



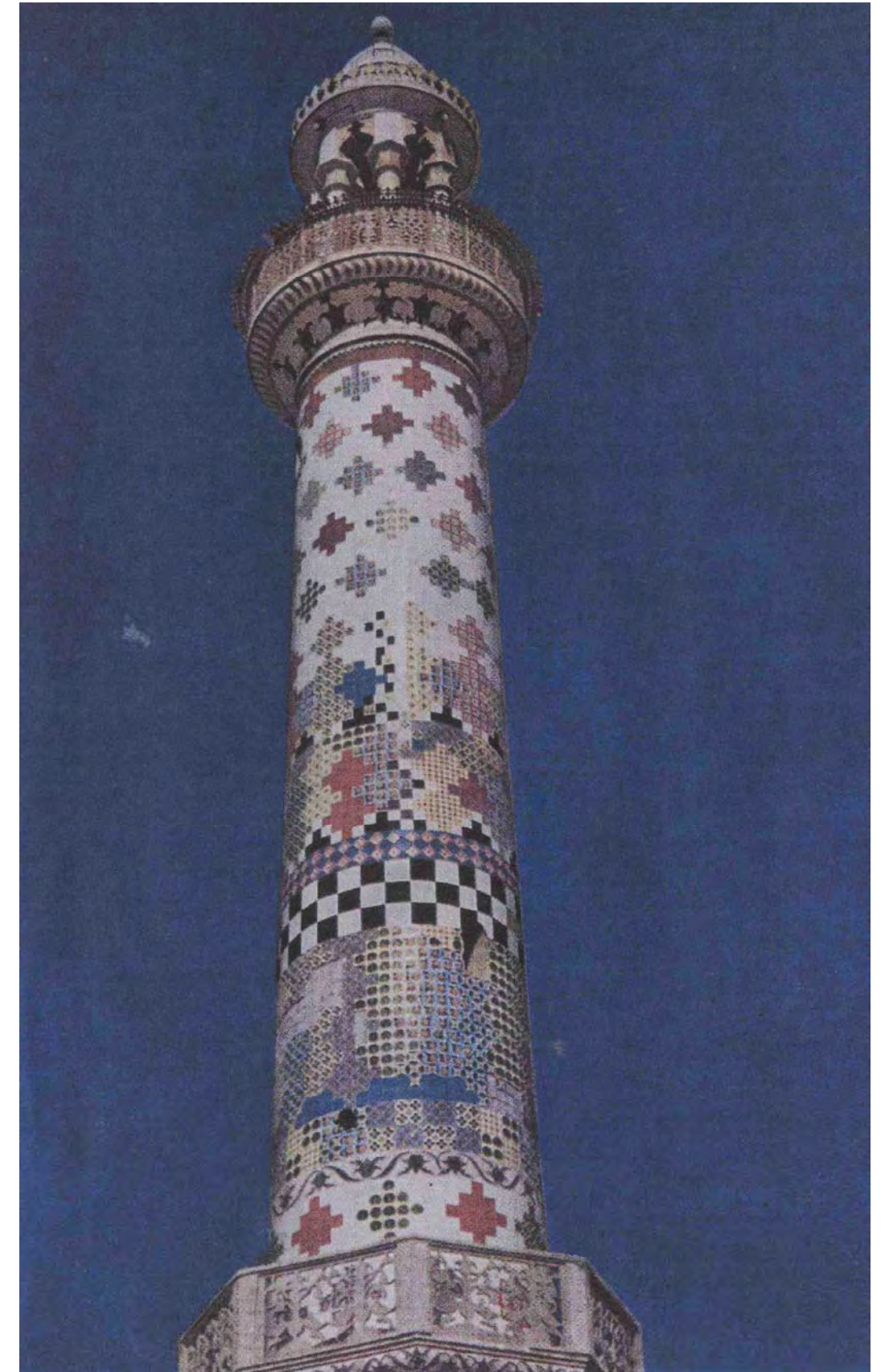
UNITED NATIONS DEVELOPMENT PROGRAM
KINGDOM OF BAHRAIN



KINGDOM OF BAHRAIN
MINISTRY OF MUNICIPALITIES AFFAIRS & AGRICULTURE
RESEARCH AND DEVELOPMENT DIRECTORATE

**CAPACITY BUILDING FOR ENHANCEMENT
OF URBAN GOVERNANCE
URBAN DESIGN PROJECTS FOR TRADITIONAL AREAS**

**STAGE 2: URBAN DESIGN PROJECT IN
MANAMA BLOCK 301 REPORT**







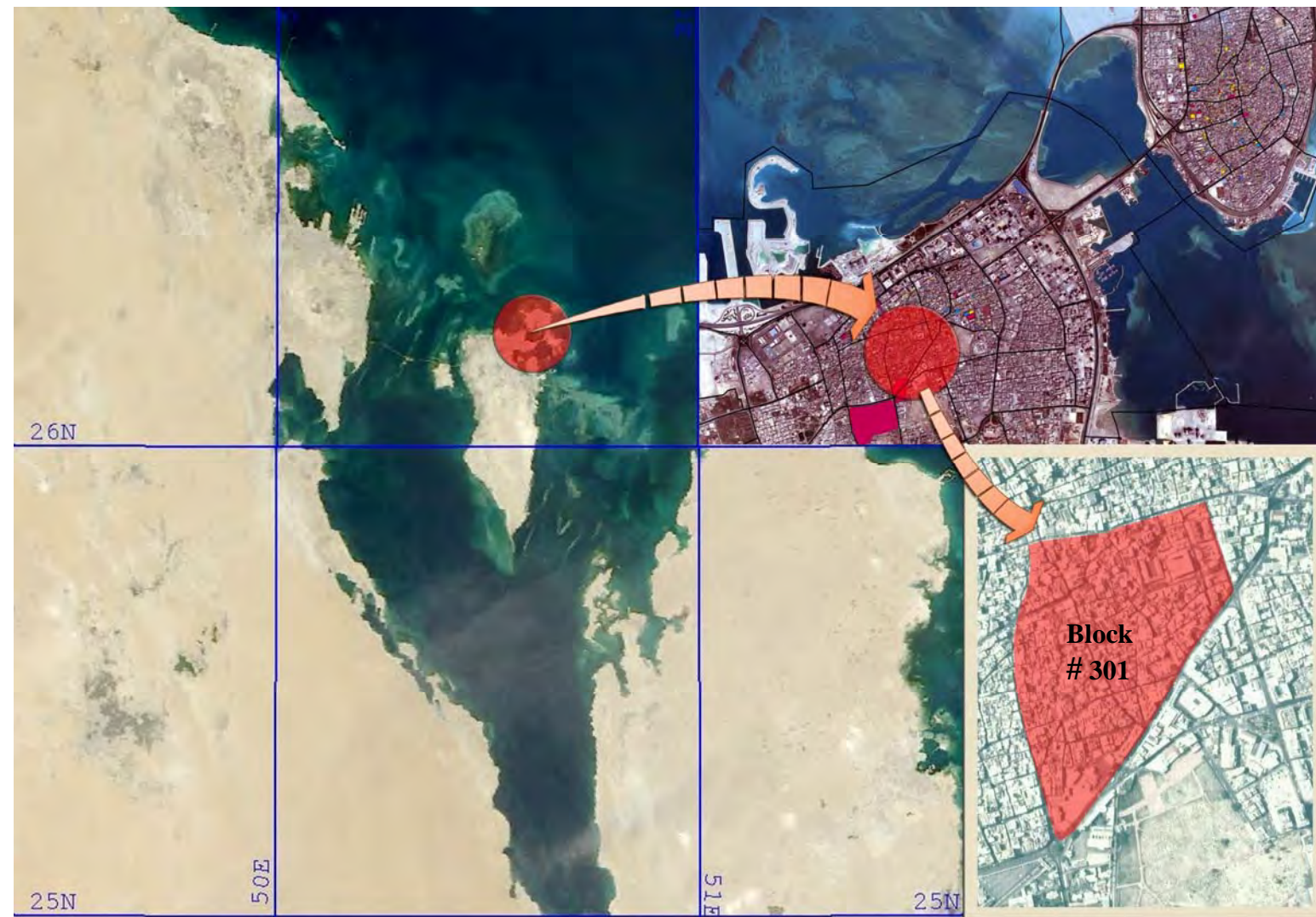
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Maps

- Study Area Location
- Study Area
- Heritage Buildings
- Existing Building Height
- Existing Land Use
- Traffic Circulation & Public Transport
- Religious Buildings & Processional Route
- Pedestrian and Parking Proposal
- Public Open space Analysis
- Selection of Project Sites
- Development of Selected Sites



Study area location



Introduction

The Study Area was selected after previous extensive studies had established it as the core area of the historic part of urban Manama, (Main Report, February 2006).

Designated as Block No. 301, it houses a bewildering variety of human activity. Despite being generally of somewhat dilapidated appearance and containing areas of vacant buildings and demolished lots, there is activity everywhere, day and night.

The mixed-use of a large percentage of buildings combined with the population density and minimal open space provides optimum conditions for a diverse urban life. The small plot size of most land holdings is also a factor in limiting the intrusion of large, single-use buildings which would threaten the current and historic diversity.

The currently perceived problem of a loss of middle class population and an excessive influx of lowly-paid "guest workers", has been held responsible for the general state of dilapidation and lack of maintenance.

Equally, the traditional system of land ownership where many related people can end up inheriting the same property while nobody is in a position of responsibility for maintenance is another factor. It must be stated however, that the majority population is still Bahraini, although declining.

The area has been recognized as a centre of religious and cultural activity for many groups in Bahrain and it can be perceived as evolving over centuries to accommodate this fundamental activity. This activity seems to maintain a healthy prominence in the life of the city despite perceived decline in other activities. A special map and commentary has been prepared to explain this unique aspect of Manama culture.

A brief history has been compiled, placing the present Manama study area within a largest geographical and historical context explaining how the existing circumstances have come about, this is appended to the report.

The traditional city in modern times has been subject to many forces which have degraded its tight-knit urban form through road widening and the construction of very large buildings which are foreign to the form and function of the traditional two storey stone and clay buildings forming narrow twisting streets between them. Continuous land reclamation projects have cut the traditional city from its original relationship with the sea. Huge modern office blocks and residential buildings are being built on this reclaimed land.

The overwhelming car traffic and undisciplined parking in the narrow, winding streets is also a major force in speeding the decay of Manama, as described below.

However, much of the traditional form and function of the old city remains, if somewhat degraded. A surprisingly large number of traditional houses also still stand. Even though, many of these have become almost invisible under a cloak of renovations and cosmetic changes.

Of great importance to this study is the fact that unlike so many other Middle Eastern countries, Bahrain still has a sizeable stock of original building fabric which it is now critical to conserve, not as a museum, but as a living evolving city.

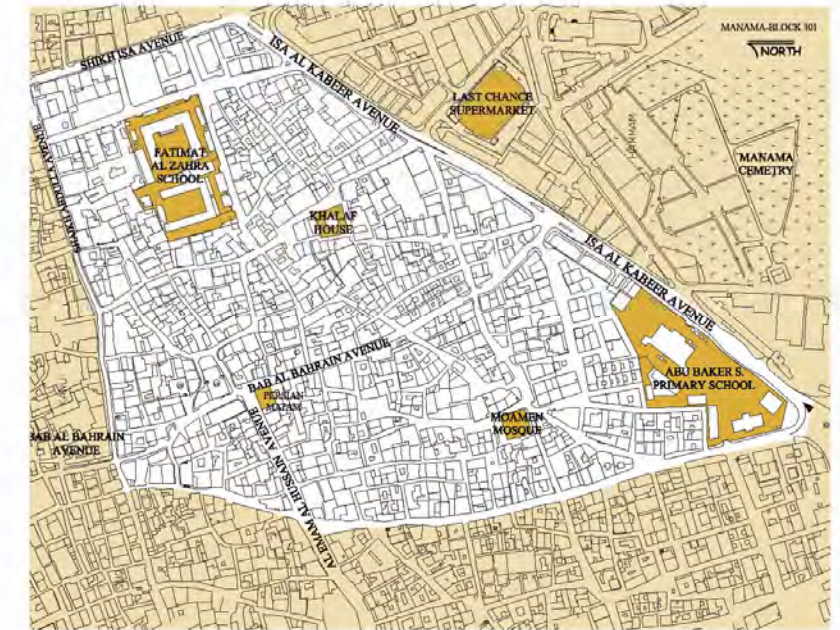
This study seeks to understand the physical and some of the social conditions in the study area and then to offer a collection of suggested improvements in selected areas. It is hoped, if these suggestions are carried out by the Authorities. It would lead to a change in perception by Bahrainis about their old city and foster a desire to widen the area where these changes might be made.



Bab Al Bahrain (The Gate Of Bahrain).

1

Study Area



The study area is defined as Block No. 301, contained within road boundaries: Isa Al kabear, Al Mutambi, Shaikh Abdulla and Shaikh Isa Avenues.

As is explained below, following the series of surveys and analysis, the study area was condensed to east of Bab Al Bahrain Avenue for the production of detailed action plans on selected sites.

Photogrammetry

For the production of certain elevational drawings and as a record building facades, the techniques of rectified photogrammetry were used in this project.



Typical street elevation using rectified photogrammetry.

Briefly, Manama is the capital of Bahrain. The archaeological record indicates human habitation for many thousands of years on Bahrain, but Manama was established in late 14th century.

Its name relates to a lodging place for pearl divers and fishermen. Another meaning is "the blissful place".

The third capital of Bahrain, after Belad Qadeem and Muharraque. It was a port of anchor and a lodging for traders and businessmen. It was famous for trade and business. Gold and pearls were major commodities.

Bahrain had the characteristics of the traditional Islamic city, where the building style followed the local, Arabic and Islamic spirit furthermore the construction material was sea rocks.

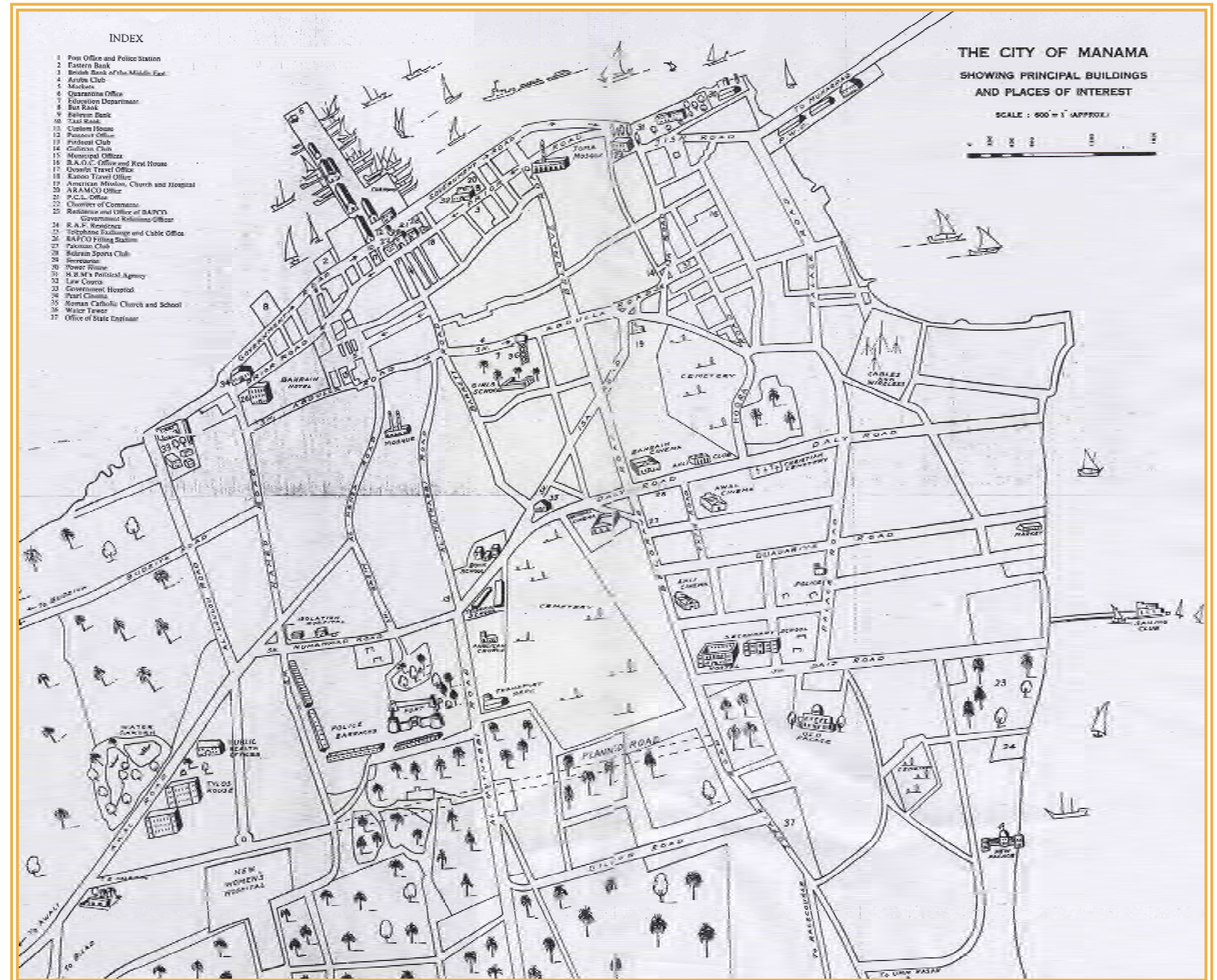
Religious architecture – mosques and martems – proliferate in Manama and represent numerous Islamic sects.

Following several Arab dynasties, the Portuguese arrived in 1521 and built Bahrain fort. The Persians purchased Bahrain from Oman in 1720.

Sheik Ahmed Al Fatih occupied Bahrain and developed an impressive merchant fleet and pearl trade before his death in 1796.

Sons Abdulla and Sulman inherited his fortune .

A brief but comprehensive history of Mamama has been written and a chronology of historical events compiled, (refer to appendix).



The City Of Manama Map , Principal Buildings.

Heritage Inventory

Within the detailed study area, about twenty-one traditional buildings have been identified for inclusion in a standardized heritage survey format. These are appended to this report.

The buildings thus identified are either impacted by the detailed urban design proposals, or are deemed to be of importance in themselves.

Note that this was a superficial survey at best and is no substitute for a full and comprehensive study of these and other heritage buildings.

The buildings selected display a wide range of forms, styles and details, all appearing within a common language of elements. The buildings surveyed follow a common set of characteristics: matams – where there are two, in good condition, well-maintained and painted.

Buildings with mixed residential and commercial use in poor to fair condition with very poor appearance. Reflecting the multitude of cheap expedient improvements by a multitude of tenants.

Larger houses, in fair to good conditions but suffering from ill-advised renovations such as cement render repairs. Houses in fair to poor condition, such as the second Kahlaf house-in original condition but never having had maintenance whatsoever, not even paint, which presents the best opportunity for conservation.

Then there is the great bulk of buildings, suffering from a multitude of small alterations where the original design has been lost to view, even though, more than 80% of the fabric still exists.

Then there are the ruins, of which there is one spectacular example-Bayt Sayed Said, which cries out for a full and proper restoration. Except for Bayt Khalaf with some well-intentioned but destructive renovations, and the religious buildings, maintenance, conservation are virtually an unknown concept in old Manama.

What is seriously lacking, is a stock of well-maintained, correctly conserved or restored buildings which are able to demonstrate the beauty of traditional Bahraini architecture. Once this has been achieved, there should be a boost to national pride at what may be waiting when a larger percentage of the national estate is correctly repaired and maintained.



Heritage Buildings Survey

The heritage buildings survey has recorded more than 35 additional buildings to the approximately 176 recorded on a previous survey. The opportunity to verify the previous map was taken. Some corrections have been made but unfortunately it is reported that a significant number of demolitions have occurred, to previously recorded heritage buildings. There are large number of heritage buildings which are beyond the scope of this report to attempt to categorise or classify them.

It is recommended that a future project is to be undertaken to do a complete and detailed heritage study of the area, including documentation of the state of repair of all items. All these buildings must eventually be entered into a program at a future stage, for examination, classification and recommendations for conservation policy and planning.

Note: In this report it is considered that all traditional fabric contributes to a critical mass of the overall urban form of Manama and must be retained to be restored adapted or reconstructed as a priority.

Many of the recorded buildings on the heritage map could be defined as:

“Compromised” buildings containing about 80-90% original fabric – ie: the great mass of fabric remaining intact. These buildings may often appear specifically to have lost all significant detail – such as- windows, door shutters, balconies, interior and exterior finishes making them unrecognizable, but the study team contends that these are “surface” elements and could be easily reinstated in a restoration adaptive re-use or rehabilitation, which would be considered feasible by a building owner dedicated to a proper restoration. This is especially if that commitment was made in the context of whole area of the city being seriously rehabilitated.

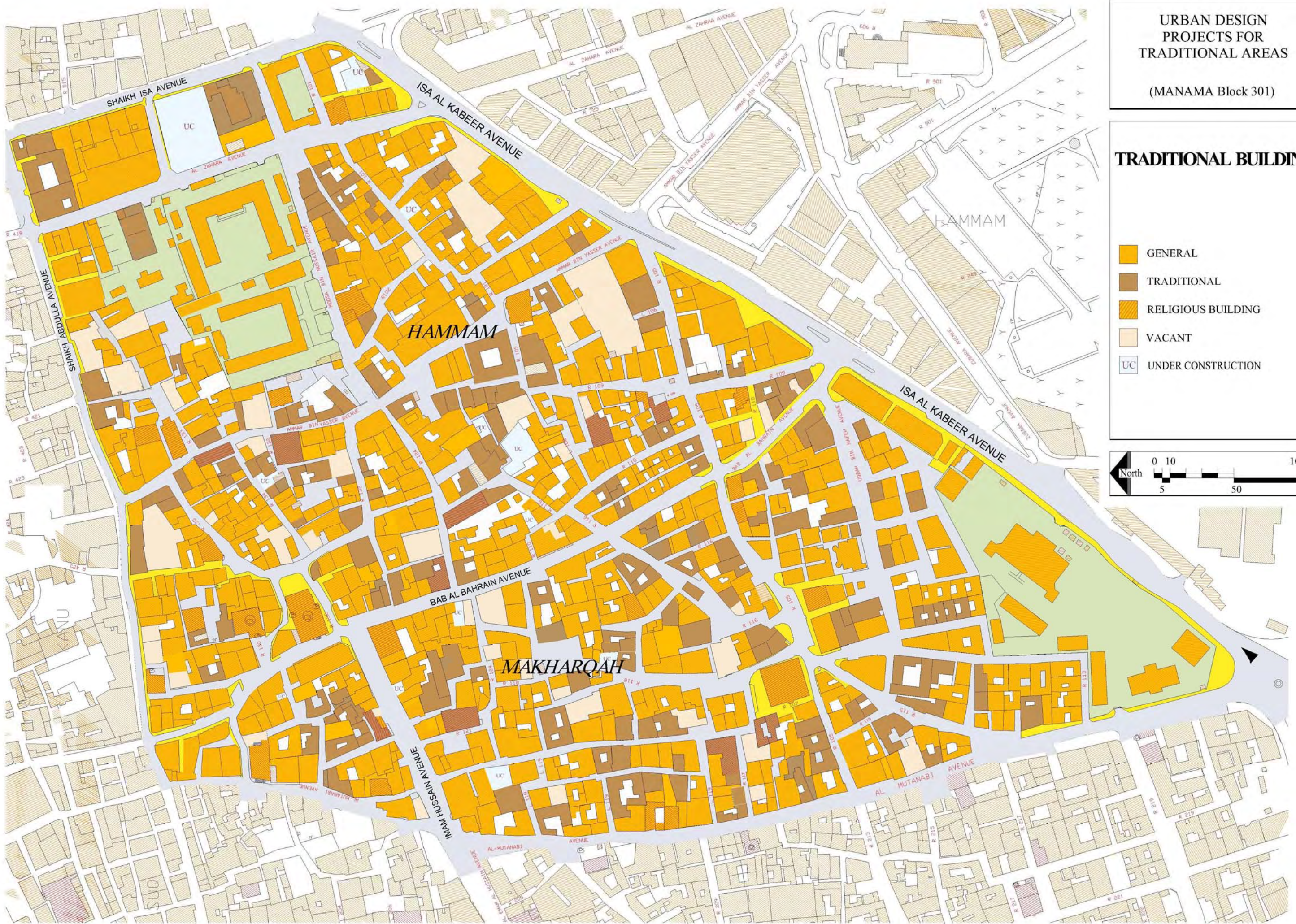
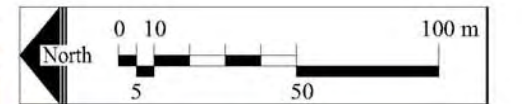
For joinery, plaster etc. new elements should be made for the ones which are missing from evidence. This intention will give rise to a very large demand and therefore numbers of workers possessing the necessary skills must be increased. This can be achieved by either importing skilled labour or more advisably because of the added social and cultural capacity-building, a comprehensive building trades training program must be established and sustained, (refer to Appendix).

Correct methods of restoration should be identified and applied to conservation and adaptive re-use of the heritage building stock.

URBAN DESIGN
PROJECTS FOR
TRADITIONAL AREAS
(MANAMA Block 301)

TRADITIONAL BUILDING

-  GENERAL
-  TRADITIONAL
-  RELIGIOUS BUILDING
-  VACANT
-  UNDER CONSTRUCTION



4

Existing Building Height

The height map shows a predominance of 2-3 floors. It is to be noted that a classification (M) has been added to most floor heights to account for a ground floor, mezzanine level present in buildings containing shops and stores. This is a feature of many buildings in the Manama study area. The mezzanines are accessed directly from within each shop etc. Alternatively, a ground floor of 4-5 meters appears as a standard, within which the shop owner has an option to build his own mezzanine.

There are also large numbers of four-storey buildings, mainly apartment blocks which appear in clusters and along principal roads.

Higher buildings appear intermittently, generally around the periphery along principal roads.

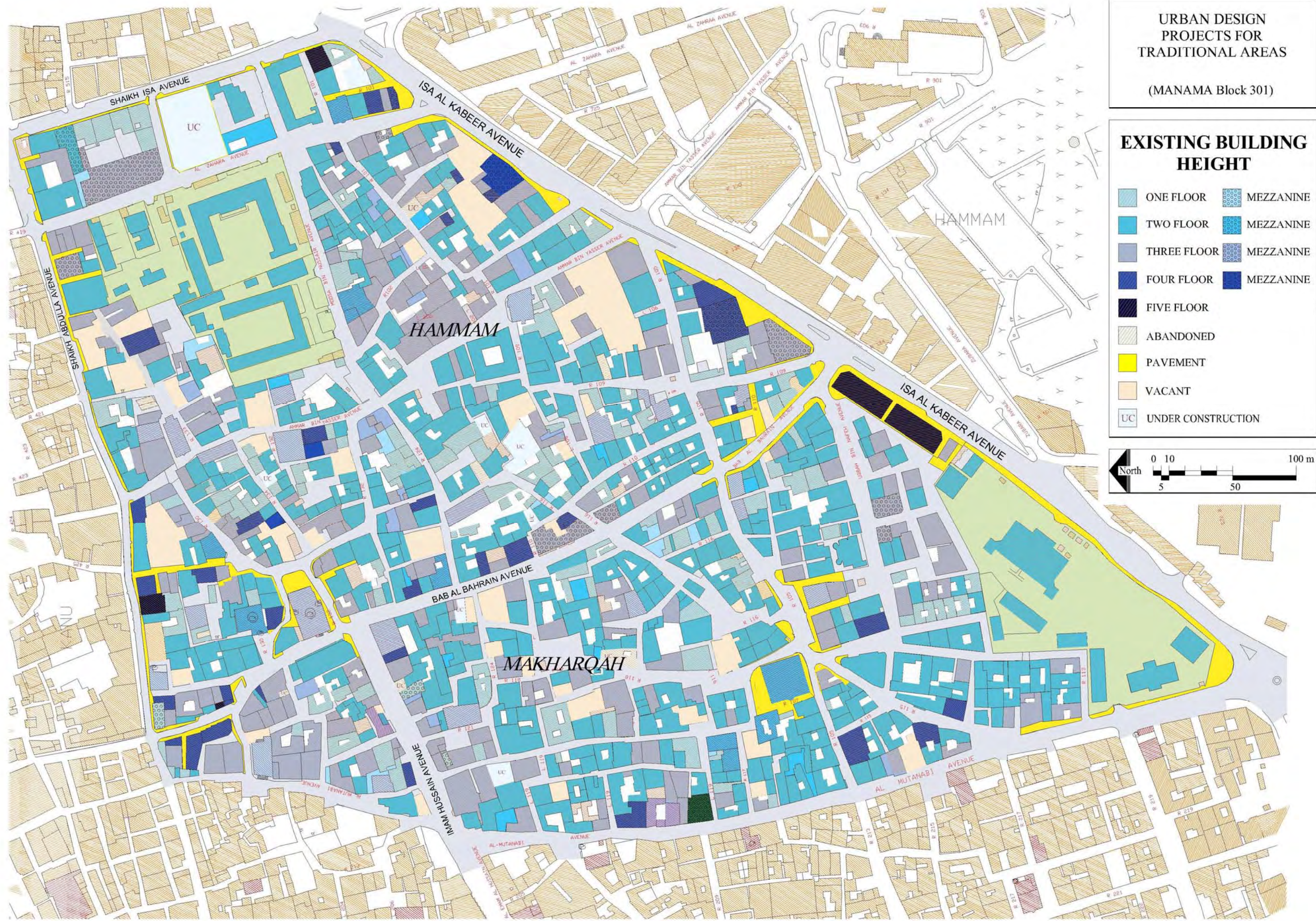


URBAN DESIGN
PROJECTS FOR
TRADITIONAL AREAS

(MANAMA Block 301)

EXISTING BUILDING
HEIGHT

- | | |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|  ONE FLOOR |  MEZZANINE |
|  TWO FLOOR |  MEZZANINE |
|  THREE FLOOR |  MEZZANINE |
|  FOUR FLOOR |  MEZZANINE |
|  FIVE FLOOR | |
|  ABANDONED | |
|  PAVEMENT | |
|  VACANT | |
|  UC | UNDER CONSTRUCTION |



With regard to land use, the study area is predominantly residential, approximately 60% houses and 40% apartments. That means a predominance of the population are living in apartments.

However a major land use is described as “mixed”, that is, containing buildings having commercial/retail on the ground floor and apartments above. Many houses contain a commercial component, even the substantial and famous traditional house, Bayt Kalaf, contains two shops.

There are also many buildings, including those which are traditional houses on two or more levels, without a commercial component. There is a small number of buildings which are specifically commercial.

Added to this mixed development, are numerous mosques, matams and other religious buildings, spread throughout the area. Some of these mosques are quite large, even grand, while some matams are small, even virtually invisible -as being converted houses.

There are three substantial schools, all with relatively recent buildings. The fourth school, which is a Persian School, has been vacant for more than a decade. All these items are mapped as educational.

There is a small number of government buildings, the first is a former British residential bungalow and the second, a small power-house. There are also numerous electrical substations throughout the area, reflecting the type of electrical system used in Manama.

There is also an unfortunate number of vacant sites and sites made vacant to provide car parking.

With respect to land ownership, this matter has been investigated when making proposed urban design interventions for certain sites, particularly vacant land seen to provide opportunities for augmenting these proposals. Names of site owners are provided (where relevant) in the detailed description of urban design proposal precincts where this information has been obtained during the short duration of the study.

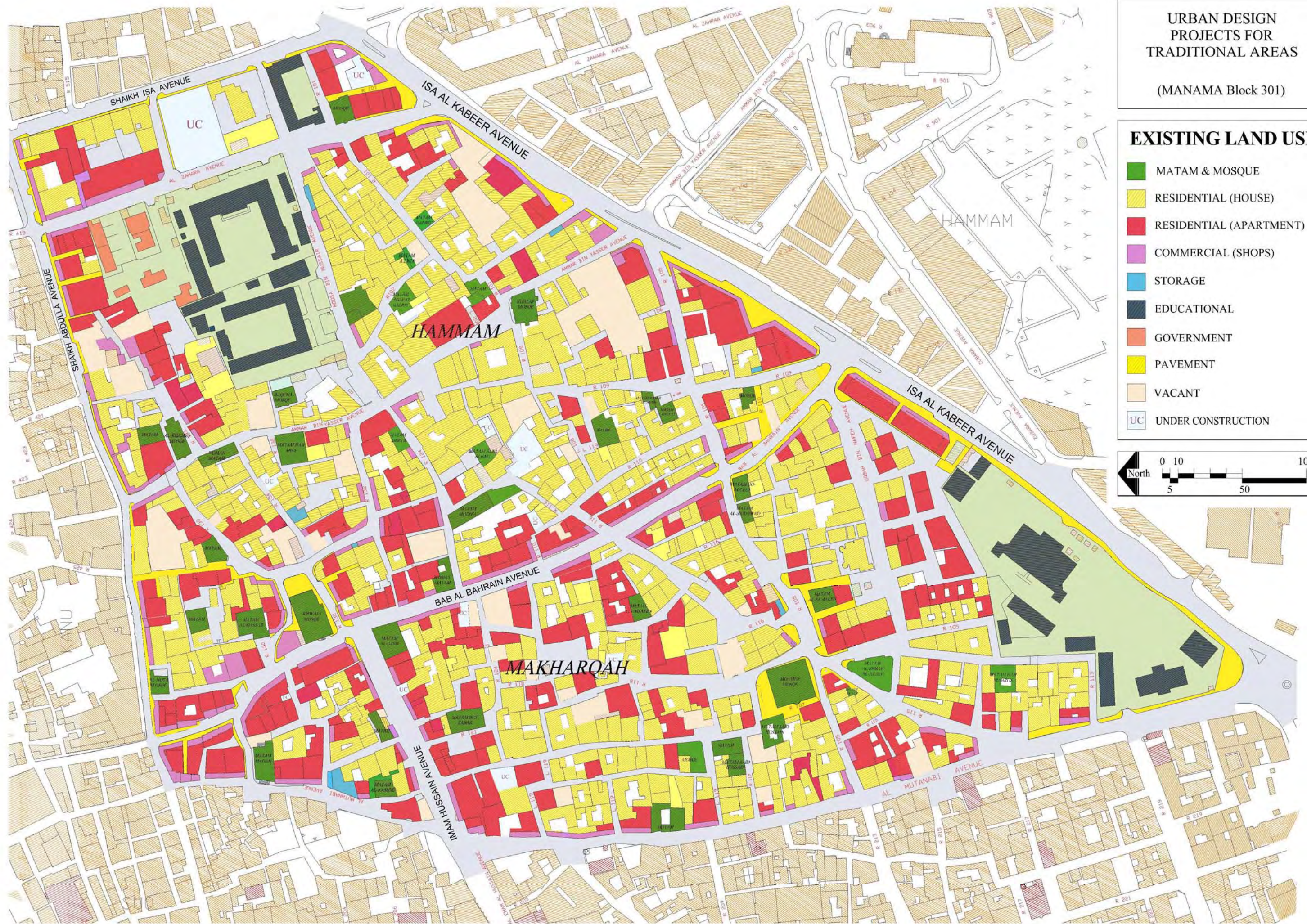
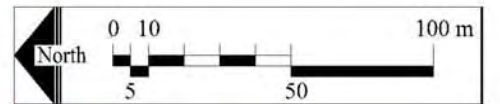


URBAN DESIGN PROJECTS FOR TRADITIONAL AREAS

(MANAMA Block 301)

EXISTING LAND USE

-  MATAM & MOSQUE
-  RESIDENTIAL (HOUSE)
-  RESIDENTIAL (APARTMENT)
-  COMMERCIAL (SHOPS)
-  STORAGE
-  EDUCATIONAL
-  GOVERNMENT
-  PAVEMENT
-  VACANT
-  UNDER CONSTRUCTION



Manama is unnecessarily saturated with traffic and parked motor vehicles. There is no definition, or separation between pedestrian and vehicular space over the great majority of the study area. Traffic is often at gridlock with slow movement often at walking speed or less while the undefined, (non-existent) pedestrian space leaves pedestrians literally adrift in a sea of aggressively driven traffic with no means of protection or refuge.

Cars intrude into narrow streets and alleys for no apparent useful purpose. In narrow roads in the souq, motorists can be seen browsing the merchandise out of the car window while no space remains for the pedestrians to pass. Locals report that these and all traffic conditions are getting worse.

It is evident that a serious reduction in unnecessary traffic and parked vehicles will have to take place before many potential improvements can occur.

Traffic

The traffic-flow map shows the directional flow of traffic in Manama streets. It is categorized as main, secondary and minor flows. Nevertheless, in all categories, it is continuous through most times of the day.

Apart from Isa Al Kabeer Avenue and a short part of Al Mutanbi Avenue, all routes are one-way, in the directions shown on the map. With the exception of Bab Al Bahrain Avenue, all main flows are around the periphery of the study area and all secondary flows except Imam Hussain Avenue are also around the periphery.

That leaves the majority of traffic in the area as "minor", including some very narrow streets, despite the carried substantial volumes.

Public Transport

A bus route, runs along the edge but does not go through the study area. It is reported that this route is not a major one, with services very infrequent and suited to the working hours of guestworker labourers, who are the principal patrons.

As there is such minimal influence on Manama from public transport, a public transport concept is suggested, for consideration in future studies.

There must be an increase in the use of public transport in Manama, if the car traffic problem is to be addressed.

While it is outside of the scope of this present urban design study, the issue of public transport must become a higher priority to the Municipal Government if the traditional city is to be retained as a functional and a useful cultural and economical resource.

This is a recurrent theme in previous studies and a subject of many studies to conserve traditional towns internationally.

Traditional towns evolved and reached their maximum development prior to the motor-vehicle. Uncontrolled proliferation of cars has acted to destroy the traditional town fabric. If what remains is to be conserved in Manama, then motor vehicles, as much as building height and land use, must also be controlled. Rational use of public transport must be one of the controlling mechanisms employed.

A proper and detailed transport study should be made of the whole urbanized area of Bahrain with the view to establishing a fundamental light rail network. This would be generally in parallel or in conjunction with the major road network – especially where median strips are wide. The existing bus network might be initially intensified, extended and then progressively converted to light rail with bus routes serving as feeders to the LRT network in outer, lower-density areas and also for example, in old Manama or Muharraq, where small low-floor buses fitted out with an equivalent finish to private cars could link major bus and light rail stops through the narrow winding streets of the old towns. It is suggested that these small buses have a touch of luxury equivalent to cars, to assist Bahrainis in their transition out of private transport.



In the case of light rail, these vehicles already possess a standard of finish, ride and general performance which is far-superior to road transport. Rail is a transit medium taken for granted in most civilized countries around the world, but entirely lacking in heavily road-dependent Bahrain.

The traffic flow map indicates a main road - Isa Al Kabeer Avenue - upon which the only bus route skirts the study area. Another main road, Al Emmam Al Hussain Avenue, approaches from the west but becomes a one way secondary road on the western edge of the study area at Al Mutanabi Avenue. Both of these avenues are a two-way street while all secondary roads within the study area are a one-way, because of the narrowness of most of these roads.

Additionally, the major secondary roads: Bab Al Bahrain, Bin Yasser, Al Mutanabi, Sheik Abdulla, Moosa Nussair Avenues, and R105, R116 and R124 Roads might support the proposed small low-floor "luxury" buses, then to be replaced by specially commissioned tramcars, (also low-floor) branching off a "mainline" light rail service on Isa Al Kabeer Avenue, which in turn might provide services to other districts and to a network of centralized large parking stations outside the old urban areas.








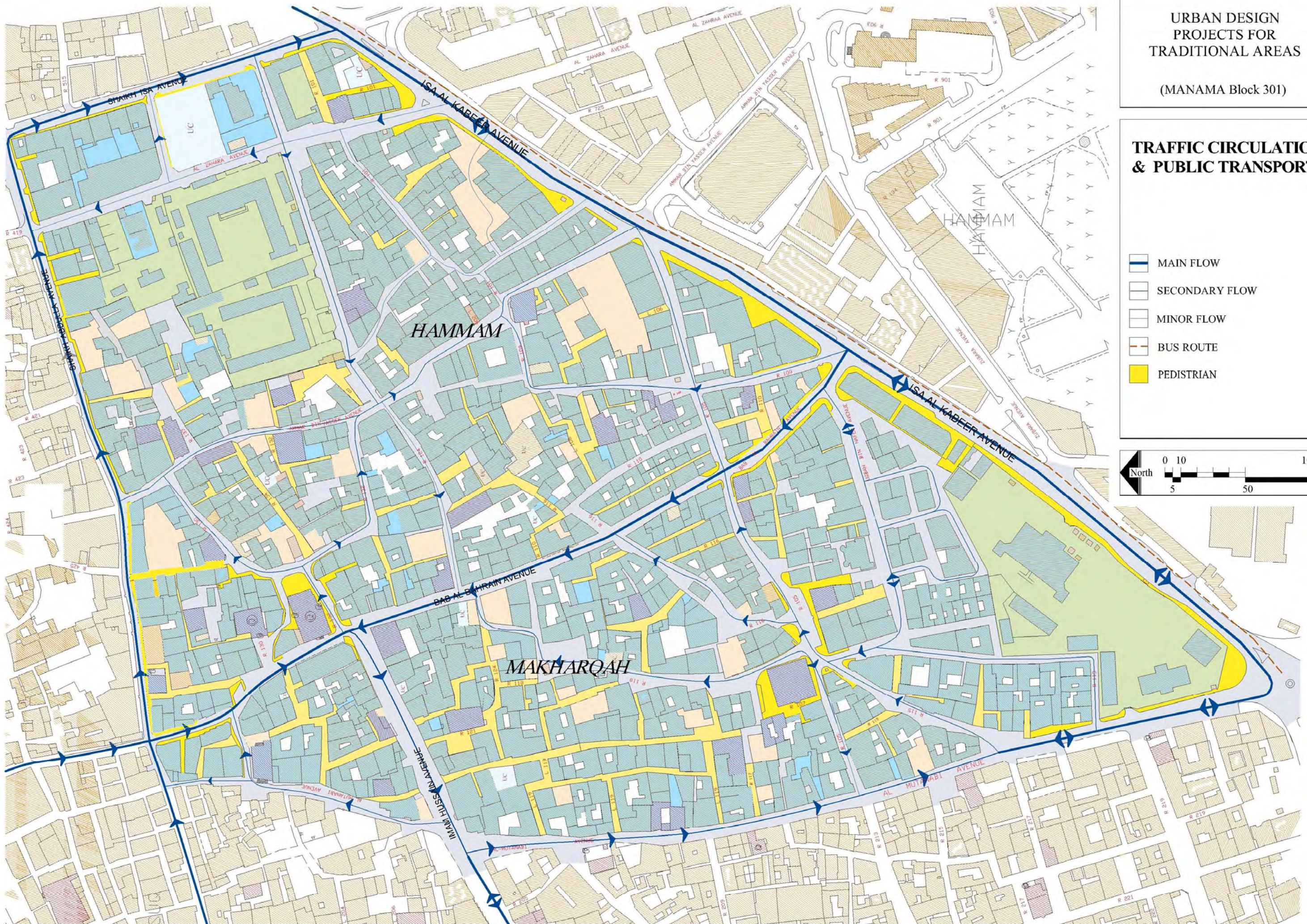
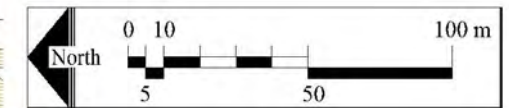
Used low level tram in traditional European city.

URBAN DESIGN
PROJECTS FOR
TRADITIONAL AREAS

(MANAMA Block 301)

TRAFFIC CIRCULATION
& PUBLIC TRANSPORT

-  MAIN FLOW
-  SECONDARY FLOW
-  MINOR FLOW
-  BUS ROUTE
-  PEDISTRIAN



There are many mosques, matams and other religious institutions in this relatively small area, representing a diversity of Moslem sects. Interestingly, most of these religious buildings are kept in good repair and often stand in stark contrast to their "down-at-heel" commercial and residential neighbours.

There is a long-established religious tradition whereby for ten days of the year called "Ashura" and also at other times, people attend their institutions and then move in large groups around a well-known route from institution to institution paying their respects, mourning or celebrating as they go, according to the occasion, listening to eminent speakers, music, watching outdoor films and participating in a huge public event. Each matem prepares food and drink, which is distributed generously to the passing crowds.

During these times the whole area is barricaded off to vehicular traffic and non-resident participants must park outside the area and walk to their respective matams before commencing the events.

It is considered that this cultural activity, carried out over the centuries, has contributed to, or was the basis of, the urban form of Manama – with principal sites occupied by mosques and matams and the general background of the residential and mixed use buildings filling in along these principal routes and other thoroughfares connected to the wider circulation pattern outside the study area. It is also these religious institutions which are at the basis of land ownership patterns.



A map has been prepared, showing the religious buildings and the routes of the ceremonial processions.

Hussainia

A Hussainia (Arabic: *حسينية*) is a congregation hall for Shia ritual ceremonies, especially those associated with the Festival of Muharram.

The name comes from Hussain, the grandson of the prophet Muhammad and the third Imam of the Shia. Shias still mourn the death of Hussain on the day of Ashura every year in Hussainias all over the world. In Bahrain it is called a "Ma'tam".



Matam Madan, One the oldest Matam's in Manama.

Ma'tam in Bahrain

Ma'tams in Bahrain play an important positive role towards its society, which appears in the religious enlightenment based on the teachings and guidelines of the Holy Quran and the prophets family (peace be upon them). On the other hand Ma'tam in Bahrain has been a central place for the revival of sad and happy events in society varying from people passing , marriages or different occasions.

Day of Ashura

The Day of Ashura (Arabic: *عاشوراء* transliterated 'Āshūrā', also Aashoora and other spellings) is on the 10th day of Muharram in the Islamic calendar and marks the climax of the Remembrance of Muharram but not the Islamic month.

The word ashura means simply tenth in Arabic; hence the name of the remembrance, literally translated, means "the tenth day".

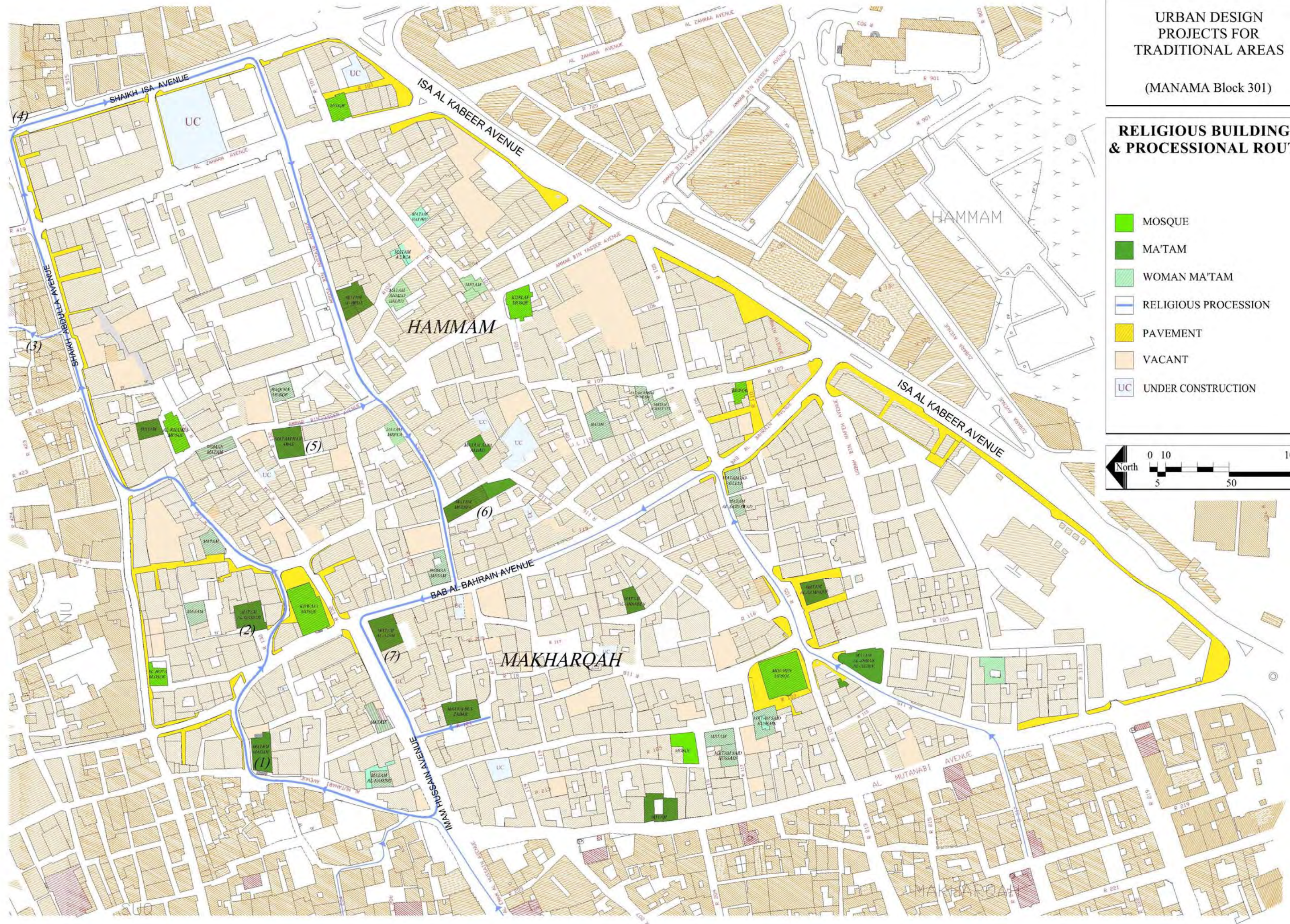
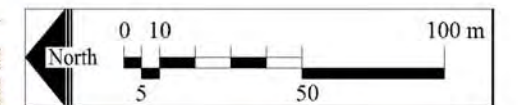


URBAN DESIGN
PROJECTS FOR
TRADITIONAL AREAS

(MANAMA Block 301)

RELIGIOUS BUILDINGS
& PROCESSIONAL ROUTE

- MOSQUE
- MA'TAM
- WOMAN MA'TAM
- RELIGIOUS PROCESSION
- PAVEMENT
- VACANT
- UC UNDER CONSTRUCTION



Public Open Space Analysis

Following building height, land use and heritage building surveys, a systematic survey of the majority of streets in the study area was made with the view to assessing the availability of public open space. That is, areas of streets and squares suitable for landscaping, seating and more active recreations.

It was found that because of the proliferation of matams, that many street spaces are already “colonised” outside these institutions to service public gatherings. A number of streets have actually been roofed over in canvas to provide shade for participants’ gathering.

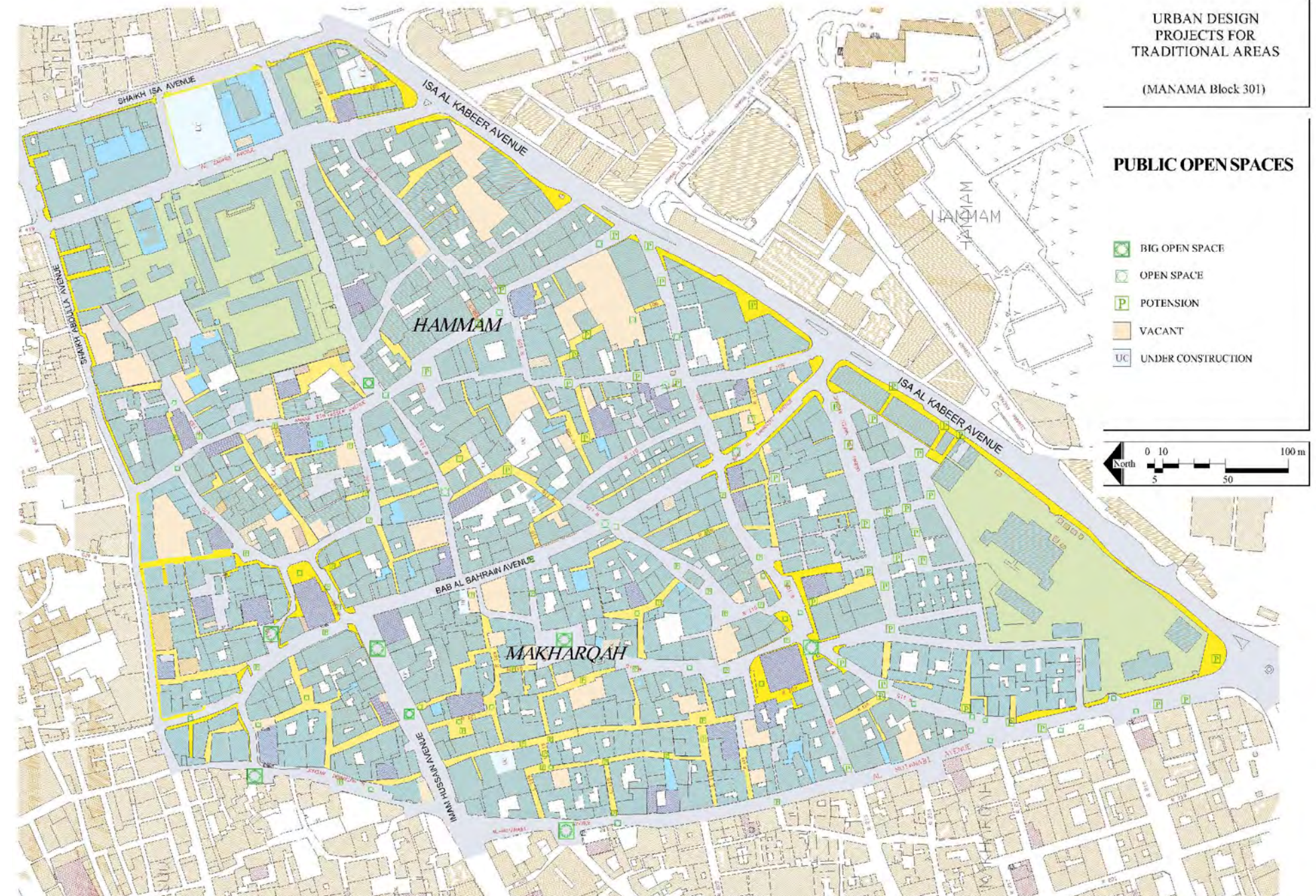


Therefore, two categories of open space were identified:

- 1) “Occupied” as above and
- 2) “Potential” for areas yet to be developed as open space.

It must be noted that as mentioned elsewhere, every available space and corner of the public realm is jammed with parked cars.

These spaces identified on maps of the eight survey areas were collated on to a single map of the study area.



The overriding strategy to the various urban design proposals in this project - as much as possible - is to separate the public realm into functional categories:

- 1) Circulation corridors for motor vehicles,
- 2) Orderly storage of vehicles, (parking),
- 3) Well-defined pedestrian zones which are continuous throughout the study area and which have a minimum standard of dimension.
- 4) "Shared Zone", a combination of 1) and 2), wherever the road is too narrow to allow a traffic lane AND a pedestrian path, the road is to become a shared zone where pedestrians have priority over cars.

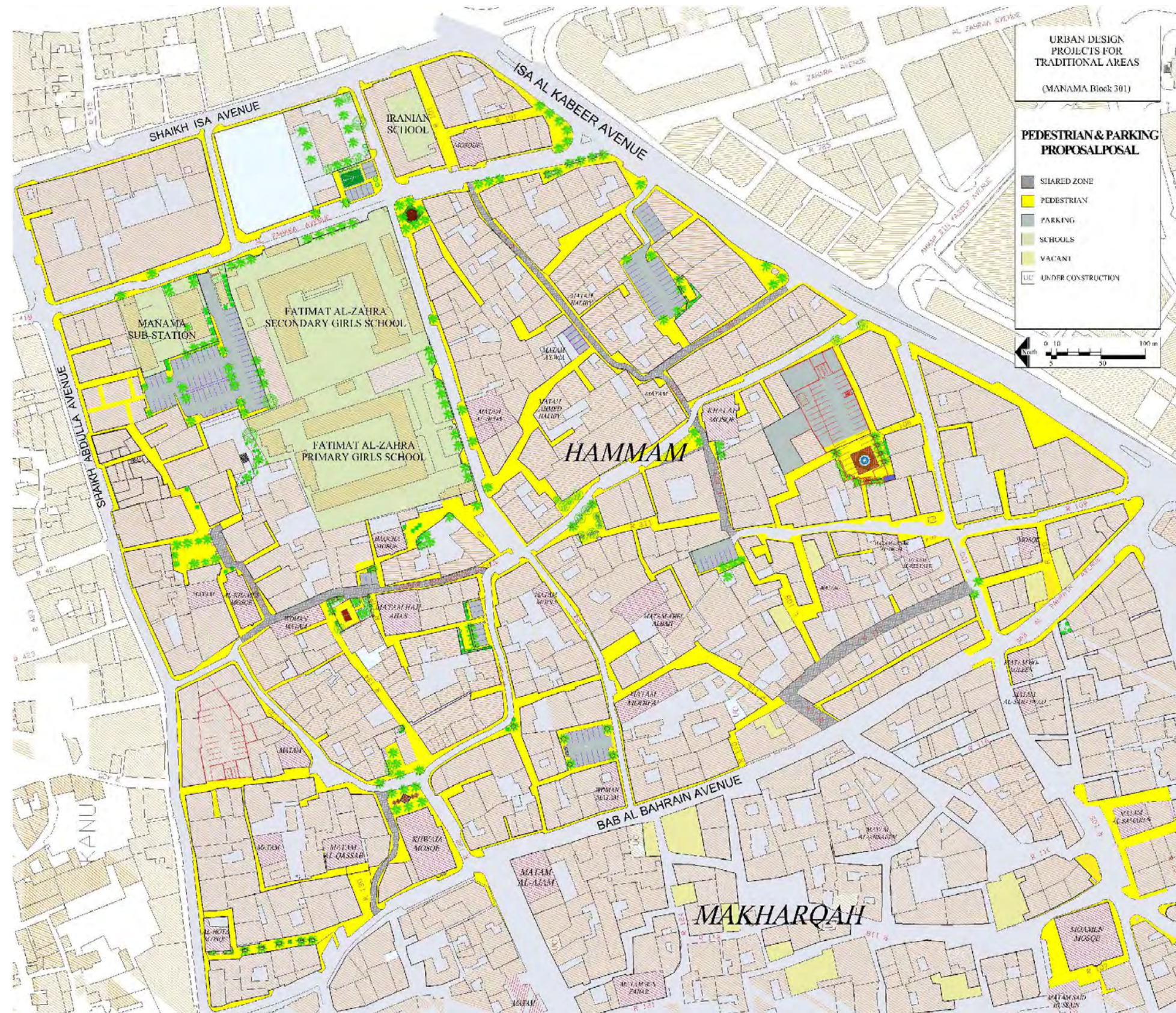
The whole detailed study area has been mapped for creation of an interconnected pedestrian realm.

The traffic flow remains basically as at present - except for many areas deemed unsuitable for cars, e.g. in too-narrow alleys. While the parking anarchy is brought under control by creating designated spaces in areas capable of accommodating them, the one-way traffic lanes are reduced in width in order to limit driving speed and maximizing opportunity for pedestrian space to be established.

There are many areas thus created in the detailed study area, from 1m wide strips where pedestrians can walk in safely, to wider areas where other activities are possible, to landscaping - including substantial trees, to significant public squares and courtyards. These squares are proposed to support the whole range of outdoor life in the community, activities which are currently denied because of the monopolisation of public space by cars.

While the anarchy of randomly parked cars is to be abated under our plans, the team has worked conscientiously to create many proper parking areas throughout the study area, ranging from paralleled parking alongside traffic lanes and pedestrian paths, to rationalizing many odd small vacant sites for maximum parking efficiency, to parking within infill developments and also a number of substantial parking stations.

Refer to the detailed description and drawings of each design proposal area for traffic and parking arrangement particulars.



Upon examining Public Open Space, it became immediately obvious, because of the clustering of “occupied” and “potential” symbols, where the nodes of activity and potential activities are located.

The study team quickly identified a number of significant urban spaces which might be investigated as potential projects for further development.

The general street-space around these symbol-clusters was shaded when it became evident where the major opportunities lay to link these clusters into chains or spines of pedestrian circulation.

The dots formed eight major areas, the eight major areas, called sites and may be identified as:

- 1 Goldsmith Markets
- 2 Vacant Site With Heritage house
- 3 Quassab Matam / Khwaia Mosque
- 4 Hajji Abbas Matam Square
- 5 Hammam Square
- 6 Bayt Khalaf Square
- 7 Second Vacant Site Precinct
- 8 Vacant Sites – Isa Al Kabeer

Each area exhibits a variety of characteristics which sets it apart from the others.

As the study continued, two more were added:

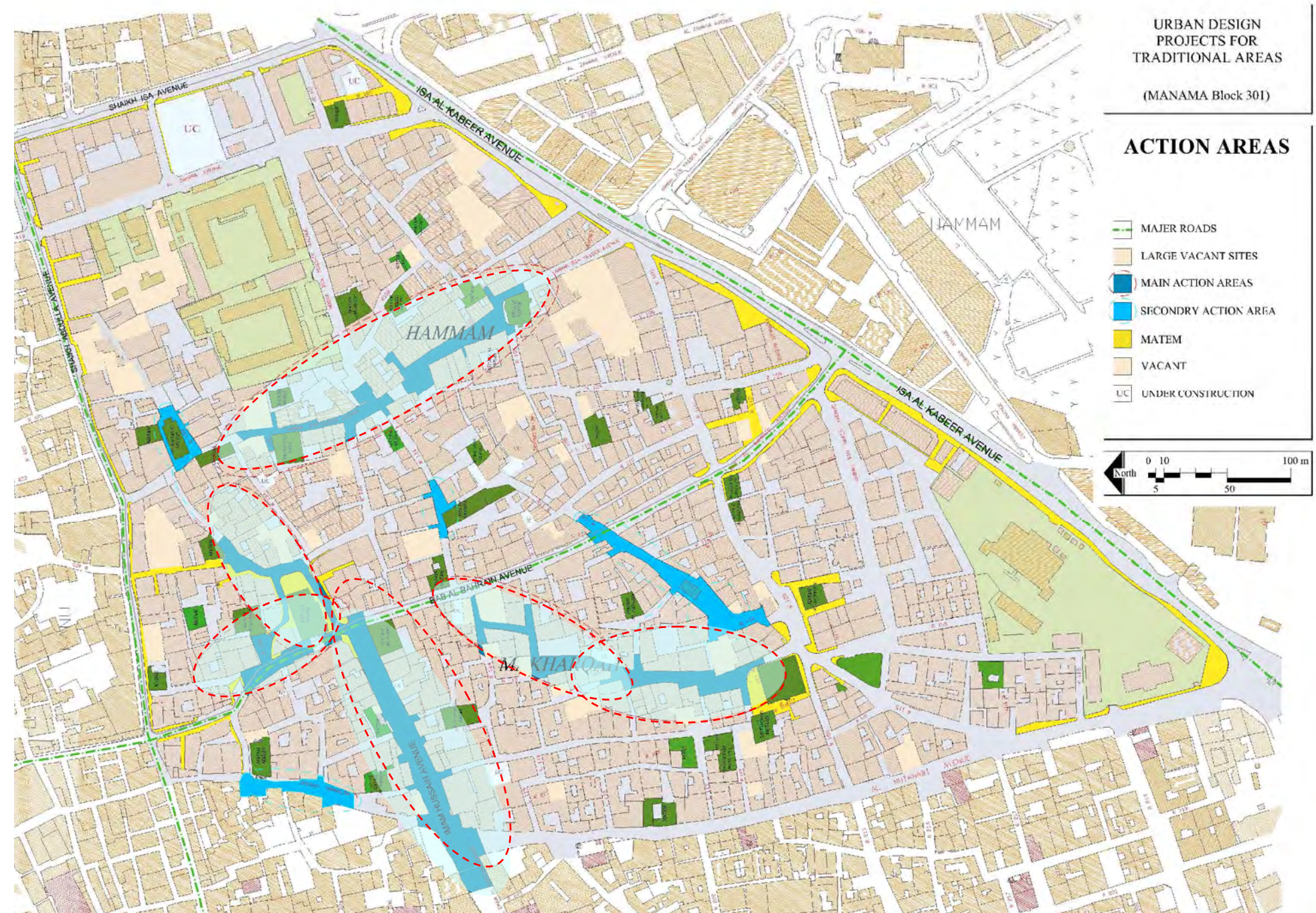
- 9 Old Persian School Square
- 10 Vacant sites used for car parks.

Additionally, there are many other areas which are worthy of urban design attention but the limited time of this study means that the scope must be limited.

Therefore, it was decided to concentrate on the areas to the east of Bab Al Bahrain Avenue, as these areas are further clustered into a constellation of urban design opportunities of great diversity, stretching from Bab Al-Bahrain Avenue in the west, to Shaikh Isa Avenue the east and from Shaikh Abdulla Avenue in the north, to Isa al Kabeer Avenue in the south.

This concentration of action plans could serve to create a critical mass of improvements, the impact of which could serve as an example for the rejuvenation of the remaining core area and old Manama, generally.

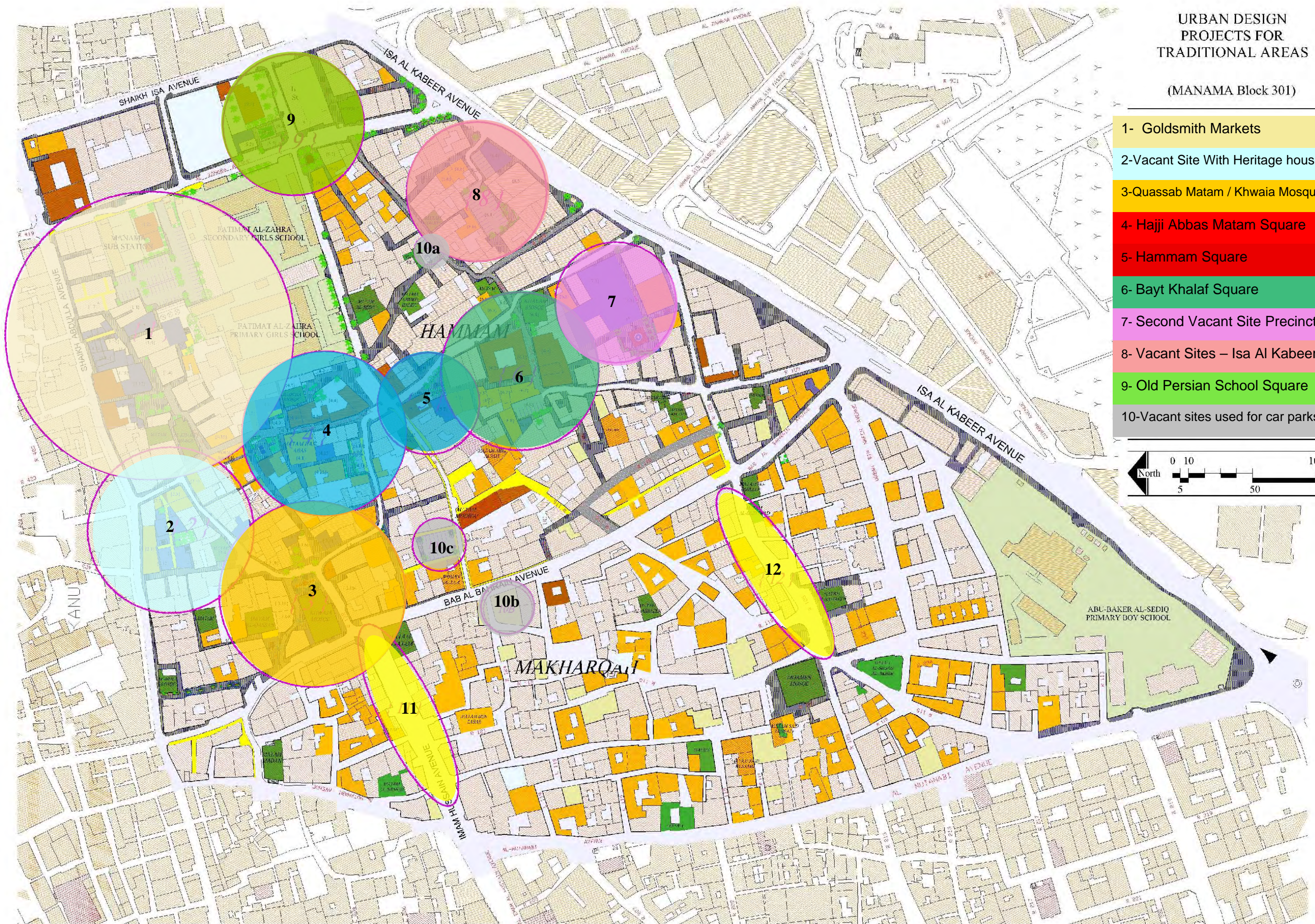
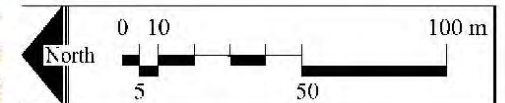
However, no collection of action plans can function unless they are connected by a rational linking device, in this case, a traffic, parking and pedestrian plan, (see Traffic, Parking and Pedestrian Proposal).



URBAN DESIGN
PROJECTS FOR
TRADITIONAL AREAS

(MANAMA Block 301)

- 1- Goldsmith Markets
- 2-Vacant Site With Heritage house
- 3-Quassab Matam / Khwaia Mosque
- 4- Hajji Abbas Matam Square
- 5- Hammam Square
- 6- Bayt Khalaf Square
- 7- Second Vacant Site Precinct
- 8- Vacant Sites – Isa Al Kabeer
- 9- Old Persian School Square
- 10-Vacant sites used for car parks



Site 1.0. Goldsmith Market Area

**This area is comprised of a diversity of sites.**

A large vacant site **{1.1}** has been found to belong to the government of 2,000 sqm, it is proposed to be laid out as a car park for approximately 75 cars. The plan shows a layout on a single ground level, however, the size of the site and the dimensions of the access "strip" would allow the construction of ramps for an additional basement and two upper levels which might accommodate 260 cars.

There is enough surplus space around the edges to provide a landscaped buffer to an adjoining property of 500 sqm, containing an unusual non-Bahraini heritage house, **{1.2}**.

This site is also owned by the government and is presently vacant but is in good condition. This historic former British Government residence and later, Ministry of Education building (a c1930s office block has been added at the rear) is proposed to be restored and put to use as a community centre, operated by other municipality agencies. Both these sites are accessed directly off Al Zahara Avenue.

Another vacant site, **{1.3}** of..... sqm is land-locked and can be accessed via an alley. This has a number of existing trees at the edges.

One idea, which is illustrated on plans, is for an exclusive restaurant in a new building, surrounded by landscaping. Other uses of this site should attempt to preserve and augment the existing trees with an extensive landscape concept. This restaurant notion has symbolic value as the possibility of an exclusive restaurant in this area with its present disorder and decay seems far-fetched.

There are a number of 3 & 4 storey apartment buildings ranged along lane way No R133, **{1.4}** these vary in condition, from being quite new to 1930s. Most of them contain shop fronts to the laneway. There is one vacant site, suitable for a similar new apartment block with shops and which has the added advantage of a right of

way in an L-shape connecting lane NoR133 to the proposed car park and landscaped restaurant site, **{1.5}**. Another pedestrian link occurs between the lane and near to the car park. A lease is proposed to be negotiated with the electricity authority over a corner of their land to make a viable connection between the goldsmith and the car park areas, **{1.6}**.

This alley is also lined with shopfronts.

Fronting the alley and Sheikh Abdulla Road is a 2-3 storey building containing a network of arcades accommodating mainly goldsmiths and tailors, **{1.7}**.

This network of arcades also has an entrance, up via a short flight of steps to the end of Lane R133. This is currently closed-off, **{1.8}**.

Sheikh Abdulla Road is a retail street having buildings fronting the road and containing shop fronts.

There are two traditional (heritage) buildings also containing shop fronts, fronting this road in site 1.0.

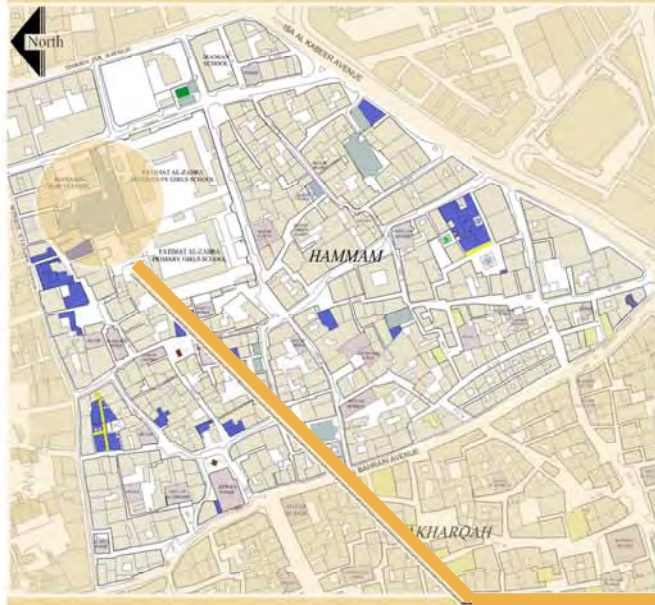
Heritage building **{1.9}**.
Heritage Building **{1.10}**.

Both these heritage buildings should be restored with regards to their original fabric, after classification and conservation plans being written, according to the Heritage Conservation Guidelines .

There are also a number of vacant sites in the precinct, **{1.11}** between Sheikh Abdulla Road andlane. It is proposed to provide new 3 storey mixed use buildings on two of these sites, **{1.12}** The buildings are to contain an arcade connecting Sheikh Abdulla Road to lane R133.








Another site, **{1.13}** containing a 2 storey building of poor quality should be redeveloped to 3 storey along with its new neighbours.

An open space opportunity exists at the rear of the historic buildings, **{1.10}** for a tree-lined square, adjacent to a shared zone.



Site 1.0 Urban Design proposal



-  INFILL MASS PROPOSAL
-  HISTORICAL BUILDINGS TO BE PRESERVED
-  HERITAGE BUILDINGS TO BE RESTORED
-  ARCADE
-  CAR PARKING
-  PEDESTRIAN
-  RELIGIOUS LOCATIONS



The combined traffic-free square, small park and lane, lined mainly with shops and goldsmith workshops should provide an attractive and lively precinct throughout the day while the residential population should provide life to the public spaces at night.

The rear wing to the heritage building No **{1.10}** which has a frontage to the proposed tree lined square, is structurally unsound and should be demolished and replaced with a two storey wing on the same footprint with balcony access around the courtyard, **{1.15}**.

There is additional site area on the North east corner on a trapezoid shaped area, adjacent to the South east corner of the tree lined square, **{1.16}**. This should be developed with a two-storey wing as well. The ground floor of this should have a café or restaurant, opening out to the square and to the small public space to the north. With this other addition, a second courtyard is also formed, **{1.17}**. Both courtyards are to be landscaped.

Behind the (second) heritage building fronting Sheikh Abdulla Avenue, the existing vacant plot is to be developed with a new traditional mixed use building of three storeys, with a commercial ground floor and residential on the floors above. The north west corner has been cut to facilitate the transition from the lane to the tree lined square.

A courtyard behind aligns with the existing court on the heritage building, **{1.18}**. The commercial or retail shops on the ground floor are to reflect their location.

The new building is to be designed to conform with the Guidelines. A cantilevered vernacular balcony would emphasize the splayed corner.

The isolated three storey goldsmith building fronting the lane and surrounded by vacant sites is an odd-shaped and rather inefficient structure. It should be either upgraded to fit in with surrounding proposed development or demolished and its site amalgamated in to the other properties forming the complex of vacant sites, **{1.19}**.

The vacant land is in the ownership of five different people. A property share arrangement is to be made to create an orderly 3 storey development over the site of the vacant lands which allows the establishment of an

arcade, (a corridor through the combined site from the Sheikh Abdulla Road to the revitalized lane)

The plan shows an amalgamation of two of these sites to allow an arcade straddling the boundary between the sites. This arrangement acknowledges a way around the complex property ownership customs in the local culture, but it leaves out three other properties which might benefit from being included in a more comprehensive redevelopment, rather than being developed independently on their own odd-shaped sites where light and ventilation is difficult, if not impossible to achieve.

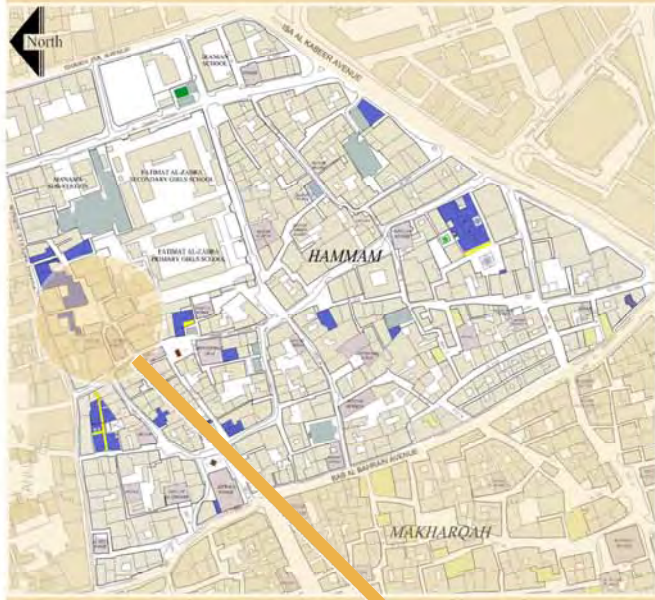
The problem of endless subdivision of land through inheritance was recognized by the authors of the first mission report. Their recommendation was for the whole historic area to come under a new authority with power overriding the usual list of municipal authorities and having compulsory acquisition powers when land owners are reluctant to co-operate in the interest of the greater common good.

It is noted that a major, (and unfortunate) characteristic of old Manama is the large number of vacant sites and un-maintained and collapsing buildings. The traditional inheritance-based property ownership system, where nobody actually is in charge of maintenance or rebuilding decisions, is one fundamental cause of this problem.

The goldsmiths market area has been heavily impacted by the above customary approach to land ownership with many vacant sites, seriously neglected buildings and numerous temporary structures lending a third-world shanty-town ambience to the area.

However, within the chaos and shambles there is ample evidence of an underlying order and of previous prosperity, to point the way towards a very interesting and vital urban quarter, which could evolve as suggested in our urban designs.

Because of its sheer size, this one site, if rehabilitated, could spark a revitalization of the neighbouring properties, including those on the other side of Shaikh Abdulla Avenue.



Site 1.0 Urban Design proposal



- INFILL MASS PROPOSAL
- HISTORICAL BUILDINGS TO BE PRESERVED
- HERITAGE BUILDINGS TO BE RESTORED
- ARCADE
- CAR PARKING
- PEDESTRIAN
- RELIGIOUS LOCATIONS

Site 2.0. Vacant Site With Heritage House

This largely-vacant site of 700 sqm is surrounded by existing development on Sheikh Abdulla Avenue, Ammar Bin Yasser Avenue and Road 130, including a number of heritage buildings, {2.1 – 2.5}.

The narrow end of the site contains a traditional heritage building which is to be retained.

The site is divided roughly between two owners and the boundary is visible, in line with the large courtyard at the rear of a house on Road 130.

This courtyard intrudes into the otherwise regularly shaped site, {2.7} as does a crude single storey masonry shed, which is proposed to demolish, {2.8}.

A proposal consisting of a commercial/retail ground floor is arranged around a pedestrian arcade, {2.9} from Road 132 to Ammar Bin Yassar Avenue, where it is proposed to be integrated into a heritage building in poor condition, (the above mentioned masonry shed is part of this property).

The heritage building would be restored and adaptively re-used, {2.10}.

The above existing courtyard defines a location for a proposed courtyard in the new development which provides light and ventilation to the centre of the arcade, {2.11}.

Another courtyard is proposed at the rear of the heritage building. Both courtyards lead to the stairways. At first and second floors, five apartments per floor are proposed, grouped around balcony-circulation spaces focused on the central courtyard. Main stairs and fire stairs are accessed from two proposed alleys, {2.12}.

This site was also examined for potential car parking. If provided in a basement, fifteen spaces would be possible. However, this would create conflict with the arcade entrance if a parking entry/exit ramp also had to be provided here. An additional difficulty would be to negotiate the subterranean space beneath the existing neighbouring courtyard to enable an underground area to be possible.



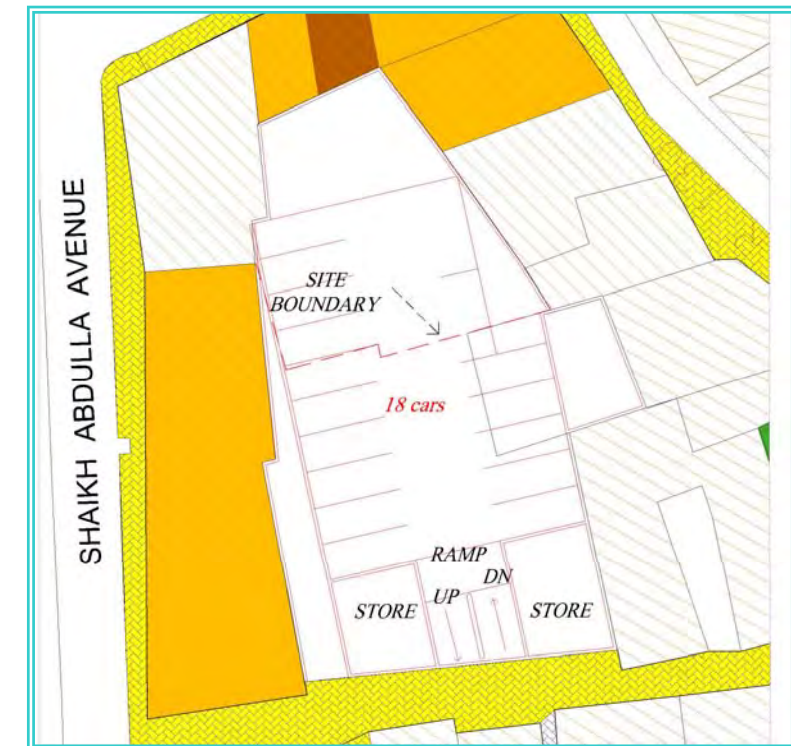
Therefore, the difficulties to be overcome and the limited number of car spaces possible, makes providing underground parking on this site a marginal proposition. Without parking, this proposed mixed-use building still presents an interesting possibility and would be in sympathy with other existing and proposed arcaded buildings in the area, all of which do not have parking. The issue of utilizing the heritage building partially for an arcade entrance must be explored at the feasibility stage.



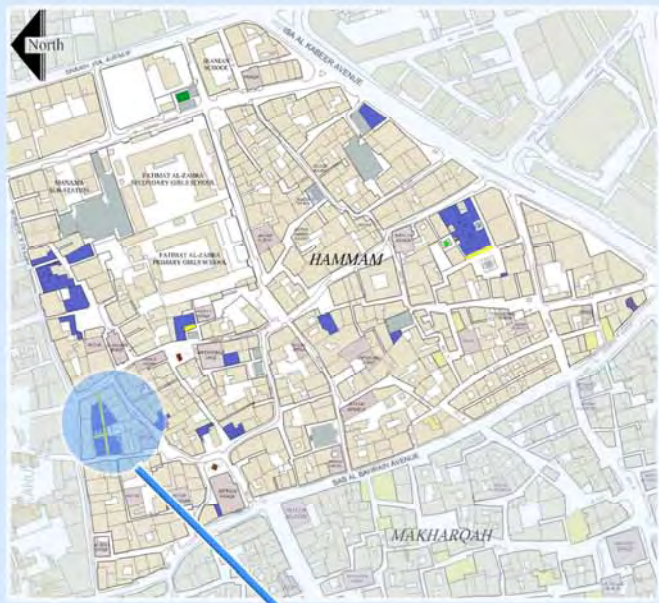
Infill, proposed apartment



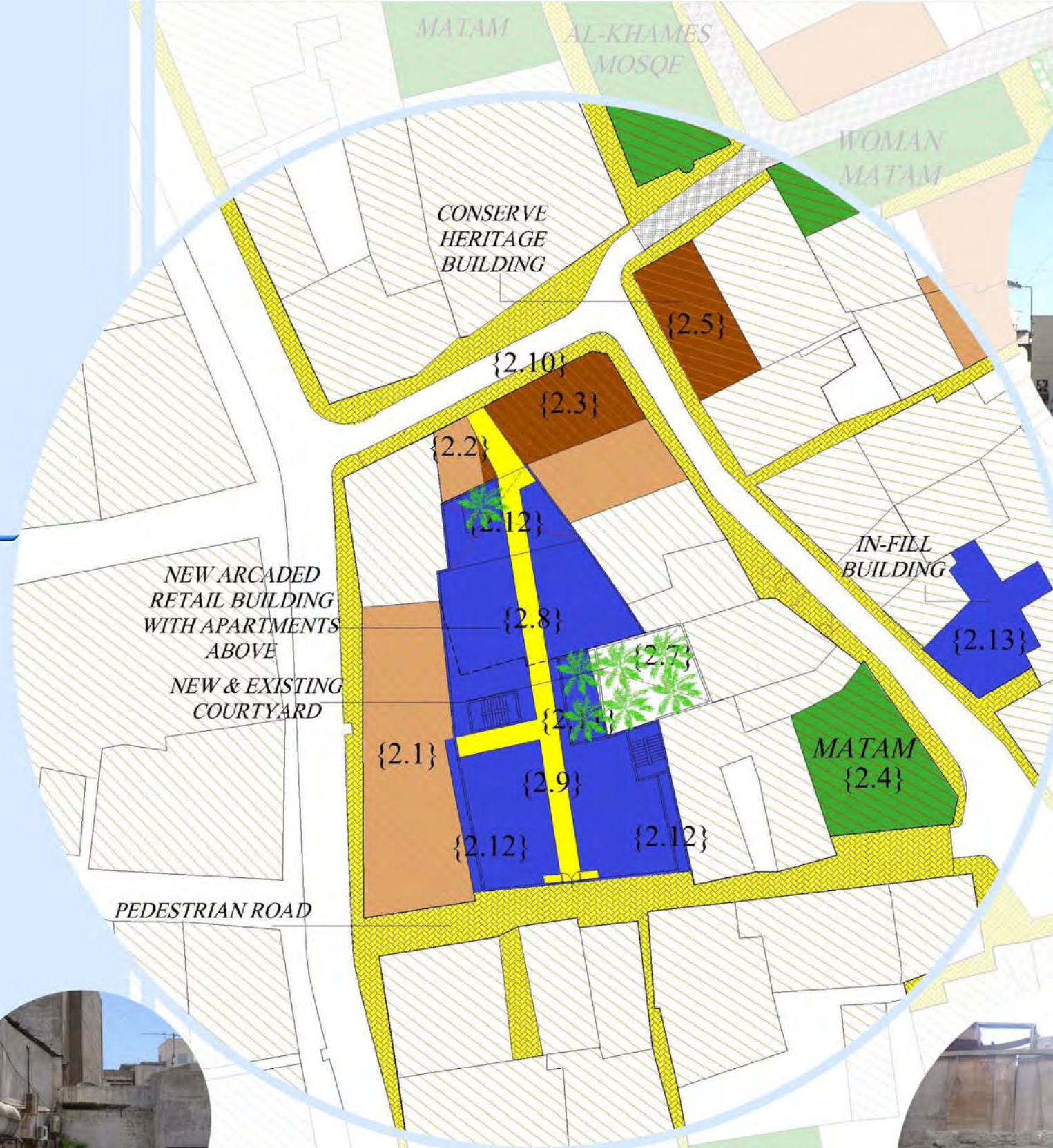
First floor plan Scale 1/500










Basement plan Scale 1/500



Site 2.0 Urban Design proposal



-  INFILL MASS PROPOSAL
-  HISTORICAL BUILDINGS TO BE PRESERVED
-  HERITAGE BUILDINGS TO BE RESTORED
-  ARCADE
-  CAR PARKING
-  PEDESTRIAN
-  RELIGIOUS LOCATIONS

KHWA
MOSQ

Site 3.0. Qassab Matem / Khwaia Mosque Area

This is a key area on the religious processional route. There is an existing urban room, {3.1} created between the buildings, the matam and a temporary ad-hoc timber framed canvas roof.

There is a huge urban design potential to create a more permanent roof here, raised partially to enable the full view of the matam façade to be seen, now partially hidden above the canvas. The truncated triangular shape of the space walls lends itself to an intersecting set of roof shapes, {3.2}. Sketches of a possible design has been provided. This is for a more permanent, cleanable roof based on tensile cable, whose web-like triangular pattern relates architecturally to the adjoining facades.

Given that through traffic and parking is to be eliminated from this space, (apart from deliveries) a matching tiled pavements should be designed, {3.3}. The existing roughly-made moveable benches and counters should be re-made in more civic-grade materials. Support structures for temporary decorations and lighting should be re-designed.

All surrounding facades should be restored and de-cluttered, including removal of excessive commercial signage. There is a matam kitchen in a temporary structure on public land between the mosque and the retail building. It is proposed to make this permanent with quality materials and designs, moreover, to get rid of the dilapidated plywood "temporary" infill.

The space continues eastwards around to the back of the mosque where two overlapping large open spaces exist. One is an established paved area, to the rear of the mosque {3.4}. The other is a generally vacant area, but which is occupied at centre by an electrical substation building {3.5}. Combined, this pair of spaces could become the open space public square counterpart to the outdoor room.

As a long-term strategy, the substation {3.6}, could be relocated as part of an overall modernisation of the electrical system – accommodated in a compact metal cabinet, kept inconspicuously to a corner. Or ideally, sunken in a sub-surface pit, the whole pavement then refinished to link with the rest of the public square.

Meanwhile it is proposed to partially adjoin the substation with a minimal structure containing a restaurant on two levels. As part of this improvement, the substation facades should be refinished to blend in with the general improved appearance of the proposed upgraded public space. The new building could contain public toilets which also serve the restaurant.

One prominent corner of the square contains a traditional house, with curved façade {3.7}. This property has been recently bought by an owner who intends to upgrade it and live in it with his family. The building contains numerous faults, however, provides many opportunities.

Discussions have started between the study team and building owner. This opportunity is likely to develop into a pilot project for future heritage building sites in the study area.

The likely use of the building is mixed, with a commercial component on the ground floor and residential above. An existing second floor addition is unsympathetic in style as well as materials to the original. It is the superimposition on the original structure which is causing extensive structural cracking and wall-displacement.

As this second floor space will be needed by the new owner and some extensive renovations and repairs will be required, a design is to be prepared for the reconstruction of the upper floor as well as the building generally. Another proposed use for this building is to have a restaurant on two levels with a small flat on the top floor. This would be subject to the interest of the new owner being obtained.

On the opposite corner, a "vacant" site, {3.8} (partially occupied by a metal shed) is to be developed by a three-storey mixed residential/commercial building with a traditionally-designed façade, according to the guidelines, but also paying respect to the curved-façade heritage building opposite.

Note that this street between these buildings, down to Road 132 is dominated by shop fronts, {3.9}.

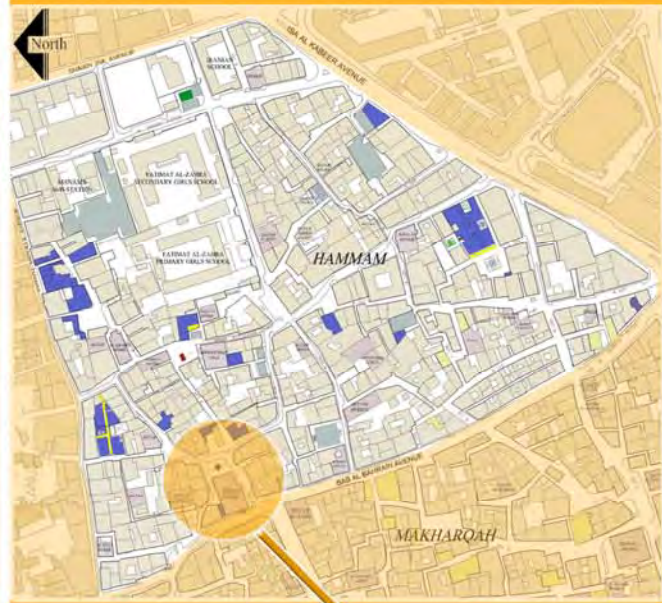
Indeed, while this precinct is dominated by the matam and mosque, its main other uncton at street level is expressed by numerous shop fronts containing retail and workshops, spreading along all these backstreets and Bab Al Bahrain Avenue {3.10}.



SITE 3.0.Qassab Matem/ Khwaja Mosque

SECTION A-A

1 / 200



Site 3.0 Urban Design proposal

Again, the building between the matam and the mosque containing the crude balconies needs to be reconstructed or redeveloped in a satisfactory way to form a proper wall to the civic square, as in its small way, does the crude metal porch, disfiguring the rear of the mosque {3.12}. Designs have been prepared for this and adjacent shop-houses.



- INFILL MASS PROPOSAL
- HISTORICAL BUILDINGS TO BE PRESERVED
- HERITAGE BUILDINGS TO BE RESTORED
- ARCADE
- CAR PARKING
- PEDESTRIAN
- RELIGIOUS LOCATIONS



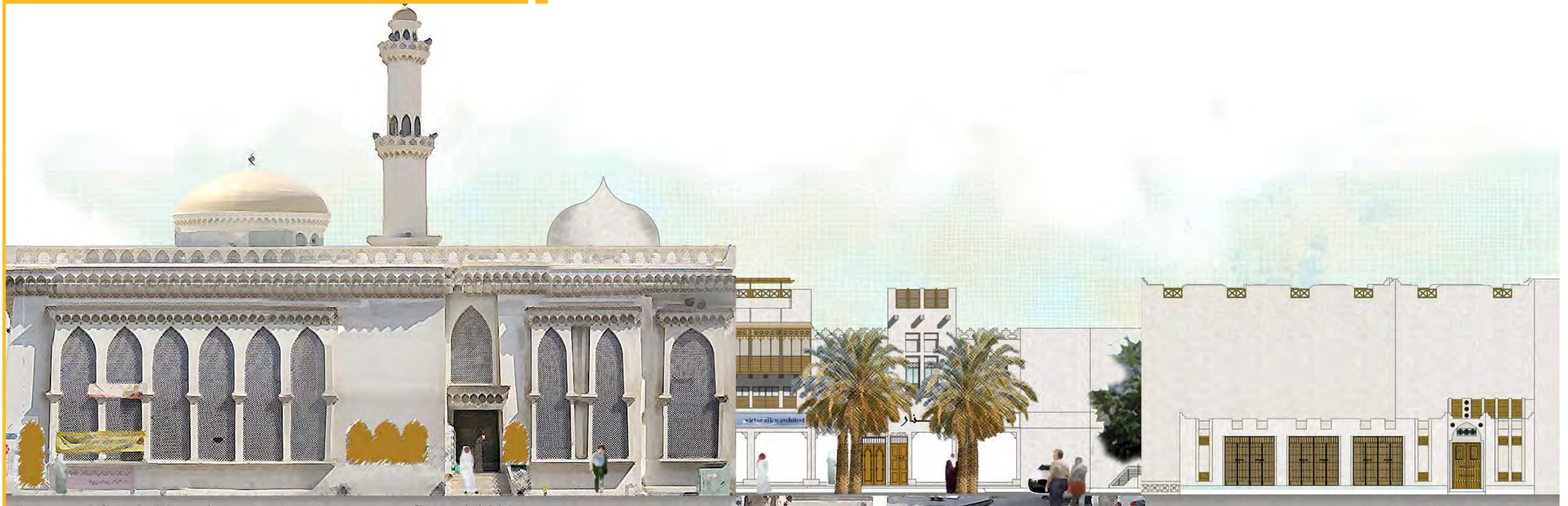
Existing rectified East Elevation ----- Scale 1 / 200



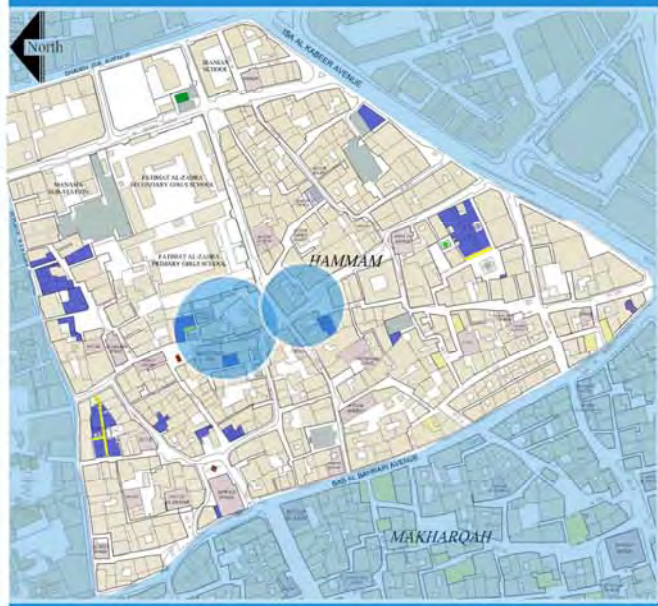
Proposed East Elevation ----- Scale 1 / 200



Existing rectified South Elevation ----- Scale 1 / 200



Proposed South Elevation ----- Scale 1 / 200



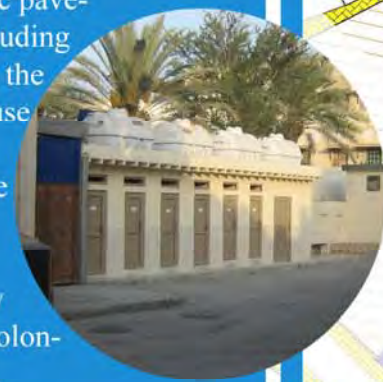
Site 4.0. Hajji Abas Matam Square

This area is known for its famous heritage matam, {4.1} although the main project intervention is with the restoration and adaptive re-use of Bayt Sayed Said, partially ruined, however a substantial traditional house and courtyard, {4.2}. Bayt Sayed Said is to be adaptively re-used as: a house museum, {4.3}, district library, exhibition hall and service block. The building has many characteristic features of traditional construction displayed and not covered by later "improvements". There is extensive construction using substantial palm-trunks, as well as mangrove.

The large courtyard, is to be developed to show artifacts and activities from the early days of the building, but kept largely clear to enable occasional exhibitions and events {4.4}. The existing concrete block courtyard wall, {4.5} is to be demolished and rebuilt with stone, as original, reinstating large gates to re-connect its relationship with the yard beyond, belonging to Al Baqcha Mosque.

The Mosque itself is to be rebuilt, {4.5} and the public pavement around is to be upgraded to a high standard, including the existing recent kerbing and formal parking area in the square between Bayt Sayed Said and the heritage house opposite, {4.6}. The existing line of public toilets, utilitarian at best, is to be screened behind a new stone wall matching the courtyard wall, {4.7}.

The adjacent vacant lot is to be developed with a new building – "Motawa's Quran Institute", {4.8} with a colonnaded porch and external parking for four cars, {4.9}. Attached to the porch is to be a shop, (preferably a cold store, {4.10}). All of this is to become a community facility. Ammar Bin Yassar is to become a shared zone as it is too narrow to accommodate a separate traffic lane and the minimum separate pedestrian walkways. This road also has a canvas roof in front of the matam, which has an unsympathetic relationship with Bayt Sayed Said and should be redesigned, {4.11}.



On the other side of the lane on vacant land, a new public space is proposed, consisting of landscaped terrace and a formalized activity area – suggested permanent table tennis facility and seating area, {4.11}. Behind this on vacant land, an infill house of traditional design is proposed, {4.12}. There is a smaller alley behind the historic matam with a vacant site suitable for a three storey infill house, {4.13}.

Nearby, on Road 132 and straddling the alley, two vacant sites currently containing parking and metal sheds, are to be rationalized for seven formal parking places and formal landscaped areas adjacent, {4.14}.

There are several heritage houses on the fringes of this precinct, which are to also receive conservation attention along with the major heritage houses, {4.15}.

This whole precinct as described, will be an elegant combination of restored old and sympathetic new buildings with complimentary landscaping and pavements.

Site 5.0. Hammam Square

This area is the centre of the Hammam district. It lies between Bayt Khalaf square and Hajji Abbas Matem Square. It contains two major heritage buildings, {5.1} with balcony & opposite on Ammar Bin Yasser Road {5.2}. There are smaller heritage buildings, {5.3} fronting the lane and a vacant site proposed as an infill residential project, {5.4}.

Ammar Bin Yassar Avenue and a lane diverge here as a "Y" junction. Between them, a landscaped triangular square" is formed, {5.5}.

This is opposite an existing space containing some trees, which is to be augmented and improved, {5.6}

Space is also made for eight parallel car parking spaces, {5.6}.

The lane is narrow, therefore traffic-free, {5.7}. The square also has a vacant site which should have an infill house, carefully designed in sympathy with an otherwise unbroken row of heritage houses on this lane.



Site 6.0. Bayt Khalaf Square

This area, which leads directly from Hammam Square is dominated by Bayt Khalaf, a substantial courtyard house undergoing renovation, {6.1}. The front elevation is dominated by a spectacular overhanging balcony.

This house has been subject to subdivision by inheritance and is divided into four plots.

The rear part of the building has been substantially rebuilt, {6.2} which has eliminated a substantial overhanging balcony, as on the front.

Across Road 109, which is to be made a shared zone, is another substantial heritage house, {6.3}, also belonging to the Khalaf family. Although somewhat dilapidated, it is very intact, with balconies on two elevations and most external timber doors, windows etc, are all intact, if in need of restoration.

Nearby, is a Mosque, completing the group, {6.4}.

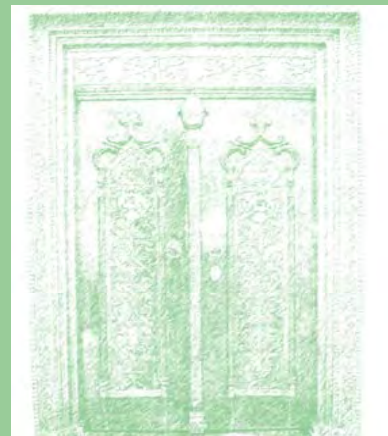
There is also a heritage building, {6.5} opposite Bayt Khalaf, on Ammar Bin Yasser Avenue, which has had its end bay demolished and replaced by a concrete block house, {6.6}, still under construction, within the same envelope. This is an extraordinary intrusion in what was otherwise, a substantially intact heritage neighbourhood.

It is hoped that conservation laws may prevent further intrusions into this and similar Manama heritage precincts.

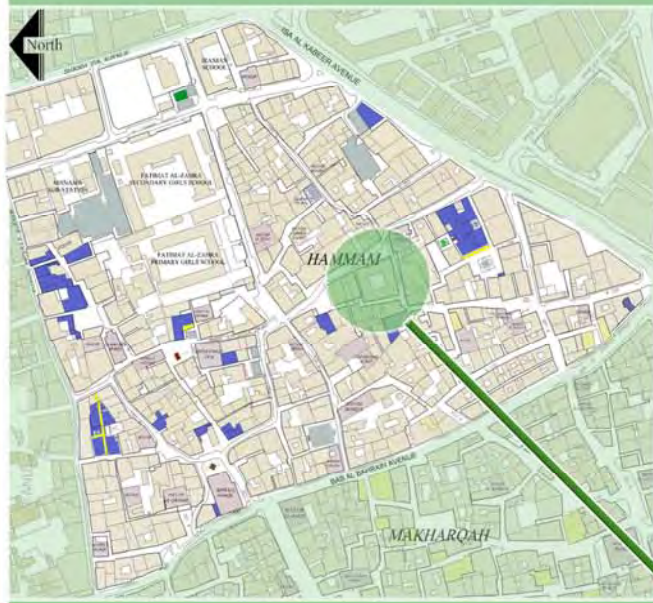
In the lane behind Bayt Khalaf, there is a row of heritage houses, {6.7}, as also mentioned in 5.0. There are others slightly further afield, {6.8}. The majority of buildings in this precinct are heritage and this should be recognized in all future planning in this precinct.

The wide section of road in front of Bayt Khalaf is to be paved and parking excluded, except for parallel parking.

Diagonally opposite the second Kalaf house, is a vacant site, (presumably in this context, a former heritage house). It is to be converted into a parking area for eight cars, {6.9}. A large triangular corner is to contain visitors centre and amenities, {6.10}. Enough surplus land is available for pedestrian paving and landscape to indicate that this is "more" than just another carpark. From here, it is intended that guided tours would be conducted of the heritage buildings of Hammam district.

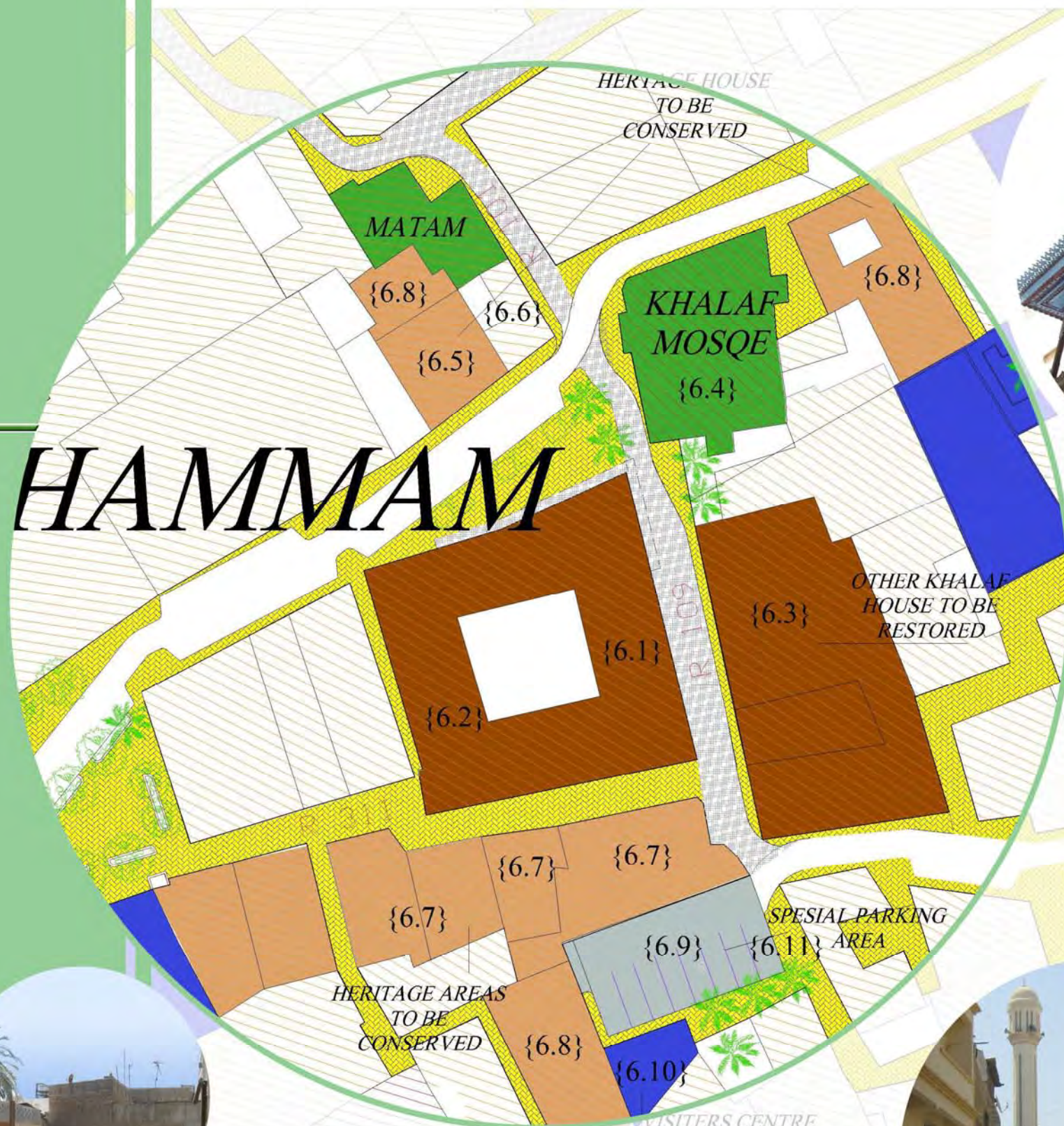


Rectified Photogrammetric. East Elevation of Bayt Khalaf Scale 1 / 200



Site 6.0 Urban Design proposal

HAMMAM



-  INFILL MASS PROPOSAL
-  HISTORICAL BUILDINGS TO BE PRESERVED
-  HERITAGE BUILDINGS TO BE RESTORED
-  ARCADE
-  PEDESTRIAN
-  CAR PARKING
-  RELIGIOUS LOCATIONS

Site 7.0. Second Vacant Site Precinct

Off Ammar bin Yassar Avenue, a very large vacant site exist which has served as an informal car park for some decades.

The site is at an interface between mixed commercial / residential properties on one side, (rear of R105 buildings) and largely residential areas on the other.

The site is seen to offer an opportunity to create a large number of car spaces, but the exclusive use of this valuable site for car parking is considered a waste.

The land is divided into three areas, two privately owned and one at the rear is government property - 1,000, 500 & 300 sq m respectively.

The best location for parking is proposed to be underground and allowing for access stairs and ramps, would provide 37 spaces and another 12 spaces in stack configuration, {7.1}.

The basement would also provide 214 sqm of cellar space for the commercial tenancies above, {7.2}.

The ground level would accommodate approximately 380 sq m of commercial/retail space, {7.3}, the car park ramps, {7.4} stairs from the car park, {7.5}, stairs to the upper levels, {7.6} and a colonnade fronting a new public square, {7.7}.

The square, {7.8} would be bounded by significant trees planted in the ground adjacent to the car park excavation.

The square is linked to surrounding streets by existing alleys to the North, South and East. An existing wide alley separates the proposed building from existing buildings to the North, {7.9}. Some of these buildings open out to the alley, including the fronts of several houses. The elevation of the proposed development should provide an active frontage to this alley, such as shop fronts. It is already proposed to have the main building entrance and car park stairway here.

The square, which is well insulated from the sound of surrounding traffic, would have a fountain & pond at the centre of which a vertical element would also serve as a mechanical vent to the car park below, {7.10}.

On the upper two levels, a schematic arrangement for five x 120 sqm apartments, {7.11} per floor (total of 10) is suggested, arranged around a central atrium/courtyard, {7.12} with balcony walk ways to the main stair and fire stairs {7.13}. The sixth & twelfth apartments are smaller, approximately 100 sqm because of an intrusion from the adjacent property, {7.13}.

The apartments are also arranged three wide against each public façade. The middle units are provided with balconies, {7.14} and this suggests, in conjunction with the guidelines, a façade design.

Adjacent, an infill house of three floors is proposed on the "L" shaped site, {7.15}. This area is also connected to Ammar Bin Yassar Avenue by a short alley, {7.16}.

It is suggested that the square leg of this site is to be built containing a landscaped courtyard, {7.17}.

Nevertheless, this secondary vacant site should be treated as a residential infill site containing a single house or a number (approximately 3) of apartments in 3 floors.

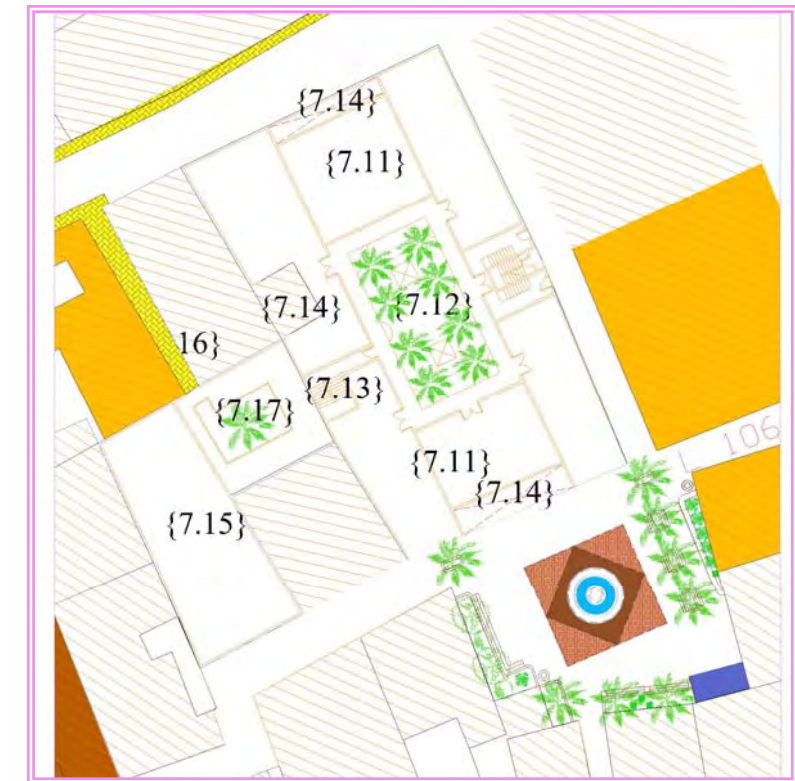
The street elevation to? Lane should have traditional treatment according to the guidelines.

There are also several heritage buildings in this precinct, {7.18}.

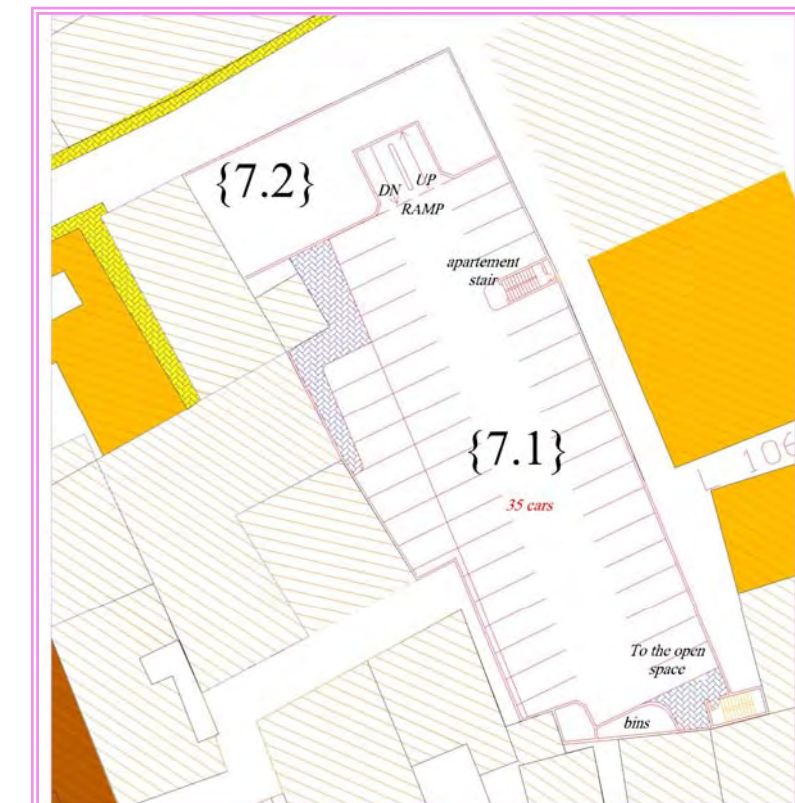


Front Elevation Scale 1/500

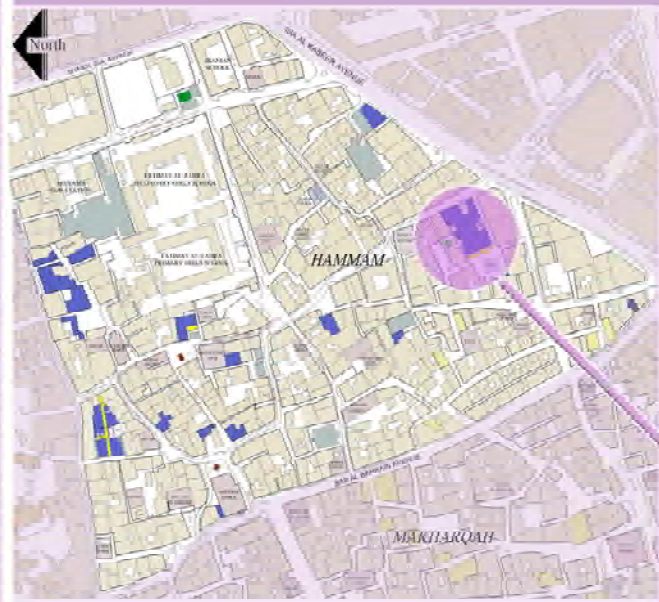
Infill, proposed apartment



First floor plan Scale 1/500



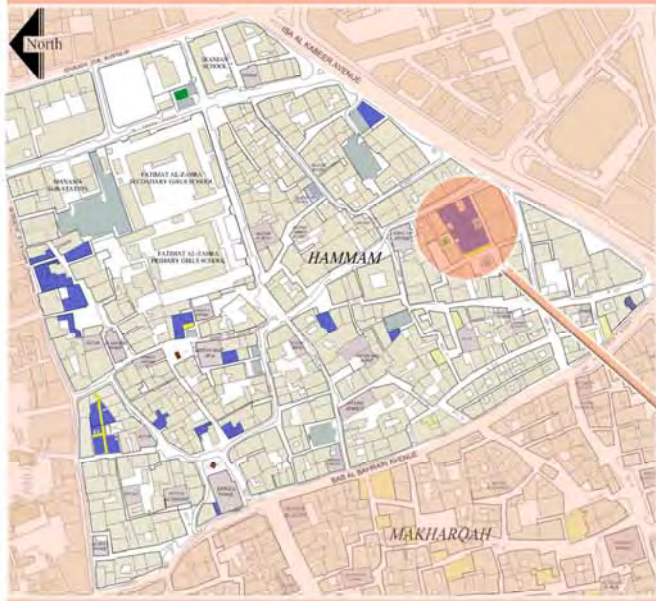
Basement plan Scale 1/500



Site 7.0 Urban Design proposal



- INFILL MASS PROPOSAL
- HISTORICAL BUILDINGS TO BE PRESERVED
- HERITAGE BUILDINGS TO BE RESTORED
- ARCADE
- CAR PARKING
- PEDESTRIAN
- RELIGIOUS LOCATIONS



Site 8.0. Vacant sites on Isa Al Kabeer Avenue

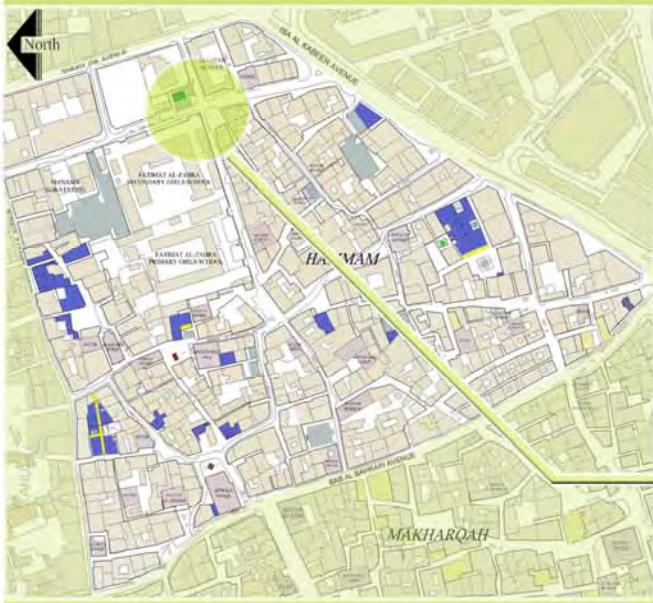
Two sites with corners touching, one of 700 sq.m, presently used as an informal carpark, will accommodate a rational parking area for some 24 cars, {8.1}.

The access is via an alley off Isa Al Kabeer Avenue and then via a new lane at the rear of a proposed development site. There is an amount of space around the edges for a very useful landscape, according to locals who report this site vacant for 50 years and who support the possibility of a landscaped recreation area within this large space, {8.2}.

Access is restricted off Al Kabeer Avenue to a single lane which bends at 90° around the new development site. Because of this, an alternating one-way traffic flow is proposed, controlled by a simple automatic traffic light device, {8.3}.

A multi-storey residential / commercial building containing shops and five undercover parking spaces at ground level, is proposed for the other 400 sq m vacant site fronting Al Kabeer Avenue, {8.4}. A similar development has been recently completed adjacent, {8.5}. In keeping with our urban design objectives, a multi-storey version of a traditional façade should be attempted by the following architectural design team. There are also some heritage buildings in the precinct, to be conserved, {8.6}.





Site 9.0. Old Persian School Square

This square is formed at the intersection of Al Zahara Avenue and Road 124 by a vacant corner site, (north-east corner) and a widened piece of public road, (south-west corner). Opposing on the diagonal, are two school sites. On the south-east, the Persian School sits intact, in a good condition but vacant, {9.1}. On the northeast corner is a vacant wasteland with temporary storage and assorted rubbish along with randomly parked cars. There is also a basketball ring in the centre of the rubbish, unable to be used. Behind this is a substation building with temporary shed beside, {9.2}. It is proposed to create an active recreation space, being an approximate half, or practice, basketball court with mesh fences, rubberized floor with markings and one ring, {9.3}. The court would be surrounded by eight formal car spaces, {9.4}. There is also some space for trees and shrubs to complement the existing and proposed landscaping on the other side of the high wall surrounding the freestanding heritage building beyond, {9.5} this is to be restored and landscaped. On the south-west corner, there is already a formation of the corner of a square, with the building setback, {9.6} and two frontages with retail shops enclosing the space, {9.7}. There are two heritage buildings, {9.8} one fronting this urban space and containing a shop. Pavements and kerbs are to be established as illustrated, creating areas of parallel parking. The paved forecourt created is to be edged with palm trees, {9.9}. Road 101 fronting the Persian School is to be pedestrianised and this treatment is to extend to Isa Al Kabeer Avenue, through the alley and past the mosque, {9.10}.

It would be desirable if the school could be re-opened or a compatible redevelopment of its site would be found of three storeys and of sympathetic traditional design.



Site(s) 10.0. Smaller Vacant Sites Used for Parking

Miscellaneous sites are currently used as car parks.

There is a number of former traditional house-sites where the houses have been demolished to create a local or family parking area.

These spaces are mentioned in previous reports as problematic as having a devastating impact on the continuity of the urban and historic fabric. The potential for major long-term damage can not be underestimated because it simply happens, house-by-house, as these old buildings, already in poor repair are seen as far less valuable than vacant land covered in parked cars surrounded by makeshift boundary fences and the naked rough rendered grey side-walls of houses never intended to be seen in public.

Two examples are shown, in both cases it is proposed to keep the car park function, rationalise it to obtain non-parking space for other uses and to develop the air space above. The third is shown as a car park, but could also be developed with apartments above.

Where these, or any other sites created by demolition and then converted to parking or other open space use, the surrounding walls of buildings and fences are to be plastered, appropriate to the material type, (modern or traditional) and painted an acceptable colour.

Site 10a Parking Area A

This site, corner of Road 101 & lane consists of two low recently-built concrete block walls enclosing a vacant block intended as a car park.

The narrowness of the two streets is such as that the entry gate has been positioned on the corner, allowing a diagonal entry for cars.

A proper car park is set-out allowing for five standard spaces which are 5.5 m away from the wall on the other side of the alley. The rest of the area is proposed as a building entry and a store. A courtyard is possible in the rear corner although may be more useful at first floor level.

On the two upper floors, one apartment on each floor of approximately 120 sq m is proposed.

If the planning rules are followed, these car spaces would be allocated to the apartments and two for lease to others. We propose that a reduced allocation to building residents, around one/unit would allow three to be leased to the neighborhood.



If design rules may be relaxed allowing garages of only 2.5m wide, then 5 lock-up garages are possible. The facades also could also possibly include traditional balconies on the new building and it would follow the guidelines applicable for infill buildings.

Site 10b Parking Area B

The second site, outside the detailed study area and is connected to Site 12.0., is included as an important illustration, corner of Bab Al Bahrain and Road 124. This site was deliberately created by demolishing a 320 sq m site in an important location to create a private parking lot for members of an extended family living nearby.

Applying rational design rules, the site yields 12 car spaces. Because of its trapezoid shape, there are left-over spaces for service areas and an access stair to the proposed two upper levels containing a total of six apartments of 100m² each.

How the parking is allocated to the new apartments or not, versus the existing users parking rights and the proposed appearance of the three storey building is discussed in the previous example.

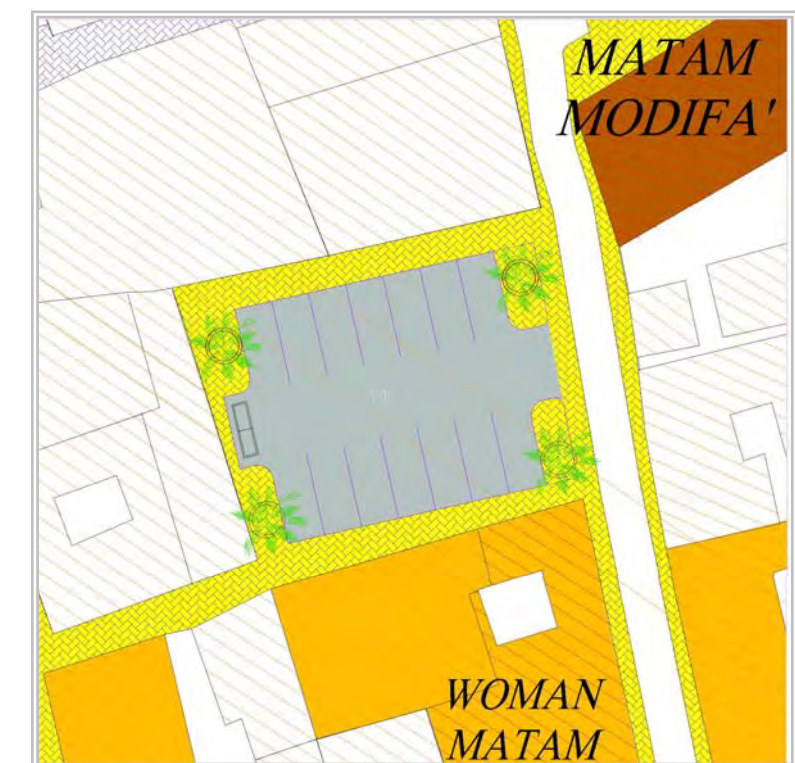
Site 10c Parking Area C

This site, on Road 124 consists of a singly-owned area of 391 sq m, capable of 14 car spaces and landscaped areas on each corner integrated with two existing alleys running on the side boundaries.

The same number of cars could be housed and the airspace developed above with two floors containing 8 x 97 sqm apartments. Architecture would be for Sites 10a & 10 b.



Site 10B ----- Scale 1/500



Site 10C ----- Scale 1/500

13 Additional sites

Site 11 Imam Hussain Avenue

This area was recognized early in the survey process and an obvious solution quickly realised and description written.

When the study area became condensed, Site 11 was excluded from further design and no drawings were done. However, this is an exciting and potentially very influential project which should be pursued at a later stage. It is unlike most of the other sites because it involves a substantial reconstruction initiative over a whole block and would extend another block outside the study area.

Some decades ago, this area was occupied by houses containing religious/political groups generally in opposition to the government. The road was crooked and narrow, it was also difficult and dangerous for police patrols to drive through. In 1982, government decided to eliminate the problem by buying and demolishing houses along its length. This partially-ruined streetscape remains today.

However the street is regularly occupied on frequent occasions by members of the same group as before who now live in the surrounding neighborhood. These regular gatherings are augmented by food and drink stalls and is a significant part of the cultural life of the city.

The existing townscape condition here does not reflect well on the presentation of this area as either a part of a historic district or part of a modern international capital.

A proposal for urban design improvement would include:

The Municipality to investigate the ownership of partially-demolished properties and buy land if it is not already owned since 1982.

Develop 3-4 storey residential/retail blocks containing mezzanine base level with colonnades 2.7 wide, on vacant land and on sites deemed to contain second rate buildings suitable for redevelopment.

Colonnades to incorporate shop fronts, building entrances and stepped seating.

The general structural modulation and architectural details are to be of traditional Manama style. (Refer to design guidelines).

The existing matams are to be integrated in to the new streetscape.

The reason for colonnaded facades is to retain the present ground areas available for public gatherings, open space and managed parking, while reducing the street width to approach its original form, providing shelter, while enabling the creation of additional building floor space on the upper levels. The creation of this additional real estate should help finance the general public improvements.

Interestingly, there is one, (presumably post-1982) colonnaded building on the street pointing the way. However, the design criteria for colonnaded buildings need to be upgraded from this example.

While colonnaded buildings are not generally found in Manama, they do exist in other traditional Islamic areas and the local style could be adapted utilizing the design guidelines.



Site 12 Road 116 Precinct



This site was identified as having great potential but was excluded when the detailed project area was condensed. It should become subject to design at the next stage, along with Site 11.

Note however that Site 10B, which is actually part of Site 12, has been described and drawn in this report.

This area is included because it serves an example to community, religious and business leaders. This area has already been subject to urban design intervention by the Municipality.

Pedestrian walkway and lanes have been created around the intersection roads 116 and 105 Formal parking at 90 has been provided in front of Matem Al Samakeen, and temporary/permanent sun shade are also provided at the matem and adjacent shops.

It is understood that the leaders at Manama Mosque have been influential in assisting these positive changes to occur. Major paving and landscape also surrounds the mosque.

Those who view the present urban design proposal, should visit "Site 12" and see that it is all quite possible and can be done incrementally, or all at once, as funding becomes available.



14 Conclusions & Recommendations

The "Urban Design Action Plans" outlined above began their conceptual existence as small circles around selected road junction sites. As they were developed, many expanded until they overlapped adjacent sites.

What is now presented is a parallel series of virtually continuous urban improvement projects stretching from Shaikh Isa to Bab Al Bahrain Avenues and from Shaikh Abdulla to Isa Al Kabeer Avenues, covering approximately 50% of Block 301.

In doing so, there are more written descriptions, maps and plans instead of pictorial representations in this report than might be expected. Consequently, a greater area of the city has been covered in more detail.

Following on, because much of what is in the proposals already exists and what new work is generally low key in scale, a future campaign involving visual artists might readily add the coloured perspectives to fill-out the scenario presented here.

There is, however, a number of evocative elevation images, based on photogrammetric data from existing streetscapes, showing how some proposals fit into the old city. This technique should be continued, to document more of the city on an as-needs basis, while the project areas are further refined and developed.

The section on heritage is relatively brief, considering the huge stock of heritage buildings in the study area. This is because:

1. Most issues of heritage have been covered in previous reports.
2. A selection of the more important and strategic buildings was surveyed.
3. The study area has a large number of heritage buildings in all states of repair. However, it is concluded that there is no more debate needed, all remaining stock must be conserved - and in the short term - at least protected from demolition while the necessary documentation is carried out.

It is recommended that a future project be undertaken to do a complete and detailed heritage study of the area,

including documentation of the state of repair of all items.

All these buildings must eventually be entered into a program at a future stage, for examination, classification and recommendations for conservation policy and planning.

A system of education about correct methods and materials must be established and applied.

A recommendation is made that serious consideration be given to establishing training for traditional building crafts, for people employed on Manama's restoration.

Recognising that the project must go forward, some suggestions about training craftsmen are offered in anticipation of early action towards this goal, (see Appendix).

Recognising that in the event of Global Warming, Bahrain would be particularly vulnerable to even small rises in sea level, the total dependence on motor vehicles for transport seems short-sighted.

As the country moves boldly forward with ever more comprehensive development programs, it is suggested that the nation looks forward to investing in public transport infrastructure, namely light rail. There is plenty of evidence that this medium is well suited to the population size and distribution. It could help save the environment and save the old city as well.

It is strongly recommended that a comprehensive study be made into establishing a comprehensive public transport system before yet more capital is invested in road-based transport networks.

In much of urban Bahrain and in old Manama in particular, the design of public roads pays minimal regard to pedestrians. This urban design study recommends a systematic and prioritized redesign of the public realm for emphasis.

The urban design proposals described herein and the encouragement to conserve Manama's remaining heritage building stock are two sides of the same coin in a strategy to revitalize this part of the old city and then the remaining old city in due course.

STUDY GROUP

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ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to the honorable Minister **H.E Ali bin Saleh Al Saleh**, the Undersecretary **Dr. Jumma Al-Khaabi** and the Assistant Undersecretary **Mr. Mohammed Noor Al-Sheik** for giving me the opportunity to direct this project :

Capacity Building for Enhancement of Urban Governance: Urban Design Projects for Traditional Areas in Bahrain.

Furthermore, for their continuous support and guidance in achieving successful completion of this project.

My gratitude is also extended to all the staff at United Nations Development Program in Bahrain, particularly **Mr. Ali Salman**, Program Analyst. I also wish to express my thanks to the consultants, who came all the way to Bahrain to participate in the project and played a vital role in bringing this project to its successful outcome. In conclusion, I owe special thanks to my staff at the Research and Studies Section, who helped and supported me to undertake this project with indefatigable team spirit. They are too many to be acknowledged individually here.

Falah Al-Kubaisy (Ph.D.)
Project Director;
R& D Advisor MoMAA



Appendices

- h. Manama History Background
- i. History – chronology
- j. Training of heritage Building Trades
- k. Heritage buildings inventory
- l. Public transport concept
- m. Photogrammetry Report

Training of Traditional Building Trades

While outside the scope of the present study, it is recommended that establishment of traditional skills training be prioritized. While this item may be regarded as “down the track”, the practical reality is that it takes a very long time to move all the bureaucratic obstacles and to devise, consult, debate, rewrite and eventually approve an appropriate curriculum which will receive accreditation with education authorities and credibility with the construction industry. It takes further work and persistence to then marry this curriculum into actual training programs based on real building conservation sites.

Referring to the Restoration Code and being able to see ‘ruins’ where the underlying fabric becomes exposed to view. The following preliminary list of building craft skills is compiled:

Wall masonry

- * Rubble masonry using "sea stone"
- * Dressed masonry for columns
- * Damp proof coursing
- * Masonry repairs
- * Demolition of mass, reinforced concrete and block work
- * Use of palm, mangrove, rope-wrapped reinforcement, lintels etc.

Floor and roof timbering

- * Traditional wood preservation and treatment.

Rush/palm leaf mat layering/weaving

Screeding and water proof plastering (roof)

Lime wall plastering

- * Plaster cleaning
- * Removal of cement-based plaster

Carved gypsum panels

Joinery

- * Wooden screens/shutters
- * Projecting balconies
- * Solid timber paneling
- * External windows
- * Doors
- * Applied wall decoration

Metalwork

- * Door/window accessories

Glazing

- * Coloured/stained leadlight

Roof plumbing (e.g. mizram)

Installation of modern services into heritage fabric.

Focus Group/Steering Committee

At the earliest possible opportunity, a focus group is to be conducted with all available traditional tradesmen and builders in order to verify and refine this list prior to developing each topic into sub-sections in preparation for curriculum development.

Students

The ideal student is an already qualified tradesman, (mason, carpenter, plasterer etc). These should be 75% of student numbers with 25% school-leavers.

Qualification

A qualification, recognized by the Government, building industry, and technical institutions must be offered.

For example:

"Special-Class Tradesman, (Plasterer) Heritage."

Main type of student (75%) to be already qualified plasterer, mason. Carpenter & etc. courses to be “Advanced” “Heritage”.

Education programs may be added to the fundamental trades curriculum:

- * Heritage architectural education for tradesmen
- * Heritage drawing and documentation for trades and architects
- * Trade teacher training
- * Traditional Bahraini architecture and building for public education



Archaeological salvage- a systematic system of salvage and retrieval of all traditional materials from demolitions, (where unavoidable) and from previous dumps.

Where buildings having little remnant fabric would compromise the integrity of possible new (sympathetically designed) buildings, then demolition should be permitted but all materials should be conserved and stockpiled for use in reconstructing missing elements on less degraded existing historic buildings.

Craftsman census- a systematic survey and compilation of a directory of traditional trades people. In parallel, a system of skills testing and "recognition of prior learning" for those seeking accreditation and/or admission to courses.

Quality assurance program- to be established on the evolving knowledge base of the education and training programs.

Public advice centre- for building owners contemplating renovations/repairs.

A **conservation mentality** must be fostered and extended to include building maintenance.



Capacity-Building for Enhancement Of Urban Governance: Stage 2



URBAN DESIGN PROJECTS FOR TRADITIONAL AREAS IN BAHRAIN

جرد المباني التراثية في البحرين (المنامة مجمع 301)

INVENTORY OF HERITAGE BUILDINGS IN BAHRAIN (MANAMA block 301)

Capacity-Building for Enhancement Of Urban Governance: Stage 2
URBAN DESIGN PROJECTS FOR TRADITIONAL AREAS IN BAHRAIN
جرد المباني التراثية في البحرين (المنامة مجمع 301)
INVENTORY OF HERITAGE BUILDINGS IN BAHRAIN (MANAMA block 301)

رقم المبنى
Building number

تاريخ البناء
Date of building

حقيقي
Factual

تقريبي
Estimated

اسم المسجل
Name of recorder

QAMAR

Capacity-Building for Enhancement Of Urban Governance: Stage 2
URBAN DESIGN PROJECTS FOR TRADITIONAL AREAS IN BAHRAIN
جرد المباني التراثية في البحرين (المنامة مجمع 301)
INVENTORY OF HERITAGE BUILDINGS IN BAHRAIN (MANAMA block 301)

Neighbourhood Mukhargah الشارح Street 116 رقم المبنى Building number 938 اسم المبنى الأصلي Original name of building اسم المبنى الحالي Present name of building اسم المالك Owner's name سيد حسن شرف اسم الساكن Occupant's name علي عبد الوهاب تاريخ البناء Date of building حقيقي Factual تقريبي Estimated اسم المسجل Name of recorder QAMAR

Poor	<input checked="" type="checkbox"/>	ردية	Ruin	Fair	<input type="checkbox"/>	متوسطة	Partially ruined	Good	<input type="checkbox"/>	جيدة
	<input type="checkbox"/>	خرية			<input type="checkbox"/>				<input type="checkbox"/>	مهدمة جزئياً

الأهمية التاريخية

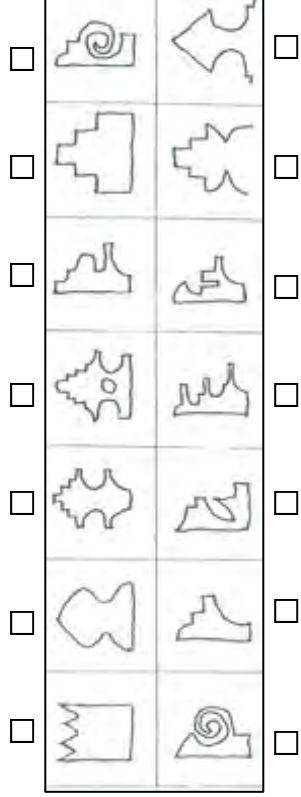
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Name of builder	اسم المصمم
اسم البناء	Name of Designer



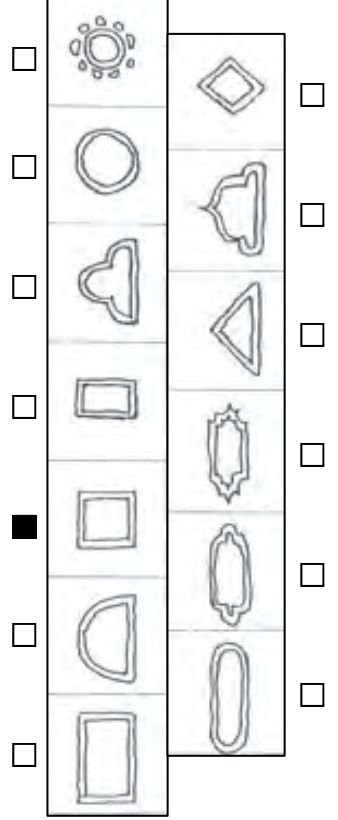
Parapets (Select type used)

ستارة السطح (الطراز المستعمل)



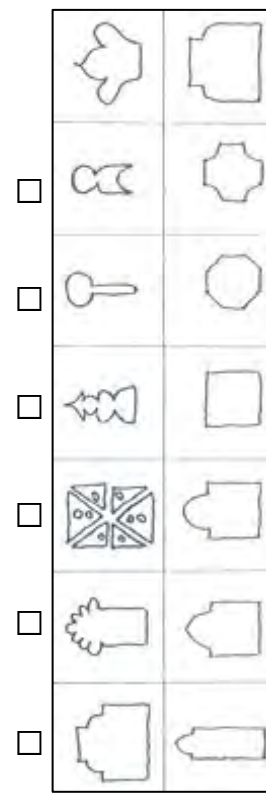
Incised niches (type used)

الكوى المزخرفة (الطراز المستعمل)



Plain Niches (type used)

الكوى الغير مزخرفة (الطراز المستعمل)



Capacity-Building for Enhancement Of Urban Governance: Stage 2
URBAN DESIGN PROJECTS FOR TRADITIONAL AREAS IN BAHRAIN
جرد المباني التراثية في البحرين (المنامة مجمع 301)
INVENTORY OF HERITAGE BUILDINGS IN BAHRAIN (MANAMA block 301)

Building Identity		هوية المبنى	
Neighbourhood Mukharqah	الشارع Street 118	رقم المبنى Building number 1007	اسم المبنى الأصلي Original name of building
	الشارع Street 118	رقم المبنى Building number 1007	اسم المبنى الحالي Present name of building
		اسم المالك Owner's name	اسم الساكن Occupant's name
		تاريخ البناء Date of building	تقريبي Estimated
		حقيقي Factual	اسم المسجل Name of recorder QAMAR

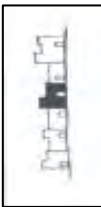
Poor رديئة	Fair متوسطة	Good جيدة
Ruin خرابة	Partially ruined جزئياً مهتمة	

الأهمية التاريخية	
على الصعيد العالمي International	على الصعيد القطري National
<input type="checkbox"/>	<input type="checkbox"/>
Specify	
إشرح	

الملكية	
وقف Waqf	ملك خاص Private
<input type="checkbox"/>	<input type="checkbox"/>
عامة Public	

الإستعمال الثانوي	الإستعمال الأساسي
	Residence

Name of builder	اسم المصمم
اسم البناء	

Environment relationship	
الموضع	
Isolated منعزل	Attached ملاصق
<input type="checkbox"/>	<input type="checkbox"/>
Detached مستقل	

Building Identity

الشارع Street 124
رقم المبنى Building number
القريه Neighbourhood Mukharqah

اسم المبنى الحالي Present name of building
اسم المالك Owner's name
اسم الساكن Occupant's name

هوية المبنى

تاريخ البناء Date of building
حقيقي Factual
تقريبي Estimated
اسم المسجل Name of recorder
Qamar

Condition of Building

حالة المبنى
Poor رديئة Fair منوسطة Good جيدة
Ruin خربة Partially ruined جزئيا مدممة

Historical significance

الأهمية التاريخية
على الصعيد العالمي International على الصعيد القطري National Local محلي

Specify

إشراح

Ownership

وقف Waqf ملك خاص Private عامة Public

Secondary use

الإستعمال الثانوي Maatam

Name of builder

الإستعمال الأساسي Maatam

Conservation work

أعمال الترميم
In progress جارية لا يوجد None
Complete تمت طمئة Proposed مقترحة
Minor طفيفة Major أساسية

Environment relationship

الموقع
Isolated منعزل Attached ملاصق
Detached مستقل

Building Description

عدد الطوابق No of floors
1 2 3

عدد المداخل No of entrances
3 مسقف Covered مفتوح Open

عدد الأرواش No of courtyards
مربع Square مستطيل Oblong

عدد اللوانات No of liwans
السطح Roof الطابق الأول First floor الطابق الأرضي Ground floor

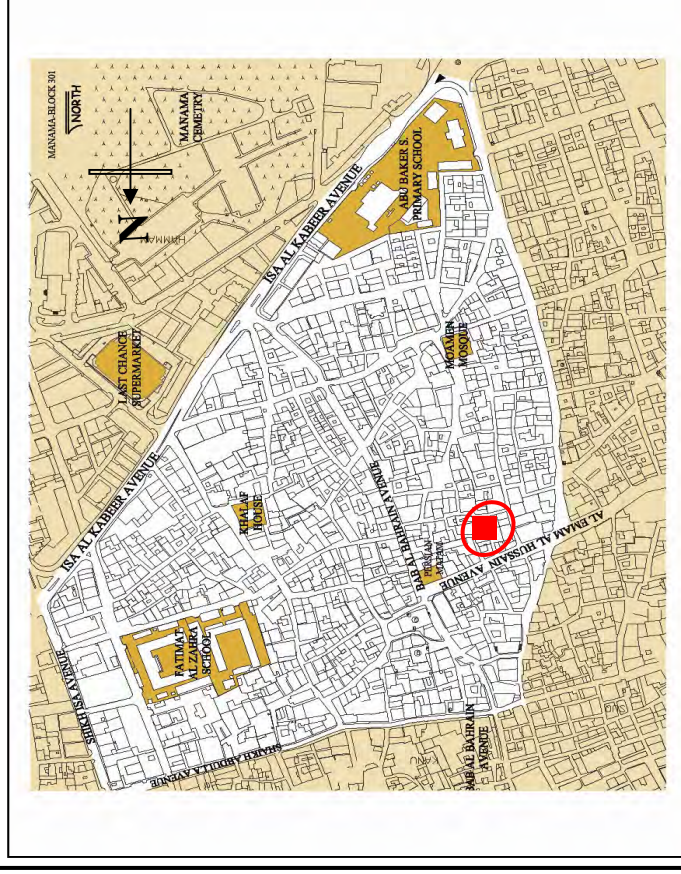
عدد السلالم No of staircases
داخلية Internal خارجية مسقفة External covered خارجية مفتوحة External open

عدد الحجرات No of rooms
حجرات سكنية Other حجرات غير سكنية Ground floor الطابق الأرضي First floor الطابق الأول Roof السطح

درجات النوافذ Window shutters
عدد الدرجات الخشبية No. wooden shutter لا يوجد None
عدد الدرجات الحديدية No. iron shutters

نوافذ ذات زجاج ملون Stained glass fanlights
عدد النوافذ الحديدية No. iron railings لا يوجد None
عدد النوافذ الخشبية No. wooden railings

درابزينات الشرفات Balcony railings
عدد الدرابزينات الخشبية No of iron railing لا يوجد None
عدد الدرابزينات الحديدية No of wooden railing



Plan of Location


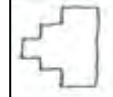
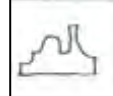

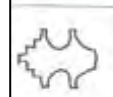
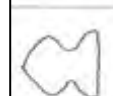
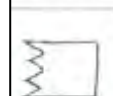
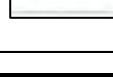
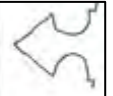

مخططات جبسية مزخرفة
Decorative plaster panels
عدد المسطحات المنحوتة No of carved panels
السطح Roof الطابق الأول First floor الطابق الأرضي Ground floor
عدد المسطحات المخزومة No of perforated panels
السطح Roof الطابق الأول First floor الطابق الأرضي Ground floor

الطيطان (الطراز المستعمل)
Arches (type used)










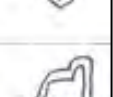


Type of Building	رقم المبنى No. of Building
House	05
	نوع المبنى مسكن


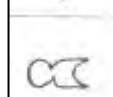
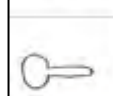



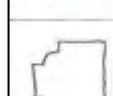
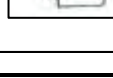

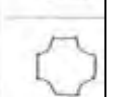
Parapets (Select type used)
ستارة السطح (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
									
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



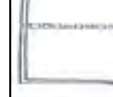




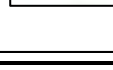


Incised niches (type used)
الكوى المزخرفة (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
										
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Plain Niches (type used)
الكوى الغير مزخرفة (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
									
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Main entrance door (design most similar)
الباب الخارجي (الشكل المشابه لباب المبنى)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
									
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Threats to building
المخاطر التي تواجه البناء

Horizontal	<input type="checkbox"/>	شروح أفقية	<input type="checkbox"/>	Rising damp	<input type="checkbox"/>	رطوبة صاعدة	<input type="checkbox"/>
Vertical	<input type="checkbox"/>	شروح عمودية	<input type="checkbox"/>	Leaking roof	<input type="checkbox"/>	رطوبة متسربة من السطح	<input type="checkbox"/>
Diagonal	<input type="checkbox"/>	شروح مائلة	<input type="checkbox"/>	Damp through walls	<input type="checkbox"/>	رطوبة متسربة عبر الجدار	<input type="checkbox"/>
Fungus	<input type="checkbox"/>	فطريات	<input type="checkbox"/>	Termites	<input type="checkbox"/>	أرضه	<input type="checkbox"/>
Others	<input type="checkbox"/>	أخرى	<input type="checkbox"/>	Vegetation	<input type="checkbox"/>	نباتات	<input type="checkbox"/>

Documentation
الوثائق المتوفرة

مستندات أخرى Other records	<input type="checkbox"/>	مطبوعات Publications	<input type="checkbox"/>	صور قديمة Old photographs	<input type="checkbox"/>	خرائط Drawings	<input type="checkbox"/>
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Notes & comments
ملاحظات و تعليقات

It's a big house with beautiful heritage wooden balcony, it has a square courtyard and liwan at the ground floor as well as the first floor, also there are number of wooden shutters and a beautiful heritage wooden entrance.

The rear half of the building has been rebuilt, deleting the balcony. and the upper floor has been modified.



المصادر
References

Building Identity

الشارع Street	رقم المبنى Building number	اسم المبنى الأصلي Original name of building	اسم المالك Owner's name	اسم الساكن Occupant's name
109	432		Haji Ahmed Khalaf	
القرية Neighbourhood	تاريخ البناء Date of building	حقيقي Factual	تقريبي Estimated	اسم المسجل Name of recorder
Hamam				Qamar

هوية المبنى

Condition of Building

حالة المبنى

Poor رديئة Fair منسوخة Good جيدة

Mehmed جزئياً مهتمة Partially ruined Ruined مهتمة

الأهمية التاريخية

على الصعيد العالمي International

على الصعيد القطري National

على الصعيد المحلي Local

إشراج

Specify

الملكية

ملك خاص Private

عامة Public

الإستعمال الثانوي

الإستعمال الأساسي

Residence

اسم المصمم

اسم المصمم

الإستعمال الثانوي

الإستعمال الأساسي

Residence

اسم المصمم

اسم المصمم

اسم المصمم

اسم المصمم

أعمال الترميم

In progress جارية None لا يوجد

Complete تمت Proposed مقترحة

Minor طفيفة Major أساسية

الموقع

منعزل Isolated

مستقل Detached

ملاصق Attached

Building Description

عدد الطوابق

عدد الطوابق

1 2 3

عدد المدخلات

عدد المدخلات

2 مسقف Open مكشوف Covered

عدد الأرواح

عدد الأرواح

1 مربع مستطيل Square

عدد اللوانات

عدد اللوانات

1 الطابق الأرضي Ground floor

1 الطابق الأول First floor

1 السطح Roof

عدد السلالم

عدد السلالم

1 خارجية مسقفة External covered

1 خارجية مكشوفة External open

1 داخلية Internal

عدد الحجرات

عدد الحجرات

4 حجرات سكنية Habitable rooms

4 الطابق الأرضي Ground floor

3 الطابق الأول First floor

1 السطح Roof

درجات النوافذ

درجات النوافذ

لا يوجد لا يوجد

None None

عدد الدرجات الخشبية عدد الدرجات الحديدية

No. wooden shutter No. iron shutters

نوافذ ذات زجاج ملون

نوافذ ذات زجاج ملون

لا يوجد لا يوجد

None None

عدد النوافذ الخشبية عدد النوافذ الحديدية

No. of wooden railings No. of iron railings

عدد الدرابزينات الخشبية

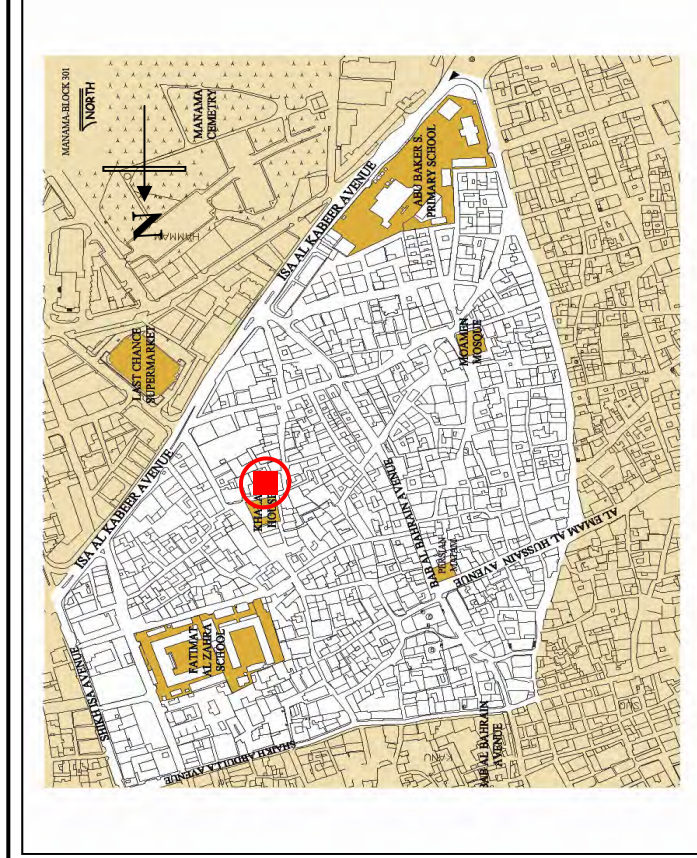
عدد الدرابزينات الخشبية

لا يوجد لا يوجد

None None

عدد الدرابزينات الحديدية عدد الدرابزينات الخشبية

No. of iron railings No. of wooden railings



مخطط الموقع

مسطحات جبسية مزخرفة

عدد المسطحات المنحوتة

عدد المسطحات المزخرفة

السطح الطابق الأول Roof First floor

السطح الطابق الأول Roof First floor

عدد المسطحات المزخرفة

عدد المسطحات المزخرفة

السطح الطابق الأول Roof First floor

السطح الطابق الأول Roof First floor

الطابقان (الطراز المستعمل)

الطابقان (الطراز المستعمل)

لا يوجد لا يوجد

None None

Arches (type used)

Arches (type used)

لا يوجد لا يوجد

None None

Type of Building	نوع المبنى	رقم المبنى No. of Building
House	مسكن	06

Parapets (Select type used)

ستارة السطح (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Incised niches (type used)

الكوى المزخرقة (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Plain Niches (type used)

الكوى الغير مزخرقة (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Main entrance door (design most similar)

الباب الخارجي (الشكل المشابه لباب المبنى)

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Threats to building

Horizontal	<input type="checkbox"/>	شروح أفقية	<input type="checkbox"/>	Rising damp	<input type="checkbox"/>
Vertical	<input type="checkbox"/>	شروح عمودية	<input type="checkbox"/>	Leaking roof	<input type="checkbox"/>
Diagonal	<input type="checkbox"/>	شروح مائلة	<input type="checkbox"/>	Damp through walls	<input type="checkbox"/>
Fungus	<input type="checkbox"/>	فطريات	<input type="checkbox"/>	Termites	<input type="checkbox"/>
Others	<input type="checkbox"/>	أخرى	<input type="checkbox"/>	Vegetation	<input type="checkbox"/>

Documentation

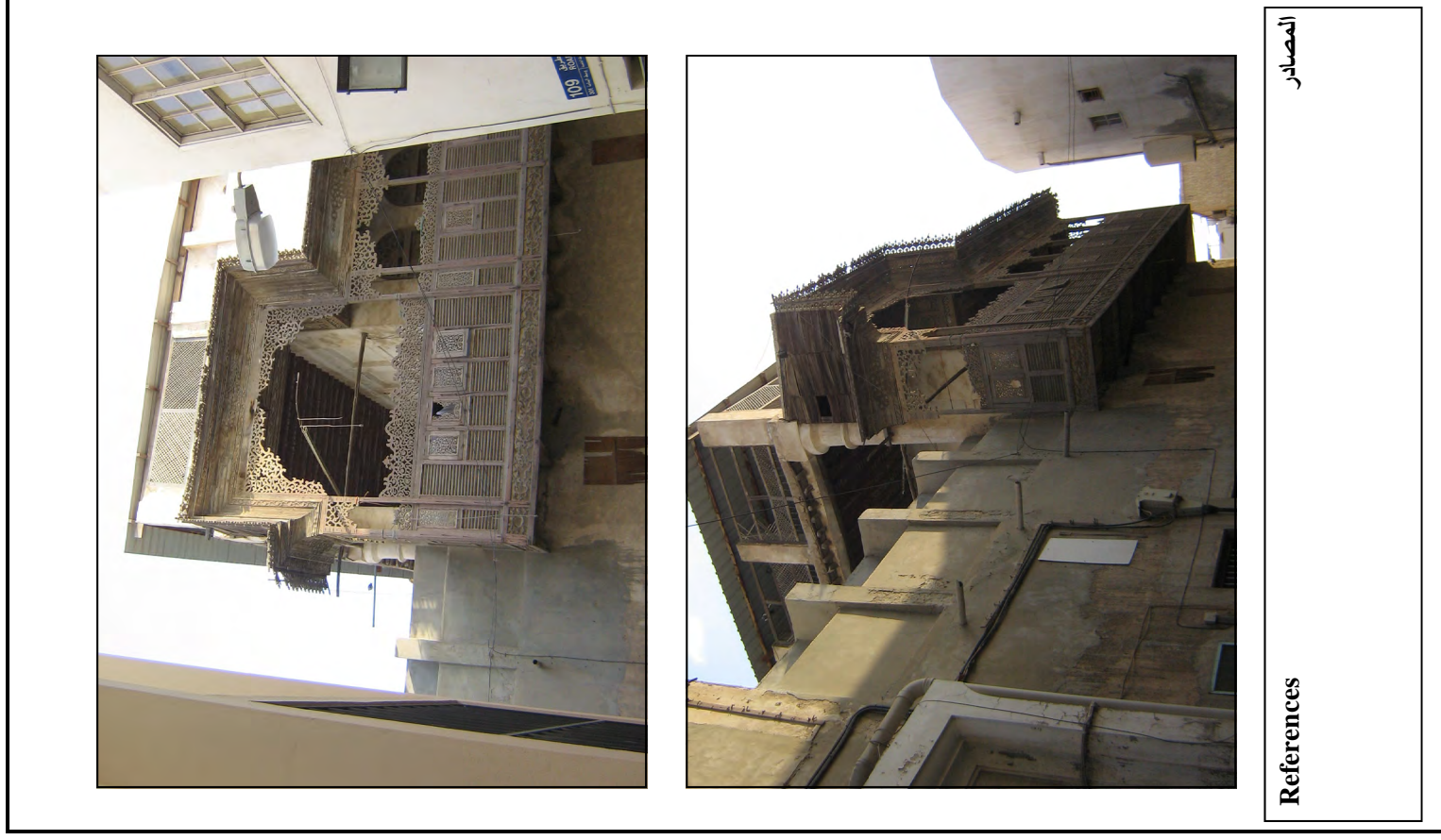
الوثائق المتوفرة

مستندات أخرى Other records	<input type="checkbox"/>	مشتورات Publications	<input type="checkbox"/>	صور قديمة Old photographs	<input type="checkbox"/>	خرائط Drawings	<input type="checkbox"/>
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Notes & comments

ملاحظات و تعليقات

It's a big house, there are wind catchers on the parapet wall, also there are arches and plane niches on the external wall of the house, there is a beautiful heritage balcony on the two sides of the house, also there is a courtyard and liwan at the first floor and ground floor of the house.
Basically intact, requires restoration of surface finishes and woodwork.



المصادر

References



Building Identity

الحيّز Hamam
القارعة Street
رقم المبنى Building number
194

اسم المبنى الأصلي Original name of building
Yateem House

اسم المالك Owner's name

اسم المسكن Occupant's name

تاريخ البناء Date of building

حقيقي Factual

تقريبي Estimated

اسم المسجل Name of recorder
Qamar

هوية المبنى

Condition of Building

حالة المبنى
Poor رديئة
Fair متوسطة
Good جيدة
Partially ruined مهتمة جزئياً

Historical significance

على الصعيد العالمي International
على الصعيد المحلي Local
National
Specify إنشرج

Ownership

وقف Waqf
ملك خاص Private
ملكية عامة Public

Secondary use

الإستعمال الثانوي Vacant
الإستعمال الأساسي Residence

Name of builder

اسم المصمم Name of Designer

Name of the builder

اسم المصمم Name of Designer

Conservation work

أعمال الترميم
In progress جارياً
Complete تمت
Minor طفيفة
None لا يوجد
Proposed مقترحة
Major أساسية

Environment relationship

الموضع
Isolated منعزل
Detached مستقل
Attached ملاصق

Building Description

وصف المبنى
عدد الطوابق No of floors
3
1
2

عدد المدخلات No of entrances
مكشوف Open
مغطى Covered
1

عدد الأحواش No of courtyards
مربع Square
1
مستطيل Oblong

عدد اللوانات No of liwans
السطح Roof
الطابق الأرضي Ground floor
الطابق الأول First floor

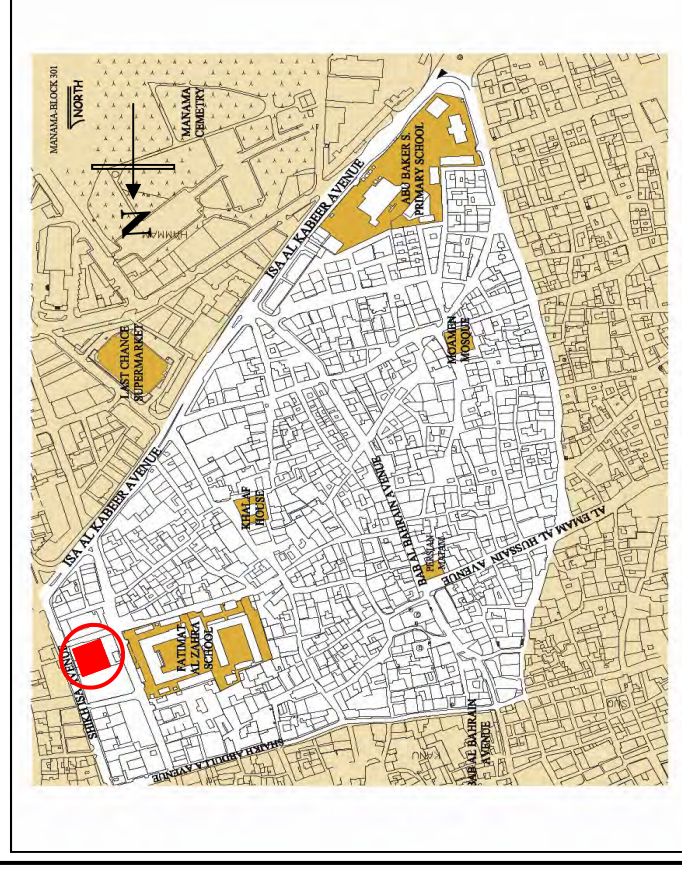
عدد السلالم No of staircases
داخلة Internal
خارجية مغطاة External covered
خارجية مسقفة External open

عدد الحجرات No of rooms
Other
حجرات غير سكنية Ground floor
حجرات سكنية Habitable rooms
الطابق الأرضي Ground floor
الطابق الأول First floor
السطح Roof

نوافذ التوافذ Window shutters
عدد النوافذ الخشبية No. wooden shutter
لا يوجد None
عدد النوافذ الحديدية No. iron shutters 32

نوافذ زجاج ملون Stained glass fanlights
عدد النوافذ الخشبية No. wooden shutter
لا يوجد None
عدد النوافذ الحديدية No. iron shutters 32

درابزينات الشرفات Balcony railings
عدد درابزينات الحديدية No of iron railing
لا يوجد None
عدد درابزينات الخشبية No of wooden railing 1



Plan of Location

مخطط الموقع
مسطحات جبسية مزخرفة
Decorative plaster panels
عدد المسطحات المنحوتة No of carved panels
السطح Roof
الطابق الأول First floor
الطابق الأرضي Ground floor
عدد المسطحات المخزومة No of perforated panels
السطح Roof
الطابق الأول First floor
الطابق الأرضي Ground floor

Arches (type used)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Building Identity

الشارع Street Al-Zahraa road
رقم المبنى Building number 18
اسم المبنى الأصلي Original name of building
اسم المبنى الحالي Present name of building
اسم الساكن Occupant's name

اسم المالك Owner's name
اسم المسجل Name of recorder
تقريبي Estimated
حقيقي Factual
تاريخ البناء Date of building
Qamar

هوية المبنى

اسم المسجل Name of recorder
تقريبي Estimated
حقيقي Factual
تاريخ البناء Date of building
Qamar

Condition of Building

حالة المبنى
Poor رديئة Fair منوسطة Good جيدة
Ruin خربة Partially ruined مهتمة جزئيا

Historical significance

الأهمية التاريخية
على الصعيد العالمي International على الصعيد القطري National على الصعيد المحلي Local

Specify

إشراح

Ownership

وقف Waqf ملك خاص Private عامة Public

Secondary use

Vacant

Primary use

MINISTRY OF EDUCATION

Name of builder

اسم المصمم Name of Designer

اسم البناء (اسم المبنى)

Conservation work

أعمال الترميم
In progress جارية Complete تمت Minor None لا يوجد Proposed Major أساسية

Environment relationship

الموقع
Isolated منزول مستقل Attached ملاصق

Building Description

عدد الطوابق No of floors 3 2 1

عدد المدخلات No of entrances Open مكشوف Covered مسقف

عدد الأرواش No of courtyards Oblong مستطيل Square مربع

عدد اللوانات No of liwans السطح Roof الطابق الأول First floor الطابق الأرضي Ground floor

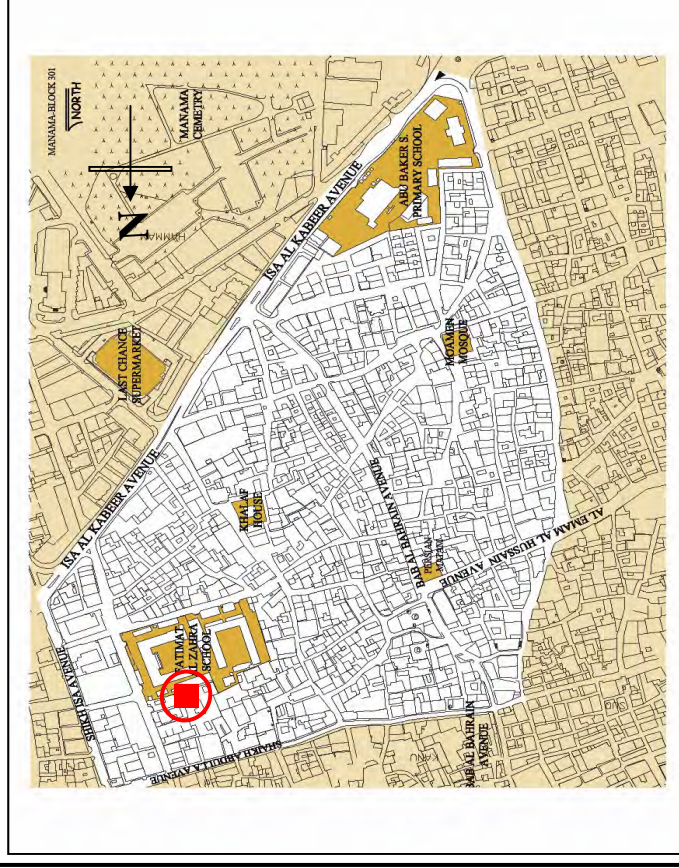
عدد السلالم No of staircases داخلية Internal خارجية مسقفة External covered خارجية مكشوفة External open

عدد الحجرات No of rooms حجرات غير سكنية Other حجرات سكنية Habitable rooms الطابق الأرضي Ground floor الطابق الأول First floor السطح Roof

درفات النوافذ Window shutters عدد الدرفات الخشبية No. wooden shutter عدد الدرفات الحديدية No. iron shutters لا يوجد None

نوافذ ذات زجاج ملون Stained glass fanlights عدد الدرابزينات الخشبية No. of iron railings عدد الدرابزينات الحديدية No. of wooden railings لا يوجد None

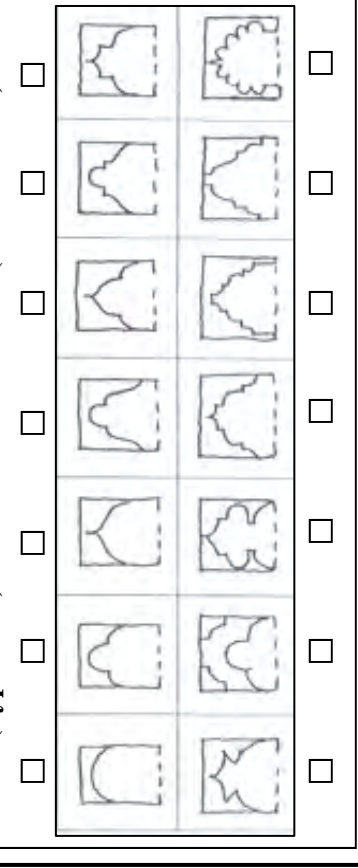
درابزينات الشرفات Balcony railings عدد الدرابزينات الخشبية No. of iron railings عدد الدرابزينات الحديدية No. of wooden railings لا يوجد None



Plan of Location

مخططات الموقع
مسطحات جبسية مزخرفة
عدد المسطحات المنحوتة No of carved panels
عدد المسطحات المزخرفة No of perforated panels
السطح Roof
السطح Roof
الطابق الأول First floor
الطابق الأول First floor
الطابق الأرضي Ground floor
الطابق الأرضي Ground floor

الطاقان (الطراز المستعمل)
Arches (type used)



Building Identity

الشارع
Street 133

رقم المبنى
Building number 1920

اسم المبنى الأصلي
Original name of building

اسم المالك
Owner's name

اسم السكان
Occupant's name

تاريخ البناء
Date of building

حقيقي
Factual

تقريبي
Estimated

اسم المسجل
Name of recorder
QAMAR

هوية المبنى

Condition of Building

حالة المبنى

Poor رديئة Good جيدة

Fair متوسطة Partly ruined جزئياً مدمرة

Ruin خربة

Historical significance

الأهمية التاريخية

على الصعيد العالمي International

على الصعيد القطري National

على الصعيد المحلي Local

Specify

إشرح

Ownership

وقف Waqf

ملك خاص Private

ملك عام Public

Secondary use

الإستعمال الثانوي

Vacant

Primary use

الإستعمال الأساسي

Residence & commercial

Name of builder

اسم المصمم

إسم البناء

اسم المصمم

Conservation work

أعمال الترميم

In progress جارية None لا يوجد

Complete تمت Proposed مقترحة

Minor طفيفة Major أساسية

Environment relationship

الموضع

Isolated منعزل Attached ملاصق

Detached مستقل

Building Description

وصف المبنى

عدد الطوابق 1 2 3

عدد المدخلات 1 2 3

مفتوح Open

مكتوف Covered

عدد الأرواش مربع مستطيل Square

عدد اللوانات الطابق الأرضي Ground floor

السطح Roof

عدد السلالم خارجية مسقفة External covered

داخلية Internal

خارجية مكشوفة External open

عدد الحجرات حجرات سكنية Habitable rooms

حجرات غير سكنية Ground floor

الطابق الأول First floor

السطح Roof

عدد النوافذ لا يوجد None

عدد الدورات الخشبية No. wooden shutter

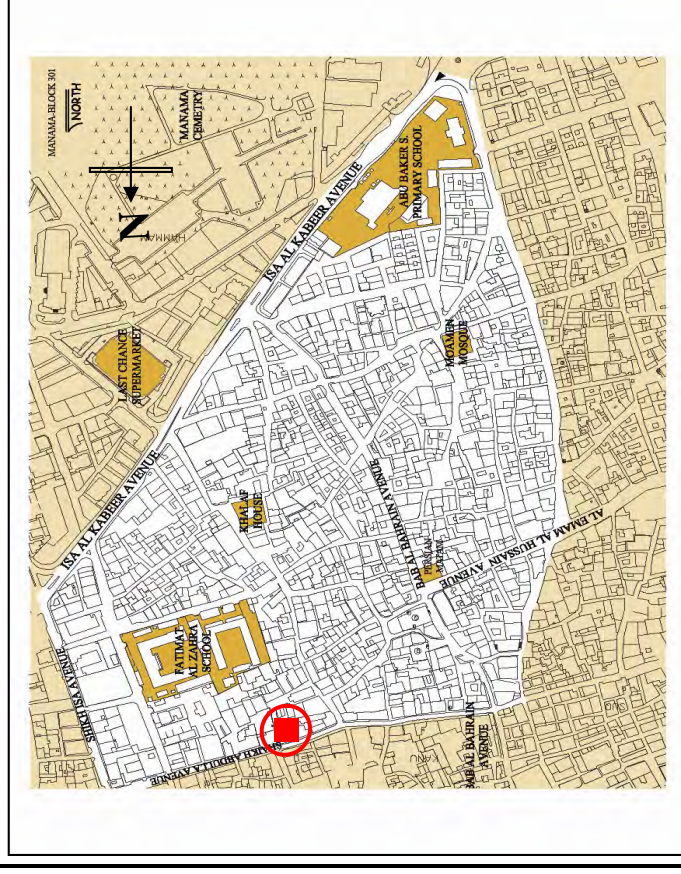
عدد الدورات الحديدية No. iron shutters

نوافذ ذات زجاج ملون لا يوجد None

لرابطات الشرفات لا يوجد None

عدد الرابطات الخشبية No of wooden railing

عدد الرابطات الحديدية No of iron railing



Plan of Location

مسطحات جبسية مزخرفة الطابق الأول First floor

السطح Roof

عدد المسطحات المنحوتة الطابق الأرضي Ground floor

عدد المسطحات المزخرفة الطابق الأول First floor

عدد المسطحات المزخرفة الطابق الأرضي Ground floor

عدد المسطحات المزخرفة الطابق الأول First floor

الطيطان (الطراز المستعمل)



Building Identity

الشارع
Street 130

رقم المبنى
Building number 1630

الفرج
Mukharqah

اسم المبنى الأصلي
Original name of building

اسم المالك
Owner's name

اسم الساكن
Occupant's name

تاريخ البناء
Date of building

حقيقي
Factual

تقريبي
Estimated

اسم المسجل
Name of recorder
Qamar

هوية المبنى

Condition of Building

حالة المبنى

Poor رديئة

Fair منوسطة

Good جيدة

Partially ruined مهتمة جزئيا

Historical significance

على الصعيد العالمي
International

على الصعيد القطري
National

على الصعيد المحلي
Local

Specify

إشراح

Ownership

وقف

ملك خاص
Private

عامة
Public

Secondary use

الإستعمال الثانوي

الإستعمال الأساسي

Residence & commercial

Name of builder

اسم المصمم

اسم البناء

Name of Designer

Conservation work

أعمال الترميم

In progress جارية

Complete تمت

Minor طفيفة

None لا يوجد

Proposed مقترحة

Major أساسية

Environment relationship

الموضع

Isolated منعزل

Attached ملاصق

Detached مستقل

Building Description

عدد الطوابق
No of floors 3 2 1

عدد المدخلات
No of entrances 1 مسقف مكشوف مغطى Open Covered

عدد الأرواح
No of courtyards 1 مربع مستطيل مربع Square

عدد اللوانات
No of liwans 1 السطح الطابق الأول الطابق الأرضي Ground floor

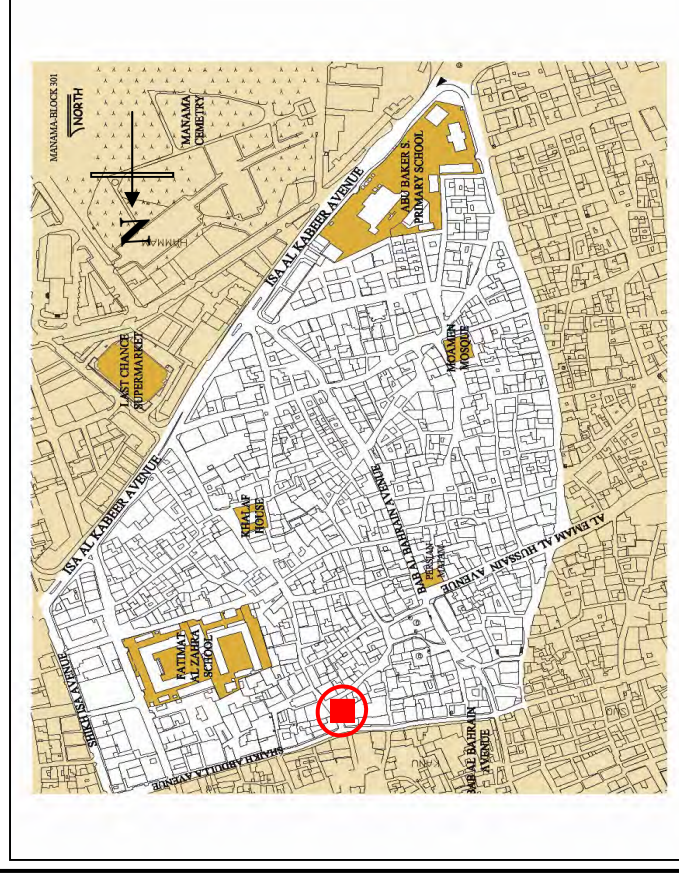
عدد السلالم
No of staircases 1 داخلية خارجية مسقفة خارجية مكشوفة External covered External open

عدد الحجرات
No of rooms 3 حجرات سكنية حجرات غير سكنية Ground floor الطابق الأول الطابق الأرضي Roof

درجات النوافذ
Window shutters 5 عدد الدرجات الخشبية عدد الدرجات الحديدية No. iron shutters لا يوجد None

نوافذ ذات زجاج ملون
Stained glass fanlights 1 عدد النوافذ الخشبية عدد النوافذ الحديدية No of iron railings لا يوجد None

درابزينات الشرفات
Balcony railings 1 عدد الدرابزينات الخشبية عدد الدرابزينات الحديدية No of wooden railing لا يوجد None



Plan of Location

مخططات جبسية مزخرفة
Decorative plaster panels

عدد المسطحات المنحوتة
No of carved panels

عدد المسطحات المزخرفة
No of perforated panels

السطح الطابق الأول First floor السطح الطابق الأول First floor السطح الطابق الأول First floor





















Arches (type used)

الطاقان (الطراز المستعمل)

الطاقان (type used)





















Type of Building	نوع المبنى	رقم المبنى No. of Building
House	مسكن	11

Parapets (Select type used)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
																			





















ستارة السطح (الطراز المستعمل)

Incised niches (type used)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
																				

الكوى المزخرفة (الطراز المستعمل)











Plain Niches (type used)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
																				

الكوى الغير مزخرفة (الطراز المستعمل)

Main entrance door (design most similar)

(الشكل المشابه لباب المبنى)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
									

Threats to building

Horizontal	شروع أفقية	<input type="checkbox"/>	Rising damp	رطوبة صاعدة	<input type="checkbox"/>
Vertical	شروع عمودية	<input type="checkbox"/>	Leaking roof	رطوبة متسربة من السطح	<input type="checkbox"/>
Diagonal	شروع مائلة	<input type="checkbox"/>	Damp through walls	رطوبة متسربة عبر الجدار	<input type="checkbox"/>
Fungus	فطريات	<input type="checkbox"/>	Termites	أرضه	<input type="checkbox"/>
Others	أخرى	<input type="checkbox"/>	Vegetation	نباتات	<input type="checkbox"/>

المخاطر التي تواجه البناء

Documentation

مستندات أخرى Other records	مطبوعات Publications	صور قديمة Old photographs	خرائط Drawings
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

الوثائق المتوفرة

Notes & comments

ملاحظات و تعليقات

There is a traditional wooden balcony on the two sides of the house in dilapidated condition, there are shops on the ground floor and resident at the first floor. There are some wooden shutters and doors in the house, also there are number of wind catchers on the parapet wall.

Badly dilapidated plasterwork and woodwork in need of conservation.



References

المصادر

Building Identity

الفرج Neighbourhood Mukharqah 130

رقم المبنى Building number 1627

الشارع Street 130

اسم المبنى الأصلي Original name of building

اسم المالك Owner's name

اسم الساكن Occupant's name

اسم المبنى الحالي Present name of building

تاريخ البناء Date of building

حقيقي Factual

تقريبي Estimated

اسم المسجل Name of recorder QAMAR

هوية المبنى

Condition of Building

حالة المبنى

Poor رديئة

Fair منوسطة

Good جيدة

Partially ruined جزئياً مهتمة

الأهمية التاريخية

على الصعيد العالمي International

على الصعيد القطري National

Local المحلي

Specify إشرح

الملكية

وقف Waqf

ملك خاص Private

عامة Public

Secondary use

الإستعمال الثانوي

Residence

Primary use

الإستعمال الأساسي

Residence & commercial

Name of builder

إسم المصمم

Name of Designer

إسم المصمم

Conservation work

In progress جارية

Complete تمت طافية

Minor طفيفة

None لا يوجد

Proposed مقترحة

Major أساسية

Environment relationship

Isolated منعزل

Detached مستقل

Attached ملاصق

Building Description

عدد الطوابق No of floors 3 2 1

عدد المداخل No of entrances Open مكشوف Covered مسقف

عدد الأرواش No of courtyards Oblong مستطيل Square مربع

عدد اللوانات No of liwans السطح Roof

الطابق الأرضي Ground floor

الطابق الأول First floor

عدد السلالم No of staircases

داخلية Internal

خارجية مسقفة خارجية مكشوفة External open

خارجية مسقفة External covered

عدد الحجرات No of rooms

Other حجرات غير سكنية

Habitable rooms حجرات سكنية

الطابق الأرضي Ground floor

الطابق الأول First floor

السطح Roof

درجات النوافذ Window shutters

عدد الدرجات الخشبية No. wooden shutter 4

عدد الدرجات الحديدية No. iron shutters

لا يوجد None

نوافذ ذات زجاج ملون Stained glass fanlights

عدد النوافذ الحديدية No. iron railings

عدد النوافذ الخشبية No. of wooden railing 1

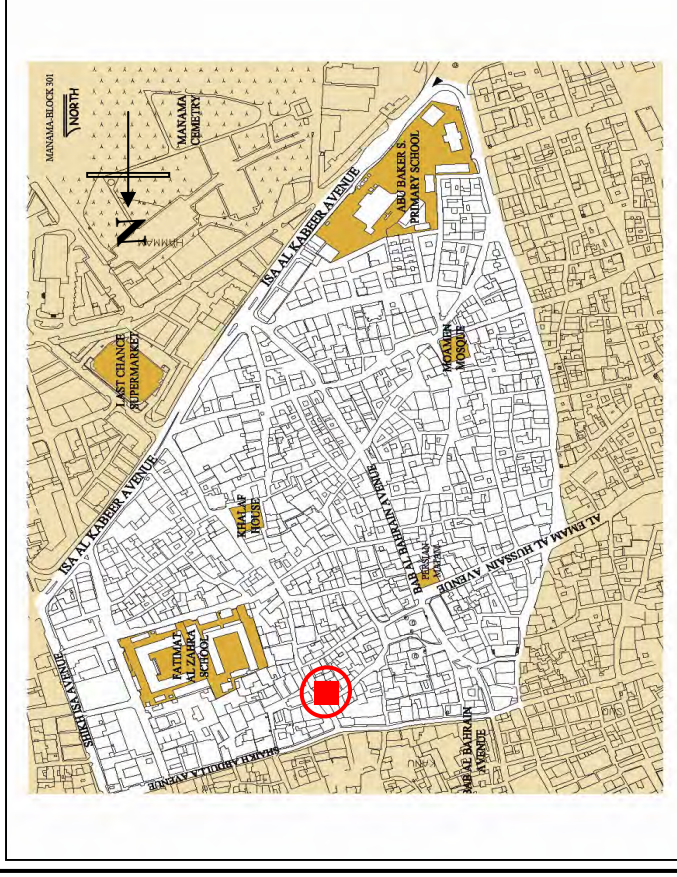
لا يوجد None

درابزينيات الشرفات Balcony railings

عدد الدرابزينيات الخشبية No of iron railing

عدد الدرابزينيات الحديدية No of wooden railing 1

لا يوجد None



Plan of Location

مخطط الموقع

مسطحات جبسية مزخرفة

عدد المسطحات المنحوتة No of carved panels

عدد المسطحات المزخرفة No of perforated panels

السطح Roof

الطابق الأول First floor

السطح Roof

الطابق الأول First floor

السطح Roof

الطابق الأول First floor

Arches (type used)

الطيطان (الطراز المستعمل)

الطيطان (type used)



Building Identity

الشارع Street
 Mukharqah Ammar Bin Yasser Road

رقم المبنى Building number

اسم المبنى الأصلي Original name of building

اسم المالك Owner's name

اسم المسجل Name of recorder

تقريبي Estimated

حقيقي Factual

تاريخ البناء Date of building

Condition of Building

حالة المبنى
 Poor رديئة Fair متوسطة Good جيدة
 Ruin خربة Partially ruined مهتمة جزئيا

الأهمية التاريخية
 على الصعيد العالمي International
 على الصعيد المحلي Local

إشرح Specify

Ownership

ملك خاص Private
 عامة Public

Secondary use

الإستعمال الثانوي

الإستعمال الأساسي

Name of builder

اسم المصمم

اسم البناء

Conservation work

أعمال الترميم
 In progress جارية لا يوجد
 Complete تمت Minor أساسية

Environment relationship

الموضع
 Isolated منزول مستقل ملاصق

Building Description

عدد الطوابق
 1 2 3

عدد المدخلات
 5 مسقف Open مكشوف Covered

عدد الأحواش
 1 مربع مستطيل Square

عدد اللوانات
 الطابق الأرضي Ground floor
 الطابق الأول First floor
 السطح Roof

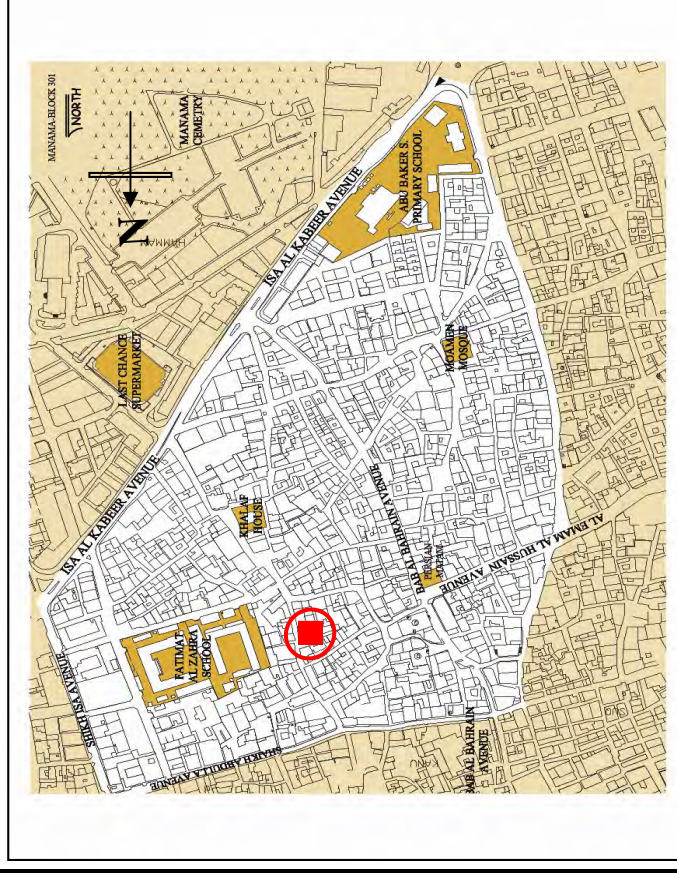
عدد السلالم
 داخلية خارجية مكشوفة خارجية مسقفة
 Internal External open External covered

عدد الغرف
 Other حجرات غير سكنية حجرات سكنية
 Ground floor الطابق الأرضي
 First floor الطابق الأول 3
 Roof السطح

درفات التوافذ
 عدد الدرفات الخشبية 31
 No. wooden shutter
 عدد الدرفات الحديدية
 No. iron shutters

توافذ ذات زجاج ملون
 Number العدد None
 لا يوجد

درابزينات الشرفات
 عدد الدرابزينات الحديدية
 No of iron railing
 عدد الدرابزينات الخشبية
 No of wooden railing
 لا يوجد None



Plan of Location

مسطحات جبسية مزخرفة
 عدد المسطحات المنحوتة الطابق الأرضي الطابق الأول السطح
 Ground floor First floor Roof
 عدد المسطحات المخرمة الطابق الأول الطابق الأرضي السطح
 Ground floor First floor Roof

Arches (type used)

الطيطان (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Parapets (Select type used) ستارة السطح (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Incised niches (type used) الكوى المزخرقة (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Plain Niches (type used) الكوى الغير مزخرقة (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Main entrance door (design most similar) الباب الخارجي (الشكل المشابه لباب المبنى)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Threats to building المخاطر التي تواجه البناء

Horizontal	<input type="checkbox"/>	شروح أفقية	<input type="checkbox"/>	Rising damp	<input type="checkbox"/>	رطوبة صاعدة	<input type="checkbox"/>
Vertical	<input type="checkbox"/>	شروح عمودية	<input type="checkbox"/>	Leaking roof	<input type="checkbox"/>	رطوبة متسربة من السطح	<input type="checkbox"/>
Diagonal	<input type="checkbox"/>	شروح مائلة	<input type="checkbox"/>	Damp through walls	<input type="checkbox"/>	رطوبة متسربة عبر الجدار	<input type="checkbox"/>
Fungus	<input type="checkbox"/>	فطريات	<input type="checkbox"/>	Termites	<input type="checkbox"/>	أرضه	<input type="checkbox"/>
Others	<input type="checkbox"/>	أخرى	<input type="checkbox"/>	Vegetation	<input type="checkbox"/>	نباتات	<input type="checkbox"/>

Documentation الوثائق المتوفرة

مستندات أخرى Other records	<input type="checkbox"/>	مشتورات Publications	<input type="checkbox"/>	صور قديمة Old photographs	<input type="checkbox"/>	خرائط Drawings	<input type="checkbox"/>
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Notes & comments ملاحظات و تعليقات

This is Maatam, it has an Islamic tradition history, it has some wooden shutter and wooden door entrance, it has an Islamic heritage importance.



Building Identity

الشارع
Street 132
رقم المبنى
Building number 1742
الفرج
Mukharqah

اسم المبنى الأصلي
Original name of building
اسم المالك
Owner's name
اسم السكان
Occupant's name
تاريخ البناء
Date of building
تقريبي
Estimated
حقيقي
Factual

هوية المبنى
اسم المسجل
Name of recorder
QAMAR

Condition of Building

حالة المبنى
Poor رديئة Fair منوسطة Good جيدة
Ruin خربة Partially ruined مدممة جزئيا

Historical significance

على الصعيد العالمي
International
على الصعيد القطري
National
Local على الصعيد المحلي
Specify
إشراح

Ownership

وقف ملك خاص ملك عام
Waqf Private Public

Secondary use

الإستعمال الثانوي
Vacant

Primary use

الإستعمال الأساسي
Residence

Name of builder

اسم المصمم
Name of Designer
اسم البناء
Name of Designer

Conservation work

أعمال الترميم
In progress جارية لا يوجد
Complete تمت Minor أساسية Major

Environment relationship

منزول مستقل ملاصق
Isolated Detached Attached

Building Description

عدد الطوابق
No of floors 3 2 1

عدد المدخل
No of entrances Open مكشوف 1 مسقف Covered

عدد الأرواح
No of courtyards Oblong مستطيل مربع Square

عدد اللوانات
No of liwans السطح السطح الطابق الأول الطابق الأرضي
Roof First floor Ground floor

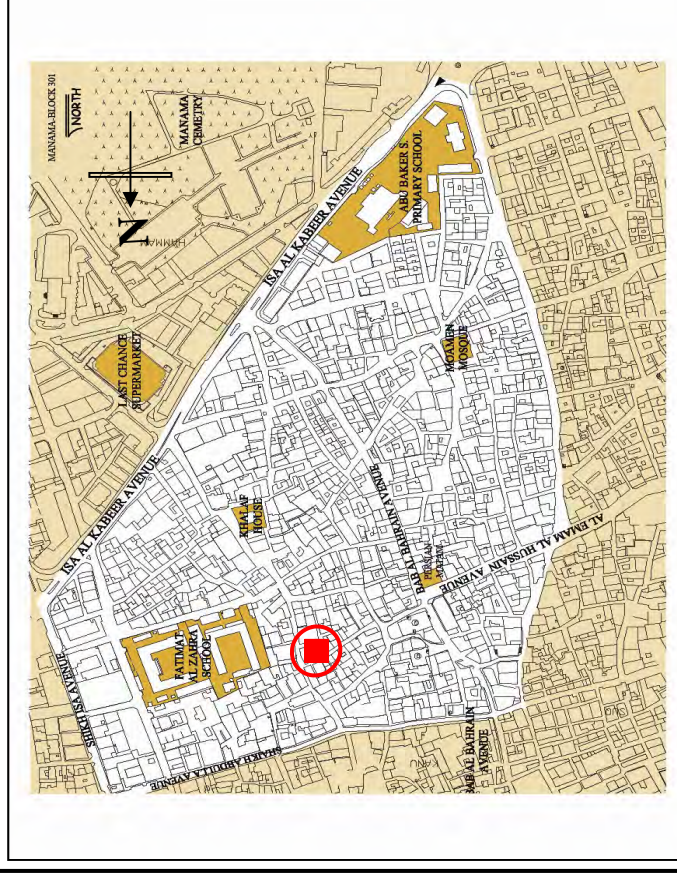
عدد السلالم
No of staircases داخلية خارجية مسقفة خارجية مكشوفة
Internal External open External covered

عدد الحجرات
No of rooms حجرات غير سكنية حجرات سكنية
Other Ground floor Habitable rooms

الدرجات النوافذ
Window shutters عدد الدرجات الخشبية عدد الدرجات الحديدية
No. wooden shutter No. iron shutters

نوافذ ذات زجاج ملون
Stained glass fanlights عدد لا يوجد
Number None

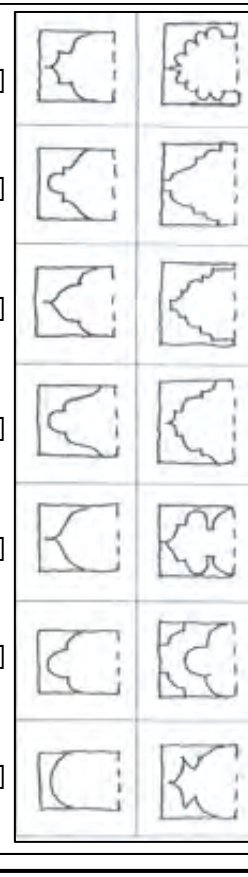
درابزينات الشرفات
Balcony railings عدد الدرابزينات الخشبية عدد الدرابزينات الحديدية
No of iron railing No of wooden railing



Plan of Location

مخططات الموقع
مسطحات جبسية مزخرفة
Decorative plaster panels
عدد المسطحات المنحوتة
No of carved panels
عدد المسطحات المزخرفة
No of perforated panels
السطح الطابق الأول الطابق الأرضي
Roof First floor Ground floor
السطح الطابق الأول الطابق الأرضي
Roof First floor Ground floor

الطاقان (الطراز المستعمل)
Arches (type used)





Building Identity

الشارع Street 132
Mukharqah
رقم المبنى Building number 1851
اسم المبنى الأصلي Original name of building

اسم المالك Owner's name
اسم المبنى الحالي Present name of building
اسم السكان Occupant's name

تاريخ البناء Date of building
حقيقي Factual
تقريبي Estimated

اسم المسجل Name of recorder
Qamar

هوية المبنى

Condition of Building

حالة المبنى
Poor رديئة Fair متوسطة Good جيدة
Ruin خربة Partially ruined جزئياً مهتمة

Historical significance

على الصعيد العالمي International
على الصعيد المحلي Local
National القطري

Specify

Ownership

وقف Waqf ملك خاص Private ملك عام Public

Secondary use

Vacant

الإستعمال الثانوي

الإستعمال الأساسي Residence & commercial

Name of builder

اسم المصمم Name of Designer

الإستعمال الأساسي

Residence & commercial

Conservation work

In progress جارية لا يوجد None
Complete تمت Proposed
Minor طفيفة أساسية Major

أعمال الترميم

لا يوجد None
مزمعة Proposed
أساسية Major

Environment relationship

منعزل Isolated مستقل Detached ملاصق Attached

Building Description

عدد الطوابق No of floors 3 2 1

عدد المدخلات No of entrances 1 مسقف Covered مفتوح Open

عدد الأحواش No of courtyards مربع مستطيل مربع Square

عدد اللوانات No of liwans السطح الطابق الأول الطابق الأرضي Ground floor

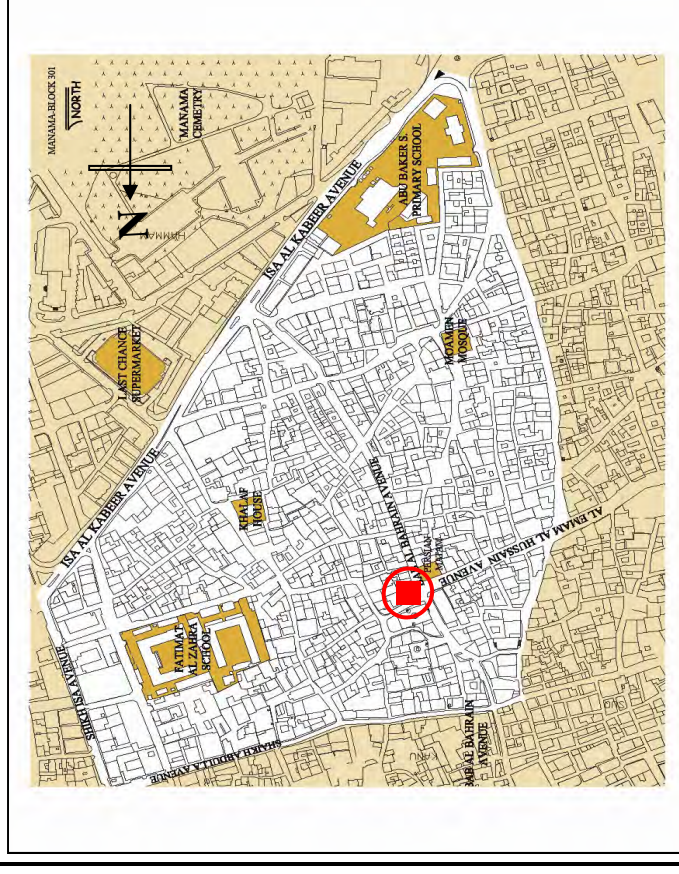
عدد السلالم No of staircases داخلية خارجية مكشوفة خارجية مسقفة External covered

عدد الحجرات No of rooms حجرات غير سكنية حجرات سكنية Habitable rooms

درجات النوافذ Window shutters عدد الدرجات الخشبية عدد الدرجات الحديدية No. iron shutters No. wooden shutter

نوافذ ذات زجاج ملون Stained glass fanlights عدد النوافذ الخشبية عدد النوافذ الحديدية No of iron railings No of wooden railing

درابزينات الشرفات Balcony railings عدد الدرابزينات الخشبية عدد الدرابزينات الحديدية No of iron railing No of wooden railing



مخطط الموقع

Decorative plaster panels

عدد المسطحات المنقوتة No of carved panels

عدد المسطحات المخرمة No of perforated panels

عدد الطراز المستعمل (Arches (type used)

عدد المسطحات الجسبية مزخرفة

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية

عدد المسطحات الأرضية



Building Identity

الشارع Street 117

رقم المبنى Building number 992

اسم المبنى الأصلي Original name of building

القريج Neighbourhood Mukharqah

اسم المالك Owner's name سيد حمزة سيد حسن

اسم السكان Occupant's name

اسم المبنى الحالي Present name of building

تاريخ البناء Date of building

حقيقي Factual

تقريبي Estimated

اسم المسجل Name of recorder QAMAR

هوية المبنى

Condition of Building

حالة المبنى

Poor رديئة

Fair متوسطة

Good جيدة

Ruin خربة

Partially ruined مهتمة جزئياً

Historical significance

على الصعيد العالمي International

على الصعيد المحلي Local

National على الصعيد القطري

Specify

إشرح

Ownership

ملك خاص Private

عامة Public

Secondary use

الإستعمال الثانوي Residence

Primary use

الإستعمال الأساسي Residence

Name of builder

اسم المصمم

Name of Designer

اسم المصمم

Conservation work

In progress جارية

Complete تمت

Minor طفيفة

None لا يوجد

Proposed مقترحة

Major أساسية

Environment relationship

منعزل Isolated

متصل Detached

متعلق Attached

Building Description

عدد الطوابق No of floors 3 2 1

عدد المداخل No of entrances Open مكشوف مسقف Covered

عدد الأفواش No of courtyards Oblong مربع Square

عدد الليوانات No of liwans السطح الطابق الأول Ground floor

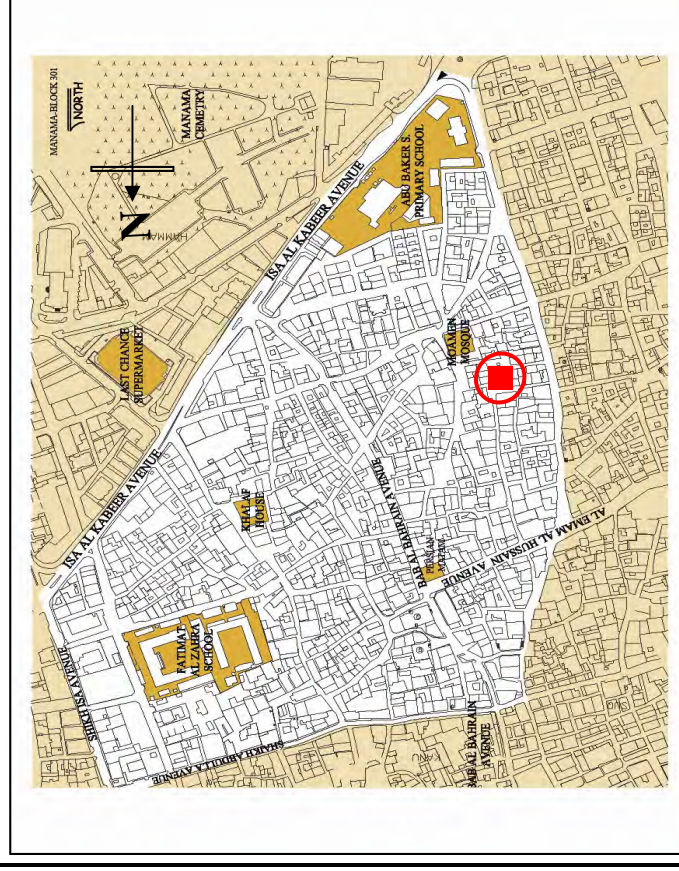
عدد السلالم No of staircases داخلية خارجية مسقفة External covered

عدد الحجرات No of rooms حجرات غير سكنية حجرات سكنية Habitable rooms

عدد الغرفات الترفات No of rooms الترفات الخشبية عدد الترفات الحديدية No. iron shutters

نوافذ زجاج ملون Stained glass fanlights Number العدد None

درابزينات الشرفات Balcony railings عدد الدرابزينات الحديدية عدد الدرابزينات الخشبية No of iron railing No of wooden railing



Plan of Location

مسطحات جبسية مزخرفة Decorative plaster panels

عدد المسطحات المنحوتة No of carved panels

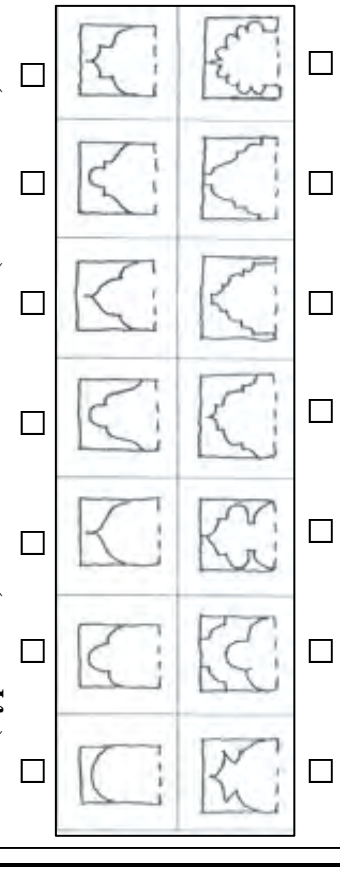
عدد المسطحات المزخرفة No of perforated panels

السطح Roof

الطابق الأول First floor

الطابق الأرضي Ground floor

Arches (type used)





Building Identity

القريه Neighbourhood Mukharqah

رقم المبنى Building number 998

الشارع Street 117

اسم المبنى الأصلي Original name of building

اسم المالك Owner's name

اسم المبنى الحالي Present name of building

سيد حسين سيد علي

تاريخ البناء Date of building

حقيقي Factual

تقريبي Estimated

اسم المسجل Name of recorder QAMAR

هوية المبنى

Condition of Building

حالة المبنى

Poor رديئة

Fair متوسطة

Good جيدة

Ruin خربة

Partially ruined مدممة جزئيا

Historical significance

على الصعيد العالمي International

على الصعيد المحلي Local

National

Specify

إشرح

Ownership

ملك خاص Private

عام Public

Secondary use

الإستعمال الثانوي

Primary use

الإستعمال الأساسي

Vacant

Name of builder

اسم المصمم

إسم البناء

اسم المصمم

Conservation work

أعمال الترميم

In progress جارية

Complete تمت

Minor طفيفة

None لا يوجد

Proposed مقترحة

Major أساسية

Environment relationship

الموضع

Isolated منعزل

Detached مستقل

Attached ملاصق

Building Description

عدد الطوابق No of floors 3 1

عدد المداخل No of entrances

Open مكشوف

Covered مسقف

عدد الأرواش No of courtyards

Oblong مستطيل

Square مربع

عدد الليوانات No of liwans

السطح السطح

الطابق الأول الطابق الأول

Ground floor الطابق الأرضي

عدد السلالم No of staircases

داخلة داخلية

خارجية مسقفة خارجية مسقفة

External covered External open

عدد الحجرات No of rooms

Other حجرات غير سكنية

Habitable rooms حجرات سكنية

الطابق الأرضي الطابق الأرضي

الطابق الأول الطابق الأول

السطح السطح

درجات النوافذ Window shutters

عدد الدرجات الخشبية عدد الدرجات الخشبية

No. wooden shutter No. iron shutters

نوافذ ذات زجاج ملون Stained glass fanlights

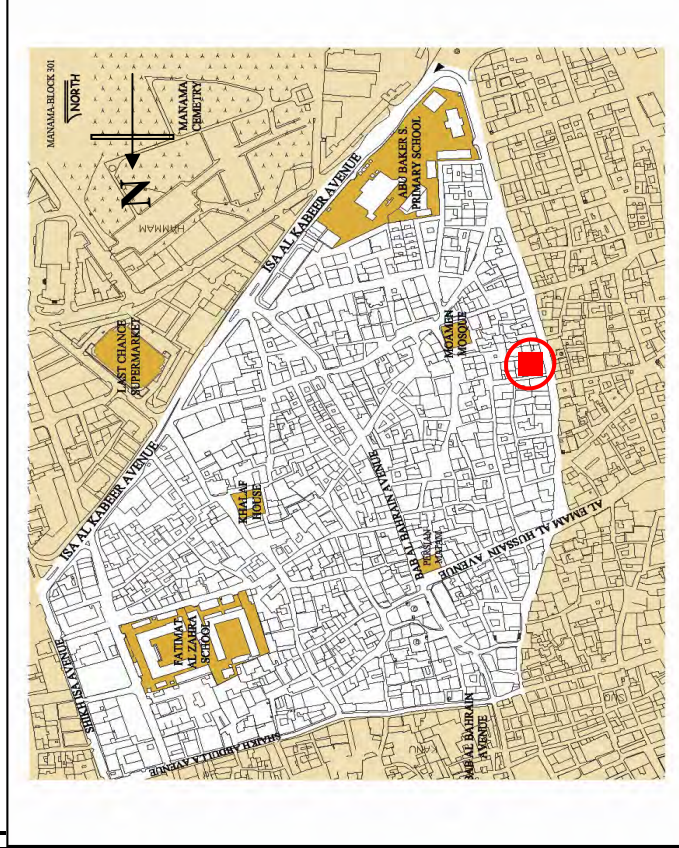
عدد العدد

لا يوجد None

درابزينات الشرفات Balcony railings

عدد الدرابزينات الحديدية عدد الدرابزينات الخشبية

No of iron railing No of wooden railing



Plan of Location

مسطحات جبسية مزخرفة
Decorative plaster panels

عدد المسطحات المنحوتة No of carved panels

السطح السطح

الطابق الأول الطابق الأول

Roof Roof

عدد المسطحات المزخرفة No of perforated panels

السطح السطح

الطابق الأول الطابق الأول

Roof Roof

الطيطان (الطراز المستعمل)

Arches (type used)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Building Identity

الشارع Street 124
Mukhtarqah
رقم المبنى Building number
اسم المبنى الأصلي Original name of building

اسم المالك Owner's name
اسم المبنى الحالي Present name of building

اسم السكان Occupant's name

هوية المبنى

تاريخ البناء Date of building
حقيقي Factual
تقريبي Estimated
اسم المسجل Name of recorder
QAMAR

Condition of Building

حالة المبنى
Poor رديئة Fair متوسطة Good جيدة
Ruin خربة Partially ruined مهتمة جزئيا

Historical significance

على الصعيد العالمي International
على الصعيد المحلي Local
National
Specify

Ownership

ملك خاص Private
عامة Public
وقف Waqf

Secondary use

الإستعمال الثانوي Maatam

الإستعمال الأساسي

Maatam

Name of builder

إسم المصمم Name of Designer

إسم البناء

Maatam

Conservation work

أعمال الترميم
In progress جارية None لا يوجد
Complete تمت مزعومة
Minor طفيفة Major أساسية

Environment relationship

الموضع
Isolated منزول
Detached مستقل
Attached ملاصق

Building Description

عدد الطوابق No of floors
1 2 3

عدد المدخلات No of entrances
3 مسقف Covered Open

عدد الأحواش No of courtyards
مربع مستطيل Square Oblong

عدد اللوانات No of liwans
السطح الطابق الأول Ground floor

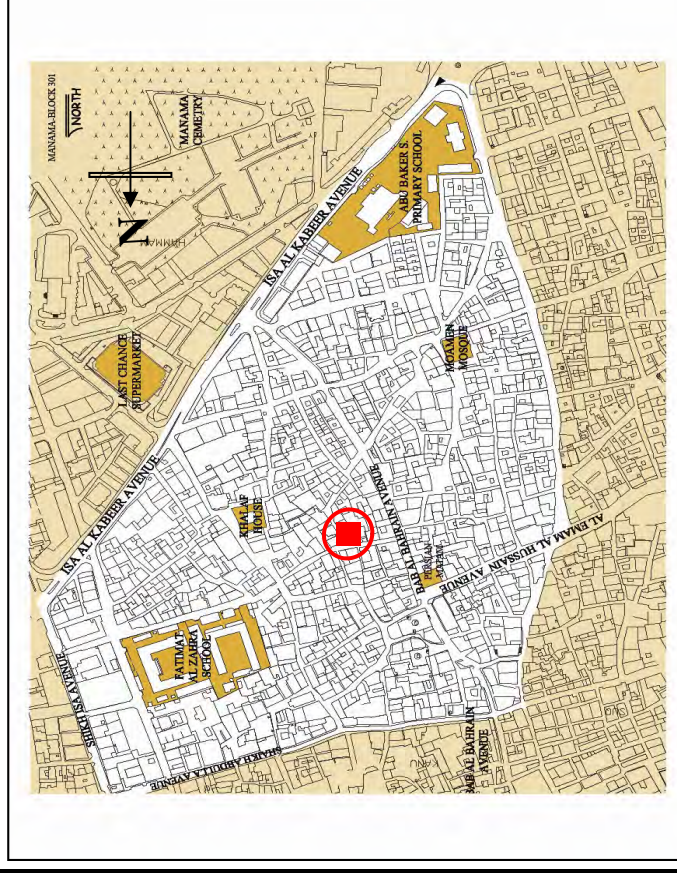
عدد السلالم No of staircases
داخلية خارجية مكشوفة خارجية مسقفة Internal External open External covered

عدد الحجرات No of rooms
Other حجرات غير سكنية حجرات سكنية Habitable rooms
السطح الطابق الأول الطابق الأرضي Roof

درفات التوافذ Window shutters
عدد الدرفات الخشبية عدد الدرفات الحديدية 9
No. wooden shutter No. iron shutters

نوافذ ذات زجاج ملون Stained glass fanlights
عدد لا يوجد None

درابزينات الشرفات Balcony railings
عدد الدرابزينات الحديدية عدد الدرابزينات الخشبية
No of iron railing No of wooden railing



مخطط الموقع

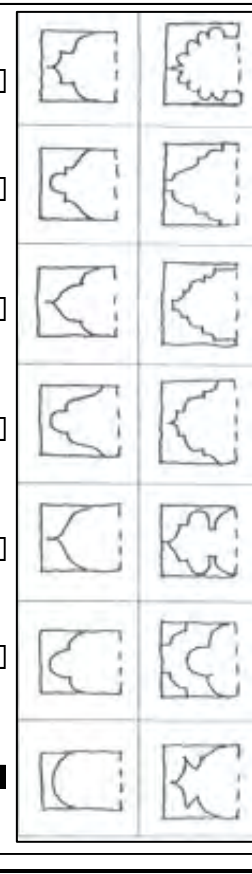
Decorative plaster panels

عدد المسطحات المنقوتة No of carved panels
السطح الطابق الأول الطابق الأرضي Roof First floor Ground floor

عدد المسطحات المخرومة No of perforated panels
السطح الطابق الأول الطابق الأرضي Roof First floor Ground floor

Arches (type used)

الطابقان (الطراز المستعمل)

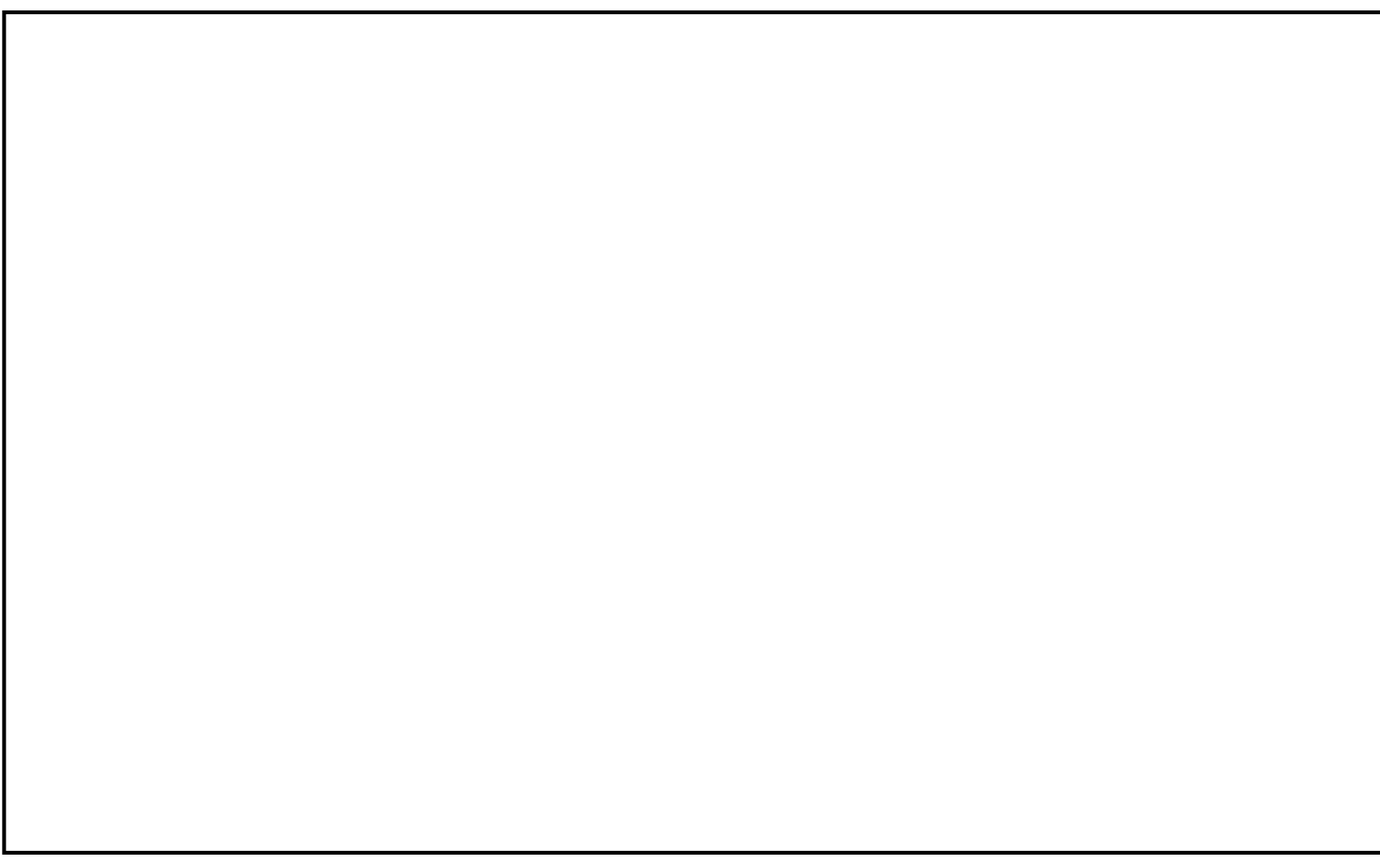


Capacity-Building for Enhancement Of Urban Governance: Stage 2
URBAN DESIGN PROJECTS FOR TRADITIONAL AREAS IN BAHRAIN
جرد المباني التراثية في البحرين (المنامة مجمع 301)
INVENTORY OF HERITAGE BUILDINGS IN BAHRAIN (MANAMA block 301)

Neighbourhood Mukharrqah الشارع Street الشيخ عبد الله رقم المبنى Building number 97 اسم المبنى الأصلي Original name of building اسم المبنى الحالي Present name of building اسم المالك Owner's name Al-Arayed اسم الساكن Occupant's name تاريخ البناء Date of building حقيقي Factual تقريبي Estimated اسم المسجل Name of recorder

Poor <input type="checkbox"/> رديئة Ruin <input type="checkbox"/> خربة Ruin <input type="checkbox"/>	Fair <input type="checkbox"/> متوسطة Fair <input checked="" type="checkbox"/>	Good <input type="checkbox"/> جيدة Good <input type="checkbox"/> مهدمة جزئياً Partially ruined <input type="checkbox"/>
الأهمية التاريخية		
على الصعيد العالمي International <input type="checkbox"/>	على الصعيد القطري National <input type="checkbox"/>	على الصعيد المحلي Local <input type="checkbox"/>

Name of builder	اسم المصمم	اسم المصمم
<input type="text"/>	<input type="text"/>	<input type="text"/>



Building Identity

الشارع Street Ammar bin Yasser رقم المبنى Building number 79

القريه Neighbourhood Mukharqah

اسم المبنى الحالي Present name of building اسم المالك Owner's name Ali Umran

اسم المسجل Name of recorder Qamar

تاريخ البناء Date of building

حقيقي Factual

تقريبي Estimated

هوية المبنى هوية المبنى

Condition of Building

حالة المبنى

Poor رديئة Ruin خربة Fair متوسطة Good جيدة مدممة جزئياً Partially ruined

Historical significance

الأهمية التاريخية

على الصعيد العالمي International

على الصعيد القطري National

على الصعيد المحلي Local

إشراح Specify

Ownership

ملك خاص Private

ملك عام Public

Secondary use

الإستعمال الثانوي

الإستعمال الأساسي Residence

Name of builder

اسم المصمم

اسم المصمم

Conservation work

أعمال الترميم

جارية In progress

تمت Complete

مزمعة Proposed

أساسية Major

طفيفة Minor

لا يوجد None

Environment relationship

الموقع

منعزل Isolated

مستقل Detached

متعلق Attached

Building Description

عدد الطوابق

عدد الطوابق 3 1 2 2

No of entrances

عدد المدخلات

مستطيل Open مكشوف Covered مربع Square

No of liwans

عدد اللوانات

السطح Roof

الطابق الأول First floor

الطابق الأرضي Ground floor

No of staircases

عدد السلالم

داخلية Internal

خارجية مكشوفة External open

خارجية مسقفة External covered

No of rooms

عدد الحجرات

حجرات سكنية Other حجرات غير سكنية Habitable rooms الطابق الأرضي Ground floor

الطابق الأول First floor

السطح Roof

Window shutters

درجات النوافذ

عدد الدورات الخشبية No. wooden shutter

عدد الدورات الحديدية No. iron shutters

لا يوجد None

Stained glass fanlights

نوافذ ذات زجاج ملون

عدد Number

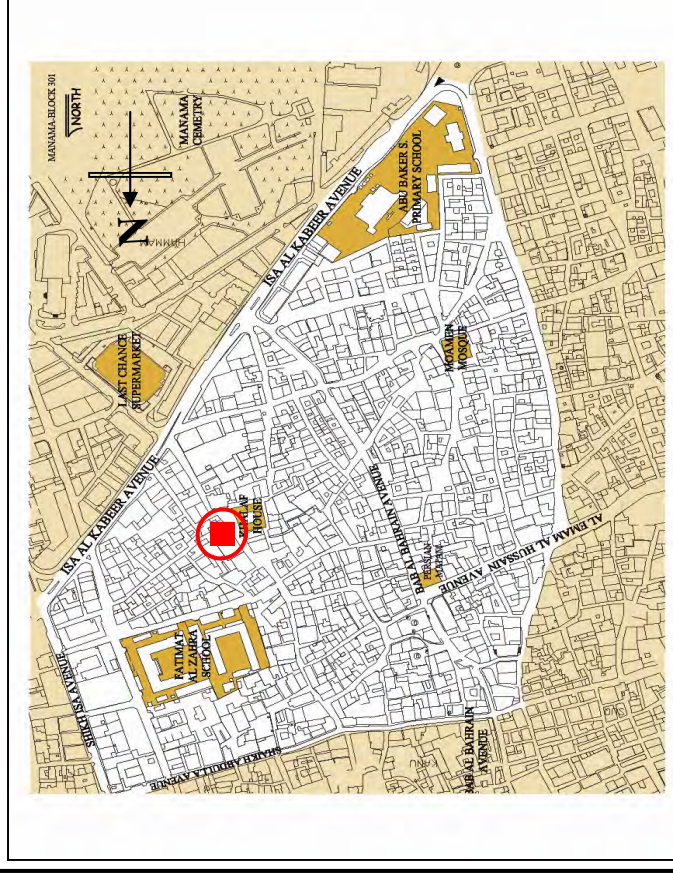
لا يوجد None

Balcony railings

درابزينات الشرفات

عدد الدرابزينات الخشبية No of wooden railing

لا يوجد None



Plan of Location

مخطط الموقع

مسطحات جبسية مزخرفة

عدد المسطحات المنحوتة No of carved panels

الطابق الأرضي Ground floor

الطابق الأول First floor

السطح Roof

عدد المسطحات المخرومة No of perforated panels

الطابق الأرضي Ground floor

الطابق الأول First floor

السطح Roof

Arches (type used)

الطيطان (الطراز المستعمل)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX A:

Manama: History Background

Manama is the capital of Bahrain. Historically as the location of a large graveyard, now the biggest of all times .

Manama was established in the second half of the 14th century, as a resting seat for fishermen, pearl divers and also as a market for agricultural produce from all over the island. The root of the name "Manama", some historians and elderly people used "Almone'ema" (the blissful place) altered later to merely Manama.

Others to the presence of a lodging palace of some ancient-day merchants, where it was dubbed Manama (place of sleeping). Some elderly people referred to Manama's location in the middle of the Arabian Gulf where it was a lodging place for divers, fisherman and pearl divers, and where the pearl trade was booming.

Manama is the third consecutive capital of Bahrain in the recent era after Belad Qadeem and Muharraq. Manama was a port of anchor for ships and also a lodging place for many traders and businessmen.

This city was famous for trade and business where commercial markets such as the Tawaweesh market where high quality pearl was sold and where the gold market was a remarkable center next to the Tawaseesh market, thanks to the mutual professional links between the two, in addition to Al- Boshoot market (Arabian cloak market).

This city was distinguished by the traditional characteristics of the Islamic city, where its building style followed the local, Arabic and Islamic spirit, where the construction material was sea rocks. Its buildings were unique in design and relevance to social and natural conditions, such as the ventilation towers (Badkeer). The city has maintained its religious nature exemplified in mosques and Hussein obsequies which are gathering places for people in the land spaces (Baraha, colloquial) in front of them.

Manama: Architectural development

- **First stage: since establishment till 1904 :**

Bahrain was part of the Arabian land mass, but in around 6000 B.C. it ceased to be connected to the mainland. In 3800 B.C. the state of Dilmun was established and began to decline in 2000 B.C. Assyrian kings claimed sovereignty over the islands from 750 B.C. Bahrain was incorporated into Babylonian Empire in 600 B.C. Persians conquered it in 540 B.C. In 300 B.C. Bahrain was incorporated into the Seleucid dynasty, In 300 A.D. the Parthian period began. In the 4th cent., Shappur II, the Sassanian king, annexed Bahrain to his kingdom. From the 7th to the 11th cent. Bahrain was ruled by governors on behalf of the caliphs of Damscus and Baghdad. In the 15th cent. Bahrain was united with qatif and hasa under Sh. Ibrahim Al-Maliki. The Omani invasion happened in 1487 and Umar bin Al- Khattab became governor. Bahrain islands fell into Portuguese hands in 1521 and Bahrain fort was built. In 1602 Bahrain ceased to be a vassal to Hormuz and the Portuguese then the Portuguese sent a fleet from India to destroy Hormuz and Bahrain in 1645. In 1720 Persians purchased Bahrain from Oman.

The Al-Khalifa dynasty was a result of the AL-Khalifa victory and Sheikh Ahmed Al-Fatih (the conqueror) occupied Bahrain & set about developing an impressive mercantile fleet with an equally powerful pearl trade portfolio. When he died in 1796, he was succeeded by his sons Abdulla and Sulman. In 1799 the Wahabi tribe occupied the islands for a short time. Sheikh Sulman bin Ahmed Al-khalifa, considering himself unable to repel the invaders, retired to Zubara. After the height of the pirate period, Sulman returned to Bahrain. In February 1820, the joint rulers of Bahrain and he stayed in Manama and so Manama become the capital of Bahrain.

Manama Fort (Qalaat Al Diwan) was built in the first half of the 18th century. Originally it consisted of four round towers joined by crenellated walls. Little of the original structure remains. Nowadays the site is occupied by the public security headquarters.

Building blocks appeared at the northern part of the city. Various occupations and professions took their place as well giving the city's quarters their distinct shape. In addition, a number of villages scattered along the city center and northern part came into existence, such as Gherifah, Juffair, Seqya, Nai'eem and Ras Romman.

In the main city of Manama there was a number of orchards owned by pearl traders. The cottages and (brestajat) were made

of palm leaves. These units were scattered through the city, either at that time in the arable lands or in randomly filled spaces of land as living requirements dictated.

Manama's quarters were named after some land uses such as Makhariqa, Hammam, Hatab, etc. in addition to the commercial quarter in which pearl trade was taking place. This quarter was divided between various trades: Tawaweesh Market, Boshoot Market and Metal Market. etc.

- **Second stage: 1905- 1933 :**

As a result of population growth and growing importance, the city gained politically and economically. The city witnessed a surge in construction and consequently, its organized structure. In this period, the Quarantine station was built in Manama in 1909 and the Maritime port of Manama (mina Manama) was built with a goods ware-house in 1912, in addition to the establishment of the Municipality Building in 1919.

In this period, motor vehicles became common. The authorities widened roads to accommodate the traffic. Arable lands vanished under building development and oil exploration in 1932. Educational services were established. The first girl's school, the American mission schools and Jaafarian School, (currently, Abu Bakr Al-Sedeeq).

The mosque is the most prominent example of Islamic architecture. We have two main mosques in Manama, Friday mosque and Mosque Ras-Rumman. The Friday mosque has an imposing minaret decorated with colorful geometric designs composed of mosaics. This mosque was not built until the late 1930s by Sheikh Hamed from first oil revenues. Mosque Ras-Rumman, before extensive land reclamation, was located on a headland surrounded by a pomegranate garden from which the building takes its name. However, the leaning minaret is one of the few surviving mud –brick examples in Manama.

In this period, the important home Bayt Skinner was built, the first Manama home of Mr. & Mrs. Edward Skinner, between 1932-1937. It was demolished in 1956.

This period is the main transitional stage of the city, architecturally and economically.

A major change occurred with the construction of the corniche roads in Manama and Muharraq in the 30s. Eventually the causeway linking the two cities, with the swing bridge was completed in 1942.

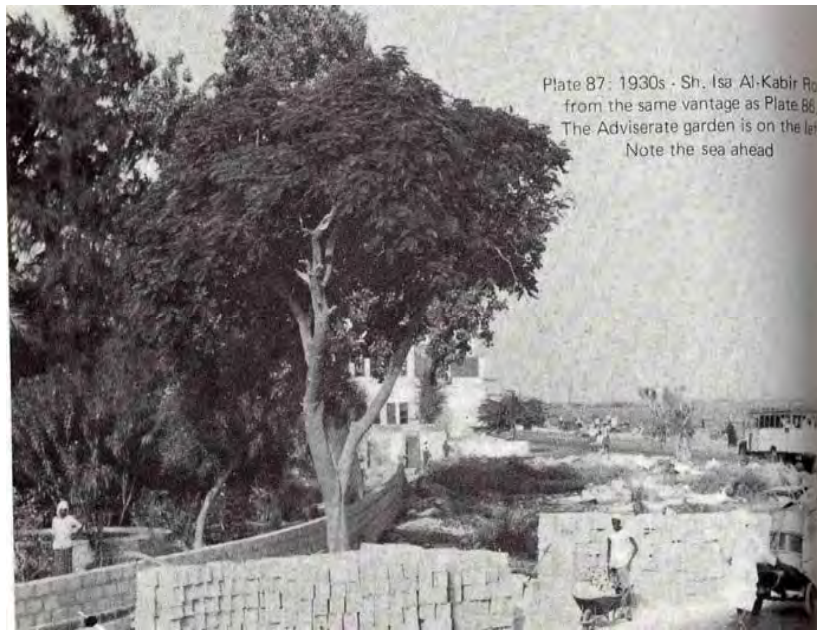


Plate B7: 1930s - Sh. Isa Al-Kabir Road from the same vantage as Plate B6. The Adviserate garden is on the left. Note the sea ahead.

1930— Sh. Isa Al-kabir Road, the adviserate garden is on the left



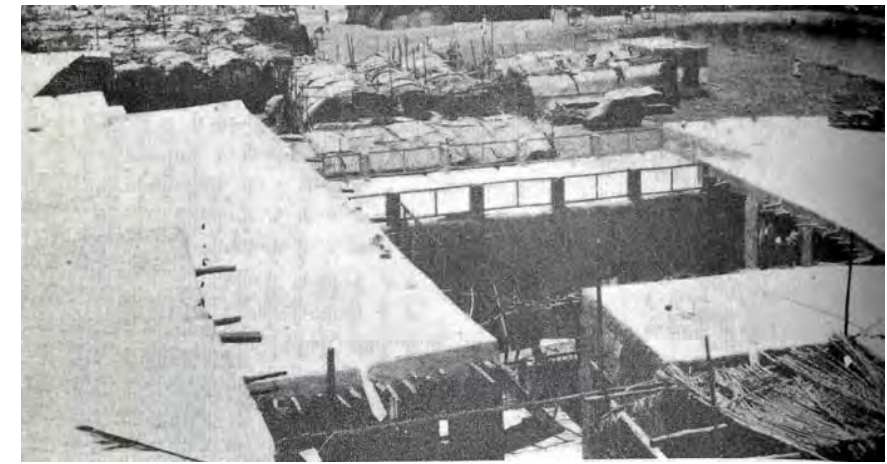
Entrance of Manama suq 1926. The children are playing in front of it.



Picture of Bab Al-Bahrain area & the surrounding which is now called Government Avenue 1920.



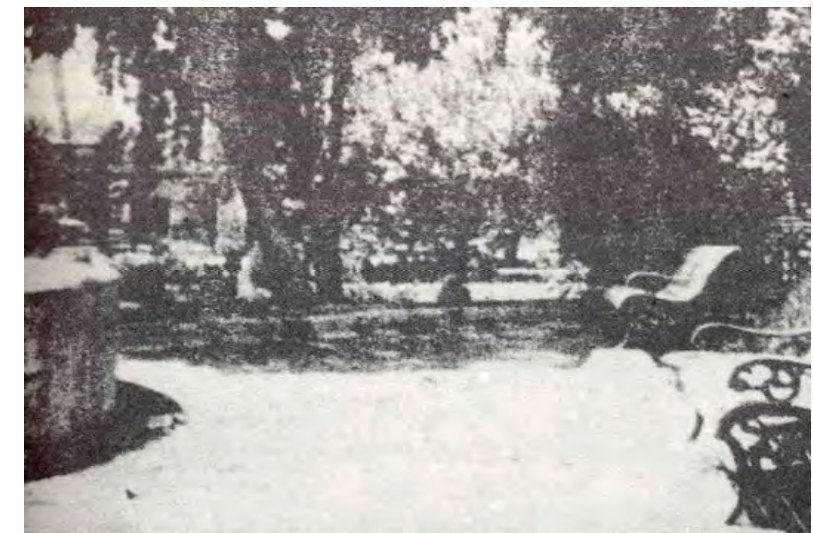
Picture of the building that existed before Bab Al-Bahrain. It was used for law courts, waqf departments, & part of it as a police station & post office in 1928.



Old customs pier and harbour, 1930



Vegetables & fruits market in Manama 1930-1940.



Al- Baqsha public garden, (for animals & birds) established by the Manama Municipality in 1920. Now demolished & built as Al-Zahra School.



Mina Manam



Dhow harbour prior to land reclamation. Bahrain maritime and mercantile building, background.



Cannon on the old pier, now King Faisal Highway.



Bayt Skinner, Al-Khalifa Road, early 1930. (Now Jashanmal Department Store)

• **Third stage: 1934- 1953 :**

This period is associated with the first years of oil exploration, when urbanization began in Bahrain generally and in Manama specifically. The large surge in population in this period led to ownership of private housing outside of the old city. Land planning also resulted in division of large properties on arable lands surrounding the area, leading in turn to the appearance of quarters of distinctive architecture of modern character such as Quodaibeya, Hooraa, Sequaya and Salmanyaa.

Pearl Cinema was constructed in 1937 and the first petrol station. This was in active service until early 1981. At the time of its opening in 1938, it was the first petrol station in Bahrain and what is thought to have been the first in the lower Arabian Gulf. The story goes, the builders had no idea what a petrol station should look like and so it was designed in the classic proportions of a mosque, hence the very high roof and archway.

The new Bab Al-Bahrain (Gateway of Bahrain) was designed by Sir Charles Belgrave in 1945 with Government offices, the post office and the custom house. It became the focus of two sections of the eastern and western sections of the cornice and the hinge of the whole urban structure, giving access to the suq and harbour. By the mid-1950s the area had been reclaimed and Mr. Jashanmal had built his first store on it.

Finally, In Manama, the main transformations of the historic fabric occurred along the waterfront to the north and the east, along government road. This was already marked-out in the early 30s to form the new water-front and served the main pier with the customs house in front of the Bahrain gate. In the late 30s, this spine was continued to the north-east with the causeway linking Manama to Muharraq and connected to the existing roads leading inland. A major vehicular ring road, was created surrounding the central core of the traditional city and created the conditions for further urban growth in different directions. Focused on this major system, a new street pattern was created which penetrates from government road into the pre-existing fabric. This is particularly dense and continuous along the waterfront, where new urbanisation took place on the early land reclamations. It is also relevant on the southern and eastern edges.



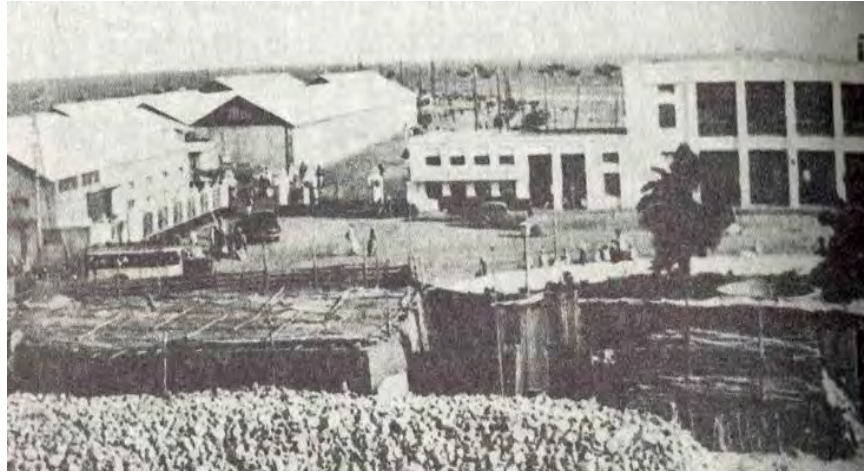
Bab Al-Bahrain, built 1945. Note carved gypsum balus-



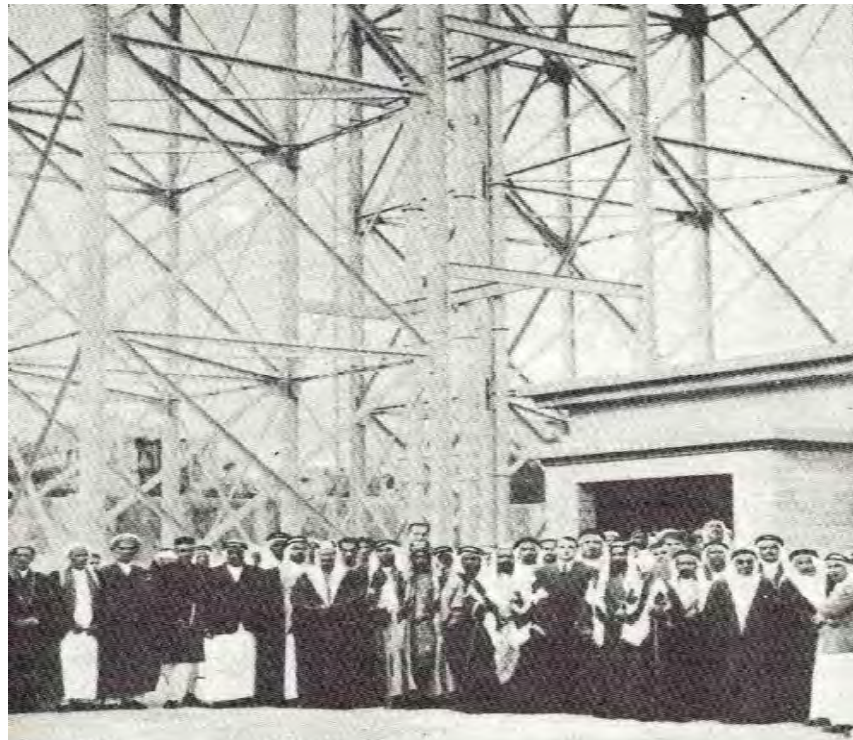
Government Avenue, 1950 looking towards Bab Al-Bahrain. Mr. Jashnmal's old store is on the left



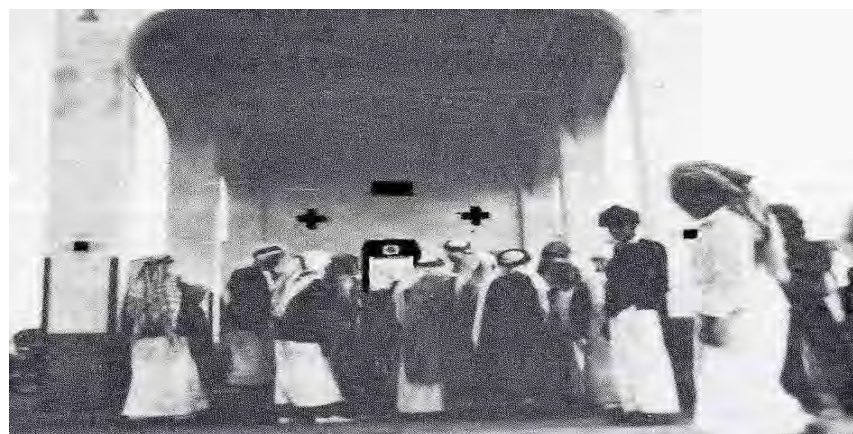
1935 - Pearling expedition to transportation from Manama-Muharraq



Old customs pier built in 1936 (left) stores building (in front) trees on customs roundabout, wooden stores & stones for the construction of the old building which existed before Bab Al -Bahrain.



Sh.Isa bin Hamad Al Khalifa opened the project of water falling in Manama 1948-1949.



Bahrain's first petrol-filling station Opening ceremony,1938.



Wednesday market in front of the old municipality building 1941.

- **Fourth stage: 1954- 1969 :**

This stage is an example of a set of economic, population, urban and architectural developments, where citizens moved into new neighborhoods. In the current plan of Manama, the extent to which the city and its grid plan were affected, is clearly shown.

The significant areas which came into existence in this period are: Gofol and the northern parts of Mahooz and Adleya. Rural areas such as Bilad Qadeem, Zinj, Jufair and Om Al-Hasam were added to the city.

The Almoayyed Building - twin structures, built by Yusuf Almoayyed in 1956 on the site of his grand- father's timberyard, were the first high-rise buildings to appear in Bahrain. Opposite is Almoayyed Stationery, a shop sited where Mr. Almoayyed recalls, he used to moor his boat when he was a boy.

- **Fifth stage: 1970- 1977**

This period is the stage of organized and planned development of Manama city, away from the random scatter of construction when the city stretched to double the previous area.

This organized development was a product of "the Unit of Natural Planning-Municipality" for which the government recruited a group of consultants and planners, a new stage of urban planning and architecture in the history of Manama.

Therefore, it was decided to start sea reclamation in eastern Manama areas such as Ras Al Romman and Hoorra and the western parts the central market area. In addition, the area along the northern coastline was defined and the area to the south of King Faisal Highway created.

- **Sixth stage: 1978- 1986**

This stage was an architectural boom at the national level in general and at Manama level specifically where high buildings were common. The construction boom continued to the current time.

This stage is one of the most important coordinated implementation of Manama planning, where 80% of that plan was completed. A wide area had been annexed to the northern coast of Sanabis area which in turn was added to Manama. There were also a number of big achievements by the Central Municipality Agency in terms of public parks, construction inside housing quarters and along public streets. The agency executed King Faisal Highway (Corniche) in the eastern part. Other projects undertaken by the government were Al Fateh Mosque, Bahrain National Museum, Bait Al Quraan, National Bank of Bahrain, Hilton and Sheraton Hotels and the Civilization Center which as a whole reflect the architectural development of the country in this booming period. Also built on reclaimed land and opened in June 1981 were the Chartered Bank and the new Ministry of Finance and Foreign Affairs, completed in 1982.



1981- Sh. Isa Al-Kabir Road, looking towards Bahrain

United Nations Development Program-Bahrain Ministry of
Municipalities and Agriculture Affairs

Capacity Building for the Enhancement
Of Urban Governance
(Stage 2)

Photogrammetric Documentation for Muharraq and Manama Urban Design Pilot Projects

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1. Introduction

This report presents the results of the heritage documentation team's mission in connection with "Capacity Building for Enhancement of Urban Governance," a joint undertaking of the United Nations Development Program (UNDP) and the Bahrain's Ministry of Municipalities and Agriculture Affairs (MoMAA). The two members of the team worked concurrently for most of the time although commenced and concluded work at different dates. Dr. Jose Luis Lerma, a geodetic and cartographic engineer as well as photogrammetry specialist, worked for the period June 20-July 1; Dr. Salim Elwazani, a conservation architect and documentation specialist, worked for the period June 21-July 4. The work served the three projects of Stage Two of the UNDP/MoMAA undertaking:

- Pilot Project 1: Urban Design of the City of Muharraq Cultural Heritage Area
- Pilot Project 2: Urban Design of the City of Manama Cultural Heritage Area
- Pilot Project 3: Architectural Re-Design of the Qayseriyyah Souq in Muharraq

In consultation with the UNDP/MoMAA Project Director and the three pilot project consultants and understanding their needs, it became clear using the Digital Rectified Imagery (DRI) method was—because of its relative speed, simplicity, and output format—an appropriate choice for the purpose of the projects. The short mission period of the documentation team consultants made the choice even more appropriate. The documentation work proceeded through data acquisition phase on site and data processing and presentation in the office.

The team mission was carried out with the UNDP/MoMAA Phase One mandate in mind, specially the part that was dealt with in the IT Consultant's report. This report emphasized establishing of a national heritage documentation center and developing a decision support system for urban conservation planning. The IT Consultant proposals dealt with diversity of documentation issues. For example, training and education was one of five functions of the proposed National Heritage Documentation Center (NHDC). The Report (p. 272) emphasizes "training of architects and preservation specialists in the procedures of architectural documentation." As part of the documentation team's mission, training through demonstration and personal implementation of rectification has therefore been extended to a number of architects and architectural interns of the Section of Studies and Research (SSR).

2. Documentation Considerations in the Context of the UNDP/MoMAA Undertaking

2.1. General

Photogrammetric documentation is embedded in the UNDP/MoMAA undertaking requirements. As such, the documentation

team has appropriated and used the Digital Rectified Imagery, one survey and documentation method of the field of photogrammetry. A series of measurable urban and architectural ensemble elevations have been produced. To assimilate the basis and the scope of the documentation team work, a brief definition of photogrammetry and a number of its known methods is brought up below. Further, the level of documentation provision versus pilot projects needs is mentioned. Finally, a description of the documentation procedure and activities is outlined.

2.2. Photogrammetry and Digital Rectified Imagery (DRI)

Photogrammetry means measuring from photographs or images. A photogrammetric procedure consists universally of data collection and data processing phases. The demand for efficient use of the dimensional information resulting from the photogrammetric process requires a compatible information management system in place. A synopsis on DRI is presented below with the intent of placing the documentation team's utilization of the rectified imagery method in an informative context for the DoDAA's Section of Studies and Research and other interested parties. Further, a clarification for stereo-photogrammetry and orthoimagery, other documentation approaches of particular relevance to heritage site documentation, is also presented to provide basic but distinguishing information about methods of photogrammetry. This will help make educated decisions on using appropriate methods for measured survey projects in future.

Rectified imagery (or photography) is based on satisfying a parallelism condition between the plane of the architectural surface under documentation (the object) and the plane of the image. This very condition implies that the object plane has to be essentially "geometrically" plane. The process of bringing the two planes into parallelism (namely, removing "tilt" displacement between the two planes) is called rectification, hence rectified imagery. The outcome of the rectification process is a scaled rectified image well suited for dimensional measurement of building surfaces and, subsequently, for producing measured drawings of building elevations, flat ceilings, and the like.

Rectified imagery is a single image approach, in the sense that images are rectified individually, although two or more rectified images can be further processed to yield extended scenes—expressed as mosaics in the photogrammetric parlance. In a geometric sense, DRI corrects tilt displacement, but not "depth" displacement (that is typically associated with the side of the building apparent in the image, for example). Tilt displacement is expressed through the angle formed by two unparallel planes, in this case, the architectural surface plane and the plane on which the image is formed in the camera.

Stereophotogrammetry, on the other hand, employs two or more photographs. It deals with and turns depth displacement to a measurement advantage. Its principles are based on how the

eyes perceive depth distances in viewed objects. Viewing objects by two eyes is called binocular vision. Binocular vision is far superior to monocular vision (by one eye) in judging depth distances. Binocular vision of an object leads to stereoscopic model. Simulating a stereo model setting begins with arranging two images, called stereo pair, in a stereoscopic instrument in such a way that the left eye sees (in the created model) the left image of the object point, and the right eye sees the right image. The formulation of the stereoscopic model enables the measurement of distances in three dimensions—in plan and elevation.

Ortho-imagery, a third approach of relevance to documenting heritage sites, goes one step further beyond rectified imagery to collapse all objects in a scene into (the) one reference plane. All planes parallel to the reference plane collapse to this reference plane. All information in the scene, now framed at the scaled reference plane, turn into measurable dimensional information. Either 3D models built up after stereo-photogrammetric plotting or surveying methods can be used to produce true orthoimage (or orthophoto) elevations. The benefit of orthoimagery is that all the image content (texture) is placed on its correct position on the reference plane. As orthoimagery corrects both tilt displacement and depth displacement, it combines the application advantages of both DRI and stereophotogrammetry.

From the array of photogrammetric methods, the documentation team had, from the outset, considered the use of DRI for the UNDP/MoMAA undertaking. After conferring with the Director of the SSR and with the consultants of the three pilot projects, the decision to employ the method has been confirmed. The two urban design projects and the architectural re-design project all lacked information of individual building elevations and of extended elevations of urban scenes in their respective project areas. The “visual” rectification version of the rectified imagery approach was determined as an efficient technique to use, as it combines the benefits of practicality and speed. This implementation of this method resulted in a series of scaled photographic elevations that can be readily converted into measured drawings in a CAD environment.

2.3. Pilot Projects Needs for Documentation

Slating buildings and areas for documentation was done intermittently in an incessant flow of consultations with the three design pilot project consultants. Constrained by the limited time availability of the documentation team members (nine and twelve working days, respectively), the design consultants were pressed to prioritize the need for survey and documentation in their respective urban areas of study. The result was limited survey coverage of the two urban design cultural heritage areas of Muharraq and Manama. Conversely, the Qayseriyyah Souq complex received considerable coverage as a decision was made early on by the SSR Director to do so because of the relative urgency for completing the Souq’s re-design coupled by clarity

of what needs to be documented.

The limited availability of the documentation team did not only restrict the magnitude of building ensembles that could be recorded, but also derived the thought of the need for three classifications of images:

1. Rectification action images: these are the images that are meant to be rectified, and were indeed rectified by the documentation consultants.
2. Rectifiable images: these are images that can be rectified at some time in future by the SSR architectural personnel.
3. Context images: these are images that are not meant to be rectified, but provide context information mostly for buildings documented by images of Classification 1, rectification action images.

3. Field Operations and Office Rectification Tasks

3.1. General

The documentation consultants’ work consisted of field operations and office activities. In specific terms, the work comprised:

- Capturing images on site (data acquisition)
- Rectifying images in the office (data processing)
- Training young architects and interns on digital rectified imagery processes, mostly in the office
- Touring and exploring the three project areas with the SSR Director, pilot project consultants, and office architectural personnel
- Conferring with the SSR Director and design consultants on a daily basis for coordinating documentation work with project requirements
- Note taking and development of the documentation consultants’ report
- Collaborating with the Qayseriyyah Souq project consultant for initial thoughts on the re-design program and site historic information

3.2. Field Operations

Field surveys for capturing images followed a linear pattern of operations. Using a wide-angle camera (Canon Digital Camera EOS D60, resolution 6.3 MPixels; 15mm Sigma lens), image capturing had been, in all cases, initiated at one end of a building row—which coincided with a street junction corner in many cases. Moving towards the other end of the building row, a series of digital images were captured in such a way to maintain an overlapping coverage between images of adjacent buildings. Photographic operations had of course dealt with buildings, but the emphasis was placed on the continuity of the linear “scene,” including voids and objects between buildings. This emphasis goes well with the type of information needed to carry out urban

analysis and design. The camera’s image numbering system helped link individual images to a separate hand-marked image identification setup on a hard copy map. This linkage enabled the retrieval and arrangement of the series of sequential images, and in the end, enabled the selection of appropriate images for rectification.

3.3. Office Rectification

Office rectification of the captured images was completed in a repeated, but structured procedure using Adobe Photoshop CS and plug-in Panorama Tools. In its simplest structure, the procedure begins with rectifying two adjacent images separately; taking advantage of the overlapping region in the two images, it advances to fusing the already rectified images into a new entity called a mosaic. In an additional step, another single rectified image is then brought to fuse into the initial mosaic to form a new, expanded mosaic. The steps repeat and the mosaic expands till the building row is all accommodated in a final mosaic-ed scene.

4. Output Images and Mosaics

4.1. General

Images captured in the field amounted to 454 distributed unevenly among the three pilot project areas. The lion’s share went to Pilot Project 3, the Qayseriyyah Souq in Muharraq, and not to any of the remaining pilot projects for the urban cultural areas of Muharraq and Manama. The fact that the Qayseriyyah Souq complex is of a set size and of graspable architectural re-design program prompted the decision to concentrate on this complex for almost the first week of the documentation activities. Table 1 depicts image distribution by a) project and, b) image classification—as either action image, rectifiable image, or context image. It also shows the final output of the documentation function, the mosaics—measurable ensembles of building elevations.

Summary

Total number of images: 167
 Total of rectifiable images: 146
 Contextual: 6
 Rectified imagery: 15
 Mosaics: 2

- Bab Al Bahrain Avenue
 Total number of images: 108 (55 for East Elevation; 53 for West Elevation)

Total of rectifiable images: 106
Contextual: 2

Rectified imagery: 0

- 105 Road

Total number of images: 42 (19 for North Elevation; 23 South Elevation)

Total of rectifiable images: 33

Contextual: 0

Rectified imagery: 9

- Ammar Bin Yasser Avenue

Total number of images: 17

Total of rectifiable images: 7

Table 1. Image distribution by pilot project, image classification, and output mosaics

<i>Pilot Project</i>	<i>Action Images (rectified)</i>	<i>Rectifiable Images</i>	<i>Context Images</i>	<i>Total</i>	<i>Resulting Mosaics</i>
Pilot Project 1: Muharraq Cultural Heritage Area	13	60	9	82	1
Pilot Project 2: Manama Cultural Heritage Area	15	146	6	167	2
Pilot Project 3: Qayseriyyah Souq in Muharraq	26	159	20	205	3
Total	54	365	35	454	6

4.3. Pilot Project 2: Manama-Al Hamam Neighbourhood (Bab Al Bahrain Avenue, 105 Road, and Ammar Bin Yasser Avenue)

Contextual: 4

Rectified imagery: 6

Output mosaics

Full resolution: 105 Road-North Elevation_A.jpg

105 Road-North Elevation_B.jpg

Low resolution A3 (42 cm width and 100 dpi): 105 Road-North Elevation_A3.jpg

Low resolution A4 (21 cm width and 100 dpi): 105 Road-North Elevation_A4.jpg (Fig. 2)

Full resolution: Ammar Bin Yasser Av-East Elevation 74-72_80-78-76.jpg

Low resolution A3 (42 cm width and 100 dpi): Ammar Bin Yasser Av-East Elevation 74-72_80-78-76_A3.jpg

Low resolution A4 (21 cm width and 100 dpi): Ammar Bin Yasser Av-East Elevation 74-72_80-78-76_A4.jpg (Fig. 3)



Figure 2. 105 Road-North Elevation_A4.jpg

- DRI and photogrammetry
- Documentation output and its use

This section presents summaries, conclusions, and recommendations associated with each of the facets mentioned above.

5.1. Adherence to the UNDP/MoMAA Undertaking

Summary

Phase One of the UNDP/MoMAA undertaking “Capacity Building for Enhancement of Urban Governance,” is the basis for the Phase Two work involving the three pilot projects. The documentation team

The documentation consultants worked closely with the SSR Director and with the design consultants in charge of the Phase Two pilot projects to identify and prioritize the scope of documentation work. The results accord particularly with Phase One IT Consultant’s proposed strategies. The process and outcomes of the documentation function as well as the personnel training activities represent a nucleus unit for realizing the IT strategies.

Recommendations

The results of the documentation team mission should be capitalized on to jump start the IT proposals. This could be done, for example, by

5. Summaries, Conclusions, and Recommendations



Figure 3. Ammar Bin Yasser Ave-East Elevation 74-72_80-78-76_A4.jpg

The documentation team assignment proved to be multifaceted in content and intense in action. The salient facets of the assignment include the following:

- Adherence to the UNDP/MoMAA Undertaking
- Documentation needs and coverage: the scope of work
- Documentation pace and progress
- Training of architects and interns

mission was expected to adhere to the intent of the undertaking in general, and to the requirements of the pilot projects in particular.

The documentation consultants used the Phase One reports’ information as a reference for their work—particularly that of the IT Consultant. Among other things, the IT Consultant’s report emphasized training and education as one of five functions of the proposed National Heritage Documentation Center (NHDC)

Conclusions

an attempt to relate the team’s work aspects (DRI choice, training component, and the like) into the IT strategies. An early thrust in this direction is bound to yield a more effective response to IT strategy proposals.

5.2. Documentation Needs and Coverage: the Scope of Work

Summary

The documentation needs of the pilot projects were roughly described

before hand. These needs gradually evolved during the initial stages of projects. The documentation consultants strived to figure out what segments of the pilot project areas to be covered.

Conclusions

The documentation coverage and schedule has been influenced by the evolving needs of the pilot projects, and more so by the duration of documentation consultants' mission. Interestingly, at this point (second week of Stage 2), the pilot project design consultants are not yet in a position to use DRI output images and drawings in effective way. However, they sense the potential value of DRI documentation to their respective projects.

Recommendations

A reasonable assessment of urban design project documentation needs is required. Soliciting pilot project consultants' views on the *need* for documentation services and documentation outcome formats will be useful in directing future integration of documentation with urban and architectural design projects. Their views are best to be solicited while still on their mission, and more so towards the end of the mission. The duration and synchronization of documentation consultants and design consultants work is expected.

5.3. Documentation Pace and Progress

Summary

At the beginning of the mission, there was little grasp of how fast documentation activities would progress.

Conclusions

Faced by the vast physical and spatial contexts of the pilot projects, the documentation consultants strived to establish a pace or some sort of "rate" for documentation activities to help predict documentation performance, and subsequently, to help estimate the scope of work that can realistically be achieved.

Recommendations

An approximate rate of documentation (depending on established factors) needs to be set. A documentation pilot exercise at the outset of the mission is a recommended vehicle for working out a rate.

5.4. Training of Architects and Interns

Summary

Although assumed, training the SSR architects and interns had no fixed plans before the documentation consultants arrived.

Conclusions

The training component turned out to be intense and time consuming; it took time that could have been used in documenting more buildings and producing more measurable mosaics. However, the implemented training holds a definite promise. At least four trainees showed a reasonable grasp of the DRI and its associated digital skills. To gain real benefits, the trained personnel need to enhance their skills by sustaining a stream of rectification work.

Recommendations

A plan for the trained personnel to sustain their understanding and skills in using the DRI is to be instituted and followed immediately. Also, a design for a training program in the area of documentation in

general, and photogrammetry in particular, should be initiated.

5.5. DRI and Photogrammetry

Summary

Besides the DRI, other photogrammetric methods, such as stereophotogrammetry and orthoimagery, can be used for documenting heritage buildings and areas.

Conclusions

The decision to use DRI was based on its simplicity, pace, accuracy level, and the inherent characteristics of producing scaled elevations. These factors made it an efficient and compatible method for "serving" the pilot projects—as they stand now.

Recommendations

As the needs for the UNDP/MoMAA undertaking expand and change, other photogrammetric methods should be considered for use—well in advance. A drive is encouraged towards anticipating what kind of urban and architectural projects are likely to emerge in the short, intermediate, and long terms. A preliminary, but guiding, view should be developed on the possibilities of using photogrammetric or other survey techniques to serve the anticipated projects.

5.6. Documentation Output and Its Use

Summary

Over 450 images have been produced in the three pilot project areas, but still these images covered only limited segments of street elevations especially in Muharraq and Manama cultural heritage areas. Only 54 images were rectified to produce, in total, six elevation mosaics—a measurable ensemble of building elevations. Eighty percent of the images are of the "rectifiable" classification and left for rectification by others.

Conclusions

The limited number of buildings and scenes for which images have been captured in the three pilot project areas, and the limited number of the captured images that had actually been rectified hardly provide comprehensive documentation. However, the documentation consultants' enterprise provided an opportunity for all parties, including the SSR Director, the design pilot project consultants, and the trainees: to be introduced to the DRI methodology, assess their needs, and adjust their thoughts about how best to take advantage of the opportunity.

Recommendations

Pilot project consultants can be instrumental in assessing and characterizing the need for documentation in urban design and urban complex re-design projects in general. Their views should be taken into account in formulating future documentation guidelines on "what" "how much" and "how" to document. Further, a system for organizing and accessing all classes of image information needs to be developed. This will function as the nucleus for an evolving comprehensive image data base serving urban projects and municipal needs.