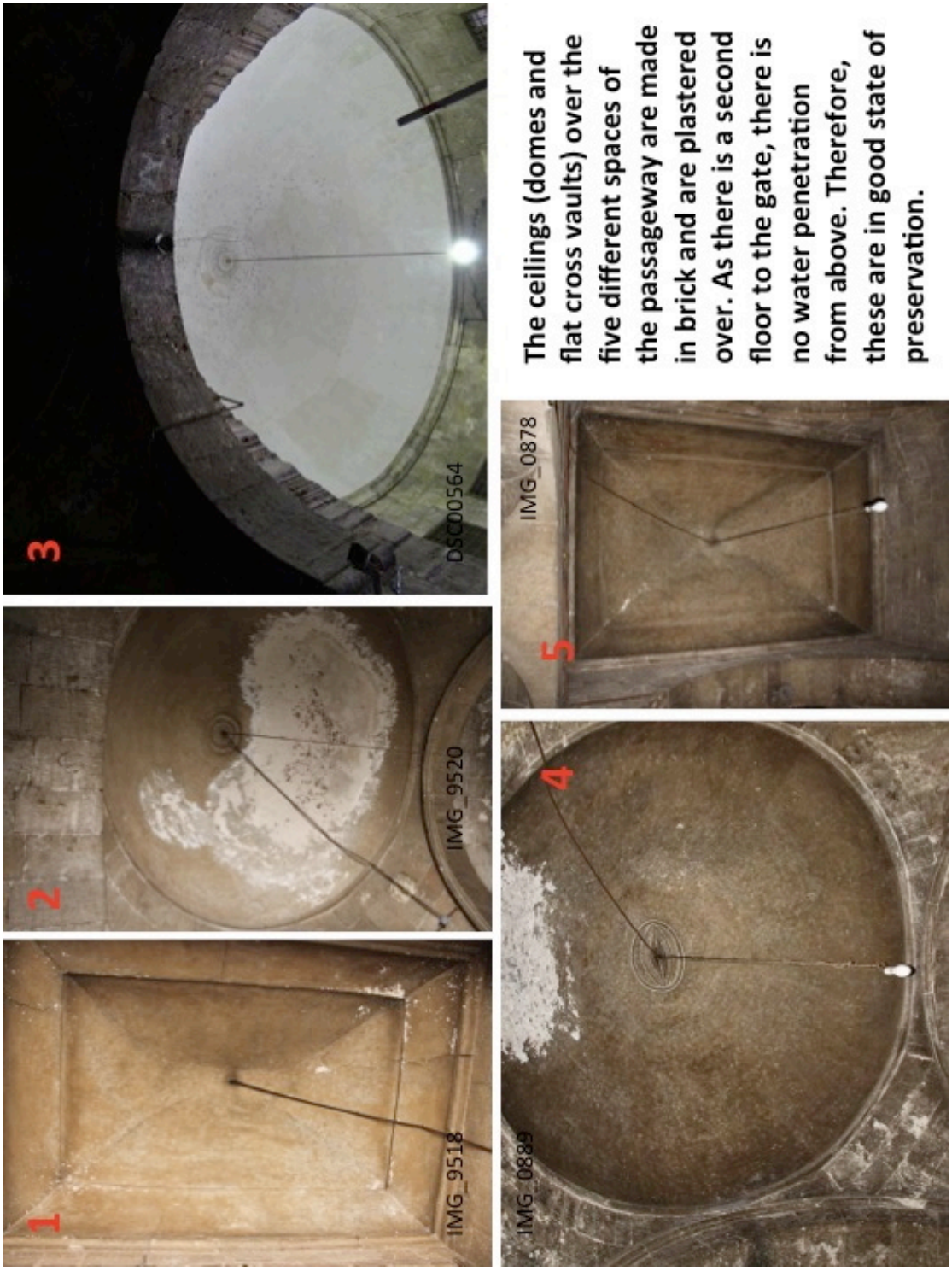
In this survey, the three faces of Bab al-Jadid: the northern, southern and the western face of the passageway are surveyed, observations are noted on the drawings, and the accompanying photos highlight pinpointed problems. The purpose of this condition survey is to justify the emergency actions proposed after this survey.




Southern façade of Bab al-Jadid
4
IMG_0747
3
IMG_0754
2
IMG_0752
1
IMG_0760
IMG_0758


Internal passageway of Bab al-Jadid looking East
North
5 different ceilings
damp walls
Stone exchange
damp attack from below


IMG_9502
3
IMG_9512
2
IMG_9514
1
5
4
DSC00562
The main source of decay is the moisture content on the lower fabric of the walls of the passageway. Most probably, these are caused by the accumulation of surface water into the lower debris on which the Bab was built after the destruction of old structures. This decay mechanism is worsened by the mal-treatment of the stone masonry. Repair uses cement, both in stone exchange and also as plaster repair. Examples above are just some of what is observed on the lower fabric.


1
IMG_9518
2
IMG_9520
3
DSC00564
4
IMG_0889
5
IMG_0878
The ceilings (domes and flat cross vaults) over the five different spaces of the passageway are made in brick and are plastered over. As there is a second floor to the gate, there is no water penetration from above. Therefore, these are in good state of preservation.

Emergency actions:

1. Repair of the plumbing in the second floor and checking the lower rooms to avoid undesirable uses of these spaces.
2. To document Bab al-Mudarraj properly and create the necessary protective measures against vandalism, because the flowerpots left there are absolutely useless.
3. Consolidate the mural paintings/inscriptions on the dome and transitional zone of Bab al-Mudarraj.
4. Re-install the electrical connections in the whole building.
5. Removal of any mal-treatment on the stone fabric, which can be done without major damage, like the modern gypsum and plaster applications.
6. Studying the building to its full fledge as a final pre-requisite before the planning for a full conservation/reuse project for it.

Suggestions for future conservation / site protection

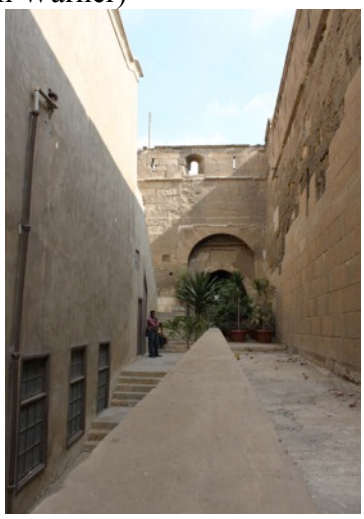
- Preparation of a comprehensive stone conservation project on Bab al-Jadid. This includes the full documentation of block by block condition survey, detection of the source of moisture inside the walls, the dewatering of the ground on which the Bab is built, and a step by step application of the the stone conservation project including desalination, repointing, grouting, pinning, stone exchange, etc.
- Dewatering will definitely need digging around and inside the gate, which can also be an opportunity to excavate the area in search for remains of the walls and material destroyed to make way for the construction of Bab al-Jadid. Therefore, proper excavations must be planned from the beginning as a separate item of work and not just as a complementary job done while solving the under floor water problem.
- It is very important to study the neighboring buildings to Bab al-Jadid before the realization of a comprehensive conservation / site management plan. These buildings include:
    - Bab al-Mudarraj and the structure lying west to Bab al-Jaded. In this report, a light investigation on these two are presented to emphasize on how our knowledge of these is crucial to our understanding of Bab al-Jadid and its surrounding.
    - The other interesting structure is the one on the western side of Bab al-Jadid. Excavated in the 1980s, it betrays a lot about the level of the area before and after Muhammad Ali's incursion, despite of the fact that excavation results are not published and we were not able to reach to those who had performed these activities.

  The study of these two structures around Bab al-Jadid and the excavation results under Bab al-Jadid's floor will shed light on the access to the Citadel before the era of Muhammad Ali. We will be able to understand how horses prior to the invention of the wheeled carriages accessed the Citadel.

BAB AL-MUDARRAJ

The Comité registers Bab al-Mudarraj meaning gate of the steps, as mon. No. 556. It is interesting how the members of the Comité gave No. 555 to Bab al-'Azab, then they skipped Bab al-Jadid and registered this Bab as No. 556. Bab al-Mudarraj was one of the original gates to the Citadel until Mohammad Ali had it substituted by his new gate, Bab al-Jadid, lying immediately to its west. The original foundation inscription of the Citadel by Salah al-Din still survives on this gate. Also other inscriptions have survived on the walls of this gate, such as Gaqmaq's, Qaytbay's, and Tumanbay's. Most outstanding are the mural decorations added by al-Nasir Muhammad on the dome above the bent entrance.
(This historical is taken from Warner)

Ascending to al-Bab al-Mudarraj from al-Bab al-Jadid IMG_0496

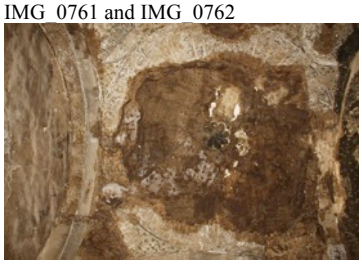


Approaching al-Bab al-Mudarraj's southern façade

The arched entrance to Bab al-Mudarraj's southern façade and the foundation inscription of the Citadel by Salah al-Din IMG_0761 and IMG_0762

One of the inscriptions on the wall of the Northern Enclosure of the Citadel IMG_0763

Stepping under the domed space of al-Bab al-Mudarraj IMG_0763

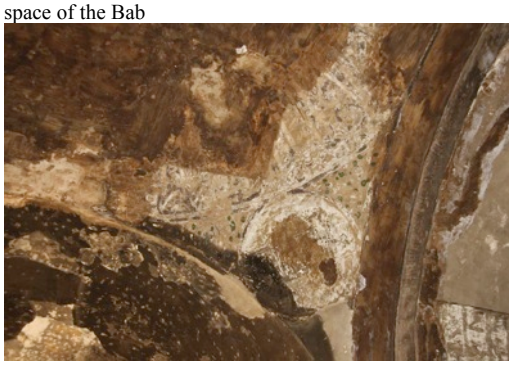


The plastered dome of al-Bab al-Mudarraj where the plaster still bears the emblem and the inscriptions of al-Nasir Muhammad

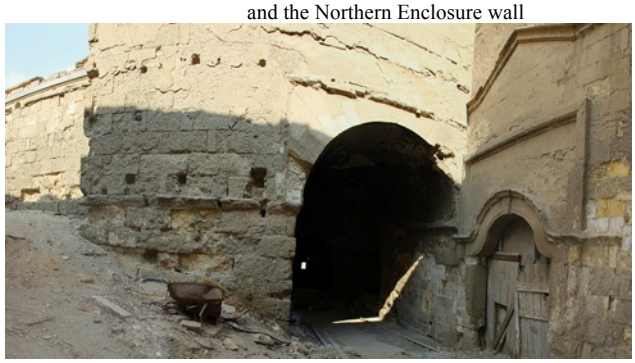
The western façade of the domed space of the Bab

The steps of Bab al-Mudarraj

The space between the Harim's Palace and the Northern Enclosure wall



Emblem of al-Nasir Muhammad on the transitional dome of Bab al-Mudarraj



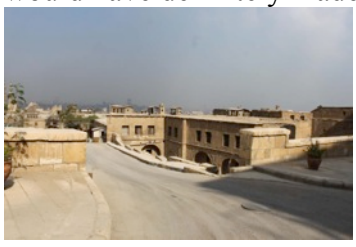
Bab al-Mudarraj viewed from the side of the wall of the Northern Enclosure of the Citadel

STRUCTURE WEST OF BAB AL-JADID

The function of this structure is not very clear, but its importance was felt even in the 1980s, when excavations were conducted there. Nothing is published and nobody really knows what was there. But, by mere observations:

- A courtyard is seen open now, with wall running in strange directions,
- Arched stone structures that look like stables, or drinking troughs and food feeding spaces for the animals, and,
- A cenotaph is still preserved on a higher level indicating the level before the initiation of the excavations,

We are left to speculate that these were like a parking area for the animals for those entering the Citadel prior to the erection of Bab al-Jadid. Introduction of the carriage would have definitely made this service become obsolete and such spaces undesirable.



The beginning of the rock-cut road to Bab al-'Azab. Notice the level of the excavated building.

The western and southern acades of the uncovered structures

Walls running in strange directions

External southern façade of the structure with its false gate appearance without real access from it to the interior of the Citadel

Bab al-Mudarraj and the structure on the western side of Bab al-Jadid betray how Muhammad Ali has interrupted something that linked these two together on a lower level, demolished a part, flattened the debris enough to make his gate be raised from its neighboring older structures. In an attempt to solve the levels problem, Muhammad Ali added a layer around the walls around his new gate, pretending that all belong to his own era. This is an interesting architectural and site situation, which must be studied before any project starts.

8. Proposed adaptive reuse alternatives

- The gate will be one of the proper accesses to the Citadel, as it has smooth access to the Southern, Northern and Lower Enclosures of the Citadel, with parking possibilities around its outer door, and with a friendly access to pedestrian visitors of the neighborhood.
- It is also the right station to talk to visitors about the foundation and history of the Citadel. It seems that its position and external and internal access to Bab al-'Azab is not a point to be neglected. It is always desirable to walk form one to the other not only through the rock-cut famous internal road of the Citadel, but why not along the enclosure walls. An opportunity worthy of discussions, especially that during this walk, Citadel and al-Qahira, the city, cross their frontiers.

9. Sources used

- Rabbat, N., *The Citadel of Cairo* (Leiden, NY, Koln - 1995).
- Lyster, W., *The Citadel of Cairo: A History and Guide* (Cairo, 1993).
- Rizk, 'A, *Mawsu'at al-Athar al-Islamiyya bil-Qahira* (trans. Encyclopedia of Islamic Monuments in Cairo) (Cairo - 2003).
- 'Azab, Kh., *Aswar wa Qal'at Salah al-Din* (trns. Walls and Qal'a of Salah al-Din), (Cairo - 2005).
- Warner, N., *Monuments of Historic Cairo* (Cairo - 2005).

5. QUBBAT (MAUSOLEUM) AL-BIRAQDAR

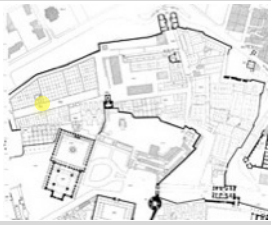
Late 17th century AD (Late 11th century AH)
During the Ottoman Occupation of Egypt (1517-1798 AD)
U94

1. About the founder of the mosque

The dome is not dated and its founder is unknown, but according to Warner, the design of its pendentives is of an archaic pattern. He further compares it to the mausoleum of Shaykh al-Tahawi built in 1687 AD and accordingly, dates this mausoleum around this date.

2. Location of the mausoleum

The mausoleum is located inside one of the warehouses facing the western façade of the remains of the Palace of al-Nasir Muhammad, across the street known as the industrial area created by Muhammad Ali in the lower enclosure of the Citadel.



3. Description of the mausoleum

(Consult the full architectural documentation prepared by our team)

The mausoleum is square in plan, with each side of the square measuring approximately 5.00 m. Its height is approximately 11.50m measured from the actual ground level to the tip of the center of the dome. The square room rises to a height of nearly 6.00m after which eight rows of stone stalactites are built upwards to act as the transitional zone in transferring the square into a circle on which the slightly pointed dome rests. The dome itself is constructed in two different colors of stone built in alternating rows, thus giving the *ablaq* decorative impression, very characteristic to Mamluk dome architecture.

Built in stone from inside, oddly enough, on the exterior, brick is exposed under the fallen plaster. So, this is a case of a double shell dome, where the interior is built of stone, while the external dome is in built bricks and plastered over. Double niches are pierced on the mausoleum's northern and western façades, with a depth of 1.50m. Most probably, these were used as cupboards.

Despite the effects of a strong fire, the stone masonry inside the mausoleum has survived and is in a fair condition, if we ignore the discoloring effect of the fire.

4. Current architectural Documentation

This included the preparation of the following drawings:
Fig. 1. Ground plan (1:100),
Fig. 2-5. Four internal façades of the mausoleum (1:200)

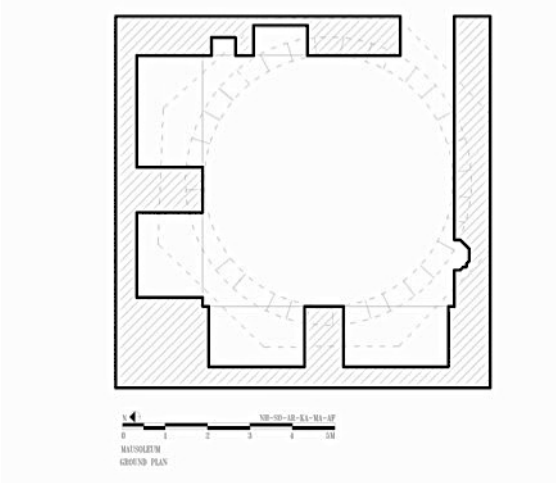


Fig. 1. Ground plan of Mausoleum

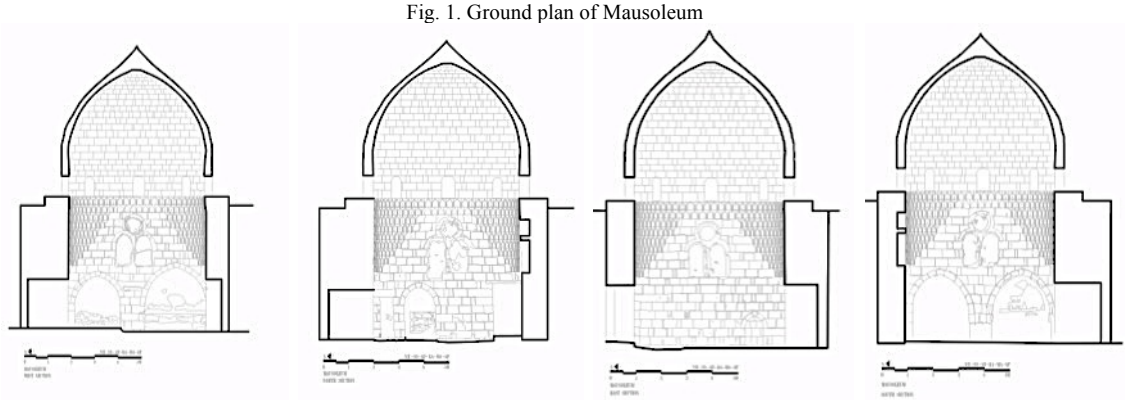
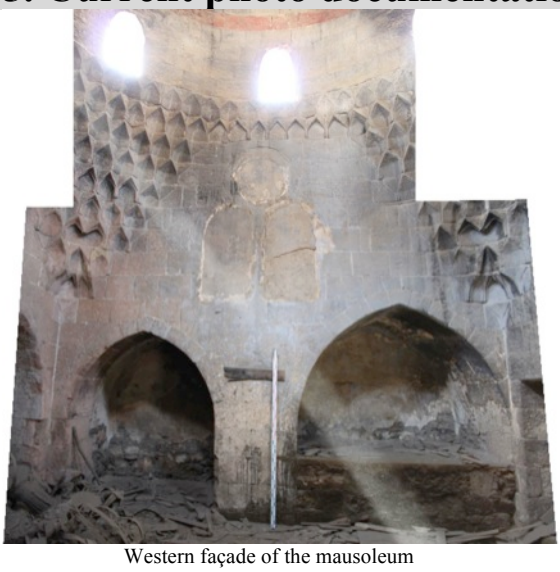


Fig. 2-5. Four internal façades of the mausoleum

5. Current photo documentation



Western façade of the mausoleum

Northern façade of the mausoleum

Southern façade of the mausoleum

Eastern façade of the mausoleum

Stalactite transitional zone

Dome of the mausoleum looking up

Details of the rooms to the East of the mausoleum


The dome from the roof with clear vertical cracks along the whole height of the dome

6. Previous conservation activities

It was not possible to get information concerning any previous conservation activities on this dome.

7. A schematic guideline for the physical restoration of material, structures, and decorative elements of qubbat al-Biraqdar

General state and state of preservation/maintenance

The dome is completely neglected and unattended. It is used for storage of tar. In the near past, the dome has suffered from a severe fire. The internal walls up to the level of the stalactites and the beginning of the dome are blackened. Most probably the vertical cracks on the exterior of the dome are the result of this fire. The small size of the dome makes repair very possible and affordable.

In general, besides the extreme state of neglect, the state of the dome seems to be stable for the moment from inside, but from outside, it needs either a conservation small action, or a temporary belting around its neck to avoid further widening of the cracks.

The rooms beside the mausoleum and the roof reached to examine the mausoleum are more under the threat of collapse than the mausoleum itself. It is so dangerous to enter these rooms and reach the roof because the debris collected on the roof does not allow one to see that underneath there is no proper roof. One needs only to visit the lower warehouses to grasp the lamenting situation of the ceiling beams, which cannot be seen as one walks on the roof.

Emergency actions:

No emergency actions are necessary, except for the consultancy of a structural engineer to belt the neck of the dome and make some repair around it. Meanwhile, it should be categorically forbidden to access the roof unattended for curious visitors who can just fall by stepping on ceiling/floor elements hanging under the debris of the roof without any support underneath.

Suggestions for future conservation / site protection

For the time being, I have no suggestions as the fate of this miniscule mausoleum lies with the fate of the rest of the warehouses around it.

8. Proposed adaptive reuse alternatives

The mausoleum will have no reuse, but the rooms beside the mausoleum, as well as the roof can adopt a wide variety of uses, considering its double view over the remains of the Palace of al-Nasir Muhammad. The mausoleum itself still needs historical research to make its owner or founder known. This might be the only chance for its revival.

9. Sources used

- Rizk, ‘A, *Mawsu’at al-Athar al-Islamiyya bil-Qahira* (trans. Encyclopedia of Islamic Monuments in Cairo) (Cairo - 2003).
- Warner, N., *Monuments of Historic Cairo* (Cairo - 2005).

6. THE REMAINS OF THE PALACE OF AL-NASSIR MUHAMMAD

(Monument No. 549)

Built during the Bahri Mamluk Period (1250-1382 AD)

1. About the founder: A major structure, which is not yet fully understood

It is interesting how a building of such grandeur is not yet fully understood and how its founder is not yet known. What is identified today as 'the remains of the palace of al-Nassir Muhammad', according to Lyster is most probably the remains of al-Ashrafiyya palace, built originally by al-Ashraf Khalil (1290-1293 AD), later taken over by al-Nassir Muhammad. Our research team is convinced by this interpretation, and will later elaborate on it, but just for the sake of completing the survey of opinions, here are some other ideas:

- It has been believed to be the *Ablaq* (Striped) Palace. According to Warner, it was assumed that the *qa'a* al-Ashrafiyya (U86) excavated in the 1980s was part of this palace, because of the surviving *ablaq* masonry on the outer western façade of the wall of Muhammad Ali's artillery platform.
- According to Rabbat, this is not al-Ablaq Palace.
- Finally, according to Creswell, the double vaulted hall with the corbeled façade on the lower level of the Citadel (U91) was al-Ablaq Palace.

To add more complications, it is interesting to observe that No 549 is assigned to Burg al-Rafraf on the map of the Comité, which according to Warner, is a mistake. So, as we proceed in looking at this structure, it is impossible to understand it fully,

without understanding all the other structures mentioned above, one of which is part of this research on the lower enclosure of the Citadel (7. The double-vaulted hall).

In all cases, judging from the size and quality of its masonry, it is definitely a structure belonging to the Bahri Mamluk period (1250-1382 AD), built by either al-Sultan al-Ashraf Khalil (1290-1293 AD), or al-Nassir Muhammad (1340 AD).

2. Location of the structure

These remains are built against the western slope of the Citadel, running practically under the western enclosure wall lying south of the courtyard of Muhammad Ali mosque and partially under the corner of the western and southern walls of Muhammad Ali mosque. Two things are clear by a mere observation of the plans:

- Muhammad Ali has deliberately used the remains of this structure as a foundation to the southwestern corner of his mosque, and,
- Muhammad Ali must have cleared part of the higher levels of this structure, filled the debris inside the lower remains and after flattening the rubble has used the terrain as a solid foundation grounds on which he has erected the courtyard of his mosque.

3. Description of 'The remains of the Palace of al-Nasir Muhammad'

(Consult the architectural documentation prepared by our team)

A spiral stone staircase acts as the only entrance to the structure currently known as 'the remains of the Palace of al-Nasir Muhammad', which is located on the lower section of the southern wall of the courtyard of Muhammad Ali mosque. This unquestionably Mamluk style staircase is reached by a long stretch of modern stone staircase, which starts its descent to the door leading to the Mamluk-style staircase from the level of the courtyard of Muhammad Ali mosque. This dramatic access itself indicates how Muhammad Ali has imposed his Citadel architecture on the ruined or 'made ruined' remains of the Mamluk-style wonders, which once dominated the Citadel and crowned the skyline of al-Qahira.
Once reached at the lowest level of the spiral staircase, a short straight stone flight of steps directs one westward. On the northern wall of this area, as well as on its continuation as one proceeds further west, two tunnels lead northwards, running practically under the courtyard of Muhammad Ali mosque. The second tunnel runs practically parallel to

the western wall of the courtyard of Muhammad Ali mosoque and along its length, three arrow slit styled windows overlook the city (See the dotted lines indicating these spaces that run under the courtyard of Muhammad Ali mosque).
Coming back to the irregular shaped space reached after the descent, an arched entrance crowned by a small square window above it, opens into a large, impressive in its massive stonework area. It is not an open space and it is not well lit, but the massiveness of its stone-made architectural elements are extraordinary, besides the shocking effect of the bat sound and smell that dominate the space (Will talk about this later). The huge space is divided into smaller square areas by a forest of stone piers, four of each serve as the bases for a cross-vaulted stone ceiling. There is no transition zone. The piers are built in such a way as to become the arches that form the vaults that cross each other at the center of each small space. Scrolling between the small spaces, it is amazing how subtle and different each stands, despite their identical structural composition and building technique methods. The space is composed of twenty-eight of these square spaces: seven along the N-S axis and four running along the E-W direction. But more of these spaces appear under the western wall of the plinth around Muhammad Ali mosque. Our team was able to detect two more rows, and a third one was still visible, running westwards, but was not accessible.
Therefore, there were at least three more rows of these square spaces, now left under Muhammad Ali's incursion. Therefore, the expected square spaces in each level are 49 bays: 7 running on the N-S direction and 7 running on E-W (only 40 documented for the time being as these were the accessible ones). It is also possible that the nomenclature seven halls came from this fact.
After crossing nearly seven of these spaces southwards, an artificially made ramp, result of an earlier mal-excavation leads into an opening created by a straight three-partite stone lintel placed under a blind arch. Passed this entrance, which is not cleared to its original height, a nearly identical lower space is revealed, again divided into small square spaces, with the same structural composition, material, and building technique. A second amazing forest of piers turning into cross vaults, with an even more dramatic effect as in this case the ground level is not totally and evenly cleared, so, scrolling between the spaces is like sailing in a undulating sea, where sometimes one grasps the whole height and in other cases, one touches the ceiling (the perfect setting for examination high ceilings without scaffolding).
In this dark space, scattered rays of sun enter from the openings of the windows on the western façade (See the western façade from outside).

4. Current architectural documentation

The preparation of the architectural documentation of this structure was not an easy task because bats inhabited the space. The darkness and negligence of the authorities have made the area the perfect residence for these mammals. On our way in for the first time, the team decided to terminate the documentation task of this structure, but have given ourselves the chance to try all known methods to get rid of bats, without really having to kill them, and we were successful. At the beginning we lit the space with strong spotlights, this was a disaster as the bats were even more aggressive and faster. This experience made us understand why a speedy person is described as being "Like a bat out of hell". They were hovering around us annoyed from the lights, but they never really left the place. Then we adopted tradition ways and have ended up burning 6 kilos of red strong chilly pepper on red-hot charcoal, placed in the rear sections of the two levels and inside the tunnels. The bats left the place with a white owl with them and no dead bats were found. We entered the place and in three days, took our photos, points, sketches, notes and were out before the bats return, as we were told that they will return.
This story makes part of the experience of documentation, but this is not the only reason for including it in this report. During our survey there, we have discovered that another group had already worked there. They had used scaffolding from the MA and plastic curtains to isolate themselves and work in each space and then to move further with their cage. Their work was interrupted; they left and never came back. It was not possible to know exactly who these consultants were and for whom they were working and the reason for the interruption of their work. It will be interesting to compare notes with them, if we ever get to know them.

The architectural documentation achieved includes:
Fig. 1. First level plan (1:200),
Fig. 2. Lower level plan (1:200), and,
Fig. 3. Western façade of the remains of the Palace of al-Nasir Muhammad (1:200).

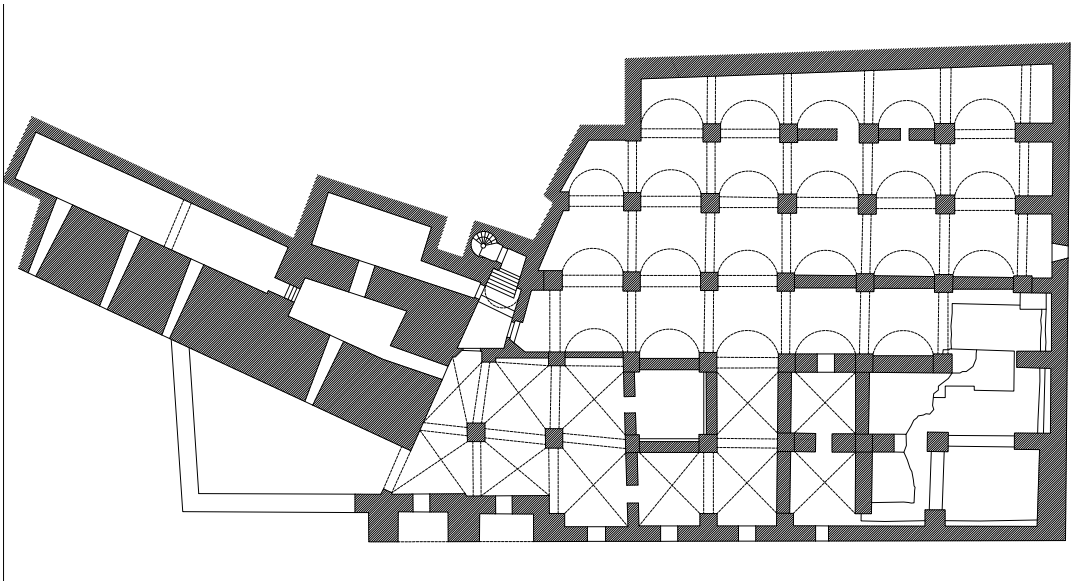


Fig. 1. First level plan (1:200)

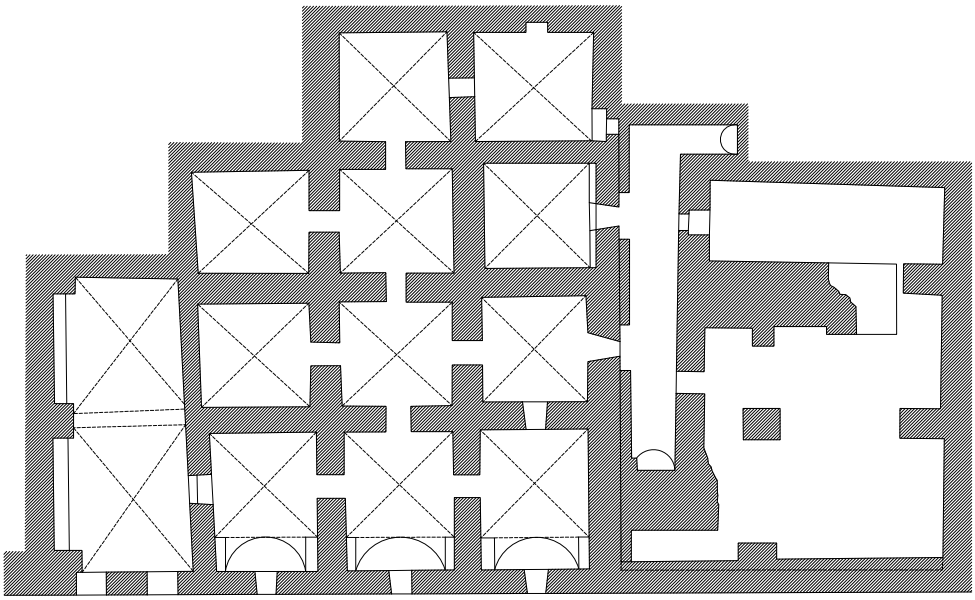


Fig. 2. Lower level plan (1:200)

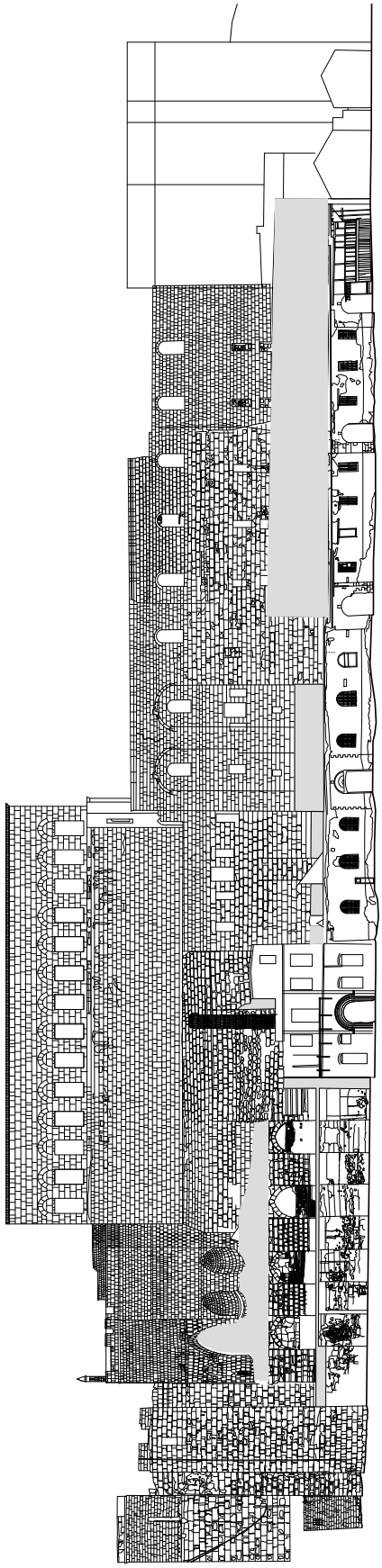
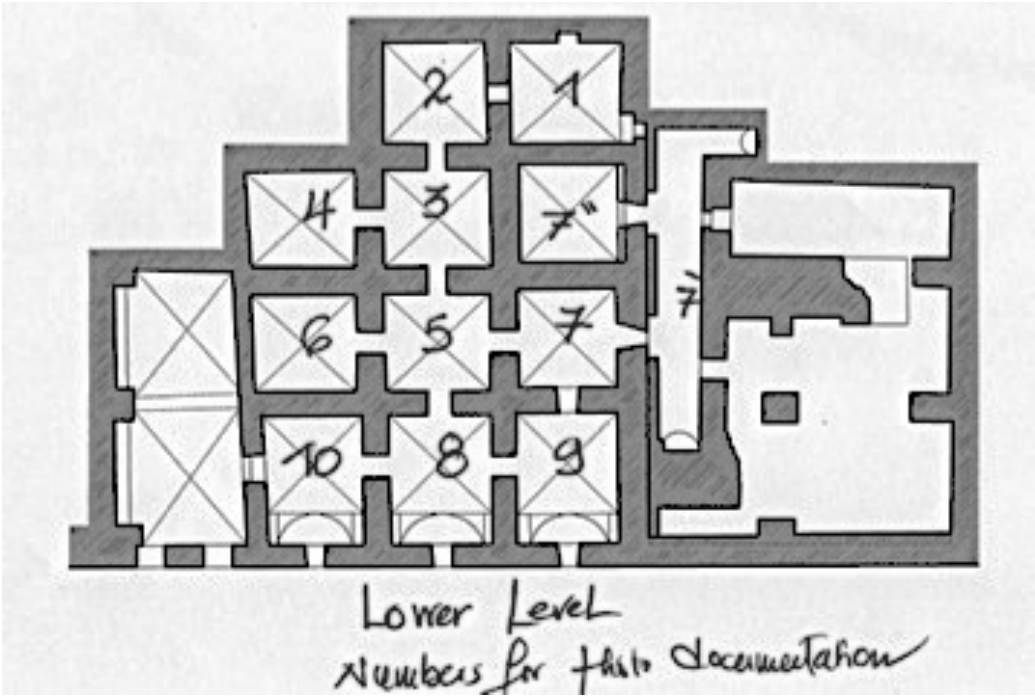


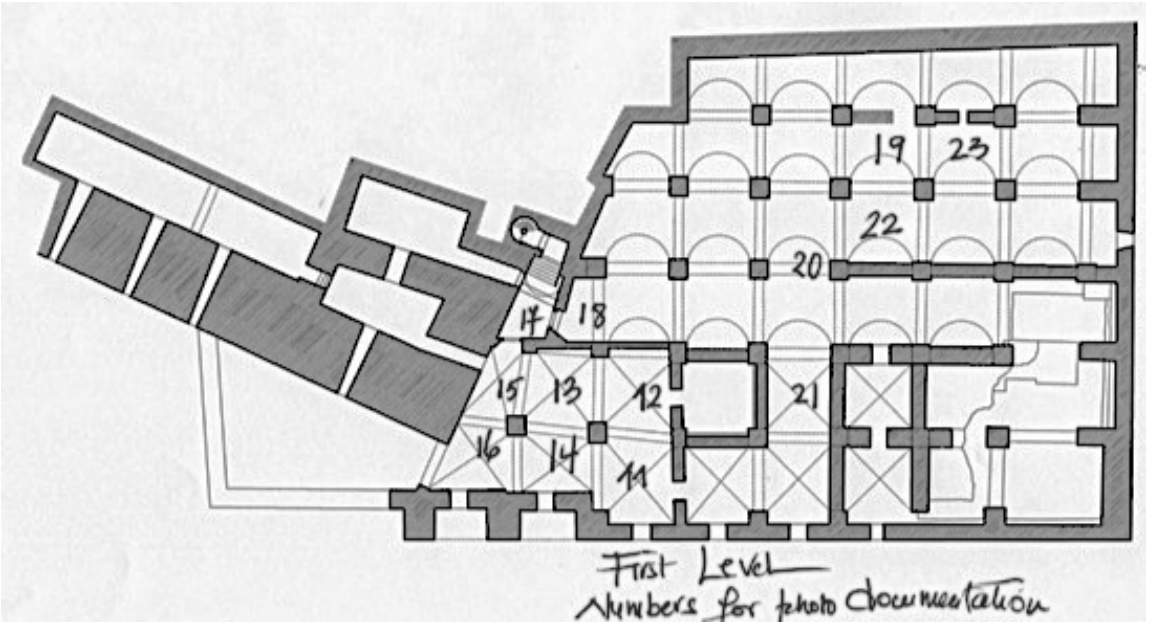
Fig. 3. Western façade of the remains of the Palace of al-Nasir Muhammad (1:200)

5. Current photo documentation

The photos presented here are just to give the general impression of the structure. For a complete survey, each bay is numbered and the photos of each space are in the folder holding the corresponding numbers.

LEGENDS FOR THE PHOTOS OF THE REMAINS OF THE PALACE OF AL-NASSIR MUHAMMAD - PHOTOS OF EACH NUMBERED ROOM BELOW CORRESPOND TO THE FOLDER CARRYING THE SAME NUMBER IN THE FOLDER: 03. PHOTOS





Access to the remains of the Palace of al-Nassir Muhammad

The spiral staircase, entrance to the first level and entrance to the side tunnel

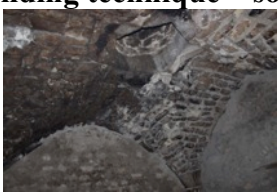
Access from the bottom of the spiral staircase to the first level

The terrace at the northernmost part of the first level

A sea of heavy walls, arches, and cross vaults




Identical spaces with identical structural solutions and yet with different material and building technique – some examples of the crossing vaults

6. Previous conservation activities

It was not possible to reach to any document related to details of the conservation activities done in this structure. Although we know that at one point in the near past, most probably in the eighties, authorities have made the reinforced concrete reconstructions on the southern corner of the structure, which had collapsed years ago. The documents for this action must be somewhere in the SCA archives and will be urgently needed if someone is to work on this structure.

7. A schematic guideline for the physical restoration of material, structures, and decorative elements of the remains of the Palace of al-Nasir Muhammad

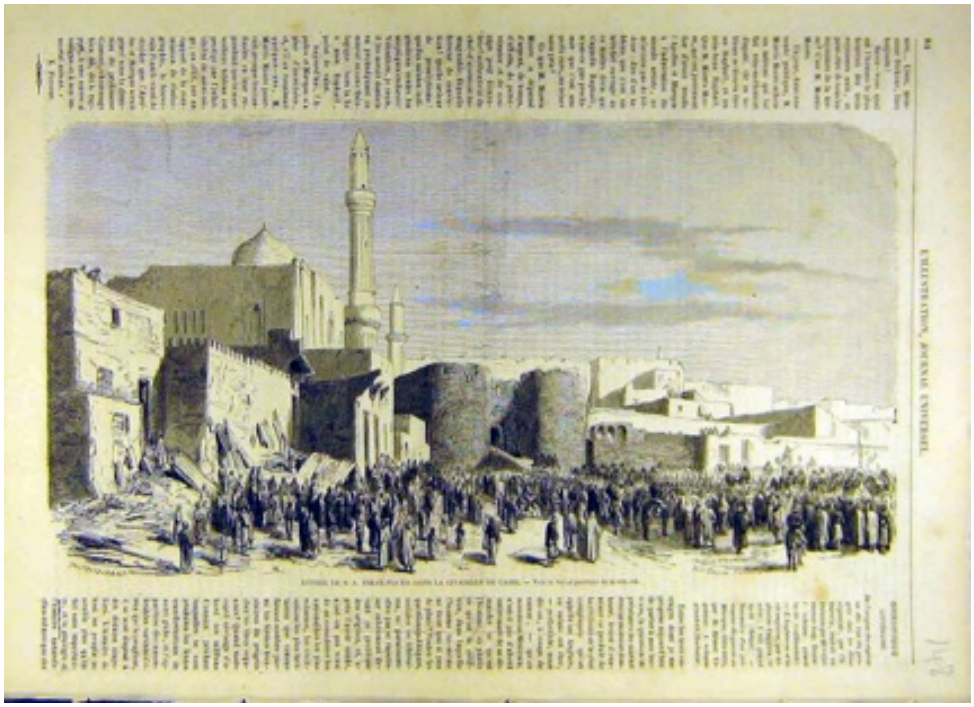
General state: Trying to understand these remains

Understanding the basic function of this structure is not an easy task because of the damage reached to it by the intrusion of Muhammad Ali in, on, and around it. All that is left today of this structure are part of two of at least three levels, which consist of a multiple of identically designed square cross-vaulted spaces; a situation where neither the general limits of the space as a whole neither the circulation between the small space of which the large space is composed of is discernable. It is really as it is called "The remains" … But, some things are clear within this uncertainty:

1. The structure surveyed under the name of "the remains of the Palace of al-Nassir Muhammad" is nothing but the underground floors of a huge structure, the above ground levels of which are currently non-existing. These were demolished and flattened to fulfill the modifications of Muhammad Ali, whose building agenda included the annihilation of the Mamluk layers and their replacement by his own buildings, which was achieved par excellence. Therefore, what we are dealing with is just the underground service areas of a building, which if ever mentioned by historians, will be never included. These lower sections might have served as dungeons, arm fabrication/storage areas, archives, etc. Why not think of the lowest level as a water storage area (a cistern). In conclusion, these levels must have been the secret chambers of the Palace above, which makes its mentioning in historical sources most unlikely.

2. The uppermost level of the spiral staircase must have been the ground level of the original structure, which must have been the separating point between the elaborately decorated portion of this building and its lower service areas.
3. Access to the first level of the surviving portion of this building is confirmed by the spiral staircase, but access from it to the still existing and partially excavated lower level is unknown. Moreover, from the openings on the lowermost section of the western impressive façade, we know that there was still a third lowermost level, which is unreachable. Therefore, nature of the lowermost level and access to the second and third lower levels are still pending issues.
4. Finally, I believe that what the eye meets by observing these remains is nothing compared to what was build originally above it, which must have been an amazing marvelous masterpiece of Mamluk civil architecture.
5. To conclude this section, I would like to mention that it is only by looking at the whole ensemble around this structure that one can start having an idea of how it would have looked like originally (See conclusions after the survey of buildings No. 6, 7, and 8 of this report).
6. One thing is certain that what was above the ground level from the southern enclosure of the Citadel structure was so impressive and omnipresent on the skyline of the city of al-Qahira that Muhammad Ali had to do something about it. He would have wanted to deal with the lower part also, but did not because of the enormous efforts need to do so, so he just left it and obscured it partially from below by building up his industrial area, parts of which still survive on the ground level of the lower enclosure of the Citadel.

Finally, according to Rabbat, these two halls have never been studied, and no hypothesis about their origin and date has been advanced. They most probably formed the lower structures supporting the four *qa'as* of the Ablaq Palace of al-Nasir Muhammad in 1314. I definitely share this opinion and will build on it in my conclusions.



Gravure depicting Bab al-'Azab before the erection of Muhammad Ali mosque

State of preservation/maintenance of the remains of the Palace of al-Nasir Muhammad

It needs no effort to grasp the degree of negligence in this structure. But what is more alarming in the worsening of the conditions since it was excavated at the turn of the century and re-excavated and partially restored in the 1980s, or better said dug hastily in earlier periods. Comparing photos taken then speak for themselves.

Archival photos from SCA archives

The situation today

Emergency actions

1. An extensive geological study concerning the state of the rock under this structure is urgently needed, and especially on its southwestern corner, which as mentioned before, had collapsed since quite a long time and restored in the 1980s by adding reinforced concrete columns with no ceilings above. This corner needs a delicate structural investigation in collaboration with a geological study for the terrain of the Citadel as a whole and its relation to al-Muqattam hill behind, and the city in front, especially after the digging of Salah Salim Road.

Archival photos showing the collapse of the masonry on the southwestern corner of the remains under study in this section

According to Rabbat, this hastily restored portion in the 1980s to complete the façade, extend to the upper hall above and covers the surface of six vaults.

2. An exhaustive architectural documentation for each bay and the whole ensemble; a documentation to be served, with the geological studies, as prime data for a structural analysis.
3. A comprehensive structural assessment of the structure using the architectural documentation and the results of the geological survey of the Citadel.
4. Installation of a monitoring system to observe the cracks on the masonry and the re-thinking and re-application of the bearing scaffolding units placed in various parts of the vaults and walls inside the structure.




AN URGENT RECOMMENDATION IS TO STOP THIS KIND OF CONSOLIDATING ACTIONS

In some spots the continuous cracks indicate a differential movement of the ground underneath


The more we approach the side of the area that had collapsed and reconstructed in the 19802, the more we witness collapsing portions of vaults and cracks.


The quick introduction of reinforced concrete beams, as a quick remedy


Some of the cross arches suffer from serious structural disorder


Excavation are more like treasure hunting

Suggestions for future conservation / site protection

- Even thinking about this is impossible for the time being as the structure is in need of its basic information, which unfortunately is either scarce or completely absent.
- The only conservation activities that can be planned now is the preparation of the reports considered as the pre-conservation pre-requisites preceding any action, which are the full historical, geological, structural, and architectural studies.

8. Proposed adaptive reuse alternatives

- It is not possible to think of a reuse for this structure before understanding its structural stability and confirming its historical whereabouts.

9. Sources used

- Rabbat, N., *The Citadel of Cairo* (Leiden, NY, Koln - 1995).
- Lyster, W., *The Citadel of Cairo: A History and Guide* (Cairo, 1993).
- Rizk, ‘A, *Atlas al-‘Imara al-Islamiyya wa al-Qibtiyya bil-Qahira* (Atlas of Islamic and Coptic architecture in Cairo), (Cairo - 2003).
- ‘Azab, Kh., *Aswar wa Qal’at Salah al-Din* (trns. Walls and Qal’a of Salah al-Din), (Cairo - 2005).
- Warner, N., *Monuments of Historic Cairo* (Cairo - 2005).

7. THE DOUBLE-CROSS HALL

Built during the Bahri Mamluk Period (1250-1382 AD), most probably the work of al-Nasir Muhammad (1290-1314 AD (689-714 AH)

8. INDUSTRIAL AREA IN THE LOWER ENCLOSURE

Built during the reign of Muhammad Ali

9. CORBELLED FAÇADE

10. BURG AL-RAFRAF

(These structures are combined together because of their proximity and because of the team's belief that these four and the remains of al-Nassir Muhammad Palace (No. 6 of this report are the remains of ONE HUGE MAMLUK COMPLEX.)

THE REMAINS OF AL-NASIR MUHAMMAD'S PALACE ARE DELIBERATELY SINGLED BECAUSE OF THEIR UNIQUENESS AND SPECIAL IMPORTANCE AND ALSO BECAUSE THESE ARE THE MOST ENDANGERED OF THIS GROUP

1. About the founder of the double-cross hall: an amazing structure not even registered as a monument

Such a wonderful structure and yet neither registered as a monument nor given any attention. Despite the fact that its date is uncertain, it is indisputably a Royal Mamluk-period structure par excellence. Its masonry size and quality and its grandeur leaves no doubt of its belonging to the golden age of Bahri Mamluk architecture. Warner gives it No U91, as a building not registered, but worthy of being nominated as a monument.

2. Location of the double-cross hall and the industrial area

The structure is located in the lower enclosure of the Citadel, but reaching it is quite tricky. This will be detailed in the description below. Maybe the reason for not registering this structure as a monument is this complicated location, which makes access to it denied most of the time and reached only after taking permission of the occupants of the spaces surrounding its enclosure. This adds to its atmosphere, as the shock of getting into the space, after crossing the neighboring mediocre structures, intensifies its majesty and wow.

3. Description of the double-cross hall
(Consult the architectural documentation prepared by our team)

The double-cross hall is a massive structure constructed of five huge crossing vaults, the side of each measuring approximately 9.00m. The two middle vaults are flanked by two *iwans* placed on each one's eastern and western sides. Rabbat thinks that this structure belonged to the stables enclosure.

The double-cross hall

Different views of the double cross hall: N-S view through the space, looking South; the southern cross vault; the northernmost of the space

It is not possible to describe this structure in itself. In fact, it is in isolation, but its whole being depends on its new/old neighboring structures.
On its western side, it is obscured by a strange structure, so-called as "the corbeled façade" composed of five huge stone corbels separated from each other by four pointed tunnel vaults, each running 10.00m deep. Nine moldings construct each corbel. The total height of each corbel is 5.50m and each protrudes from the lower pier carrying it by 2.20m. These corbels definitely meant to hold a huge structure above them that is non-existing today.

- Rabbat thinks that the upper structure might have not been completed and that their dating is problematic.
- Warner thinks they belonged to a *wikala* and dates them stylistically to the late 17^{th} or 18^{th} century.

Judging from the size and quality of the masonry of the piers that hold these corbels, I believe that they belong to a much earlier date, perhaps even to the Mamluk period. But as two of the pointed tunnel vaults block the windows on the western façade of the double cross hall, these must have been added later than the double-cross vaulted hall attributed to the time of al-Nasir Muhammad. In fact, Rabat noticed the two identical corbels flanking the top level of the Burg al-Rafraf, which look like the five corbels in front of the tunnel vaults, except that they are approximately 20.00m higher. From all these discussions and observations, I conclude that there must have been a Mamluk structure reaching at least to twenty meters high on the five huge

corbels, which explains the existence of the twin similar corbels behind Burg al-Rafraf.

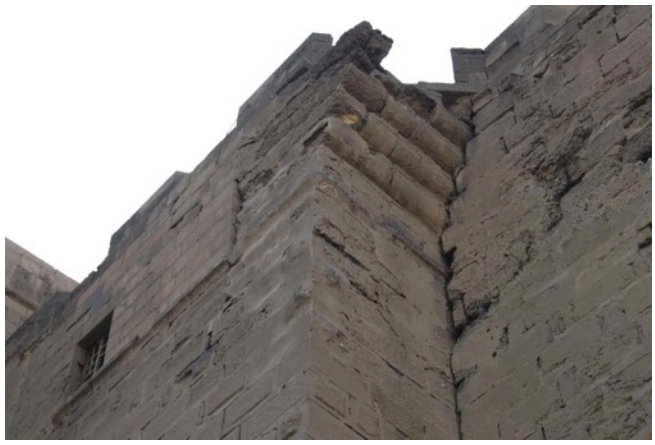
The corbeled façade

The corbeled façade obscured behind modern shaggy storehouse

Detail of the corbel

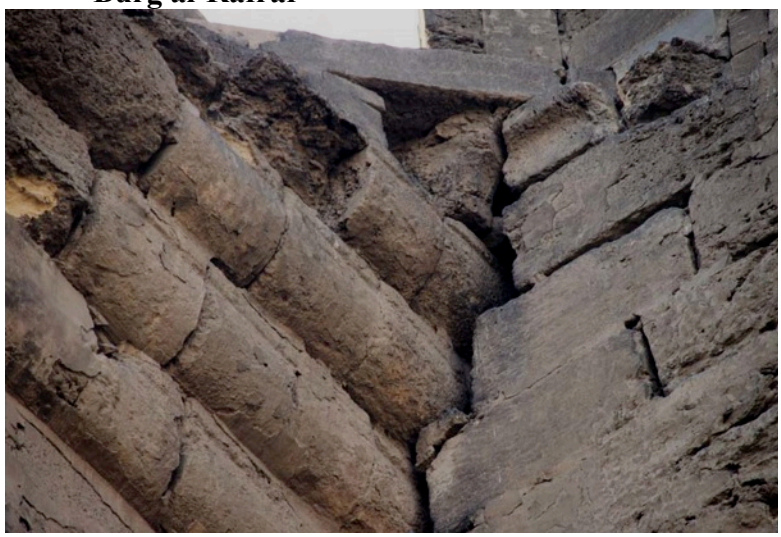
One of the pointed tunnel vaults

The corbel on the top level of Burg al-Rafraf, which is built against this corbel. Borg al-Rafraf means canopy as it had a canopy on its top. Most probably, these were supporting the canopy. Notice the two sets of corbels together.



- On its northern side the remains of the hall run under the southern wall of the southern enclosure of the Citadel, only some 6.00m east of Burg al-Rafraf.

Burg al-Rafraf

- On its southern side, the hall opens into an irregular more modern space, which is divided into two sections by modern double arches supported by a central column and two side pilasters. This structure can be attributed to Muhammad Ali attested by the chimney accessed from a small door located on its eastern wall.
Therefore, to access the double-cross hall, one needs to enter this modern structure and once passed the double arches turn right to reach the hall.

The industrial area – the chimney



Details of the chimney and its state of conservation

4. Current architectural documentation

This included the preparation of the following drawings:
Fig. 1. Ground plan of the double-cross hall (1:300)
Fig. 2. North-South section of the double-cross hall looking East (1:300)
Fig. 3. North-South section of the double-cross hall looking West (1:300)
Fig. 4. Eastern internal façade of the tunnel vaulted niches and the lower sections of the five piers between them (1:400)
Fig. 5. Ground plan of Burg al-Rafraf (1:100)
Fig. 6. Western façade of Burg al-Rafraf (1:100)
Fig. 7. Plan of corbeled façade and Burg al-Rafraf (1:300)
Fig. 8. Combined western façades of corbeled façade and Burg al-Rafraf (1:300)
Fig. 9. Plan of the industrial area (1:100)
Fig. 10.Western elevation of the chimney (1:100)
Fig. 11. Part of the western façade of the remains of the Palace of al-Nasir Muhammad showing the blocked entrance behind the chimney (1:100)
Fig. 12. Ground plan showing the double-cross hall and its surrounding structures as an ensemble (1:100)

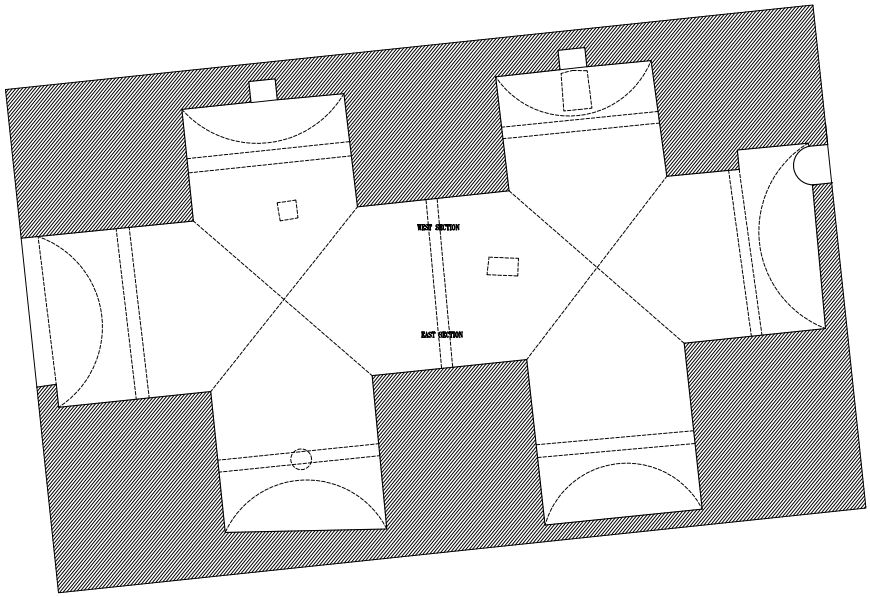


Fig. 1. Ground plan of the double-cross hall

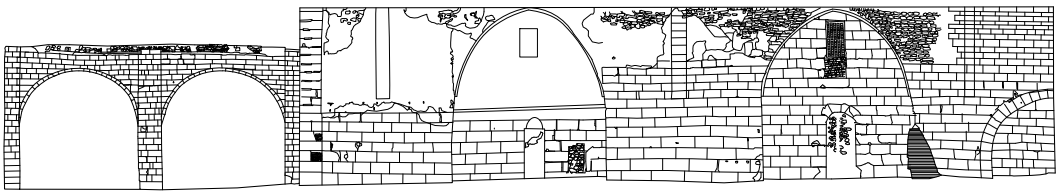


Fig. 2. North-South section of the double-cross hall looking East

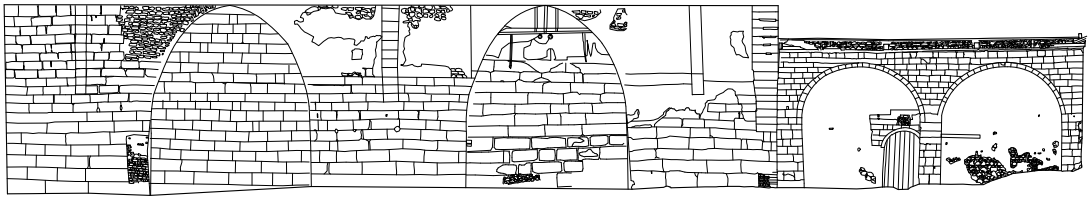


Fig. 3. North-South section of the double-cross hall looking West

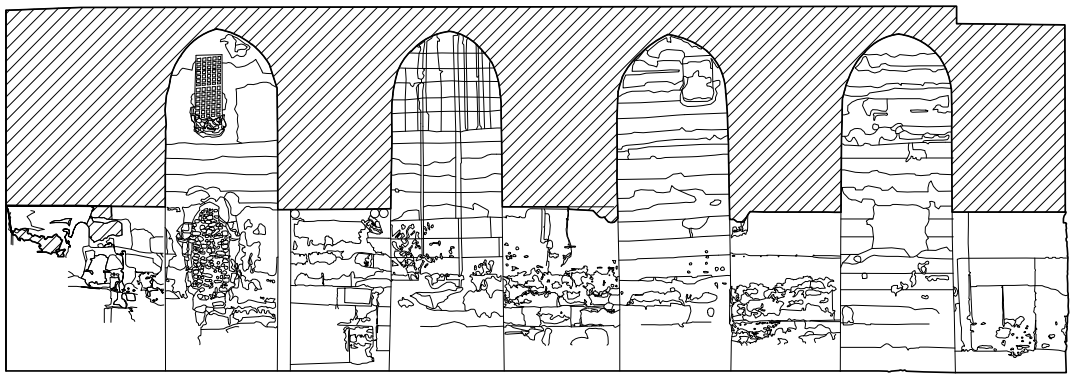
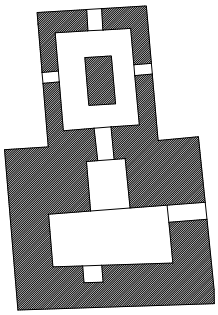


Fig. 4. Eastern internal façade of the tunnel vaulted niches and the lower sections of the five piers between them



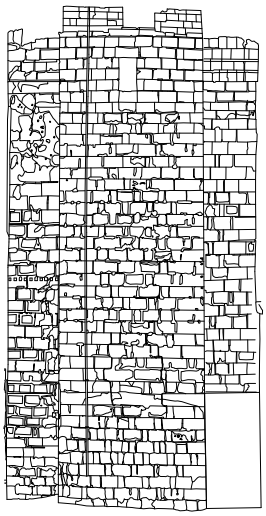


Fig. 5 and 6. Ground plan and western façade of Burg al-Rafraf

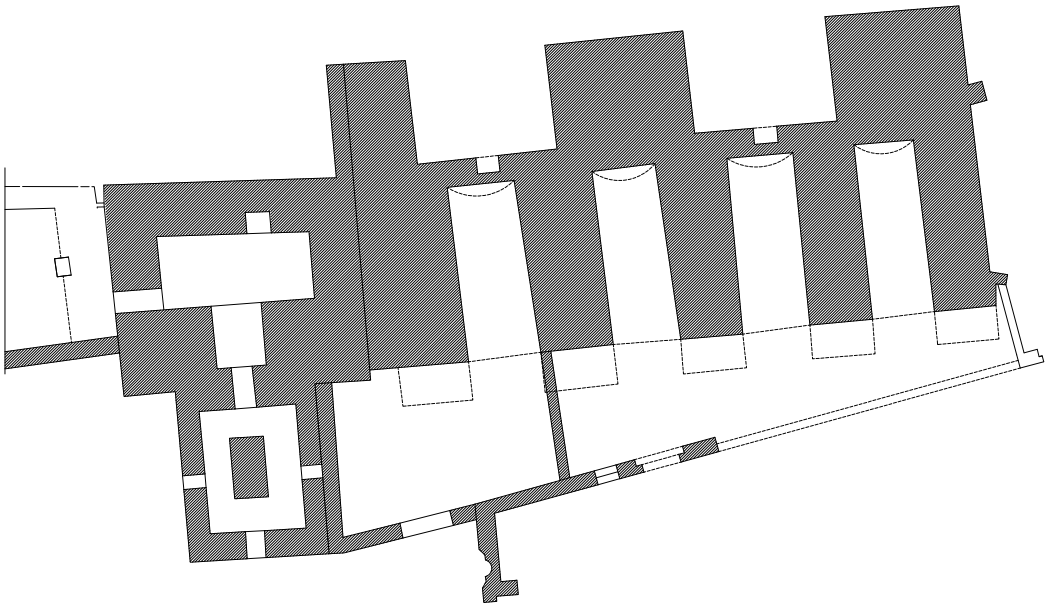


Fig. 7. Plan of corbeled façade and Burg al-Rafraf (1:300)

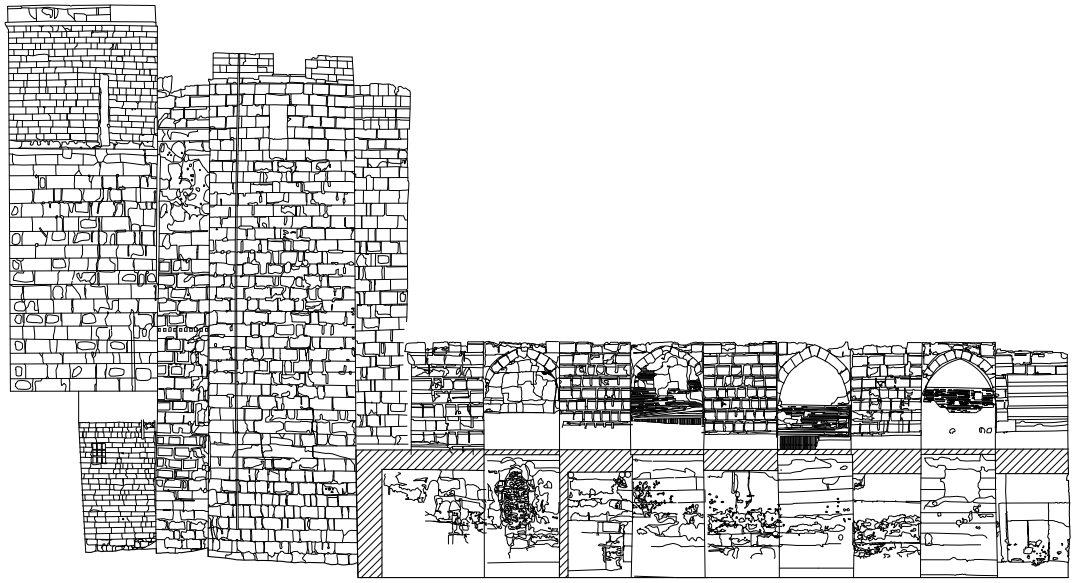


Fig. 8. Combined western façades of corbeled façade and Burg al-Rafraf (1:300)

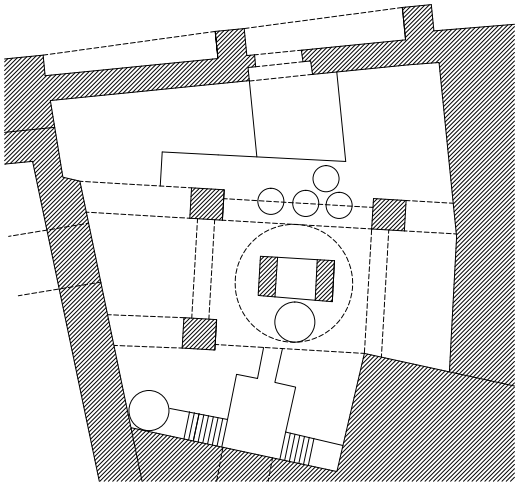


Fig. 9. Plan of the industrial area (1:100)

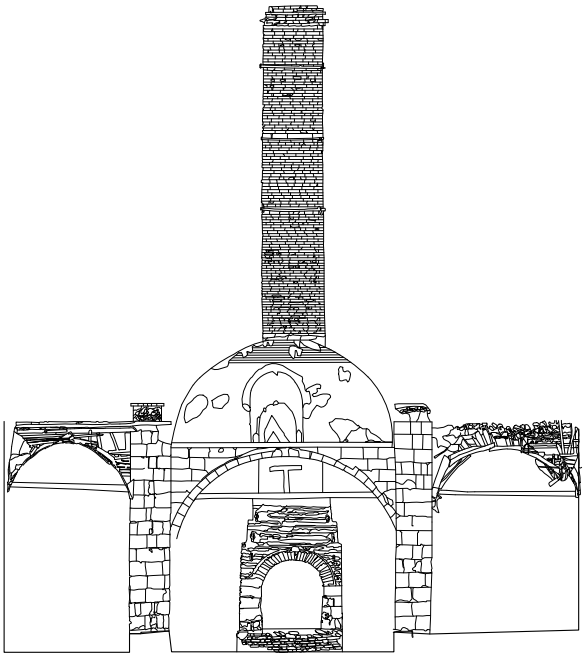


Fig. 10. Part of the western façade of the remains of the Palace of al-Nasir Muhammad showing the blocked entrance behind the chimney (1:100)

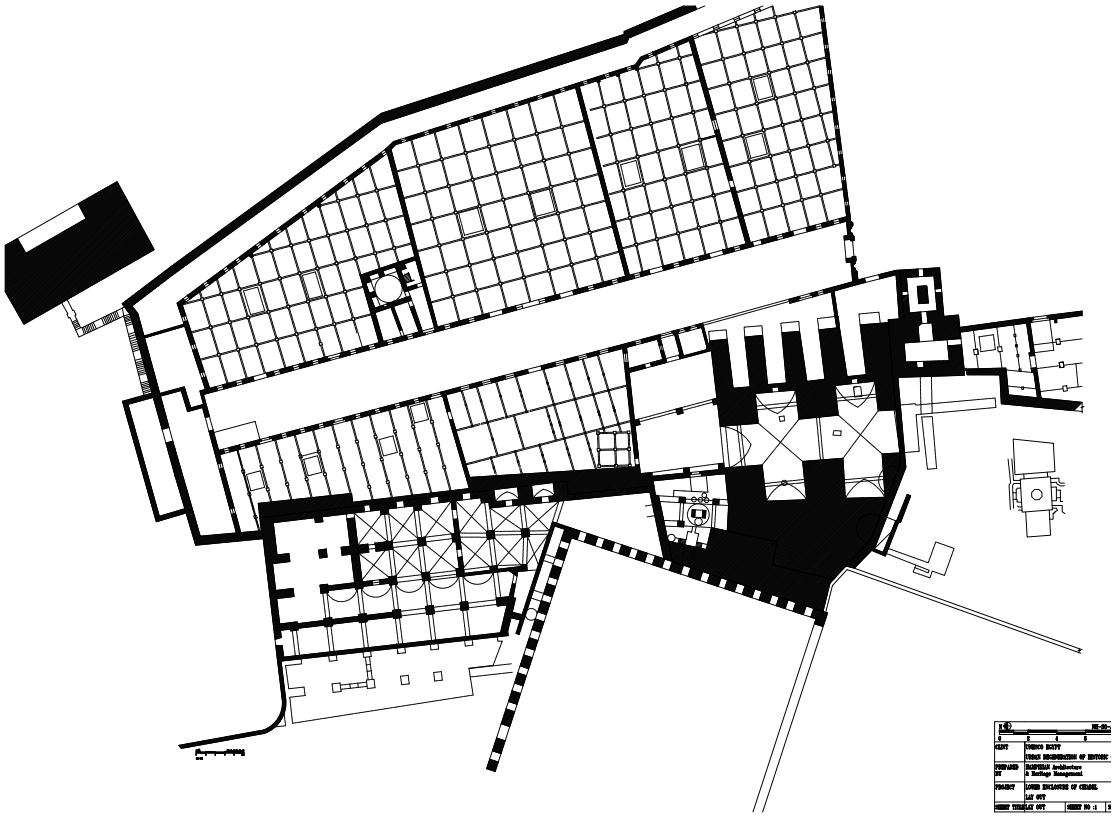


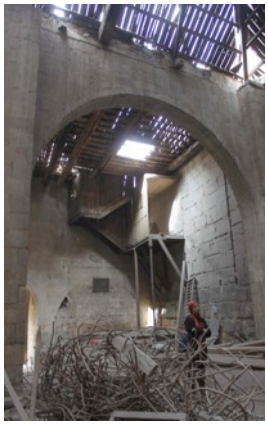
Fig. 12. Ground plan showing the double-cross hall and its surrounding structures as an ensemble (1:100)

5. Current photo documentation

Entering the warehouse

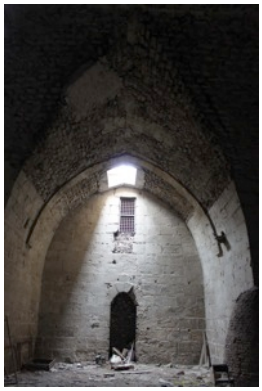
Through the modern double arched space

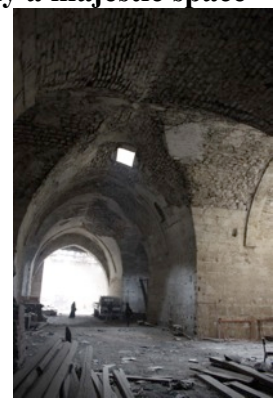
The translucent wooden ceiling



A pulpit …..

And then suddenly a majestic space






Grandeur is realized by the use of different kinds and sized of well hewn and sometimes rough stone masonry – a masterwork in stone

The space today is used as a storage area for spareparts of cars, motosycles, etc. But to add to the deep sensation to the place, the detail on the left is always pointed and mentioned as a *mashnaqa* (road to hang criminals from …

6. Previous conservation activities

As these structures are not registered as monuments, except for Burg al-Rafraf, finding information related to previous conservation activities is very difficult, but not impossible and needs be found in the future.

7. A schematic guideline for the physical restoration of material, structures, and decorative elements of the double-cross hall

General state: Interpretation: Seeing the double-cross hall as a part of an ensemble

As mentioned before, the structure is now left on the Lower Enclosure of the Citadel, but alas, what one sees today is just the tip of an iceberg, seen from bottom up. According to our team, this structure was the lowest, and perhaps, there is even a lower level, of a marvelous Mamluk civil architecture, which has vanished, leaving as a witness to its existence this extraordinary basement. This basement might serve to decipher much more, if it is appropriately approached, scientifically excavated, and gently reused.

State of preservation/maintenance of the double-cross hall

The double-cross hall is in a very good state of preservation. It is only neglected morally, as it is neither documented properly nor taken the status of a monument.

Emergency actions and NO suggestions for future conservation / site protection

There is no emergency action needed for this building, just the general studies including the geology of the *jabal*, etc. Other than this, the double-cross hall is the best preserved and the worthiest of all the buildings surveyed in this report.

Only one thing is necessary to mention: cars should not be allowed to access this space. It is also urgently important to stress upon the fact that clearing its surrounding will be a crime. The setting of this building, with the roof it has above it, void of anything and yet viewing the whole of the old, and still being under the shadow of the Citadel's walls is an inexpressible opportunity, so it is urgently needed not to clear the area without thinking. In its secret setting, there is this mysticism and power that need be experienced and analyzed properly before jumping into quick conclusions. Moreover, this whole stretch of structures lying under Muhammad Ali mosque has a power still sustained in itself after all these years. This need be grasped, perceived and only then acted upon.

8. Proposed adaptive reuse alternatives

- The hall, as it is today, owns a theatrical atmosphere. The dramatic light rays, the massive stone blocks and the high ceilings composed of cross-vaults create a special sensation. It can be very be easily transformed into a theater with a central arena and the public around it. The walls can be left free to tell their story, along with what the stage actors have to say. It can really be a theater where everything changes with each piece and still the walls are left untouched. The high ceilings set the opportunity for the designer to work on levels away from the walls. Access can be allowed from the tunnel vaulted passages of the façade behind the corbeled façade.
- In general, five structures within close vicinity from each other must be worked together: The remains of the Palace of al-Nasir Muhammad, the

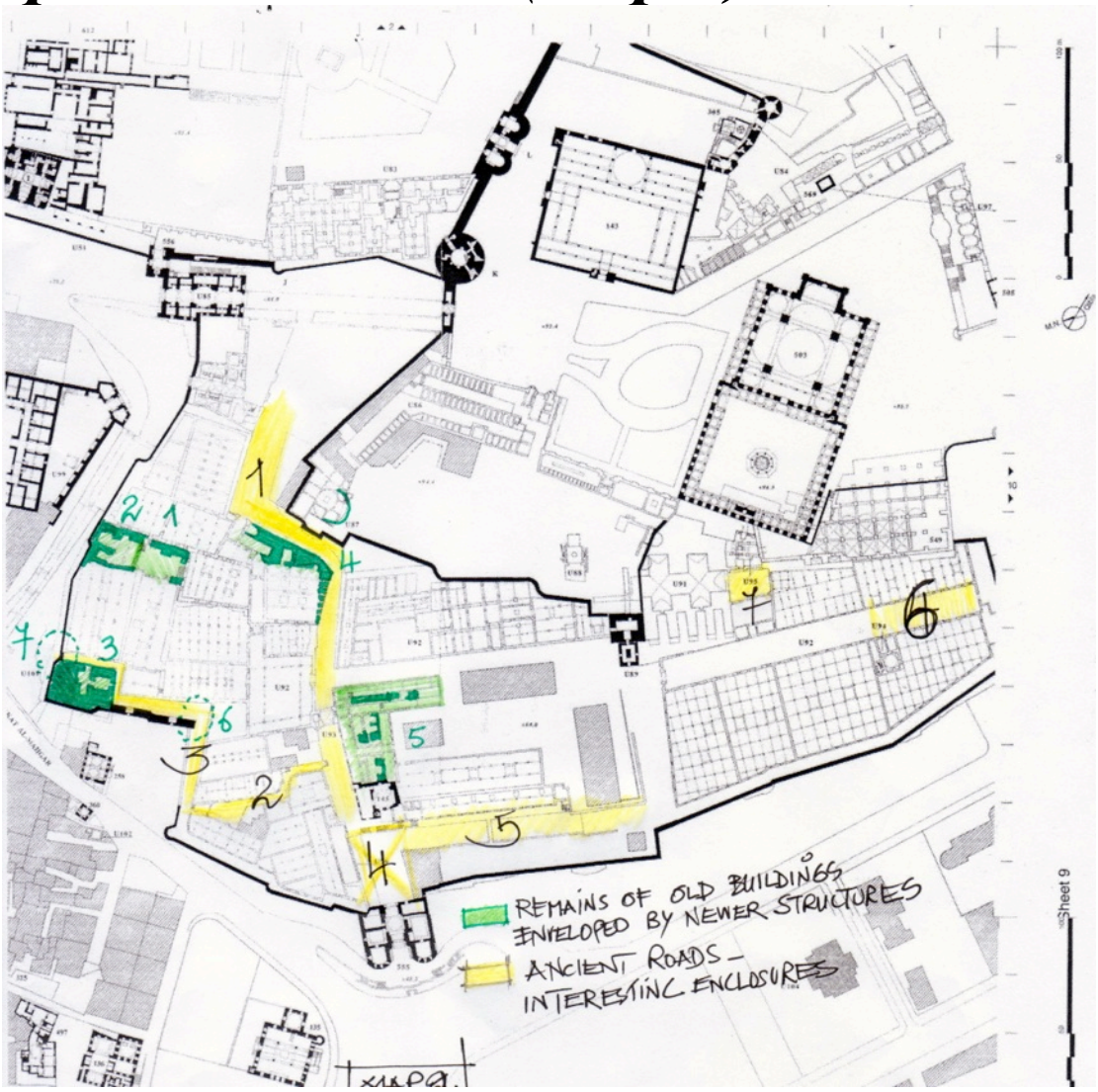
double-cross hall, the chimney, the corbeled façade, and Burg al-Rafraf. Our team is quite convinced that they were the inseparable components of a larger unit.

So it is very legitimate to think of reusing the five together or not reusing them, just "giving them back their insulted history".

9. Sources used

- Rabbat, N., *The Citadel of Cairo* (Leiden, NY, Koln - 1995).
- Lyster, W., *The Citadel of Cairo: A History and Guide* (Cairo, 1993).
- Rizk, ʻA, *Atlas al-ʻImara al-Islamiyya wa al-Qibtiyya bil-Qahira* (Atlas of Islamic and Coptic architecture in Cairo), (Cairo - 2003).
- ʻAzab, Kh., *Aswar wa Qal'at Salah al-Din* (trns. Walls and Qal'a of Salah al-Din), (Cairo - 2006).
- Warner, N., *Monuments of Historic Cairo* (Cairo - 2005).

Reporting on the remains of the older walls and the old roads and interesting enclosures worthy of special attention (map 2)



Remains of walls of old buildings enveloped by newer structures

map2 no 1 (green)


The ramp from one side and the majestic double flight staircase on the other side create an aesthetically beautiful space, and definitely betray the historical importance of the area.

map2 no 2 (green)


Unknown history and yet architecture poses questions and produces evidence of older layers

map2 no 3 (green)




With two entrances and the well-preserved vaults and arches betray the existence of an older layer, perhaps a tower?

map2 no 4 (green)

WAS NOT ACCESSED, BUT THE PLAN SHOWS THAT SOMETHING INTERESTING EXISTS THERE

map2 no 5 (green)

We have ample of evidence of the existence of a Mamluk structure in this area from al-Mu'ayyad Shaykh period. These walls must have belonged to this structure.

map2 no 6 (green)

The remains of this three-partite wall with stone facing from both sides and a rubble core betray the old dating of this wall. Moreover, its thickness, when viewed on the map, as well as its abrupt cut betray the fact that this might have been part of the outer enclosure wall of the Ayyubids, when Bab of Ahmad Katkhuda was still Bab al-Silsila.
A piece of information and a strong evidence worthy of further research.

map2 no 7 (green)

From what the eye is catching, it is obvious that the wall on the right-hand-side of the picture is interrupting an older structure. The arch interrupted and the corner squinch on the right-hand side is left hidden behind the wall.
The architectural elements betray the existence of, perhaps a dome on a square ground plan changing into an octagonal transitional zone by the help of corner squinches, only one of which is left visible today. Yet another corner worth further research.

Remains of historical roads and interesting spaces worthy of special treatment and attention for future plans
And
Other interesting enclosures of unknown historical value, but very interesting urban wise

map2 space 1 (yellow)

The sloping **sultanic rock-cut road**. Is the most historical path in the area. This was the original passageway from Bab al-Mudarraj to Bab al-Silsila, which survived long enough in its original form to serve as one of the accesses from Bab al-Jadid to Bab al-‘Azab. Moreover, this is where the famous massacre of Muhammad Ali took place, as will be related later.The drama of the rock cut road makes its nature

map2 space 2 (yellow)

map2 space 3 (yellow)

map2 space 4 (yellow)

The enclosure between the mosque of Ahmad Katkhuda, Bab al-'Azab and buildings number 1, 2, and 3 creates an urban plaza, which cannot be overseen. It has already been the plateau for an Egyptian film. Besides the beauty of the structures surrounding this space, the fact that it is built on a slope ads to its drama, which is crowned by the double flight stone staircase, which leads from the lower Bab al-

'Azab level to the level of the entrance to the mosque.

map2 space 5 (yellow)

The connection between building number 2 and 3 is also an interesting space. Connected from above with a wooden bridge, this lower level with its sloping level attracts creativity.

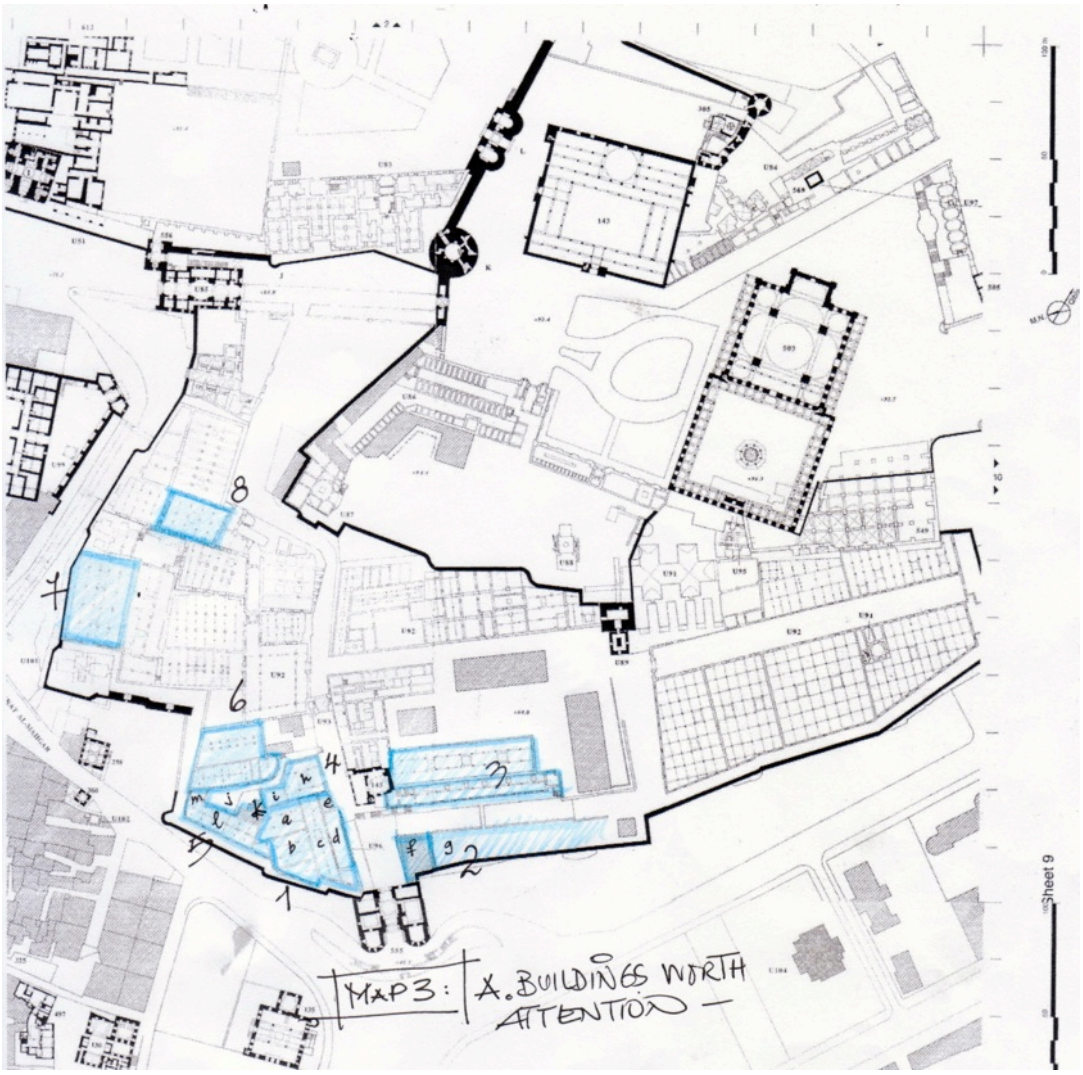
map2 space 6 (yellow)

The metal modern structure covering a passageway in the area is also a layer worthy of meditation.

map2 space 7 (yellow)

The covered space before stepping into the double cross hall has a magic that need be preserved

Light investigation on various structures and issues on the site in general as a preliminary basis for a full investigation in the future (map 3)



A. Some modern buildings that are worth receiving special attention for different reasons (map3 A)

Some structures in the study area that are still intact have interesting exteriors and sometimes interior, which can be reused during the rehabilitation of the place. With the exception of five structures, the team was able to see all interiors and exteriors of the structures inside the study area. It is not possible to present the photo documentation of all what was visited. For this purpose, the team is presenting the photo documentation done on some of these structures, insisting upon the fact that any rehabilitation-planning attempt will be mislead, if each and every of these structures were not respected, documented, and understood. So, the team hopes that this section, which is just a visual visit to some of these structures, will create serious curiosity towards our full understanding of every single structure in the area before jumping into huge irreversible verdicts for the future of this area.

map3. Build 1

de overlooking the sultanic road from outside and inside

map3. Build 2

Building with a ramp rising from its doorway to reach the level of the wooden bridge connecting it to building 3

map3. Build 3

The passageway of the main façade leading to the interior and bridged to Buid 2, leaving an interesting dramatic lower space

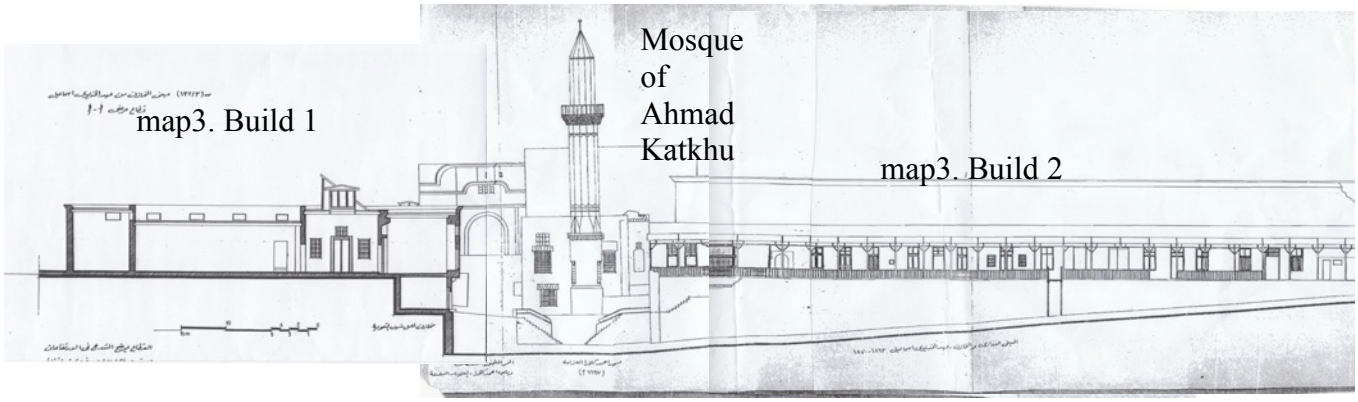
The staircase leading to the passageway

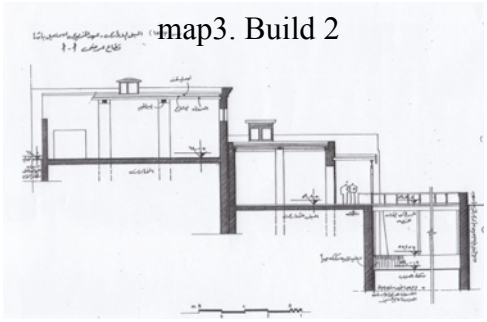
Staircase to the corridor of build 3

Passageway overlooking the historic city

Bridge connecting between build 2 and 3

The first three buildings are the administrative buildings from the period of Khedive Isma'il. Sketches presented in this report are taken from Ahmad Hussam's dissertation, which were verified by our team. These three buildings are situated along the historical sultanic rock-carved road and are linked together by buildings identified as heritage-value structures in this report, which are Bab al-'Azab, the mosque of Ahmad Katkhuda, and Bab Ahmad Katkhuda. These three buildings are not listed as monuments and they were not identified as heritage value structures, but they definitely form an urban unity with the heritage value buildings to which they are attached. Moreover, the location of these structures and the three heritage value buildings around them make an ensemble – made more interesting by the fact that they are constructed on a downhill, which happen to be the sultanic road. Therefore, the team recommends that these be seen as one cluster, when the area is visualized for a future rehabilitation-planning.

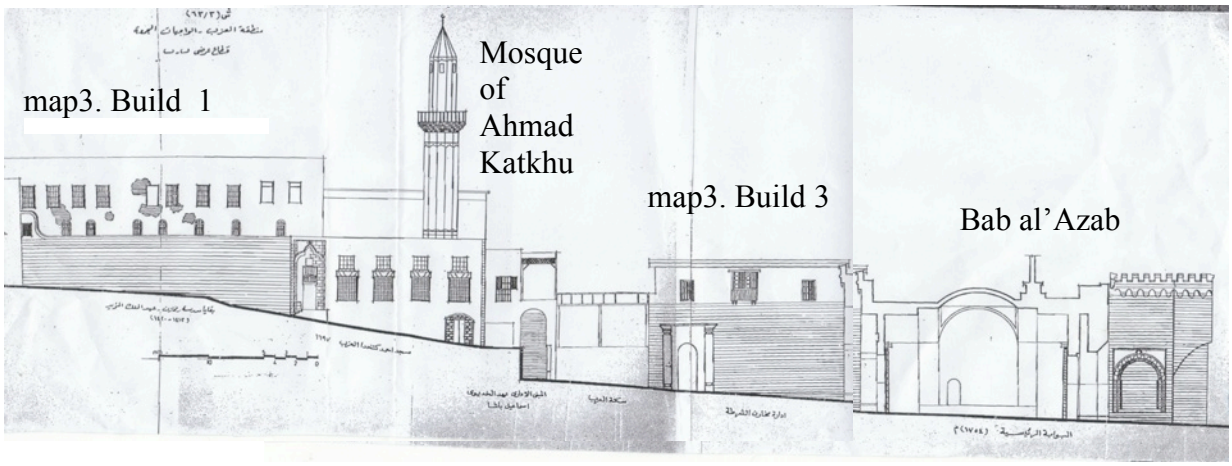




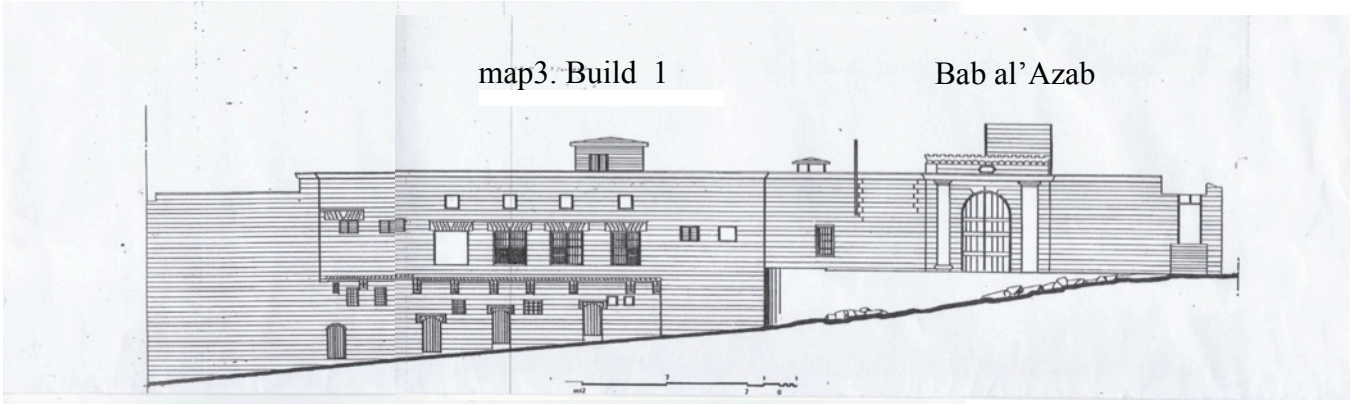
SECTION THROUGH THE BUILDINGS LYING ON THE SOUTHERN SIDE OF THE MOSQUE MAKE VISUALIZE THE POSSIBILITIES OF USING THE ROOFS, WHICH CAN BE A WONDERFUL LOCATIONS FOR PANORAMIC VIEWS OVER HISTORIC CAIRO.

East-west section through Bab al-'Azab to Bab Ahmad Katkhuda through the sultanic sloping road looking south and north

Sketches are taken from Ahmad Hussam's dissertation, which will be verified simply

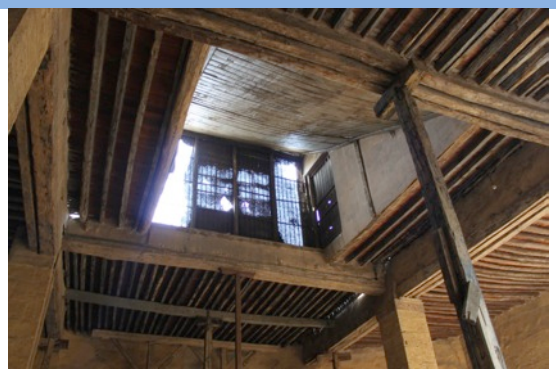


and represented around the buildings fully documented by our team.



The choice of the rest of the buildings presented here aims at showing how similar the structures are and yet how different is their state of preservation, which might be the main criteria for their inclusion or seclusion from the future life of the Lower Enclosure of the Citadel.

map3. Build 4

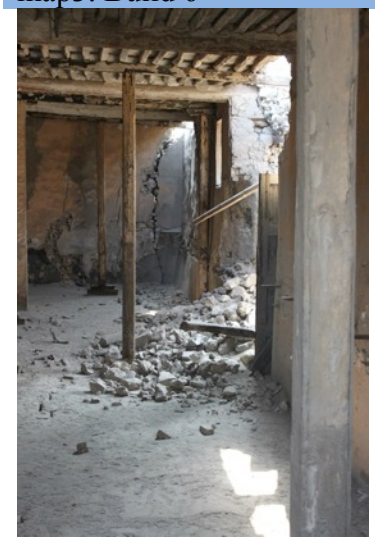



A structurally stable, aethetically well-proportioned and a well preserved structure.

map3. Build 5

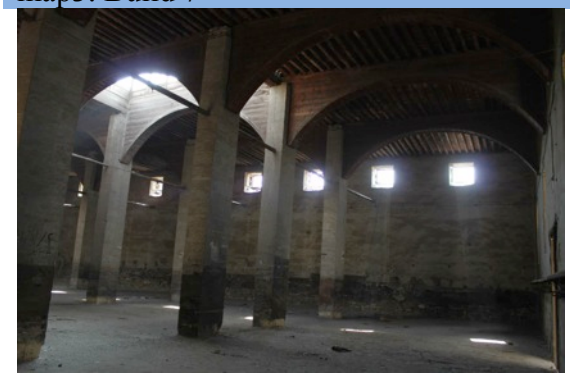

This building is not well preserved, but has the potentials of being restores and reused in the future.

map3. Build 6 map3. Build 8




These two buildings are similar to each other both in composition and also state of preservation. Their ceilings are partially collapsed or on the verge of collapse.

map3. Build 7




Contrary to buildings 6 and 8 presented above, this building is in a very good condition and it seems that it was taken care of recently, perhaps by the Agha Khan Trust, which has installed a conservation laboratory next to this space.


B. General/repetitive decay mechanism noticed on most of the buildings (map3 B)

The Lower Enclosure of the Citadel suffers from almost all the types of decay of material occurring in other areas of Historic Cairo. Because of this fact, and the fact that this area, big enough in its own right, and yet limited by its clear-cut borders, can act as the perfect spot where:

- Different decay mechanisms can be identified,
- The collected data can be categorized according to its type and degree of decay,
- Different remedies can be applied, and finally,
- Applied remedies can be monitored as they act and react upon the decay mechanism they are applied to stop or cure.

The survey made here is just an attempt to survey in photos the decay mechanisms noticed during the presence of our team on the area. It is far from being complete, as this is not our main aim, but has enough variety to make clear that this area can be in itself the open practical laboratory for conservation methods to be developed not onky for the preservation f material in this area, but perhaps, for the preservation of material fabric for all Cairene historical buildings.

(Notice numbers under the pictures correspond to the image numbers in the folder **03. PHOTOS** folder B. .

Man-made decay caused by destruction, dilapidation and lack of care/maintenance

1. Damage in this room summarizes nearly all types of decay mechanisms from which the buildings on the Lower Enclosure of the Citadel suffer: debris of destruction left on the ground level, the metal roof is in a bad shape allowing leakage from one side, garbage is accumulating on the debris, etc.

2. Destruction left in such a way as to be a constant threat of collapse

3. Adding wooden shaggy structures in front of stone buildings to create space for storage. In this case, a wood storage space owned by the SCA.

Rising underground water

4. The whole façade illustrates damage caused by the rise of the underground water, which is made more complex by the use of cement as a plastering material over the lower fabric of the stone, thus causing more damage to the stone fabric and raising the water table level higher by capillary action….

5. Damage caused by the rise of the underground water, which is made more complex by the stone exchange done with cement mortar and smaller stone blocks.

Stone decay: Structural, loss of material …

6. All the previous decay mechanisms reaching to their worst case scenarios causing the loss of the stone fabric.

7.Stone doorjambs losing their stone fabric and thus no more able to care the load of the arched gateways they are supposed to support.

8. Stress on the blocks of the jambs causing serious structural cracks and eventual loss of material

9. Decay of the lower fabric of Burj al-Rafraf, which causes structural vertical cracks along the whole height of the tower. Added to this is the mal-conservation.

18. Rise of humidity on the lower fabric of the ramp of Bab al-'Azab

19. Disturbed staircase, made more disturbed by restoring them with brick

Use of cement as the material that can do miracles and its application everywhere

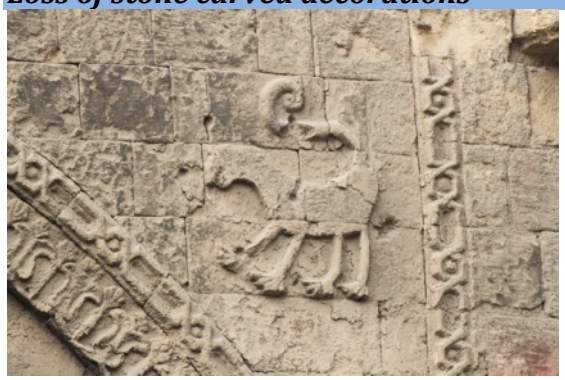
10. Previous mal-conservation
Stone steps were conserved by shaping them anew with cement … a common feature in the area

11. Damp complex problem caused by the leakage of the roof from the top and from risinf water table from the ground. Cement restorations have added to complexity of the situation.

12. Cement on the steps of the staircase showing the degree of damage caused to the old fabric and the present hazardous situation.

13. Wrong conservation practice and the use of cement as plastering material on stone.

Loss of stone carved decorations



14. Stone carved decorations are losing their sharpness and are threatened to complete destruction.

15. The stalactites of the minaret of the mosque are losing their sharp carved edges.

Structural decay

16. Collapse of wooden elements of the warehouses. This is a repetitive scene almost everywhere.

17. The whole roof is lost and the *shukhshaykha* is hanging dangerously from some loose unsafe wooden beams.

20. Absence of wooden element son the balcony

21. and 22. Unsafe roof elements and balcony balustrade

23. Hap hazardous consolidation is a dangerous practice that need be stopped urgently as it is not only unsafe for the stability of the building but endangers all those entering the place.

24. Dilapidation of the windows and the traces of old memories of the place

Unattended objects either from filed excavations in the Citadel or moved there from other areas

25. The base of a column left at the entrance to the police museum without any explanations, although it is well known that it was uncovered during the excavations of al-Ablaq Palace … It is interesting how the floor tiles are built around this precious remain.

26. The wooden door leaves left unattended are the exterior door leaves of Bab al-Azab. These are left with no protection from the ground and not even covered with plastic.

C. Architectural elements for aeration and/or illumination of the structures

Most of the roofs of the relatively modern buildings in the study area are adorned with elevated small wooden structures. These vary in form:

- They might be open towards the northern side and closed with a slant towards the southern side: a form well adapted to trap the northern breeze in Cairo. These are called in the tradition of Islamic domestic architecture as *malaqif* (wind catchers). (See the structure on the left side of the above panoramic picture).
- Other types of these structures bear the characteristics of clear stories. These are either square or cuboidal in shape, adorned by windows on their four sides. These regular shaped structures act as aeration and illumination tools for the structures underneath, which are mostly simple halls with their ceilings supported by regularly distributed stone or brick piers. The depth of these structures and their location in the core of solid constructions, makes these small roof structures the only means to allow air and light into the spaces below. These are known as *shukhshaykhas*.

Whether *malaqif* or *shukhshaykhas*, the abundance of these different structures, in their different forms and sizes on the roofs of the study area, make it impossible to ignore their existence as a tool to be treated with special care during the development of the rehabilitation plan for this area. These can be readapted and re-oriented to be used as the locations for, perhaps, the installation of solar energy units. Moreover, another thing that is worth taking into serious consideration is the use of the roofs of the buildings. These roofs, when seen together as a different platforms offer both the view over the city and the beautiful breeze of Cairene afternoons, advantages

impossible to be underestimated during the re-urbanization planning of this area.

The full documentation and study of the remains of these structures is an item of serious future architectural/scientific research worthy to be given priority in the pre-planning processes for the rehabilitation of the Lower Enclosure of the Citadel. Their preservation is a must and their re-use a tool that urges creativity.

D. Survey of the stone masonry as a tool for dating of the walls

This type of beveled of edges were common during the Ayyubid period and early Mamluk

The Comite has done this kind of conservation using small blocks.

Here the beveling stops and then we have below it non-beveled stone blocks worked with *tara sad* (straight adze). This latter is earlier and can be taken back again to the Ayyubid period. IN this section, we have an early Mamluk layer.

When we have an emblem, it is definitely datable. Thus this is the panther of al-Zahir Baybars and the wavy worked metod on the surface of the block on it is an early Mamluk layer.

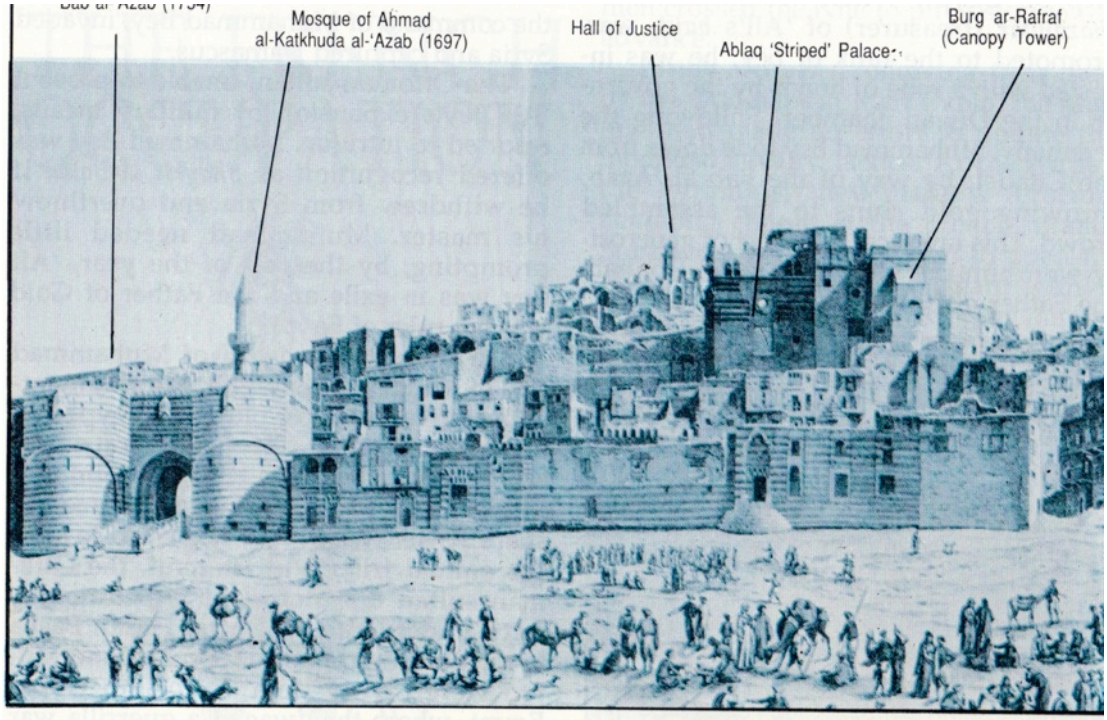
This is the block, which is always said to have the ablaq effect (The use of two colors of stone). In fact the black stone used here is reused material from a place where there was an inscription. It is yet another piece of new information worthy of pursuit.

p

Conclusions related to the connection between issues of historic, architectural, and conservation status of the area and proposals for its adaptive re-use

A basic urban conclusion: The area seen within two clusters that are historically bound together

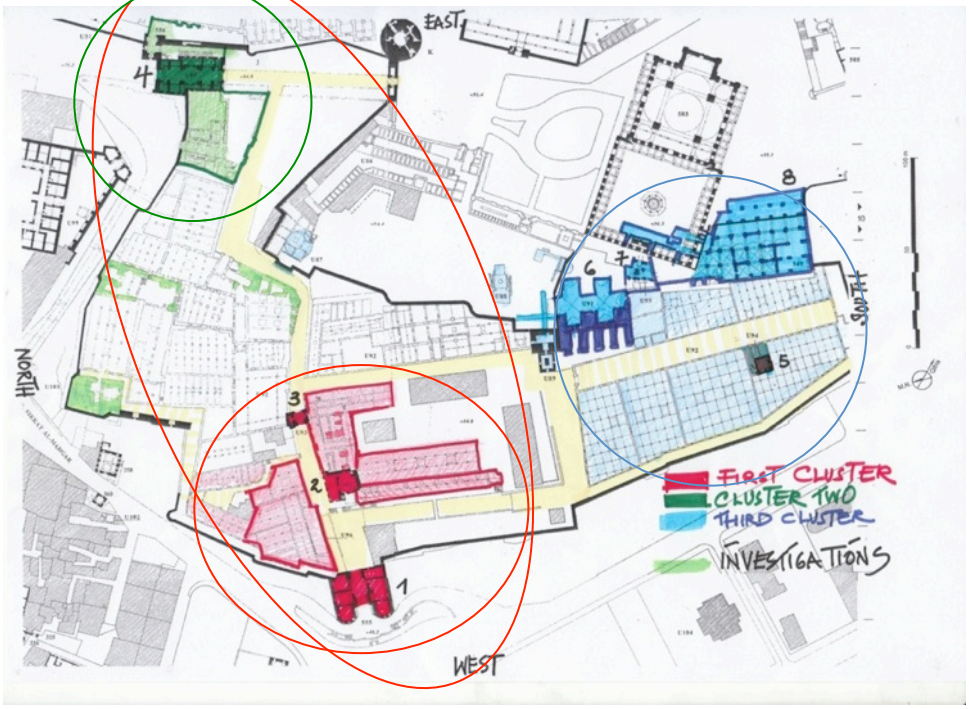
This is a simple observation just by a mere examination of the plan. It is only a matter of visually stripping off the area of the structures of Muhammad 'Ali, Khedive Isma'il, British Army, and the Egyptian Army. These all are very similar simple enclosures, roofed in wood supported by different types of pier-beam-planks systems. The roofs are pierced systematically by *malaqif* (wind traps) and/or clear stories. These systematic, factory type structures, which in fact they were, have metamorphosed the nature of the area, which during the Ottoman period was rich with colori and architectural variations. (See the foreground of the illustration below depicting Midan Rumayla as published in the Déscription de l'Égypte – prior to Muhammad 'Ali period – from Lyster)



The Citadel and Midan ar-Rumayla from the Description de l'Egypte

Muhammad 'Ali, with his 'improvements' has completely annulled the Ottoman secular/residential units and has also destroyed/build atop of the ruinous remains of the administrative/military structures of the Mamluks, mostly of al-Sultan al-Nassir Muhammad's period. Fortunately, his urge for height did not allow him to destroy the latter completely, but has used the ruins as strong foundations and a high platform for his newly founded mosque and courtyard. Therefore, these are the two secretly surviving systems in the area that still survive, in spite of Mohammad 'Ali's deliberate reoccupation of the destroyed layers' spaces with his modern arsenal and storage areas.

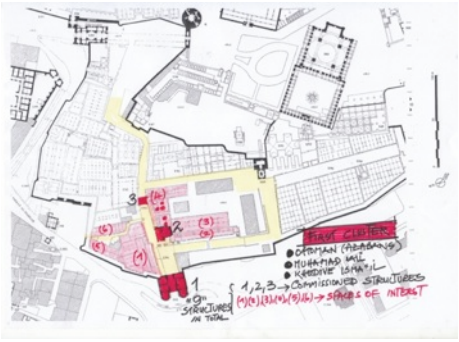
Two old depictions of the area still witness the two systems, one depicting the massacre of the Mamluks by Muhammad ‘Ali, and the second is Rhone’s depiction of the remains of al-Nassir Muhammad’s majestic structures (see below). These two old depictions of the area have stimulated further our preliminary observation and urged us to see the area as a mélange of two main clusters, where the first can be divided into two sub-divisions.



FIRST CLUSTER and

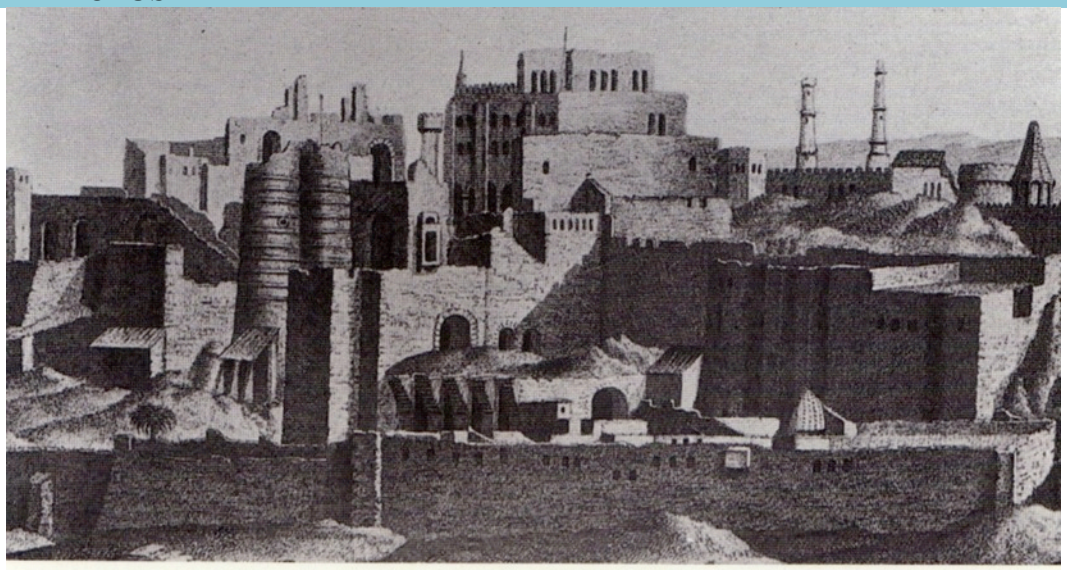
SECOND CLUSTER

This is a cluster around one of the oldest features of this area, the Sultanic sloping rock-cut road. The road starts at Bab al-Jadid/Bab al-Mudarraj and ends in Bab al-‘Azab today. This road has always survived in spite of the changing architectural structures around it. Originally it connected the lower - stables area, to the upper - residential / administrative quarters of the Citadel. It is also on this road that Muhammad ‘Ali has massacred the Mamluks. It is definitely an interesting space with a lot to say about the history of the Citadel. This is why, in this report, a distinction is made between the structures around it and have identified the whole as one cluster, but subdivided today into two. The first cluster includes the road from Bab al-‘Azab to Bab Ahmad Katkhuda (in red), while the second is the area around al-Bab al-Jadid (in green). This cluster has always been a

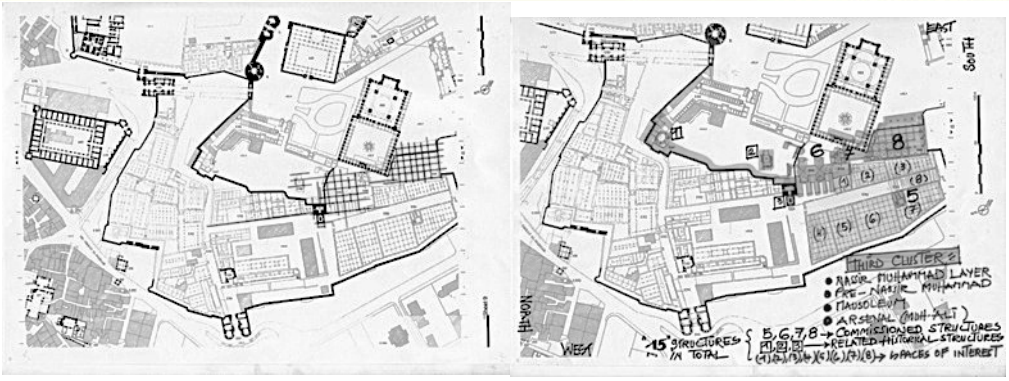


connection between the higher levels of the Citadel to Midan al-Rumayla.

THIRD CLUSTER



4. An undated print of the western façade of the Citadel (published in Arthur Rhoné, *L'Égypte à petites journées*. Paris, 1910)



The third cluster includes structures from Mamluk times that have been squeezed under the pressure of Muhammad 'Ali's mosque and courtyard built on them. These are placed in a cluster because of the fact that they are left in the lower enclosure of the Citadel, although they belonged previously to the southern enclosure of the Citadel. It is Muhammad 'Ali who has done this genius elimination of these buildings from the upper platform of the Citadel and have completely isolated them from the crème of their existence, the mosque al-Nassir Myhammad. But still, we have enough remains to restitute this connection by modern means, which might develop to be a line of thought completely different than the one to be adopted in the other clusters. These structures are hung in the air, accessed from above and yet omnipresent on the lower level. A nice architectural drama, with rich history and renowned historical figures, which can instigate modern architectural tools, to recreate something unique. Another reason for including the buildings in this area into one cluster, more related to the upper levels than the lower, is shown on the map above, on the left-hand side. It demonstrates how all the structures highlighted follow a certain grid that make out of them one construction system. This area, when thought well can revolutionize the touristic map of the Citadel, as well as re-activate the lower enclosure of the Citadel

and link it to the upper level of the Citadel by the use of modern tools according to historically proven evidence.

Other conclusions:

The Lower enclosure of the Citadel is a very complicated site, and yet so interesting and rich in its historical layers, that after a while it becomes difficult to disconnect from it. The first impressions of the area were the very true ones. The theory of clusters within the area has proven right; moreover, it has provided us with the liaison between history and the feel of the place. So, I have developed on it to form my last conclusions. I will put in this section some new/old ideas discussed during our meetings and during the preparation of this report.

1. The last five buildings surveyed have one story to tell

This is a direct result from the research conducted in this report. The five buildings are the seven halls, the double-cross vault hall, the chimney, the corbelled façade, and Burg al-Rafraf. These structures are all related to each other and they all point to the fact that these were at one point in history owned and used by the building-lover sultan al-Nasir Muhammad.

Among others, al-Maqrizi and Ibn Ayyas describe Qasr al-Ablaq as being three interconnected palaces built in the period of ten months. Definitely, al-Nasir Muhammad had used part(s) of al-sultan al-Ashraf Khalil's Palace (al-Ashrafiyya), but had modified it to his own taste. Moreover, Burg al-Rafraf was built to make a direct vertical access between the higher Southern Enclosure of the Citadel and the Lower Enclosure.

These and much more evidence come to the conclusion, that there was a direct connection between the higher and lower enclosures.

- Why not use historical facts in recreating this vertical connection using modern means, such as a modern elevator inside Burg al-Rafraf?
- Creation of the Qasr al-Ablaq is a ridiculous idea, but why not connect the five structures proven to be historically interconnected, to recreate the modern spirit of Qasr al-Ablaq?

2. Two different crossing paths, two different rhythms of history, to serve two different clientele passing by each other whenever desired

As mentioned before, the two rivalry partners of this enclosure are:

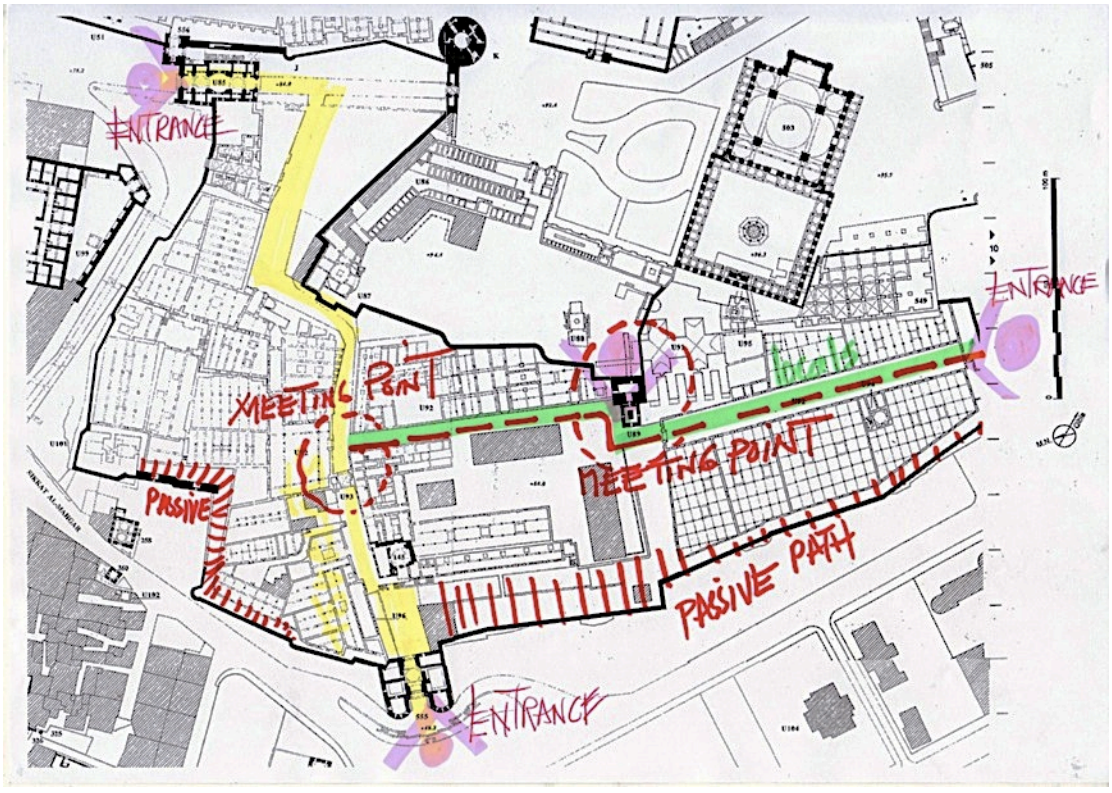
- The path running smoothly and relaxed from Bab al-Jadid downwards via the Sultanic rock-cut road reach Bab al-'Azab and then lower to midan al-Rumayla, and,
- The abrupt passage leading from the Southern Enclosure, via the spiral staircase starting at the western extremity of Muhammad Ali mosque to reach to the lower levels of The Seven Halls.

If the first road is agreeable, the other is disturbing with a lot of aggression in its making through history. The irony lies in the fact that stories of Muhammad Ali's massacres are told in the relaxing passageway between the Citadel enclosures and nothing about aggression during the second path. Although the reality is that the second path reveals the take over of the country by Muhammad Ali as well.

These two roads cross each other, and in a future overview of the Citadel, one assumes to offer services, entertainment to two different types of clientele: the locals and the tourist, the expat and the Cairene, the Arabic speaker and the non-Arabic speaker, etc. why not use this duality of the expected clientele with the duality of the two paths that will always cross each for the users of the Lower Enclosure of the Citadel.

3. The Lower Enclosure to the Citadel offers new accesses to the Citadel

Paths mentioned above create new accesses to the Citadel. Bab al-'Azab and Bab al-Jadid are the known accesses to the Citadel, but we do have a third one, which was once used to have direct access to the Citadel. This is the staircase located on the northern extremity of the Lower Enclosure. It was the connection between the structure built at the foot of the Citadel to house the working on al-Qa'ba (revetment of the Qa'ba). This can be a beautiful location for even more services to be offered in the Citadel, by annexing this building to the project, as a first step of the Citadel stretching its hand to the city. The team believes that this is a very good idea, especially that this building was used by the old regime before the 25th of January 2011, which was burned then. Now, it has lost all its wooden ceilings and is waiting for a facelift. Why not use this as a revival of an era when Egypt provided this yearly gift to the Saudis Kingdom?



4. The Lower Enclosure of the Citadel is an entity that can contain in itself and perhaps, sustain itself: Creating the micro-Cairo – A pilot project to solve Cairene everyday problems

One step further in our realizable dream world could be to create a micro Cairo at the Lower Enclosure of the Citadel. A cosmos where:

- Cleaning and recycling of the garbage is attained locally,
- Heritage awareness is provided daily,
- Solar energy provides the electricity needed for itself,
- Mini financing projects make the maintenance of the material heritage, etc.

It is a possibility that might be done by using the local and Ministry of Antiquities communities …

5. The Lower Enclosure of the Citadel as a national project that might turn a new page in the issue of saving Cairene architectural heritage

Finally, the team believe that the Citadel, like al-Azhar have always been the attraction point for rulers to make their fame and show their love for heritage. So why not this time too use this opportunity and identify the revival of this area as a national project, and matching funds with WMF accompanied by a nomination as the most endangered list, who knows.

Dreaming, based on facts is the beginning of realization of a hard task.