CHALLENGES & OPPORTUNITIES OF

HOUSING REHABILITATION IN HISTORIC SETTLEMENTS OF THE ARAB REGION



UN-Habitat

وزارة إعداد التراب الوطني و التعمير و الإسكان و سياسة المدينة
Ministry of National Planning, Urban Planning, Housing and City Policy

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المركز الإقليمي العربي للتراث العالمي
Arab Regional Centre for World Heritage (ARC-WH)

Housing is the main constituent of historic urban fabrics...





How do we preserve it in the Arab region?

This publication is based on the report commissioned by UN-Habitat Morocco in June 2023 on best practice case studies in housing rehabilitation occurring in historic settlements in Arab regions, as well as guidelines on how to take action. The guidelines developed in this report result from conversations and debates led during a regional conference that took place between the 15th and 18th of December in Marrakech, Morocco. The report's text was finalized in December 2023.

Housing Rehabilitation in Historic Urban Settlements in Arab Regions is a project by UN-Habitat in partnership with the Islamic Bank for Development and UNESCO, working towards a deeper understanding and collective guidelines for the preservation of housing in historic centers across the MENA region.

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01

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This publication represents a genuine collaboration between our team, UN-Habitat Rabat, Morocco office, the IsDB, UNESCO, and project leads, as well as the experts who led the design and implementation of the selected case studies, who provided the essential ressources that made this report possible, and whose participation made the regional conference a success.

Most importantly, we want to express our gratitude to the Ministry of National Territorial Planning, Urbanism, Housing and City Policy, under the strong leadership of Her Excellency Mrs. Fatima Ezzahra El Mansouri. Their unwavering support was instrumental in making the conference in Marrakesh a success and providing us with invaluable information.

While this project aims to provide best practice guidelines regarding housing rehabilitation in historic centers to professionals and the general public in the Arab Region, it represents case studies that are a labor of care and commitment from local and international experts, activists, and communities working to maintain the spirit of old urban centers by bringing back or retaining the local population in place.

We hope this document will disseminate their work, build upon their efforts, and attract new supporters.



Fig.1: Street in a residential quarter of the Medina of Marrakech. Flickr, ©SlowPathImages. Accessed September 4th 2023.

02 Executive summary

Summary of recommendations

Drawing on insightful 17 case studies and robust recommendations by experts invited to a conference, this document presents a comprehensive strategy for housing rehabilitation and conservation management plans (CMPs) in historic settlements across the Arab region.

It underscores the pivotal role of CMPs in orchestrating holistic preservation endeavors, amalgamating architectural, social, economic, and governance facets. The document underscores the transformative potential of CMP adoption while tackling prevalent challenges like funding constraints, stakeholder engagement deficits, and governance inadequacies.

Recognizing citizen participation as indispensable, the document offers inclusive engagement guidelines. It further introduces innovative financing strategies, policy directives addressing land tenure complexities, and sustainable governance frameworks to surmount obstacles in housing rehabilitation. Additionally, the document outlines resilience and reconstruction strategies for post-crisis scenarios, emphasizing meticulous documentation, community empowerment, sustainability integration, and long-term planning.

Embracing these recommendations stands to propel historic settlements into an era of sustainable preservation, nurturing cultural heritage and fortifying community resilience for forthcoming generations.

Suggested next steps beyond this report include disseminating its recommendations by providing free access to them on the project website, presenting them at schools and institutions in the Arab region, and publishing the report. Additionally, creating a network of experts with experience in housing rehabilitation in historic settlements in the Arab region and funding a pilot project, which will serve as a best practice model and a teaching tool, are recommended.

House in the Medina of Marrakesh. Flickr, © Kiran Shand. Accessed September 4th 2023.



03
Partnerships and Project Team

Partners

Islamic Bank

The Islamic Development Bank is a multilateral development bank (MDB), working to improve the lives of those we serve by promoting social and economic development in Member countries and Muslim communities worldwide, delivering impact at scale.

It brings together 57 member countries across four continents - touching the lives of 1 in 5 of the world's population. Its 5 pillars of activity are:

1. Building partnerships between governments, the private sector and civil society through Public Private Partnerships (PPP).

2. Adding value to the economies and societies of developing countries through increased skills and knowledge sharing.

3. Focusing on science, technology and innovation led solutions to the world's greatest development challenges, through boosted connectivity and funding, and a focus on the UN's Sustainable Development Goals.

4. Promoting global development that is underpinned by Shariah compliant long term sustainable and ethical financing structures, as global leaders in Islamic Finance.

5. Fostering collaboration between our members nations in a uniquely non-political environment, as we come together to focus on the betterment of humanity.

United Nations Human Settlements Programme (UN-Habitat)

The United Nations Human Settlements Programme (UN-Habitat) is mandated by the UN General Assembly to promote sustainable urba, development. UN-Habitat is the focal point for all urbanization and human settlement matters within the UN system.

UN-Habitat works with partners to build inclusive, safe, resilient and sustainable cities and communities. UN-Habitat promotes urbanization as a positive transformative force for people and communities, reducing inequality, discrimination and poverty.UN-Habitat works in over 90 countries to promote transformative change in cities and human settlements through knowledge, policy advice, technical assistance and collaborative action.

UN-Habitat's strategic plan 2020-2025 adopts a more strategic and integrated approach to solving the challenges and opportunities of twenty-first century cities and other human settlements. UN-Habitat's mission embodies the four main roles of the organization, which can be summarized as: think, do, share, and partner.

Consultant

UNESCO

UNESCO is the United Nations Educational, Scientific and Cultural Organization. It contributes to peace and security by promoting international cooperation in education, sciences, culture, communication and information. UNESCO promotes knowledge sharing and the free flow of ideas to accelerate mutual understanding and a more perfect knowledge of each other's lives. UNESCO's programmes contribute to the achievement of the Sustainable Development Goals defined in the 2030 Agenda, adopted by the UN General Assembly in 2015.

As early as 1942, in wartime, the governments of the European countries, which were confronting Nazi Germany and its allies, met in the United Kingdom for the Conference of Allied Ministers of Education (CAME). World War II was far from over, yet those countries were looking for ways and means to rebuild their education systems once peace was restored. The project quickly gained momentum and soon acquired a universal character. New governments, including that of the United States, decided to join in. Upon the proposal of CAME, a United Nations Conference for the establishment of an educational and cultural organization (ECO/CONF) was convened in London from 1 to 16 November 1945. Scarcely had the war ended when the conference opened. It gathered together representatives of forty-four countries who decided to create an organization that would embody a genuine culture of peace. In their eyes, the new organization was to establish the “intellectual and moral solidarity of mankind” and thereby prevent the outbreak of another world war.

Aziza Chaouni Projects

Aziza Chaouni Projects (ACP) is a multidisciplinary design firm based in Toronto, Canada, and Fez, Morocco. The firm specializes in architecture, landscape, urban design, and construction. ACP collaborates with various experts, including ecologists, contractors, geographers, sociologists, economists, hydrologists, and others, to foster innovation through dialogues among different disciplines.

ACP undertakes projects ranging from small-scale furniture design to large-scale city planning, working with both non-profit organizations and government agencies across the globe. Some of their clients include the Royal Society of Conservation of Nature (Jordan), Joudour Sahara and Lamalif (Morocco), Evergreen Brickworks (Toronto), Getty Foundation, World Monuments Funds, USAID, the Moroccan Ministry of Tourism, and others. By working across different scales and cultures, ACP aims to address all dimensions of their projects with meticulous attention to detail, while also gaining insights from collaborating with indigenous community groups worldwide.

Additionally, Aziza Chaouni, the founder of ACP, is an Associate Professor at the University of Toronto, where she leads an ecotourism laboratory called Designing Ecological Tourism. She involves her students in applied research projects in the Global South, collaborating with NGOs and institutions.

04 Project Methodology

Project Methodology

Case study selection

We start by establishing a preliminary list of our proposed sites based on our own exposure professionally and academically, best practices from the literature, and recommendations from the body of experts. The interviewees will also help us finetune the final list of historic centers and relevant housing projects within them. The aforementioned interviews are all the more crucial at the earliest stage of the project to help us gain a better understanding of the key historic settlements with relevant housing rehabilitation experience and the challenges and opportunities facing them, as well as provide us with additional documentation and archival resources that may not be publicly available.

Preparing the groundwork for the analysis of the selected sites, we looked at outstanding precedent namely in Tunisia (Hafsia), and draw pertinent takeaways and best practices to learn from, adapt and test in the final pilot projects selected. The Hafsia rehabilitation in Tunisia was completely implemented in 1999 and won Aga Khan Award for Architecture in 1983 and 1995 during two different phases. The project was therefore completed long enough to assess their medium and long term success and drawbacks, a few decades later.

Research

Following a thorough archival and bibliographic research, we undertakood a macro and micro analysis of the chosen projects in line with our integrative approach starting with their larger context, examining their governance model, masterplans and connections pertaining to the housing projects at hand.
This research consisted of a multi layered analysis of housing rehabilitation projects in historic urban settlements in light of the variables mentioned in the Terms of Reference, to which we added two critical ones, education and environmental impact :

- Conservation design and construction
- Financial instruments
- Legislative and institutional structures
- Socio-economics
- Land tenure
- Management and governance
- Education
- Environmental impact

We concluded with an assessment of challenges and opportunities for housing in the selected historic settlements in each of the 10 countries. This in turn informed the needed solutions to reverse the deterioration of housing in historic centers.

Conference & Pilot projects

A regional conference held in Marrakech gathered world experts from the selected 10 countries and beyond to expose and exchange on the subject of housing rehabilitation challenges and best practices within historic centers across the Arab Region. Guidelines were co-developped during workshops.



Fig.2: Kasbah of Taourirt, Morocco. Flickr, © Kiran Chand. Accessed September 4, 2023.

05
Case studies

5A-01

MOROCCO | Medina of Marrakesh

Rehabilitation of the Medina of Marrakesh

Marrakesh, Morocco



Fig.3: View over Marrakesh. Source https://www.flickr.com/photos/kosmoseleevike/15910646944/



INTRODUCTION

Established in 1071 by the Almoravids, Marrakesh served as a prominent political and cultural hub in the Muslim West for an extended period. Its origins trace back to a military encampment, Kras El Hajar, and a market situated in the midst of a plateau at the base of the Atlas mountain range. Marrakech is home to an impressive array of architectural and artistic masterpieces, including ramparts and monumental gates, the Koutoubia Mosque, the Saadian Tombs, the ruins of the Badiâ Palace, the Bahia Palace, and the Menara Basin and Pavilion. Within the 700 hectares of the Medina, the ancient habitat, now vulnerable due to demographic changes, stands as an outstanding example of a living historic city with its labyrinthine alleys, houses, souks, fondouks, and traditional artisanal and commercial activities.

The Medina of Marrakech aligns closely with the royal directives aimed at enhancing and preserving the architectural and cultural heritage of ancient medinas. It has benefited from several rehabilitation programs, the majority of which were presented or signed in the presence of His Majesty King Mohammed VI. These transformative programs aim to support the city's urban and demographic development, enhance its economic attractiveness, solidify its position as a global tourist hub, improve socio-cultural and sports infrastructure within it, and promote human development indicators.

Main instigator
Al Omrane Marrakesh

Historic Center
Medina of Marrakesh

Targeted beneficiaries
Residents and shop owners of the Medina

Project duration
- 2014-2017 : Marrakech, City of Permanent Renewal Program;

- 2017-2019 : Program for the Rehabilitation and Restoration of Tourist and Spiritual Circuits in the Medina of Marrakech;
- 2018-2022 : Program for the Valorization of the Medina of Marrakech;
- 2006-2024 : Rehabilitation Programs for Endangered Dwellings (Habitat menacant ruine) in the Medina of Marrakech.

Project budget
EUR 330 million

Progress status
Work in progress
- Marrakech, City of Permanent Renewal Program 2014-2017 — 100%
- Program for the Rehabilitation and Restoration of Tourist and Spiritual Circuits in the Medina of Marrakech 2017-2019. — 100%
- Program for the Valorization of the Medina of Marrakech 2018-2022 — 88%
- Rehabilitation Programs for Endangered Dwellings (Habitat Menacant Ruine) in the Medina of Marrakech 2006-2024. — 70%

1. IDENTIFICATION

Size of the overall city
Surface: 230 km²
Population: 1,067,000 inhabitants

Size of the historic area
Surface: 7 km²
Population: Approximately 83,110 inhabitants (below the number of dwellers in 1912 due to severe depopulation).

Principal function of the city
Capital, transportation center, economic center

Principal function of the historic area
Residential, cultural heritage site, craft production, and traditional economic activities

Heritage status
UNESCO World Heritage Site since 1985, criteria (i)(ii)(iv).

Income level of dwellers in the historic city
Diversified, but the majority of the Medina dwellers are low income families.

Demographic profile
The Medina's population is majorily poor or below the poverty line.
In 1999, 20.3% of households of 5 and 17.9% of household sof 6 lived in a single room.

Land tenure
Private, public and Habous (religious buildings or placed under the custody of the religious affairs ministry). Approximately half of the Medina's residents are home owners.

Housing role in the project
Housing played a central role in the project, considering it is the predominant land use in the medina. In fact, one of the programs of the valorisation of the Marrakech medina was specifically devoted to the rehabilitation of endangered dwellings (Habitat Menacant Ruine).

Situation and urban evolution
Marrakesh was established as a cultural, religious, and trading center for the Maghreb. In 1147, the city was taken over from the Almoravids by the Almohads, who transformed it into a prestigious capital city. Marrakech has experienced significant urban expansion over the years. The urban extent of Marrakech in 2014 was 14,302 hectares, increasing at an average annual rate of 5.6% since 2002. This trend was dictated by the demographic growth of the city, exceeding the one million mark with an average yearly growth rate of 1.6%.

The Medina of Marrakesh is located at the heart of the city. It's situated at the foot of the towering Atlas Mountains in Central Morocco.

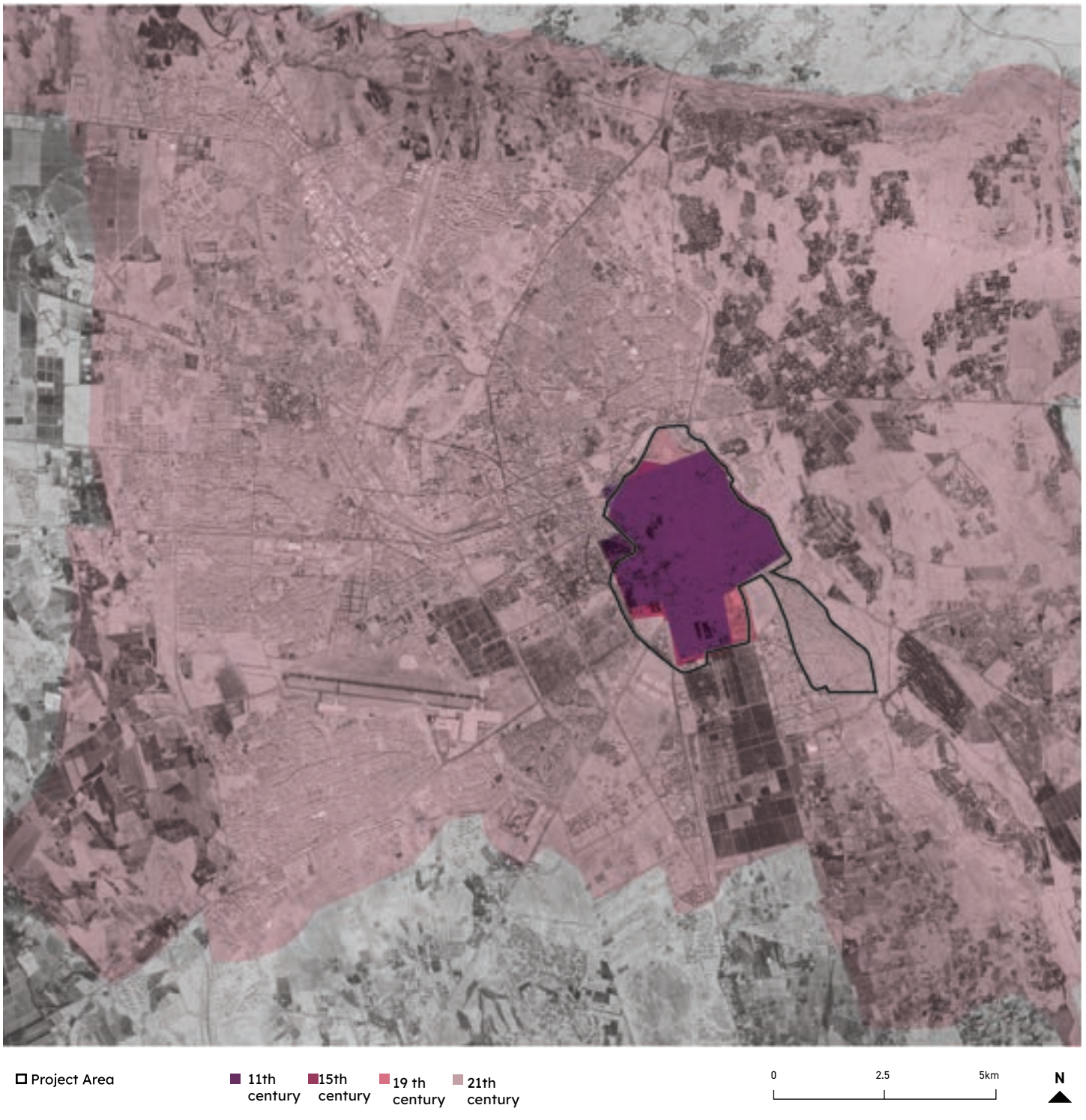


Fig.4: Morphological evolution of Marrakesh medina

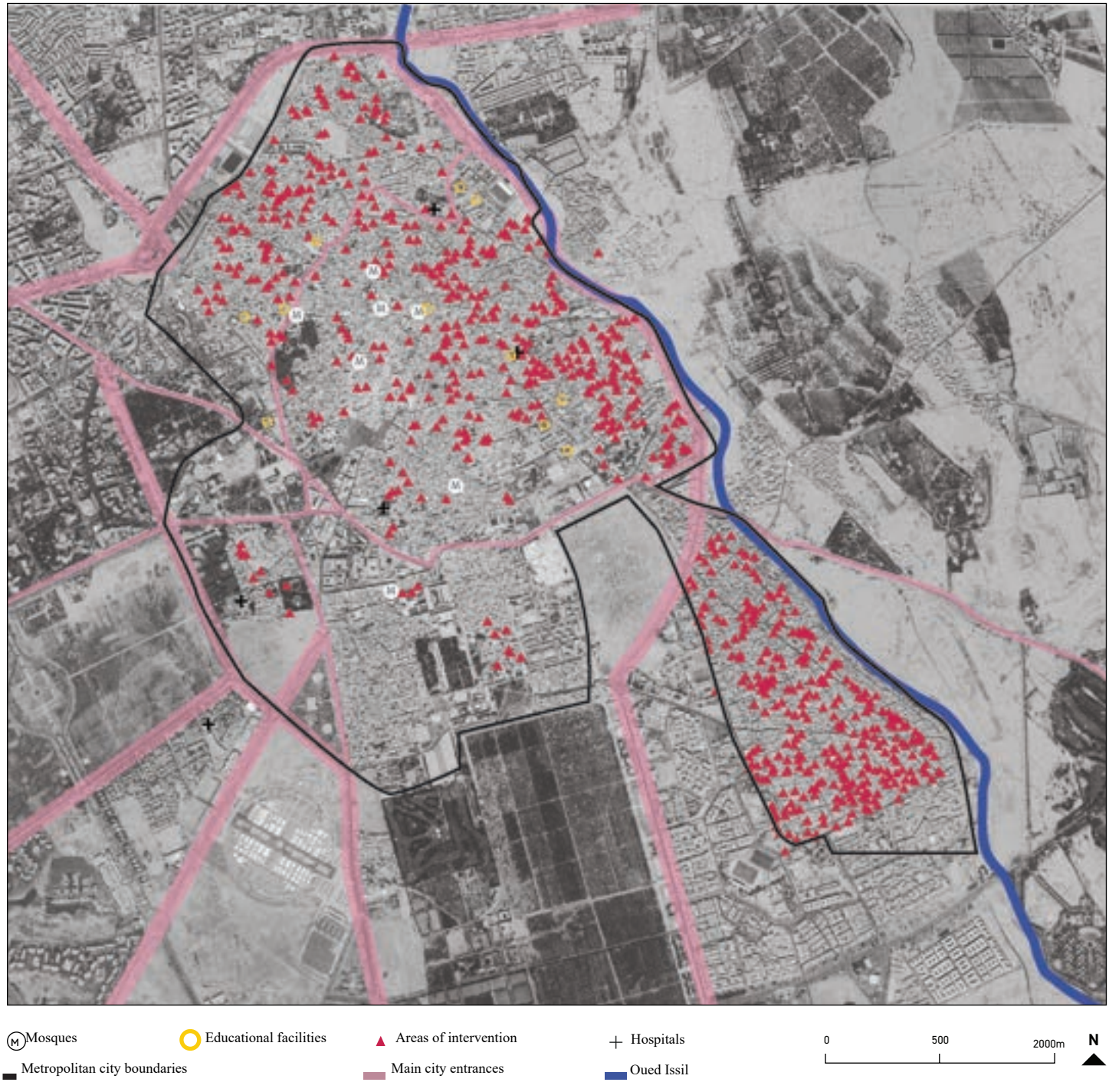


Fig.5: Marrakesh intervention area

2. STAKES

Diagnosis/Status

Marrakech, the red city, home to artisans and traders, with its rich built heritage, is an expanding touristic and cultural destination. The apparent successes of this rapid development conceal a worrying social reality, however. The extremes of luxury and poverty exist side by side in the old quarters of the medina. With traditional houses renovated by rich owners (often foreign nationals) and overcrowded, run-down dwellings, the concept of social mix unfortunately seems likely to remain a distant dream for a long time to come.

Challenges

- Delay in initiating the demolition and reconstruction of the buildings designated for demolition due to the delayed designation of architects by the Order of Architects who are



Fig.6: A courtyard of one of the target traditional house in Marrakesh. Source : https://openarchive.icomos.org/id/eprint/1403/1/Rehabilitation%20et%20action%20sociale%20a%20Marrakech,%20Maroc.pdf

responsible for developing architectural plans for the rebuilding of housing units.

- The difficulty in gathering the prescribed documents outlined in the "Habitat Menaçant Ruine" guide by eligible beneficiaries.
- Uniform authorization for reinforcement for all housing units involved in the consolidation under intervention.
- Discontent among former beneficiaries whose buildings were subject to reinforcement under previous HMR programs and reclassified for urgent total demolition without reconstruction under the current agreement.
- Refusal of evacuation by households in HMR buildings, citing the inadequacy of the frontal aid (5000 Dhs) for rent.
- Constraints arising from the impact of the COVID-19 pandemic on the execution timelines of contracts.
- Delays due to contract terminations and relaunching of markets
- Delay in the execution of stone cladding work due to the limited number of qualified workers.

Objectives

1. Improve the living conditions of the inhabitants
2. Restoration of historical monuments (funduqs, mosques, squayats, mausoleums, gates, city walls...)
3. Creation or redevelopment of public and social facilities
4. Upgrading parking facilities
5. Enhancement of tourist circuits
6. Signage and urban furniture
7. Environmental projects

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Traditional Moroccan courtyard house (Dar and Riad)

Period : Since the 12th century

Occupants : A diverse population, encompassing individuals from various economic backgrounds – rich, middle-class, and poor – as well as people practicing different religions, including Muslims, Jews, and Christians.

Evolution of housing typologies

Courtyard houses have historical antecedents in the houses and villas of the Greco-Roman Mediterranean world and even earlier in the ancient Middle East. Riyad gardens, more specifically, probably originated in Persian architecture and became a prominent

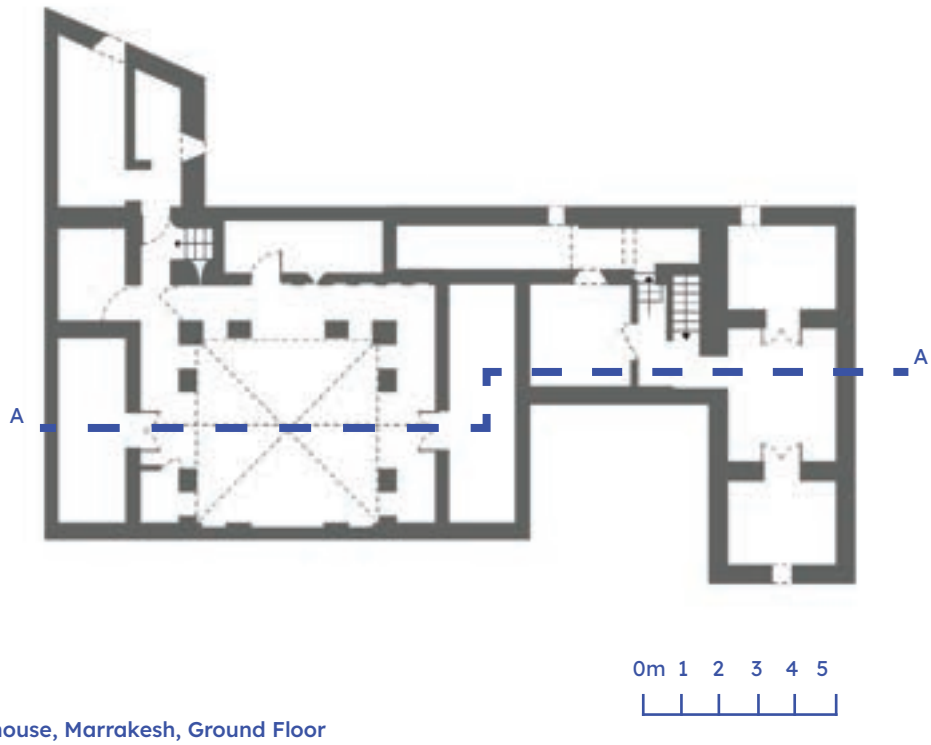


Fig.7: Example of a typical courtyard house, Marrakesh, Ground Floor



Fig.8: Example of a typical courtyard house, Marrakesh, Section A-A

feature in palaces in Andalusia (such Madinat al-Zahra, the Aljaferia and the Alhambra). In Morocco, the earliest known example of a true riyad garden (with a symmetrical four-part division) was found in the Almoravid palace built by Ali ibn Yusuf in Marrakesh in the early 12th century, next to what is now the Kutubiyya Mosque.

The inward orientation of Moroccan house architecture may have been partly encouraged by the values of Islamic society, which placed emphasis on privacy and encouraged a separation between private family spaces – where women generally lived and worked – and semi-public spaces where outside guests were received. Nonetheless, pre-Islamic traditions of domestic architecture in the Mediterranean and Africa were also at the origin of this model. These two factors likely contributed together to making the courtyard house the near-universal model of traditional Moroccan houses. It is unclear to what extent Moroccan riads and houses were inspired by models imported by immigrants from Andalusia, where many early examples have also survived, or to what extent they developed locally in parallel with Andalusi versions. What is certain, however, is that there was historically a close cultural and geopolitical relationship between the two lands on either side of the Strait of Gibraltar.

Description
In Marrakesh, the flat landscape and ample space within its city walls meant that houses could have larger courtyards and fewer stories, in contrast with those of Fez. Most older houses had only a ground floor, or at most an upper floor with a low ceiling used for storage. Larger and richer houses often contained riad gardens, which were more common in Marrakesh than in other cities. Houses were built in brick or rammed earth, with wood being used again for certain elements. Wooden corbelled arches seen in older houses became less common in more recent centuries and round or ogival brick arches were favored instead. In turn, horseshoe arches became rarer after the 18th century. Walls were covered with plaster which historically had a rose, reddish, or yellowish color, and sometimes enlivened with friezes of painted motifs. Zellij was used in reception rooms and around fountains. Window frames and door frames are often highlighted with carved stucco. The carving of motifs into wood, on the other hand, became less common over time and by the late 19th century wooden decoration was limited to painted decoration. This painted decoration also evolved, however, increasing the use of floral motifs and typically employing a red background.

Spacial distribution
The courtyard house with a Douirya (small house) situated on the first floor is one of the classic configurations in Marrakech. The house, laid out around its inner courtyard, was accessible only to members of the family; the master of the house had the Douirya to himself. This independent
The apartment in which he received guests on professional or private visits had its own stairway, entrance to which stood in the winding corridor that protects the house from curious eyes. The actual house is built on two floors. The first floor has a larger useful surface area than the ground floor. A stairway in the corner of the courtyard leads to the gallery, which, on the first floor, provides access to the various rooms.

3.2. Condition of the historic housing units before rehabilitation

The housing units that were considered for rehabilitation were abandoned and/or on the brink of collapse.

3.3. Rehabilitation know-how, materials, and material sourcing

Local know-how was retained and revived thanks to the high demand on traditional craftsmenship from riad owners and other tourist equipments. The specialized expertise of craftsmen includes: tahejjaret or stone work, wood work, wrought iron, tadellakt or lime work, bejmate also known as terracotta, etc.)

The materials used were as follows :

- Red wood
- Cedar wood
- Natural Lime
- Natural stone
- Sand
- wrought iron

All the materials used were sourced locally.

4. MECHANISMS OF THE PROJECT

4.1. Process

1. Undertake studies and necessary work to address 1600 buildings at risk of collapse in the city of Marrakech through direct intervention by specialized companies, including a building affiliated with the Ministry of Endowments and Islamic Affairs.
2. Regulate and specify the commitments and responsibilities of the contracting parties in order to allocate financial resources for implementation.
3. Allocate financial support of 5000 dirhams to families affected to temporarily vacate their homes during the intervention.
4. In case the work cannot be carried out on a building at risk of collapse for technical, administrative, or legal reasons, a specialized company will demolish the building. Financial support of 20,000 dirhams is allocated for each residing family. The monitoring committee can propose following legal procedures currently in place and issue a decision to demolish the building for the protection of residents and the neighborhood.
5. This program concerns 2400 families distributed as follows: 150 families residing in buildings affiliated with the Ministry of Endowments and Islamic Affairs and 2250 families residing in other buildings.

4.2. Partners

Experts
Architect, engineering firm, coordination office, control office, laboratory, sociologist, scenographer, historians, scientific committee.

Public stakeholders
Wilaya of Marrakesh-Safi, Urban Agency of Marrakech, Ministry of Culture and Communication, Ministry of National Territory Planning, Land Planning, Housing, and City Policy, Ministry of Religious Endowments and Islamic Affairs, Ministry of Interior, Hassan II Fund.

Newly created institutional structures
There was no need for a new institution to implement the project.

4.3. Organization and selection

a. Organization

The project's organization is shown on the organizational diagram (Fig.12).

The Habitat Menacant Ruine project relied on the following approaches :

A multipartite approach:
This is a collective initiative that brought together all local actors in the city, both institutional and associative, who agreed on a unified approach to managing “Habitat menacant ruine”. This included more coordinated and concerted intervention methods. It also aimed to leverage the resources and means of these various actors for a more effective distribution of their roles and responsibilities to address the concerning rise of the HMR phenomenon in the city.

A concerted approach:
Following a series of local consultations with all relevant stakeholders to garner their support and

OBJECTIVES

1

DRAW UP A BMR SCREENING PROGRAM

In consultation with the stakeholders, ANRUR will first carry out a technical, social and property survey, with geolocation of buildings buildings in neighbourhoods affected by the BMR phenomenon.

CARRY OUT TECHNICAL ASSESSMENTS

At the end of the sweep, and in order to determine the appropriate approach to adopt, an in-depth assessment of the BMRs is then identified.

2

3

DEFINE APPROPRIATE INTERVENTION SCENARIOS

The work required to treat the BMR identified is based on the results of the technical assessment using a participatory and holistic approach.

MAP BMR IN A GIS

The results obtained are mapped and integrated into a monitoring and observation system that is regularly updated and accessible to all stakeholders.

4

Fig.9: Project objectives

FOCUS ON PROGRAMS

SWEEP & TECHNICAL EXPERTISE LAUNCHED IN 2022

6 PRIORITY REGIONS

RABAT-SALÉ-KENITRA
TANGER-TETOUAN-AL HOCEIMA
MARRAKECH-SAFI
SOUSS-MASSA
LAAYOUNE-SAKIA EL HAMRA
CASABLANCA-SETTAT

6 PILOT REGION

RABAT-SALÉ-KENITRA
- 3 prefectures
- 3 provinces

SURVEYING OF 32 900 BUILDINGS

ASSESSMENTS OF 5 500 900 BUILDINGS

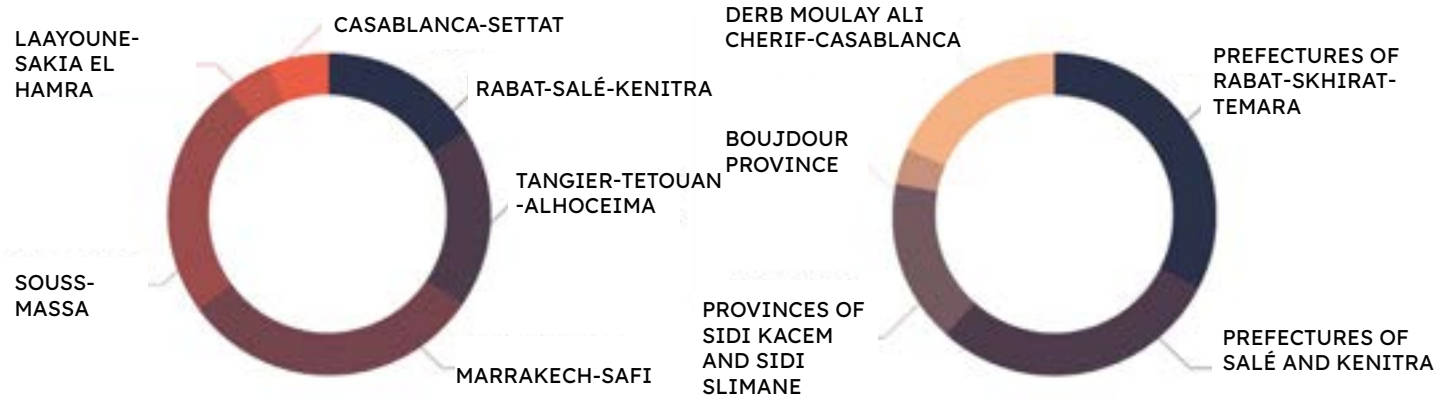


Fig.10: Project Program

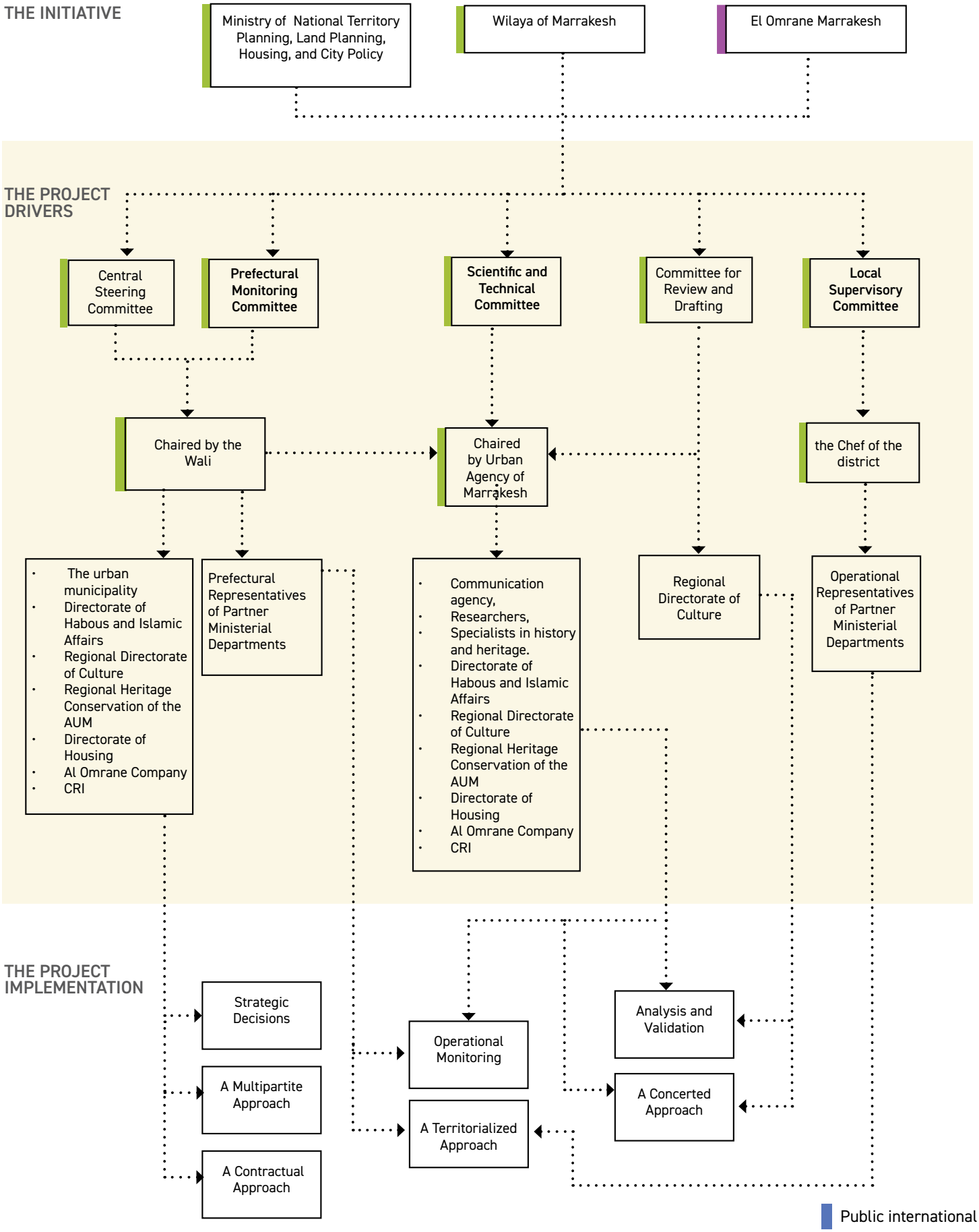


Fig.11: Organizational chart

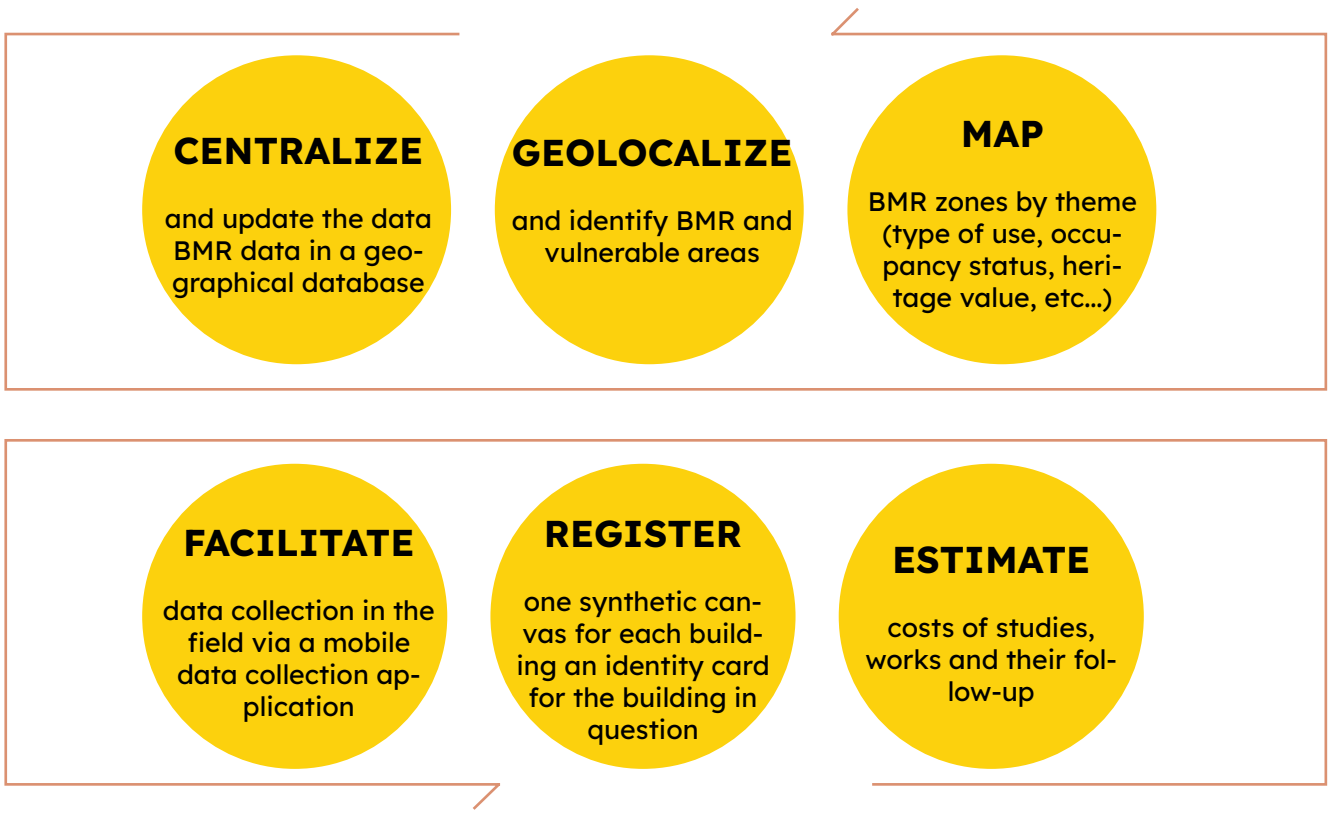


Fig.12: Intervention strategies

explore various avenues and approaches for an efficient and effective management of the phenomenon.

An operational approach:
Defining the practical modalities of HMR management. Outlining the steps, procedures, and roles of thematic committees responsible for carrying out various rehabilitation works on these buildings (timelines, scheduled moments for thematic committee meetings, etc.).

A territorialized approach:
The management of HMR has been designed based on a territorial approach. For each district in the Medina, a local committee has been established, aiming for localized management of control and identification works related to CMR.

A contractual approach:
Finally, for the effective implementation of the programs, all stakeholders involved committed to respecting its principles by validating and signing the reference document. The Wilaya, as the driving force behind this initiative, played a central role in bringing these actors together and ensuring their active involvement..

b. Selection process

The main selection criteria were the buildings' condition and the socio-economic status of the dwellers, either tenants or owners.

BMR CLASSIFICATION

B1

BUILDINGS TO BE DEMOLISHED

Those that reveal structural disorders, are detrimental to the overall stability of the building, and pose a risk to users, and where conservation action would be very costly or incompatible with the nature and/or heritage value of the building.

B2

BUILDINGS TO BE PARTIALLY DEMOLISHED

Those that can be preserved with partial demolition, possibly combined with reconstruction, consolidation or repair.

B3

BUILDINGS TO BE STRENGTHENED

Those that do not belong to the previous classes and whose conservation is necessary (heritage building, historical, etc.) or whose conservation is technically and economically worth preserving by structural reinforcement.

B4

BUILDINGS TO BE REPAIRED

Those with repairable damage or minor defects that may pose a short-term risk of deterioration.

B5

BUILDINGS WITHOUT INTERVENTION

Those that do not show any significant deterioration and do not impact its structural safety.

Fig.13: Classification strategies

4.4. Tools

a. Implementation tools

Survey tools
- Photogrammetry by drone;
- Integration of data visualization, editing, and analysis tools;
- QGIS geographic information system application.

Stakeholder engagement
N/A

Community engagement
- Meetings for consultation
- Establishing a dialogue through the dissemination and exchange of experiences and the collection of proposals
- Raising awareness about the importance of safeguarding the Old Medina of Marrakech
- A first workshop addressing material heritage and a second workshop focusing on intangible heritage within the framework of a sustainable development vision.

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

Laws and decrees
- Law 22 80 on the conservation of historic monuments and sites, inscriptions, works of art and antiques.
- Town Planning Act 12 90
- Environmental law.
- Special regulations for the Marrakech medina.

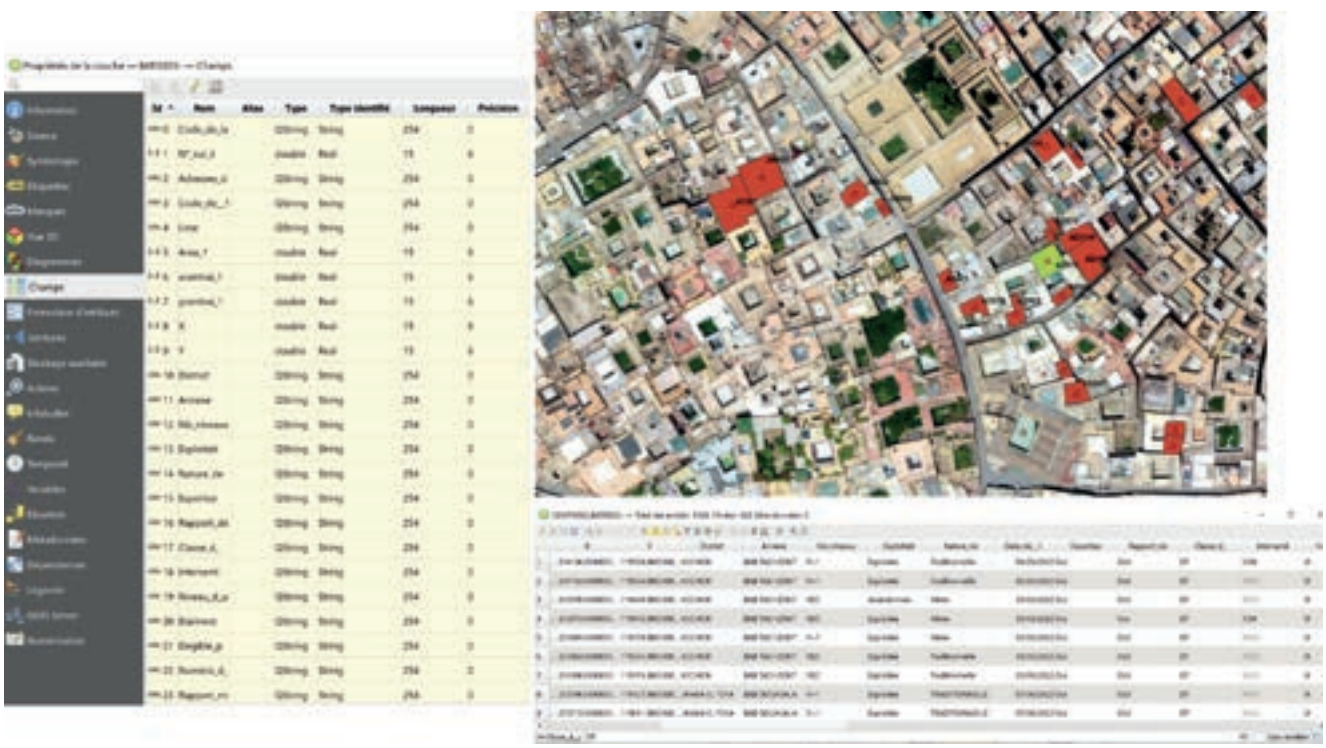


Fig.14: Survey tools
©Cabinet Ouail Benkiran, Axigeo Marrakech.

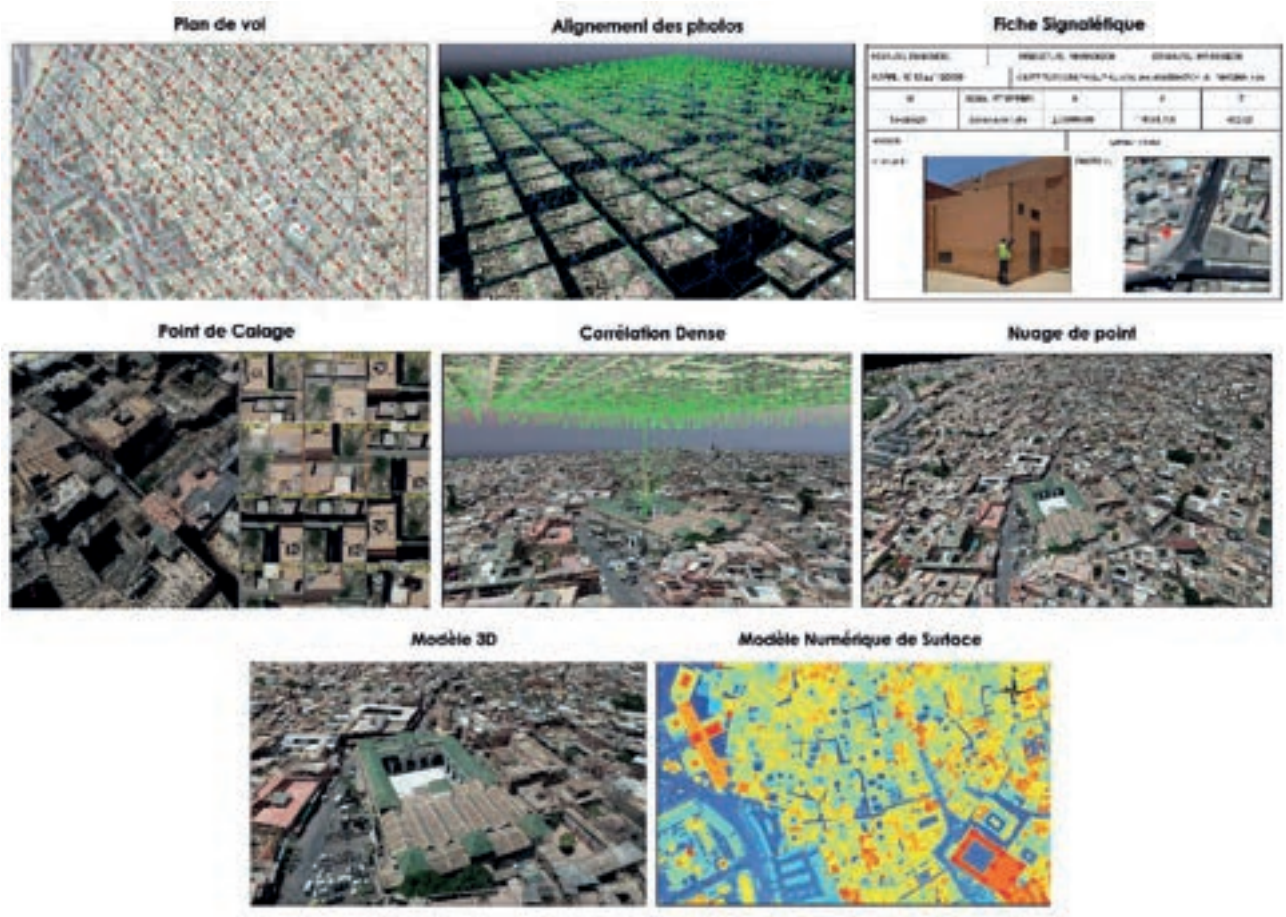


Fig.15: Aerial photogrammetry workflow and outputs. Top row from left to right: Flight plan, Photo alignment, Signal sheet. Middle row: Calibration points, Dense correlation. Bottom row: 3D Model, Surface Digital Model, Point cloud. ©Cabinet Ouail Benkiran, Axigeo Marrakech.

a. Arrêté viziriel du 15 07 1925 portant règlement général d'urbanisme pour la Médina of Marrakech
b. Arrêté viziriel du 15 06 1935 complétant l'arrêté viziriel du 15 07 1925 portant general town-planning regulations for the Medina of Marrakech;
c. Vizierial decree of 1946 establishing protection regulations for the ancient city of Marrakech;

- Plan d' aménagement de Sauvegarde et d' aménagement de la médina et de la Kasbah intra muros approved in 2023
- Prefectoral decrees on terrace design, colors and traditional coatings.
- Management plan
- Architectural charter of the Marrakech medina.

Environmental and social tools

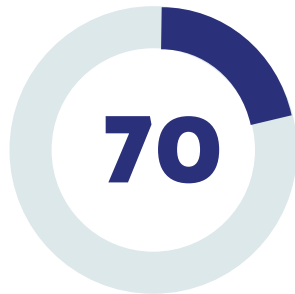
- Use of solar energy in public facilities;
- Irrigation of green spaces with reused water.

4.5. Financing

Total amount :
EUR 330 million

Source :
Ministry of Culture and Communication
Ministry of National Territory Planning, Land Planning, Housing, and City Policy
Ministry of Religious Endowments and Islamic Affairs
Ministry of Interior
Hassan II Fund

320 PARTICIPANTS IN THE PROJECT:



PUBLIC STAKEHOLDERS

Representing communes, deconcentrated state services, authority agents, concentrated central ministerial departments, private sector representative structures, professional chambers.



JOURNALISTS

Representing the press, broadcast and electronic media.



CIVIL SOCIETY

Representing civil society, associations of craftsmen and tradesmen, university professors, professionals interested in intangible heritage preservation and safeguarding, writers and artists, and foreign researchers.

Fig.16: Distribution of participants highlighting a broad audience with 320 participants divided into public operators, journalists, and civil society

Proposed Implementation Period :
The projects outlined in this agreement will be carried out by Al Omrane Marrakech-Safi within 48 months from the date of approval of the agreement by all partners and obtaining all necessary permits.

In the event that the specified period elapses without completing the program, Al Omrane Marrakech-Safi is required to provide all partners with the initial assessment of the program's implementation, accompanied by a report explaining the obstacles hindering the progress of the work

Grant Recipient : Al Omrane as the delegated project owner

Breakdown :
- Rehabilitation Programs for Endangered Dwellings (Habitat menacant ruine) in the Medina of Marrakech 2006-2024: 1500 MDH (2000 projects - 70% progress)
- Marrakech, City of Permanent Renewal Program 2014-2017: 890 MDH (43 projects - 100% progress)
- Program for the Rehabilitation and Restoration of Tourist and Spiritual Circuits in the Medina of Marrakech 2017-2019: 241 MDH (27 projects - 100% progress)
- Program for the Valorization of the Medina of Marrakech 2018-2022: 567 MDH (55 project - 88% progress)
- Other programs: 100 MDH (7 projects - 100% progress)

Financing sufficiency
The initial budget was sufficient for the scope of the project.

Maintenance financing :
No maintenance budget was accounted for.

Rehousing financing :
A aid of MAD 5000 (USD 500) was granted for rent.

4.6 Timeline

Program for the Valorization of the Medina of Marrakech.

June 2023:
- Addressing panel
- Signage panel
- Information panel, Interactive terminals
- Circuit Place Ben Youssef Dar Si Said
- Skalat Al Mourabitine
- Historical doors and interpretation centers
- Zenbouaa Garden

July 2023:
- Improvement of Mechouar accesses (Completion: Bab Lghli roundabout): subject to obtaining authorization from the competent authority

August 2023:
- Circuit Bab Moussoufa Riad Laarouss,
- Koutoubia Garden
- Surveillance camera
- Part of the wall of Mechouar Kasbah
- Enhancement of public lighting

September 2023:
- Al Antaki Parking
- Arset Bouaachrine Parking

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials
N/A

b. Legislation changes

The project didn't trigger any legislation changes.

c. Programs post-rehabilitation

There is a need to create an organization that will be responsible for the upkeep and sustainability of the project.

d. Economic impact

Rehabilitated tourist circuit equipped to enable the

creation of Economic Activity Groups (EAG).
Basic equipment and infrastructure were upgrated, and tourist circuits were rehabilitated with coverage and awnings, allowing merchants to conduct their business and welcome tourists in better conditions.

Employment
Apart from direct employment in rehabilitation works, other related activities have also benefited from the project.

e. Social impact

Gentrification
The project helped keep the original population in place, especially the tenants. However, there is no indication that the owners didn't sell their properties following the increase of their value thanks the rehabilitation of their houses.

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints

N/A

b. Legislative challenges

- Lack of legal justification of ownership of buildings at risk of ruin.
- Difficulty of eviction of resisting occupants.

c. Tenure challenges

Tenure challenges consisted mainly in the multiplicity of land tenure statuses.

ANNEX

a. Contact

Akhana Mohamed Amine, Chef de département réalisation, Al-Omrane Marrakech-Safi

b. Bibliography

https://siredd.environnement.gov.ma/Marrakech-Safi/indicateur/DetailIndicateurPartial?idIndicateur=2742

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Fig.3: Marrakesh intervention area
Fig.4: a courtyard condition of one of the traditional house in Marrakesh.
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Fig.14: Distribution of participants highlighting a broad audience with 320 participants divided into public operators, journalists, and civil society

5A-02

MOROCCO | Ksar of Taourirt

Housing rehabilitation in the Ksar of Taourirt

Ouarzazat, Morocco



Fig.17: View of the housing units in Taourir Ksar.



INTRODUCTION

The ksar of Taourirt is an emblematic earthen settlement and oasis dating from the seventeenth century that is strategically located at the intersection of several transSaharan trade routes and is now incorporated within the modern city of Ouarzazate. Located at its core is the fortified Kasbah Taourirt, which was once a residence of the affluent and influencial Galoui family, and is today a nationally recognized symbol of the Amazigh culture since it was registered as a National Monument in 1954.
Through obsolescence and abandonment, the Ksar of Taourirt has been increasingly threatened, especially the housing units which compose it, due to changes in the economic and social structures that originally supported the Ksar's fabric.
There are a total of 175 houses in the Ksar, 15 of which are built with concrete, while the vacancy to occupency ratio is a staggering 1:2.

Initiated by the Ministry of National Territory and Urban Planning, Housing and City Policy, through its Program for the sustainable development of ksour and kasbahs, the project rehabilitated a total of 60 occupied houses and a number of covered alleyways, which mainly suffered from water infiltration, among other pathologies. It is worth noting that the rehabilitated houses have previously undergone "restoration" interventions in recent decades, but these interventions lacked a proper scientific diagnosis, and were not carried out under CERKAS supervision. This is not to deny the successful restorations designed and executed according to the rules of the art, on which this project has capitalized.

Main instigator
Program for the sustainable development of ksour and kasbahs in Morocco

Historic Neighborhood/ Historic Center:
Historic neighborhood in the Ksar of Taourirt

Targeted beneficiaries
60 houses rehabilitated (60 households, 400 residents)

Project duration
8 months, not counting delays.
Launch date : 04/02/2019

Project budget
MAD 15,693,528 (Approx. USD 1,569,352.8)

Progress status
Completed

1. IDENTIFICATION

Size of the overall city
Ouarzazat city where the Ksar of Taourirt is localted is 305 km² , and is home to 71,067 inhabitants.

Size of the historic area
The Ksar of Taourirt, including the Kasbah, is approximately 6.2 ha.

Main function of the city
Historic, touristic, religious, cultural, commercial

Main function of the historic area
Residential, historic neighborhood, economic (craftsmanship and small businesses), monuments and heritage

Heritage status
The Kasbah of Taourirt, attached to the Ksar of the same name, is listed as a national heritage.
The city of Ouarzazat where the Ksar is located is today considered the departure point for adventure tourism in the Sahara Desert, hence its name “Door to the Desert.”

Income level of dwellers in the historic city
Unknown.
The residents' main income derives from farming and trade activities.

Demographic profile
The ethnic groups that once made up the ksar were as follows:
- The imzouarn or powerful lords and governors;
- Amazigh inhabitants;
- Subsaharan populations;
- Slaves and descendants of slaves;
- Jews;
- and Mrabtin (descendants of a marabout).

Land tenure
The Ksar is occupied by owners, tenants, as well as squatters. However, the real estate status is 90% private and 10% public (communal).

Housing role in the project
Housing was at the center of the project given that it is the dominant land use in the selected area of intervention.

Situation and urban evolution
The Ksar of Taourirt is a fortified village entrapped between the road N10 North and the Assif n'Tidili South, a temporary waterway which is considered a tributary of the Daraa oued. (Fig.18).

Evolution of housing typologies
Historic images confirm that Taourirt was once an oasis that encompassed several villages. The palm grove was home to a mix of Muslims and Jews who worked as farmers, servants, slaves, and were part of the Caid's extended family. The complex was a combination of palaces, stalls, kitchens, and animal pens. Over time, the Ksar evolved into a small town with two winding streets and narrow lanes, centered around two noble houses or Kasbahs. One of the Kasbahs belonged to the Caïd Si Hammadi, calipha of the Pasha of Marrakech, while the other belonged to Si Mohamed el Aarabi, his nephew and the eldest son of Si El Madani.

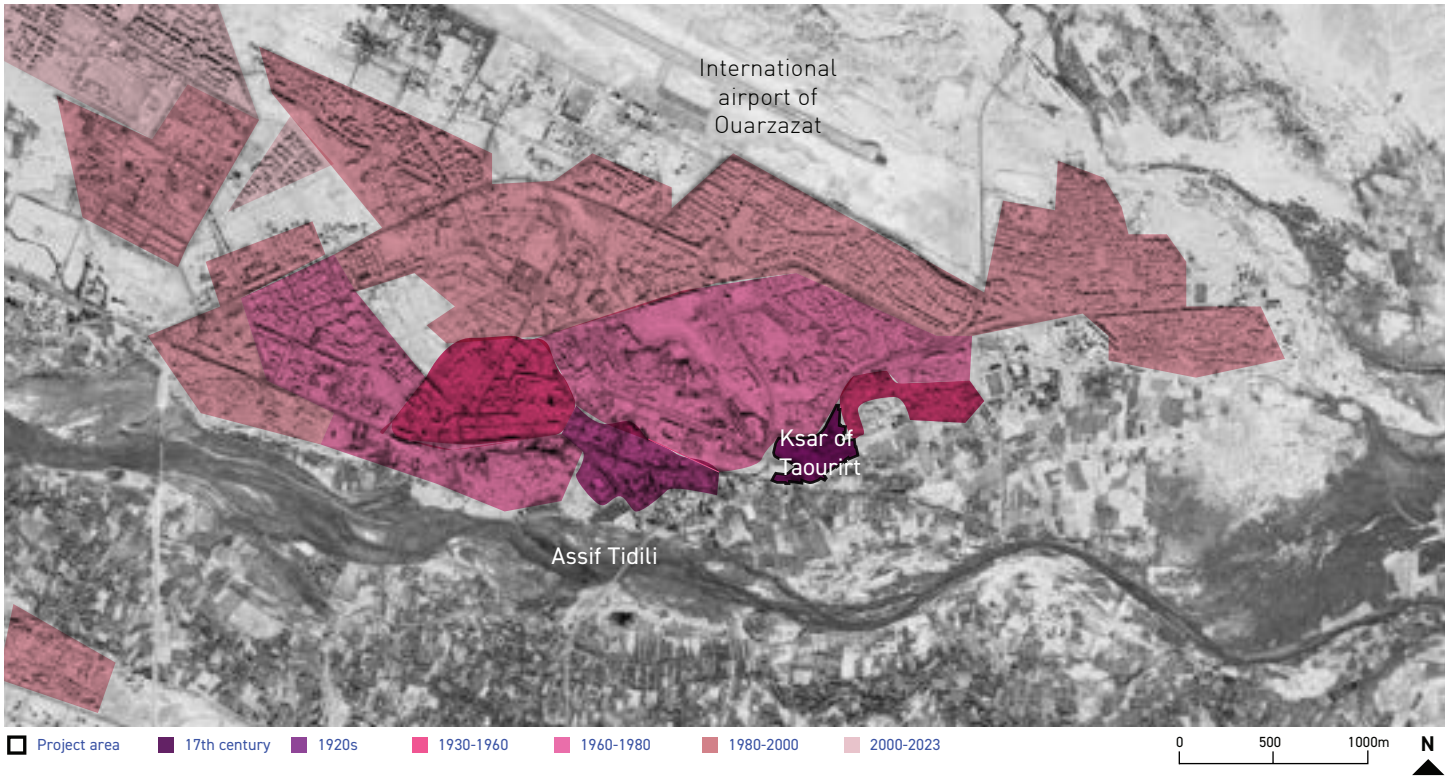


Fig.18: Ksar of Taourirt situation and urban evolution of East Ouarzazat



Fig.19: Ksar of Taourir location



Fig.20: Localisation of the intervention site and buildings



Fig.21: Before condition of elected buildings for rehabilitation. ©National Program for the Enhancement of Ksour & Kasbahs

During the French protectorate, the city underwent significant changes and rapid growth. The French army established their quarters on a hill facing Taourirt in the west, and in 1929, Colonel Bonnard Chardon began planning the colonial city.

After gaining independence, the city's landscape has transformed drastically from its original palm oasis. While a few elements still hint at the natural setting of the past, such as the Ksar cemetery and historic entrances, the city has expanded significantly to the north and along the access roads due to rural emigration and population growth. The Amazigh settlements, which include the Kasbah de Commandement and the ksar, were once surrounded by a natural landscape but are now embedded in a large urban environment, except for the south area. The settlements are now turned toward the oued and indirectly protected from the risk of flooding. However, the view from the kasbah toward the opposite riverbank, where another kasbah once stood, has also been rapidly transformed by the expansion of housing complexes.

2. STAKES

2.1. Diagnosis/Status

The Ksar of Taourirt is among the 4000 ksours in Morocco that are at risk of becoming obsolete and abandoned, leading to their gradual deterioration and eventual collapse. This decay is a result of changes in the economic and social structure that originally sustained them, a common issue in regions with an earthen building tradition. These settlements and sites are culturally significant for their aesthetic, social, and cultural values, and as physical evidence of the historical development of the pre-Saharan region. However, the lack of connection between the protection of these settlements, their planning systems, and the uncontrolled development of cities around them poses significant conservation challenges that the current system is unable to address, putting the existence and preservation of the sites at risk.

2.2. Challenges

The Ksar of Taourirt has been deteriorating and decaying due to the decline of the agrarian economy, which has caused the migration of inhabitants to larger regional settlements or cities in search of better living and financial conditions. This mass migration has left behind lower-income inhabitants and led to the decline of the ksour as viable urban settlements. Earth is now associated with poverty and substandard living conditions, and the progressive abandonment of the Ksar has led to a downward spiral of decay, lack of maintenance in public areas, collapse of abandoned buildings, and loss of know-how for building maintenance and earthen construction techniques. The replacement of traditional techniques with modern construction techniques has only worsened the problem. To conserve a settlement like the Ksar of Taourirt, a multidisciplinary approach is required to address economic, social, cultural, and technical problems holistically. However, the main challenge is the gradual loss of technical knowledge to design proper interventions and carry out regular maintenance to preserve and rehabilitate the site while preserving its historic fabric.

2.3. Objectives

The Program for the sustainable development of Morocco's Ksour and Kasbah sites aims to improve the living conditions of the Ksar's population (particularly young people and women), in support of the actions already undertaken in this direction by the Ministry of Housing and Urban Policy (MHPV), legislation on cultural heritage conservation and earthen construction, and the strategies and actions of the Ministries of the Interior, Culture, Tourism, Town and Country Planning, Crafts, the Environment and Moroccans Living Abroad.

More specifically, the project aims to :

- Establish the Ksar of Taourirt as a pilot project and improve the living conditions of its

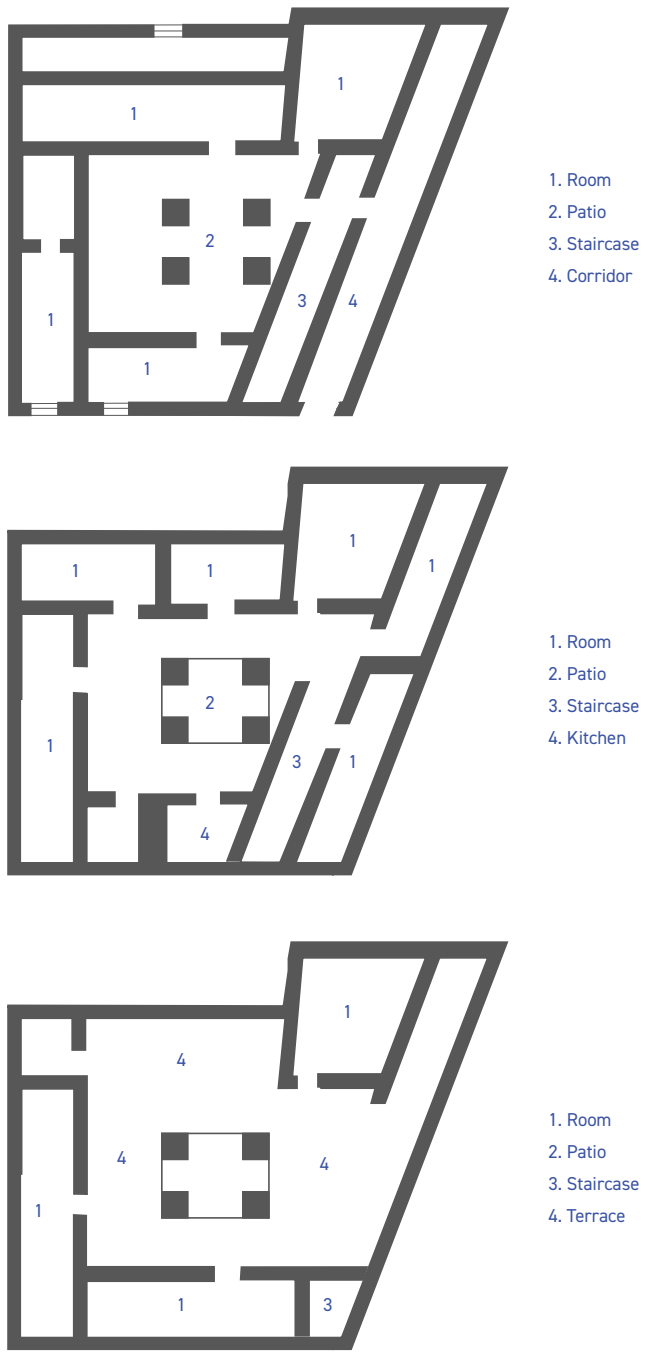


Fig.22: Floor plans of a traditional house in the Ksar of Taourirt

population, particularly in terms of housing and infrastructure;
- Build capacity, inform, and raise awareness among private and public players and local populations about the potential of ksour and kasbahs and how they can be developed.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Traditional taddart or tigmmi (house in Amazigh, the local language)

Period : 17th century
Occupants : Originally a mix of wealthy merchants and modest servants, currently low income residents.

Description :
The houses in the Ksar are essentially rammed earth houses, which are either inhabited dwellings or abandoned ruins.
This heritage is threatened by a variety of dangers, whether social with wealthy families leaving the ksour, raditional housing is increasingly disfigured by the innovations brought about by technical progress (metal doors, crude ironwork, concrete rendering, architecture, etc.).

Spacial distribution :
Information not available.



Fig.23: Before and after of residential buildings in the Ksar of Taourirt. ©National Program for the Enhancement of Ksour & Kasbahs



Fig.24: Before and after of a kitchen in residential building in the Ksar of Taourirt. ©National Program for the Enhancement of Ksour & Kasbahs

3.2. Condition of the historic housing units before rehabilitation

The buildings in Taourirt exhibit visible signs of decay, including collapses, damaged foundations, cracks, detached plaster, faulty floors, and untimely dampness. However, these symptoms may mask underlying issues in other areas of construction. In adobe construction, several weaknesses may accumulate over time without immediate consequences, and it often takes a sudden event to trigger a long-smoldering pathology. The pathologies observed in these buildings are typically caused by either a lack of maintenance or changes in the environment or use of the structure.

3.3. Rehabilitation know-how, materials, and material sourcing

The materials used to build Ouarzazate's ksours are pisé (a rammed mix of locally extracted Biyada earth and lime), Adobe (Ettoub), traditional baked brick and sometimes schist. The use of stone for foundations and plinths is obvious,
Coating plasters are generally made of all-rounder and lime, and are still in use in the region after nine centuries of application. This proves the legitimacy of the choice.
Wood, reeds, straw and plaster are used for the various elements of the construction, especially for the decorations.

- Locally sourced materials : rammed earth, adobe, palm tree, straw, lime, reeds, etc.;
- Not locally sourced materials : tiles especially for toilets and kitchens

3.4. Rehabilitation stages

The rehabilitation underwent many stages applied to two complementary clusters.
Cluster 1 : 27 houses + covered streets
Cluster 2 : 33 houses + covered streets

- Roughening and scraping of existing coatings
- Filling cracks or rebuilding parts of walls
- Installation of lintels for openings (if necessary)
- Preparing plaster using a traditional process (earth+sand+lime+water).
- Application of plaster after a few days' rest
- Installation of traditional metal joinery;
- Fitting/not fitting traditional doors and windows (wooden door with hammered nails)

4. MECHANISMS OF THE PROJECT

4.1. Process

The intervention was sectioned into two clusters:
Cluster 1 : 27 houses
Cluster 2 : 33 houses

The restoration/rehabilitation work carried out affects both housing and alleys, covered passages, borjs, the mosque, etc.

4.2. Partners

Experts
Architect, engineer, conservation consultants (CERKAS).

Public stakeholders
- Ministry of National Territory and Urban Planning, Housing and City Policy
- Program for the sustainable development of ksour and kasbahs in Morocco
- PNUD
- CERKAS (Ministry of Culture)
- Province of Ouarzazate
- Municipality of Ouarzazate

Newly created institutional structures
The project didn't trigger the creation of any new institutional structure.

4.3. Organization and selection

a. Organization
The project's organization is shown on the following diagram (Fig.25).

b. Selection criteria
Housing :
- Level of damage
- Adherence of the residents

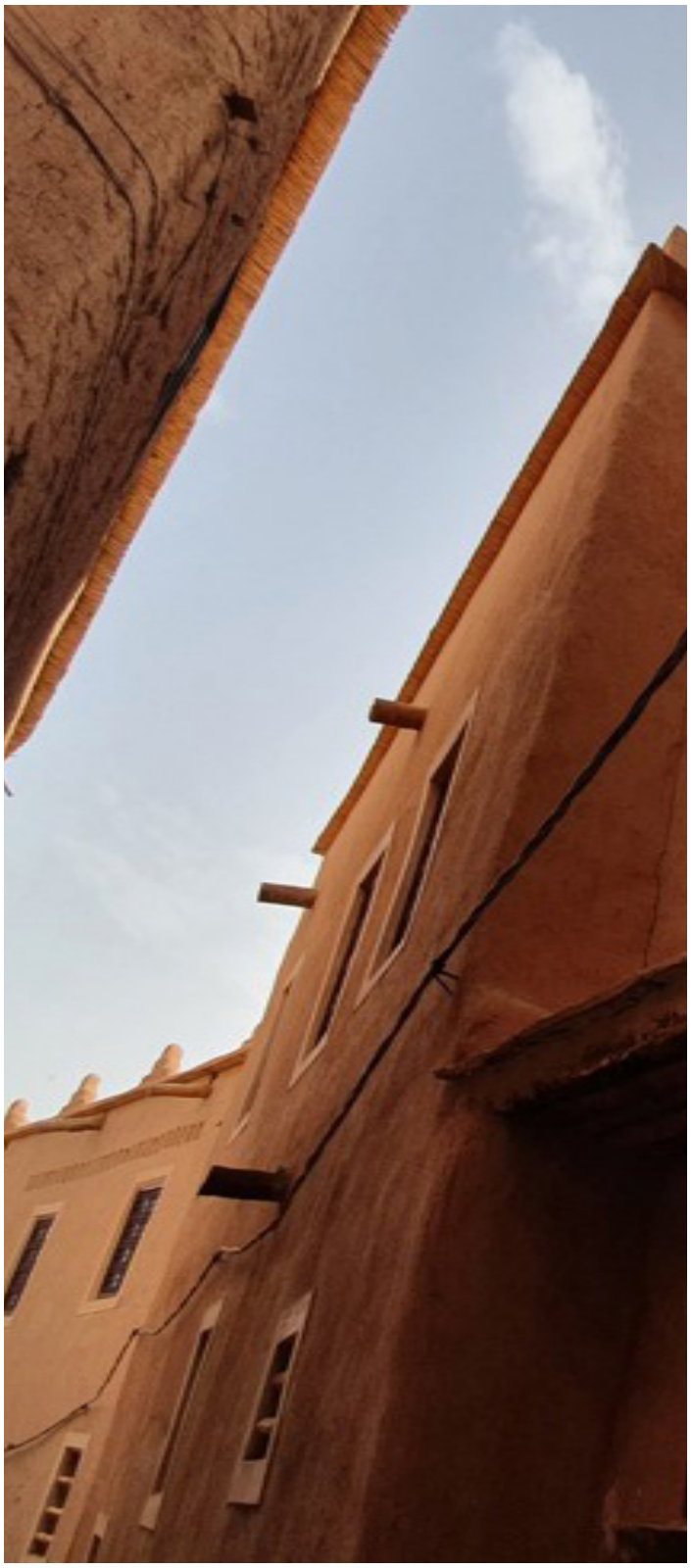
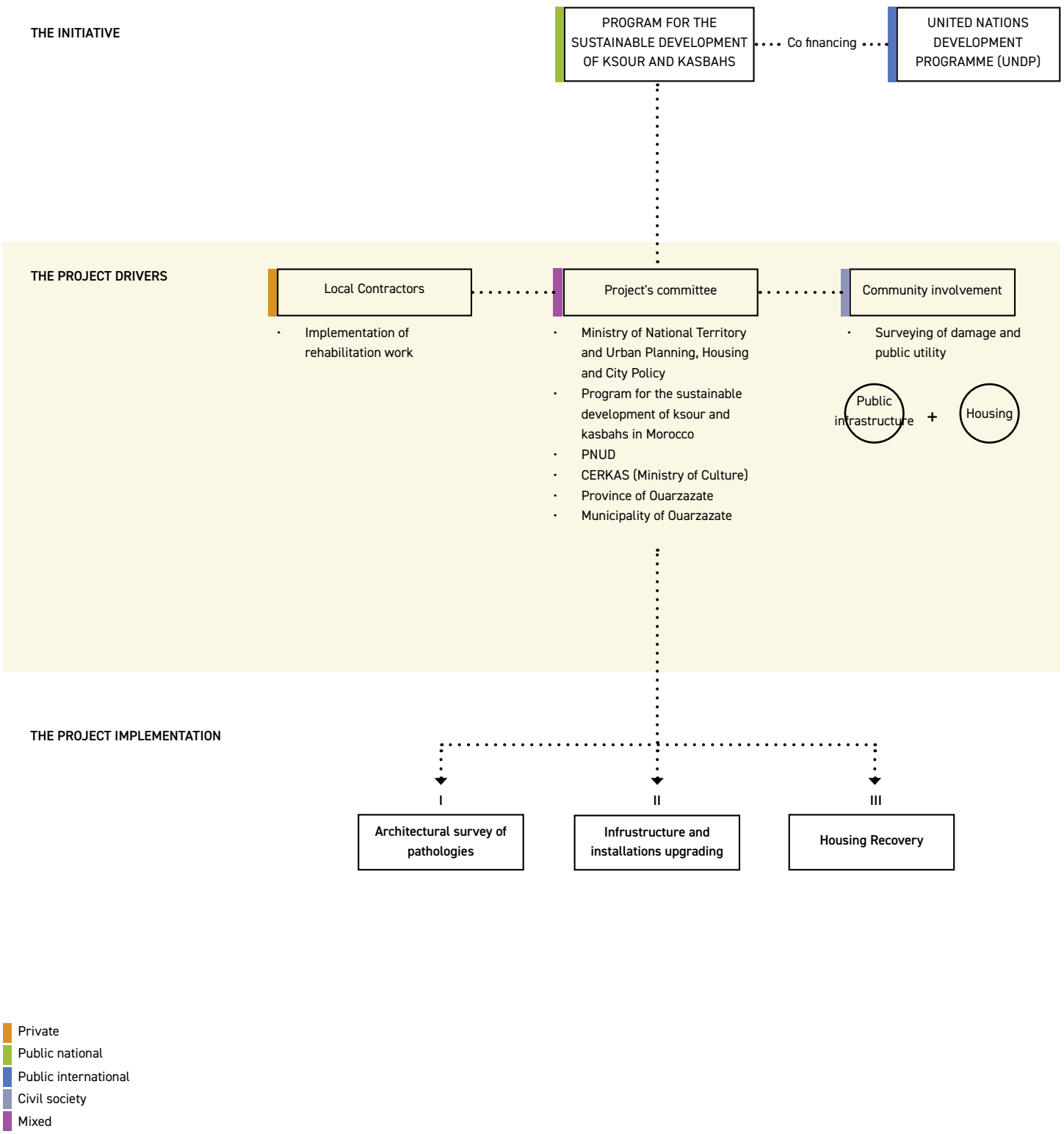


Fig.25: Street view ©National Program for the Enhancement of Ksour & Kasbahs

Fig.26: Organizational chart



Infrastructure :
- Public utility
- Urban importance

4.4. Tools

a. Implementation tools

Survey tools
The surveying consisted of an assesment of the housing conditions, followed by a set of technical floor plans of the shortlisted houses.

Stakeholder engagement
Information not available.

Community engagement
The local population, represented by the elders, was involved in the project since the beginning with the choice of the intervention areas within the ksar; additionally, they were consulted throughout the implementation of the project.
The larger population was also targeted by awareness campaigns around the importance of heritage preservation.

In the long term, the project is set to create a dedicated body for community-led management of the Ksar, which will borrow its guidelines from the original system in place of co-ownership trustees called “Jmaa” formerly responsible for the management of the Ksar.

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.)

Laws and decrees
- Project document signed by MATNUHPV and UNDP;
- Partnership framework agreements signed with the Ouarzazate local authority and CERKAS.

Environmental and social tools
Information not available.

The environmental approach was limited to the use of local materials as a means to reduce the carbon footprint of construction during the rehabilitation process and for the houses in the long run.

4.5. Financing

Total amount : MAD 15,693,528 (Approx. USD 1,569,352.8)

Source :
- 99% from Ministry of National Planning, Urban Development, Housing and Urban Policy. Department of Housing and Urban Policy.
- 1% from PNUD

Proposed Implementation Period :
8 months
Launch date : 04/02/2019

Grant Recipient :
Program for the sustainable development of Morocco's ksour and kasbah.

Breakdown :
Cluster 1 : MAD 6,899,628
Cluster 2 : MAD 8,793,900

Financing sufficiency :
An underestimation of the initial financing led to a re-evaluation of the budget as the works progressed.

Maintenance financing :
No maintenance budget was accounted for.
Some anomalies started to appear already on the rehabilitated buildings due to lack of maintenance.

Rehousing financing :
No maintenance budget was accounted for.
During the works, the residents either relocated to other rentals in the Ksar or to houses of relatives.

4.6 Timeline



Fig.27: Example of a before and after rehabiltation ©National Program for the Enhancement of Ksour & Kasbahs

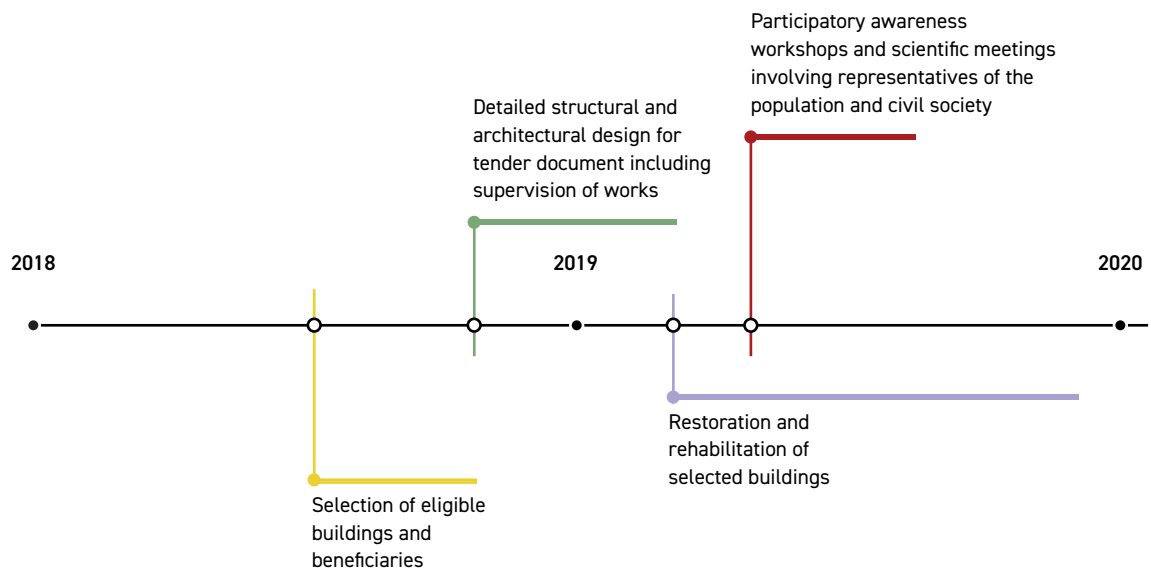


Fig.28: Timeline

Refer to figure 27 for more details.

5. LESSONS LEARNED

5.1. Results / impact

a. Technical improvements on original construction techniques/materials

The project contributed in the promotion of the local know-how related to the rehabilitation professions using local materials (rammed earth, adobe, palm tree, straw, lime, reeds, etc.).
As for traditional construction techniques, the project saw the use of mechanical techniques, rather than manual, especially in terms of rammed earth and adobe.

b. Legislation changes

A project is underway to review the regulations in place.

c. Programs post-rehabilitation

The rehabilitation preserved the initial function of the residential buildings and increase residents retention.

Economic impact

The main economic impact of the project was to provide employment during and after the project's implementation:

During the project:

As a direct impact, the project resulted in 15,000 days of paid work in construction and craftsmanship, with the engagement of 4 contractors.

Post project:

The project gave a boost to local craftsmanship, such as carpentry, ironwork, painting, masonry, plastering, plumbing, etc.
Additionally, the local contractors who worked on this project were able to secure rehabilitation contracts in other cities such as Marrakech, Fez, Meknes, Rabat, El Jadida, etc.
As an indirect impact, the project reinvigorated the tourist activity, as well the local products and bakeries. The project contributed particularly to the women's coop's revitalization by rehabilitating their shops and touristic facilities such as hostels.

d. Social impact

Perception shift

The increase in land value resulted in an increase in the local population's attachment to the Ksar.

Improved quality of life

The project contributed to the improvement of housing and living conditions for the targeted residents specifically, but also for all the Ksar's dwellers by opening and improving the roads and public infrastructure.
By addressing the risk of building collapse, the project improved the overall safety of residents and passengers, including tourists.

Education

The project contributed in the education of the local population on the importance of heritage housing by organizing participatory awareness workshops, as well as scientific meetings involving representatives of the population and civil society.

e. Environmental impact

The rehabilitation of the Ksar didn't have a direct environmental impact on its adjacent oasis. However, it is hoped that the revitalization of the built heritage will bring attention to the importance of preserving the agricultural and biological heritage as parts of the larger system of the Ksar through future programs and projects.

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints

The financial limitations made essential elements of the project such as collecting the population's grievances difficult and limited

b. Legislative challenges

There is an absence of a legal or regulatory text giving the State the right to expropriate buildings like kasbahs for public utility given their potential to activate cultural and solidarity tourism with all the positive repercussions on the local economy.

c. Administrative constraints

The notorious bureaucratic procedures slowed down the process of the project, especially with regard to payments of the contractors.

d. Lack of a holistic approach

To ensure the long-term resilience and autonomy of the inhabitants of ksar, it is important to adopt a more holistirc approach to rehabilitation and restoration. This can be achieved through financing income-generating activities and capacity building projects, as well as developing socio-educational facilities, accommodation units, and other complementary amenities and programs. These measures would help revitalize these spaces, increase their attractiveness, and ensure the long-term resilience and autonomy of their inhabitants.

ANNEX

a. Contact

Bouazza BARKA
National Director of the program for the sustainable development of Morocco's ksour and kasbah.

Ministry of National Planning, Urban Development, Housing and Urban Policy. Department of Housing and Urban Policy.

b. Bibliography

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Fig.29: Courtyard of a house in the Ksar of Taourirt ©Wikimedia Creative Commons

5A-02

MOROCCO | Medina of Fez

The safeguarding program of the Medina of Fez

Fez, Morocco



Fig.30: Fez from above, Morocco. ©Matt Dany



INTRODUCTION

Founded in the year 809, the Medina of Fez is considered the oldest historic urban settlement in Morocco. Composed of two main districts, Fez Jdid and Fez El Bali, the Medina's preservation and rehabilitation have been ongoing for over four decades, starting in the aftermath of the nomination of Fez as a UNESCO World Heritage City in 1981. Initially, several institutional measures were implemented to support the rehabilitation of the Medina of Fez. One of which was the establishment of the Agency for the Rehabilitation of Fez Medina (ADER) in 1989. The ADER Fez holds great institutional significance due to its autonomous status and competencies in heritage preservation and rehabilitation. The safeguarding program for the City of Fez is among the agency's initial projects, conducted in collaboration with numerous local, national, and international stakeholders such as UNESCO and the World Bank which participated in funding the project.

Main instigator
Agency for the Rehabilitation of Fes Medina (ADER Fez)

Historic Center
Medina of Fez

Targeted beneficiaries
The residents of the Medina of Fez

Project duration
10 years - 1990 until 2000.

Project budget
MAD 512 millions (approx. USD 51,200,000)

Progress status
Complete

1. IDENTIFICATION

Size of the overall city
320 km², 1.11 million inhabitants

Size of the historic area
Surface: 280 ha
Fez Bali: 17,342 households, with a population of 70,592.
Fez Jdid: 5,416 households, with a population of 20,560.

Main function of the city
Morocco's cultural and spiritual capital

Main function of the historic area
Residential, historic center, craft center, religious education, tourism

Heritage status
UNESCO World Heritage Site since 1981

Income level of dwellers in the historic city
Population majoritarily with low economic resources

Demographic profile
Young population: 64,2% between 15 and 59
Decreasing population of the Medina: -2,45

Land tenure
81% of the houses are "Melk" status based on the traditional Moroccan system of private ownership. The other 19% are Habous and other mix statuses.

Housing role in the project
Housing was at the core of the project since the goal was to improve the living conditions and the quality of the built environment for the residents.

Situation and urban evolution

- 9th century:

Maoula Idriss I sought sanctuary with the Amazigh indegenous population in the Volubilis region, near Meknes, in 789 CE. He, thus, established their capital on the right bank of the Fez river, now called the Andalusian neighborhood.
His son, Idriss II, moved to the left bank of the Fez river in 809 CE and founded a new city in today's Quaraouiyine neighborhood, complete with a wall, canals, and a royal palace.

- 11th century:

During this period, numerous monuments, including the Quaraouiyine mosque, were constructed.

- 12th-14th century:

After being seized by the Almohads in the 12th century, the capital moved from Fez to Marrakesh. However, it still saw a boom in the arts, culture and craftsmenship with the construction of mills, tanneries, copper and pottery workshops, etc.
The introduction of new techniques for silk weaving, leather work, and metal work, intensified the city's advancement.
Fez once more served as the capital of the Merinid Empire for two centuries beginning in the early half of the 13th century. The Merinids constructed Fez Jdid, a new city west of the city walls, in opposition to Fez Bali. It was situated on a plateau big enough to house the Caliph, his entourage, the army, and the government. The palace, the large mosque, to which the sanctuaries would later be added, the "Al-hamra" mosque, the residences of the viziers, the market, and the Jewish neighborhood "Al Mellah" were all included inside the walls of "El Madinat Al-Ibeida," the White City, home of the Merinids.

- 15th century:

Fez developed into a dual agglomeration, with the administrative and military city on one side and the medina of city residents, intellectuals, artisans, and traders on the other. Many medersas were built at that time to house international students (e.g., Medersa Al Safarine 1272, Medersa Attarine 1323, Medersa Bouanania 1350).

- 17th-18th century:

In 1666, the first Alaouite sultan Moulay Rachid relaunched trade by choosing once again Fez as capital. We owe this sovereign several prestigious constructions: the bridge over the Sebou towards Taza, Qasbah Alklunis to the north of Fez Jdid, the Sherattine medersa, and the Quarrawiyine library. Until 1757, we've seen the emergence of buildings that are now

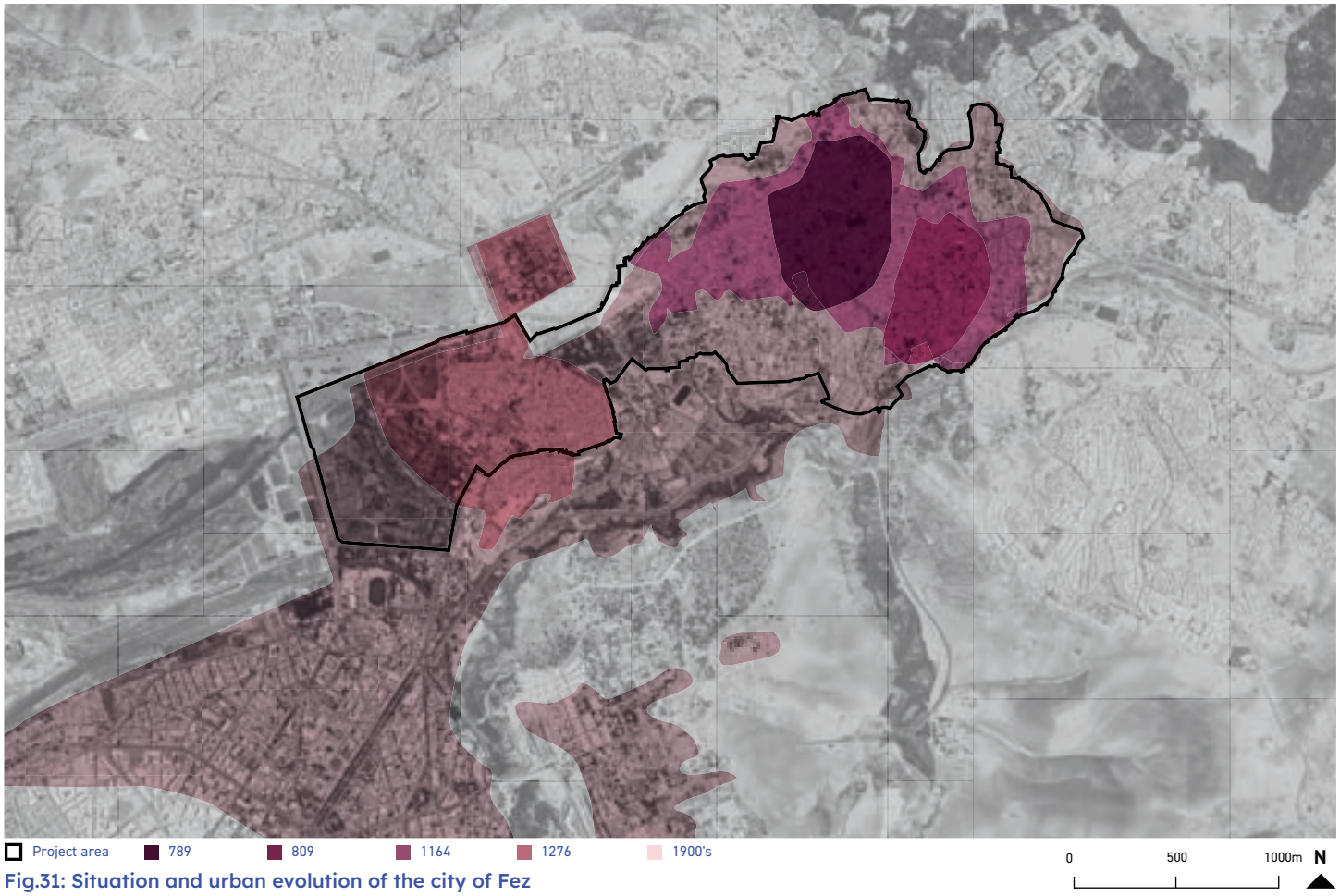


Fig.31: Situation and urban evolution of the city of Fez

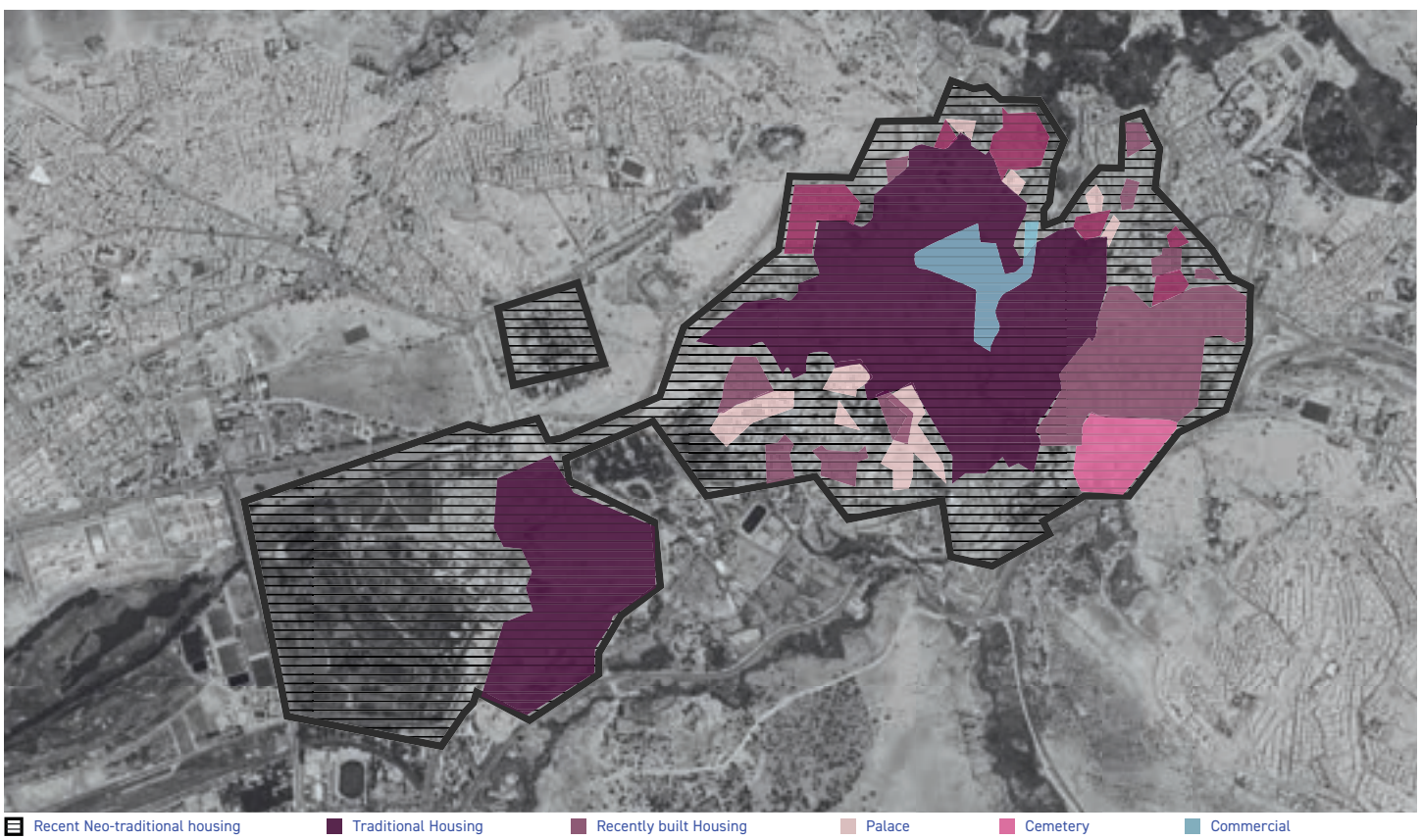


Fig.32: Housing typologies in the Fez Medina

among the architectural treasures of Fez, including the mosque of Moulay Abdellah and the Fondouk of the carpenters' fountain "Najjarine."

- 19th-20th Century:

Since the 1950s, the household and urban spaces in Fez have undergone significant modifications, in addition to the many architectural and decorative styles embraced by various social segments of the population. The medina's urban fabric densified throughout the 1960s and 1970s, to the detriment of agricultural fields located within the walls.
The 1970s saw a substantial shift at the river's crossroads: large sections of the river that ran through the city were covered with concrete slabs to allow for the building of new access roads and parking facilities.
With the influx of rural migrant families in the 1970s and 1980s, a huge demographic shift occured. As a result, the ancient patio houses have become overcrowded. The most important residences, mostly on the ridges west of the Medina, were abandoned by their owners and handed over to caretakers and their families. The majestic palaces slipped into obscurity due to a lack of upkeep effort.

2. STAKES

2.1. Diagnosis/Status

Poor living conditions faced by most dwelers of the Medina inevitably lead to situations of risk, including building collapses. The heightened concern about risks and potential loss of lives has compelled the government to adopt a national rehabilitation strategy for buildings at risk of collapse. Buildings on the brink of collapse present a dual danger:

1. Threatening the lives of several thousand residents: The project's investigation identified 3,816 households exposed to the danger of collapsing residences.
2. Losing buildings often of significant architectural value: 1,890 historical structures (705 traditional and 185 neo-traditional) were at risk of collapse, with 510 of these buildings having substantial architectural or historical value.

The adaptation and evolution of the Medina of Fez are hindered by many constraints, which manifest in key areas: buildings, infrastructure, land tenure, accessibility, construction methods, etc. The freedom of action for investors is significantly limited by these constraints, leading to additional costs, implementation difficulties, marginal operating conditions, as well as constant uncertainty regarding timelines and costs. Some of these constraints are permanent and clash with certain significant aspects of modern living. For instance, the permanent impossibility of automobile circulation inside the Medina makes its adaptation to the needs of the population much more challenging compared to other parts of the city.

2.2. Challenges

The challenges concerning the Medina are primarily: economic, social, and cultural.

- Economic and legal challenges:

The safeguarding of the Medina requires mobilizing substantial resources, especially for relocating the affected residents. In terms of legal aspects, two main problems arise, namely land tenure and occupancy status, which hinder the implementation of the interventions.

- Social challenges

The Medina also presents a significant social challenge, as it is home to a disadvantaged population. Decisions regarding evacuation are often perceived as unjust and disruptive, causing frustration among the affected population after collapses.

- Cultural challenges

The necessity to protect the relevant characteristics of the historic Medina involves maintaining the overall unity of the old city's core, which constitutes its cultural value. It also includes safeguarding the architectural features and morphology of the historical districts.

2.3. Objectives

- Rehabilitation of the built heritage
- Improvement of critical accessibility in the Medina
- Improvement of the urban environment
- Poverty alleviation
- Institutional strengthening

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Dar (traditional house)/Riad

Period : Since the 14th century

Occupants : Mainly low-income families who live in shared rentals and a minority of wealthy families owning vacant houses.

Evolution :
The oldest dwellings are from the Merinid era (14th century). Riads are the fruit of a stage of evolution of the urban fabric which became denser from the center to the periphery. It is, one can say, an intermediate stage in an evolution tending towards the densification of the urban fabric of the medina, which has given way to houses with small patios.

Description :
When viewed from the outside, these homes have a plain and neutral appearance that makes it difficult to distinguish between rich and poor homes. However, once inside, the differences become apparent. The interior of these homes, as it is now, can offer a wealth of information about the architecture and decoration of the time period, as well as cues about the materials and construction methods that were employed.
The traditional house represents a fundamental



Fig.33: Measures to safeguard houses at risk of collapse.
Source: https://heureusecommeunpoisson.wordpress.com/tag/fes/

component in the structure of the medina, its adoption by Muslim society was a response to rigorous conditions. According to Mortada (2011), ancient Islamic teachings and customs include precepts that can have immediate domestic and residential implications. These rules are based on the values of modesty, spirituality, social connection, family ties, and hospitality. Each element has a substantial impact on the architectural designs and uses of space in Muslim homes. Such principles are translated spatialy through courtyards, transitional spaces and internal circulation, proper distribution of openings, curved entrance halway, etc.

Spacial distribution :
In vernacular architecture, multifunctional spaces are the most common. At different times of the day and night, rooms such as the living and dining rooms were adapted to varied uses.

- The Dar's spatial organization

The central courtyard is accessible from the house's



Fig.34: Interior damage in a traditional house in the Fez Medina. Source: https://heureusecommeunpoisson.wordpress.com/tag/fes/

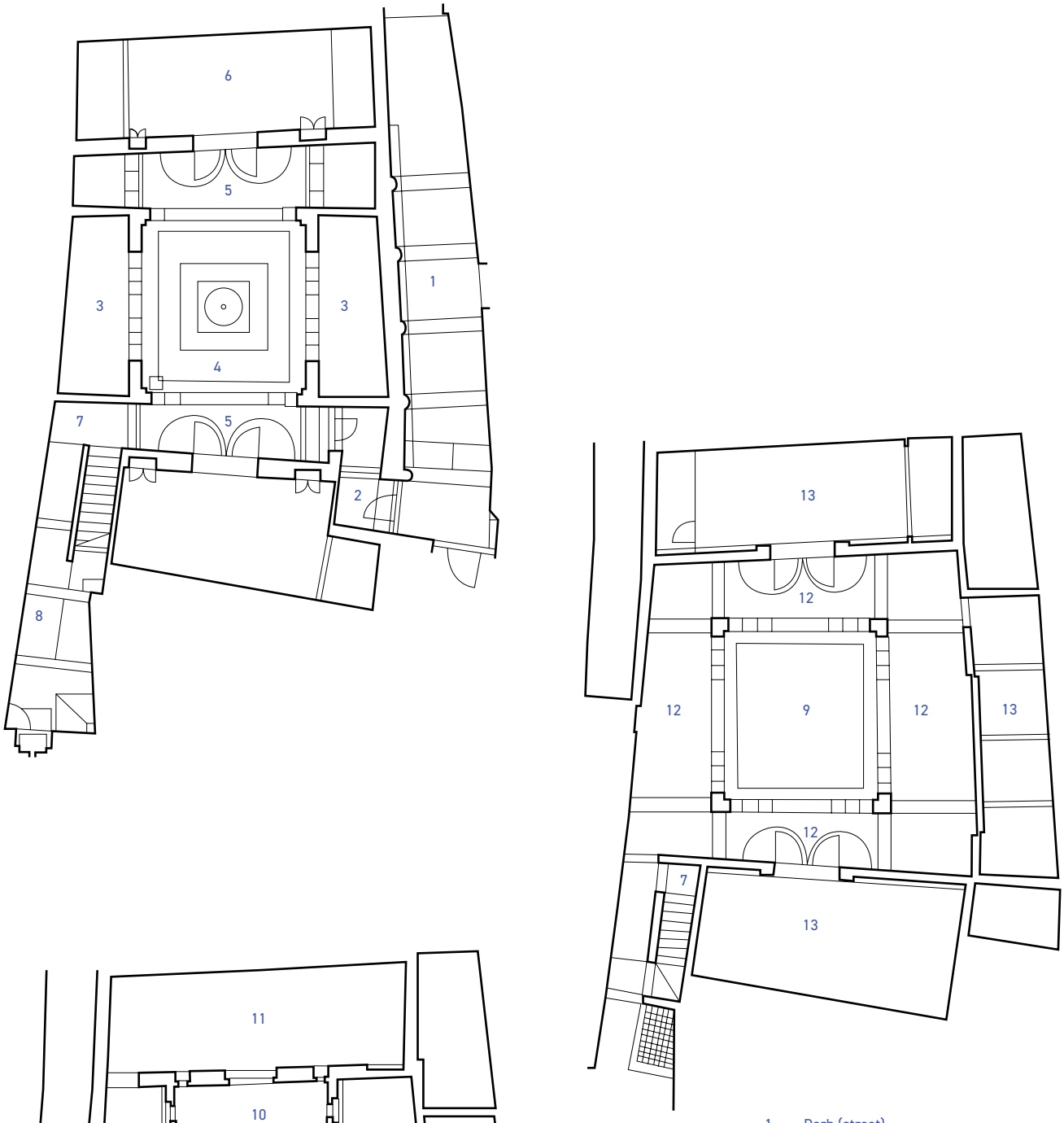
courtyard is around ten square meters in size. It provides lighting and ventilation for the communal areas as well as the living rooms. Two bedrooms are located on the first level, two of them slightly elevated above the patio floor. The first chamber opens in the center, the second chamber opens at the end. The kitchen and reserve (khzine), which are shared areas, are generally in a wing next to the front door. The second level has a big living area, three bedrooms, and a balcony that encircles the patio. On the third level, there is merely a patio. There are small steps that connect the various levels.

- Riad spatial organization

Riad in Fez, according to the authors, is defined as "an enclosed interior garden".
The difference that therefore exists between Riad and Dar would essentially come from the fact that the first is embellished with an interior garden which is lacking in the Dar. It is also useful to point out that the Riad is most often richly decorated and is generally of a higher standard than that of a Dar.



Fig.35: A small square, with its support structure, awaiting restoration. Source: https://heureusecommeunpoisson.wordpress.com/tag/fes/



1. Derb (street)
2. Bab Dar and Setwan (Entrance and hall)
3. Bertal (Portico)
4. Woust Dar (interior courtyard)
5. Gallery
6. Living room
7. Drouj (stairs)
8. Kitchen
9. Void on Courtyard
10. Void on Bertal
11. Cheqlabia
12. Gallery
13. Room

0 2 4m

Fig.36: Typical plan of a traditional house in the Fez Medina. Dar El Iraqi

The Moroccan Riad's components :

- Entrance:

Centered, chicane, or angled corridor, connects the street to the patio. The entrance is followed by a chicane corridor creating a transitory space.

- The Koubba:

It is generally the noble room with the largest dimensions in the house. This room has the richest decoration as it is considered as a ceremonial room, mostly facing the garden. When the house has only one portic, it borders the Koubba, setting it apart from the other rooms.

- The Menzeh:

It is presented in two aspects:
The menzeh upstairs, which can be found in both dar and riad, offers a panoramic view that stretches over the rooftops of the city.
The menzeh on the ground floor is raised above the level of the rooms so as to overlook the interior garden. Considered a space of leisure, its depth remains smaller than that of the rooms.

- The Bhou:

These loggias are generally quiet places of retreat. When they spread out in length, they form true main buildings entirely open in the garden.

3.2. Condition of the historic housing units before rehabilitation

Traditional houses abandoned and on the brink of collapse. This was largely attributed to the accelerated and sudden emigration of a substantial portion of the population from the medina to other neighborhoods or cities, leaving their homes either abandoned or shared among multiple tenants with no concern for maintenance. Lack of upkeep, abandonment, and heavy usage were then the primary technical causes of degradation.

3.3. Rehabilitation know-how, materials, and material sourcing

Local know-how was retained and revived thanks to:

Training workshops for the residents of the medina as well as craftsmen, technicians, politicians, stakeholders, businessmen and intellectuals in order to:

- Overcome the lack of appropriate expertise
- Rebuild the community's trust in its heritage
- Encourage the master-builders to practice their original work
- Involve both public and private sectors in the process

4. MECHANISMS OF THE PROJECT



Fig.37: Measures to safeguard houses at risk of collapse. Source: https://heureusecommeunpoisson.wordpress.com/tag/fes/

4.1. Process

The projects' process can be explained in four points:

a. Reference area
The study is conducted in a reference area that is representative of the entire medina (43 ha, 1329 houses, 21000 inhabitants, roughly one-fifth of the area and population of Fez Bali during the intervention). This area serves as the framework for the initial project.

b. Preliminary investigations were carried out in the reference area using:
- A double survey, exhaustive for households and covering about half of the houses.
- Technical expertise and a rapid assessment of the work needed for 20 houses.

c. Identification of intervention types
Seven types of interventions on housing have been defined. The first one covers more than three-quarters of the houses in the intervention area:

1. Rehabilitation of (neo)traditional houses.
2. Reconstruction of (neo)traditional houses too degraded for rehabilitation.
3. Rehabilitation of historical houses requiring special treatment.
4. Rehabilitation of apartment buildings.
5. Rehabilitation of the Riads.
6. Adapting some Riads it new uses as equipment or services
7. Renovation (integrated operation of new housing in a strictly delimited small area).

d. Two Levels of Intervention on the housing units:
Level 1: The envelope of the house, "consolidation" work.
Level 2: Rehabilitation of the houses interior.

4.2. Partners

Experts

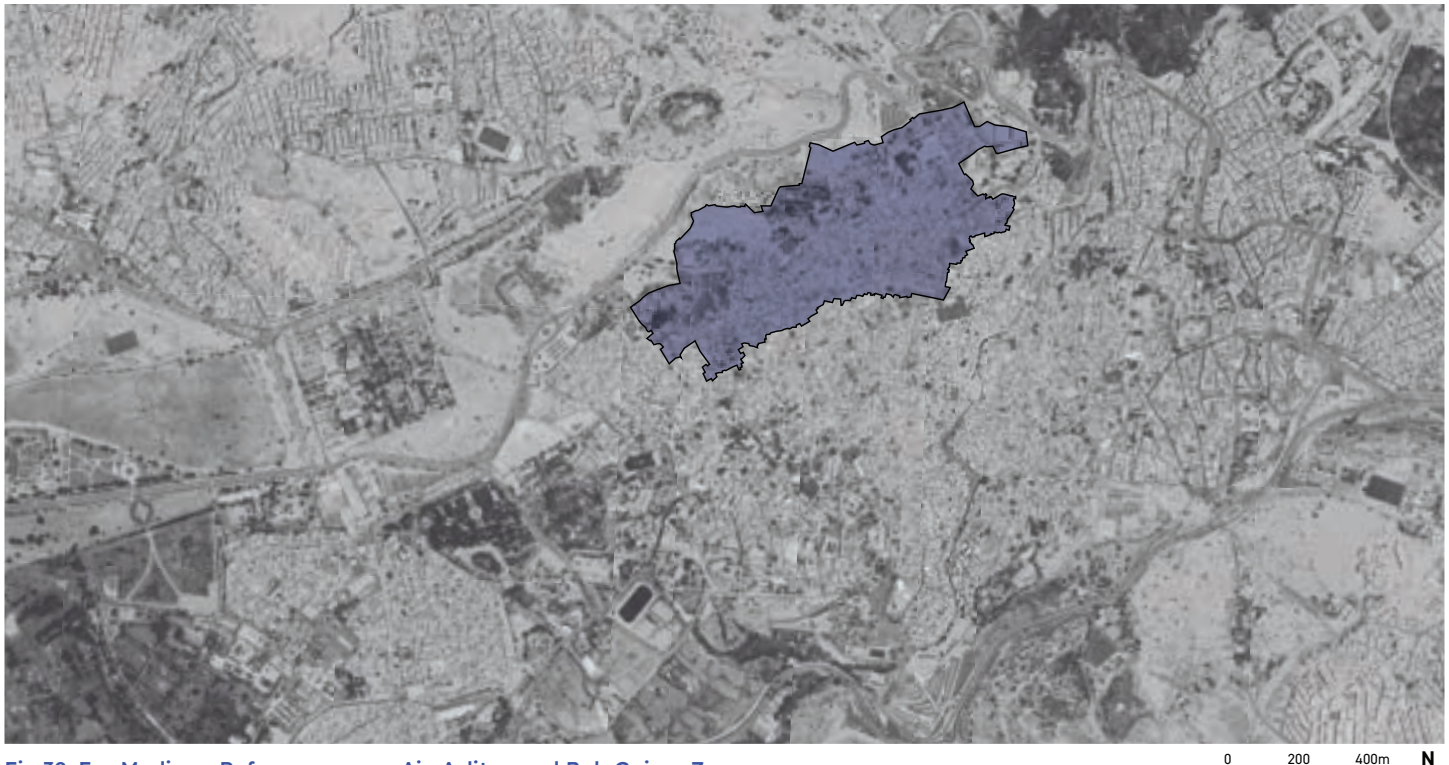


Fig.38: Fez Medina - Reference area - Ain Azliten and Bab Guissa Zone

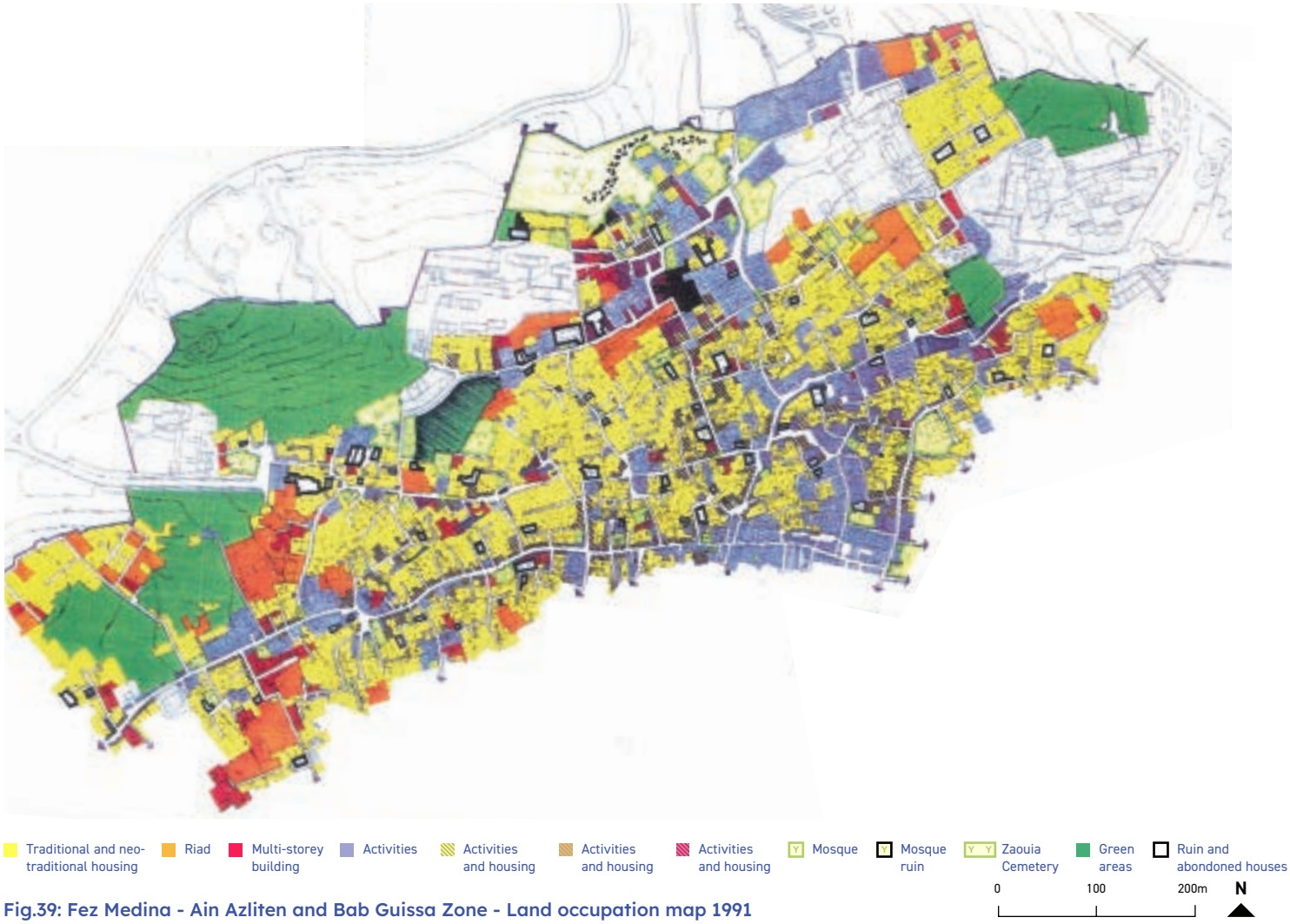


Fig.39: Fez Medina - Ain Azliten and Bab Guissa Zone - Land occupation map 1991

Planners, Engineers, Architects, Economists, Sociologists, Historians, Chemists, Archaeologists

Public stakeholders

- ADER Fez
- Safeguarding delegation
- Wilaya of Fez
- Urban agency of Fez
- Ministry of Culture and Communication
- Ministry of National Territory Planning, Land Planning, Housing, and City Policy
- Ministry of Religious Endowments and Islamic Affairs
- Ministry of Interior
- RADEEF

4.3. Organization

The project's organization is shown on the flowchart on the right (Fig. 39)

4.4. Tools

a. Implementation tools

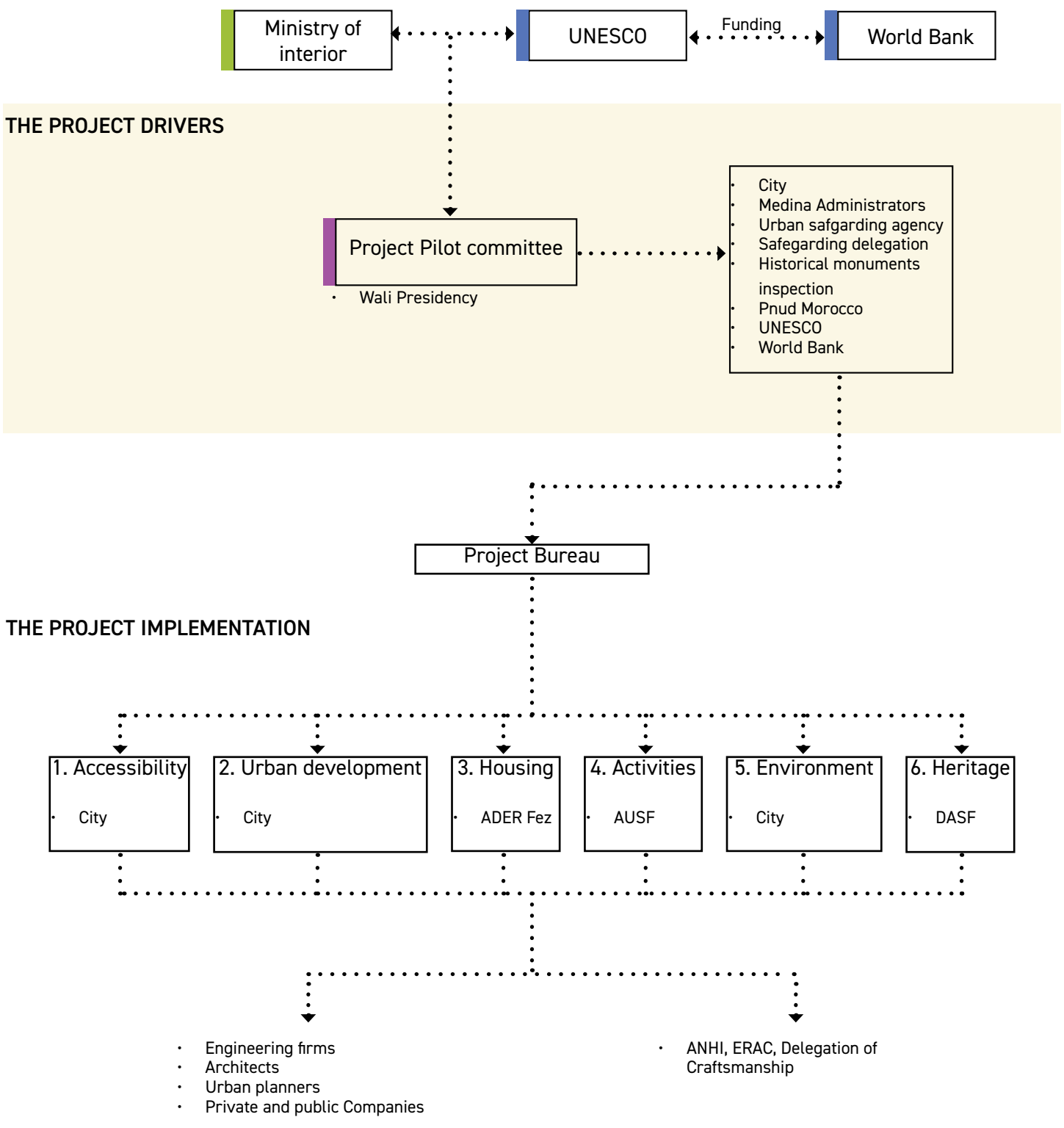
Survey tools

To evaluate interventions on housing, a model is designed, consisting of three linked tables:
- Cost breakdown by type of intervention, house condition, structural work, and finishing work; a summary of costs.
- Breakdown of land situations and occupancy statuses according to the type of intervention and house condition.

Stakeholder engagement

The project was overseen by a Pilot Committee representing the Moroccan Government, the Municipality of Fez, and the Funders. This Pilot Steering Committee makes all the strategic decisions, allocates necessary funds, monitors major project phases, and is overall responsible for the successful progress of the project.
This Pilot Committee, which met at least once per quarter. It is chaired by the Wali of Fez and composed of representatives from the Ministry of the Interior, the Municipality, the Wilaya, and the Funders.

Community engagement



- ABBREVIATIONS AND ACRONYMS

ADER: Agency for the Rehabilitation of Fez
ANHI: National Agency for the Fight against Insalubrious Housing
AUSF: Urban and Safegarding Agency
DASF: Delegation for Safegarding the Fez Medina
ERAC: Regional establishment for Development and construction

Private
Public national
Public international
Civil society
Mixed

Fig.40: Organizational chart

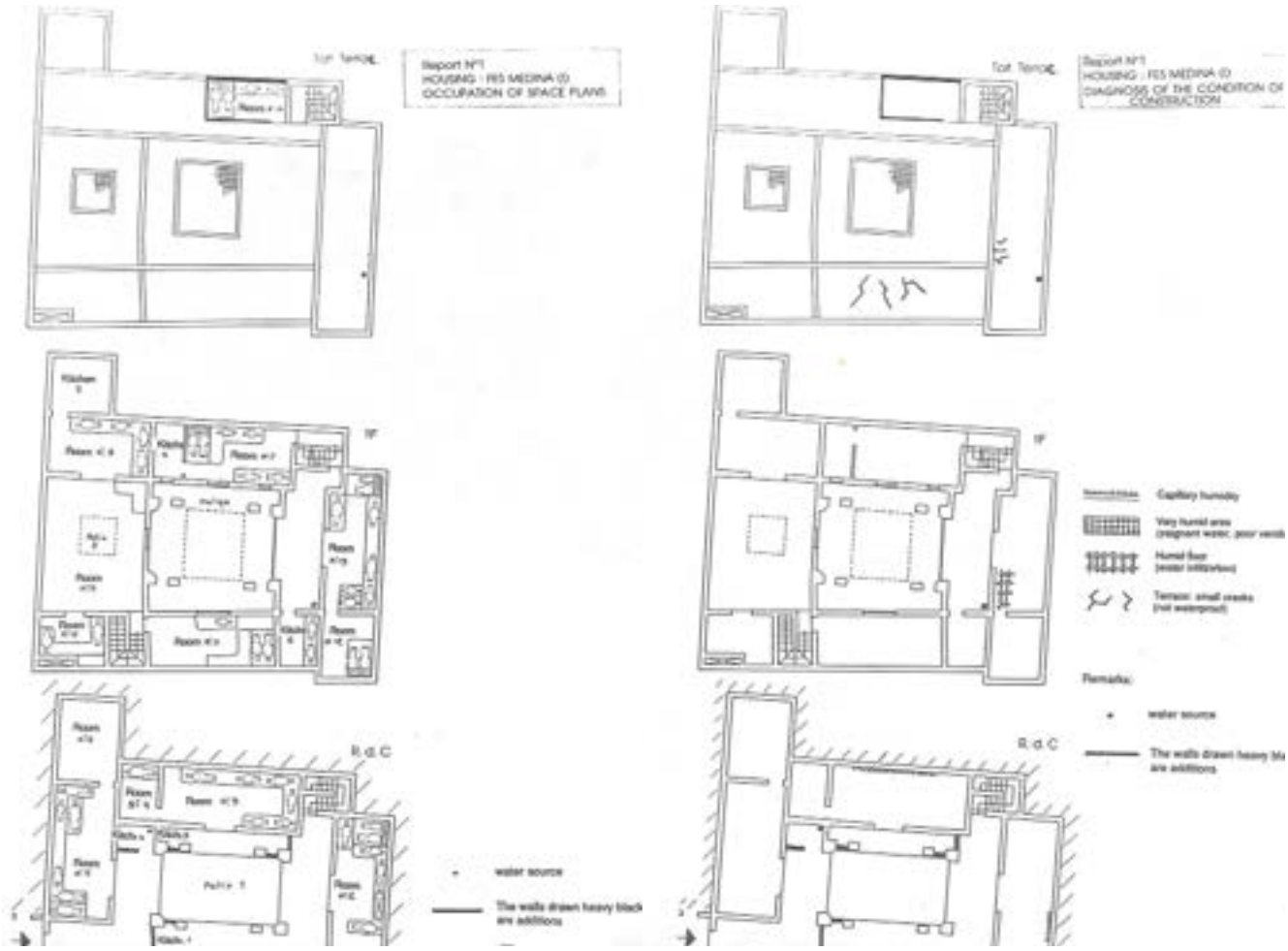


Fig.41: Survey tools, Diagnosis of the condition of a traditional house

Community involvement took the form of the participation of a number of local NGOs and foundations in the development of the project concept and of many local stakeholders in the implementation of the social assessment. This had a direct impact on project design, as it highlighted the expectations of the resident population for poverty-alleviation activities, which were then incorporated, over the cultural heritage rehabilitation aspects.

Cultural activation
The cultural activation of the neighborhood was planned through the program “Cultural and creative industry recovery” from the very start of the project, in parallel to housing rehabilitation.

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

Laws and decrees
The Decree of May 26, 1980, the Decree of May 26, 1980 and the Dahir of December 8, 1915 in the context of interventions on buildings at risk of collapse.
The Dahir of July 21, 1913 and the Law of October 8, 1977 for matters related to the alienation of habous properties and de-habousization through authoritative means.

4.5. Financing

Total amount : MAD 512,885,000 (Approx. 51,288,500

Source : Moroccan Public Financing (State - 22,6%, local - 9,5%), Loans or contributions from investors

A.	**Identification of Construction**	• Name : *Dar Ben Kirane* • Address : *N° 40 Derb Ben Kirane* • District : *Zekkak el Roumane* • Age of construction : *environ 3 siècles* • Type of construction : *Trad./Neo-traditional* - *Building* - *Riad*
B.	**Characteristics of building**	• Facade(s) on street : *2,2 ml* • Level : *GF* - *1F* - *2F* - *3F* - *4F* - *+ Terrace* • 1/2 level : *1°.D.Niv.* - *2°.D.Niv.* - *3°.D.Niv.* - *4°.D.Niv.* • Patio : *yes* - *no* • Patio area : *25 m2* • Total inhabitable area (Shon)* : *335 m2* • Inhabitable area terrace : *10 m2* • Area terrace : *203 m2* • Area store (s) : - *m2* • Number of bathrooms : *1* - *2* - *3* - *4* - *5* - *1 per house* • Water hookup : *yes* - *no* • Number of water sources : *1* - *2* - *3* - *4* - *5* - *1 per house* • Well : *yes* - *no* • Electrical hookup : *yes* - *no*
C.	**Occupation characteristics**	*Housing* or Hous./Activities • Land status : *Melk* - *Co-op Melk* - *Public Habous* - *Private Habous* - *Oth* • Number of households : *8* • Total number of inhabitants : *53* • Terrace inhabited : *yes* - *no* • Condition of construction : *Very poor condition* - *Poor condition* - *Average/good condition*
D.	**Main problems**	• Humidity of walls (capillary) • Terrace not waterproof • Large number of inhabitants

* : Shon = Net Surface Area

Fig.42: Survey tools, Diagnosis of the condition of a traditional house

(State - 15,1%, Fec* - 8,1%, CIH** - 7,7%), Operators equity capital (Utilities - 2,6%, Private - 34,4%)

Proposed Implementation Period : 5 years

Grant Recipient : Municipality of Fez

Breakdown :
1. Access, roads: MAD 93,954 (18,3%)
2. Urban development: MAD 67,938 (13,2%)
3. Housing rehabilitation: MAD 86,222 (16,8%)
4. Activities: MAD 91,682 (17,9%)
5. Environment: MAD 37,866 (7,4%)
6. Cultural Heritage: MAD 93,055 (18,1%)
7. Project Management: MAD 42,083 (8,2%)

Financing sufficiency :
N/A

Maintenance financing :
The assistance for rehabilitated housing is 5,395 Moroccan Dirhams.

Rehousing financing :

Alongside the rehabilitation operations for housing in the medina, there are plans for rehousing options elsewhere. An equitable assistance of 6,402 Moroccan Dirhams is proposed for the relocation of households.

4.6 Timeline
Refer to figure 42 for more details.

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Institutional strengthening
- A resource mobilization program in favor of the Municipality.
- The strengthening of ADER-Fez.

b. Programs post-rehabilitation
Launched in 2002, the rehabilitation assistance program involves the government providing aid

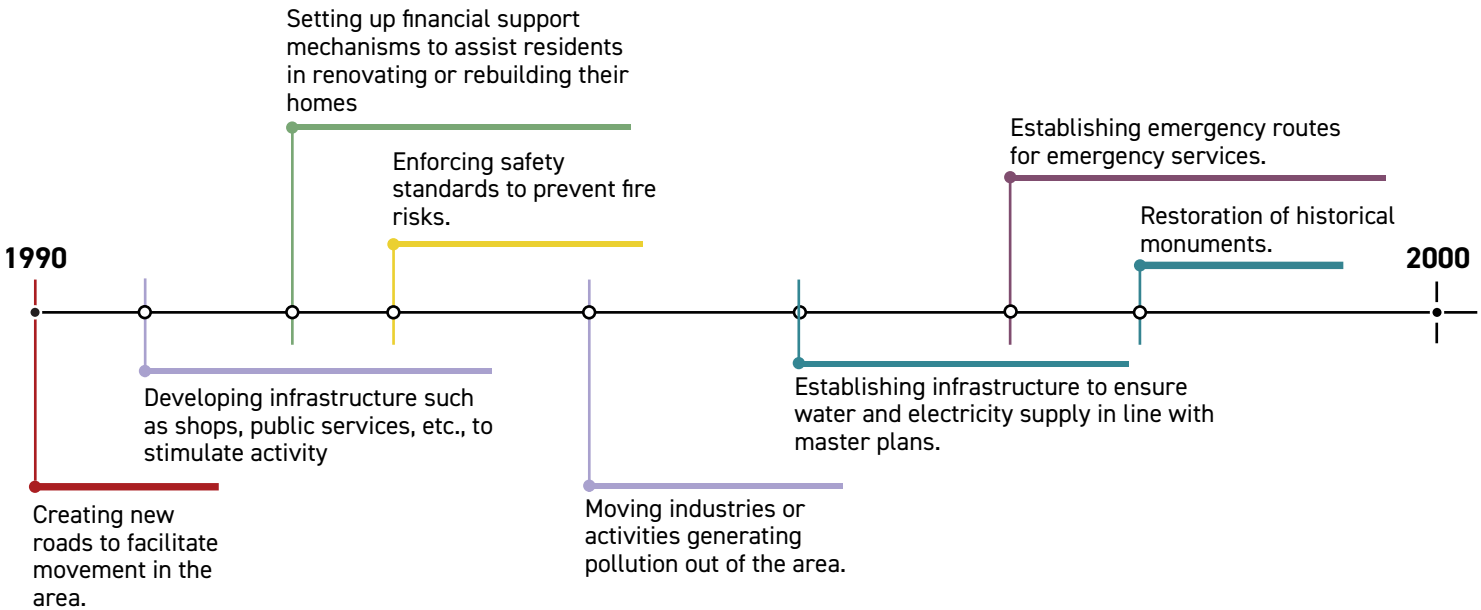


Fig.43: Timeline

equivalent to 50% of the rehabilitation costs, while also ensuring technical assistance. Property owners wishing to rehabilitate their "traditional type" homes or workshops benefit from voluntary technical advice from A.D.E.R-Fez. The driving idea behind this program is to encourage participation in the effort to rehabilitate buildings, based on the principle that "the inhabitants of the Fez medina are the primary stakeholders in the improvement of their housing and quality of life."

c. Economic impact

- Employment

Project Agreements specified that the project was to "use the rehabilitation process to promote labor-intensive job opportunities" and that ADER-Fes was to create a Community Development Department to hire and remunerate crews under force-account arrangements to carry out these activities. However, the Municipality that was financing this component did not want to hand-over the procurement to the implementing agency, and proceeded to engage contractors instead, which provided sub-optimal services in a climate of limited competition and inflated prices. Overall, 1,000 job opportunities were generated throughout the project activities against the projected 6,000.

d. Social impact

- Gentrification mitigation

A number of households are affected by demolitions resulting from the accessibility and emergency network project. Others will be required to vacate their houses because interior modifications often lead to a reduction in the number of residences. Some may prefer to acquire property elsewhere rather than bear



Fig.44: View on a house patio. Flickr, © Kiran Shand. Accessed September 4th 2023.

the consequent rent increases due to improvements. These households are distributed between Sahrij Gnaoua (a relatively expensive neighborhood near the medina) and Ben Souda (further into the South extension zone).

- **Education**

A common ground has been established and a training environment has been set up. By doing so, Fez has succeeded in making conservation a common concern and all parties are required to act and participate. It has taken a long time to reach this stage of consciousness regarding conservation issues

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints

N/A

b. Legislative challenges

Multiple tenants, mixed ownership of buildings at risk of ruin

c. Tenure challenges

The scarcity of available land

ANNEX

Poverty indicators in Fez Medina: (Source H.C.P 2014)

	2004	2007
Population	91289	96391
Population below The poverty line	7325	4260
Vulnerable population	13962	14919
Poverty ratio (%)	8,024	4,419
Vulneability ratio (%)	0,645	0,167
Inequality index (%)	35,756	31,116
Human development index	0,673	

d. Bibliography



Fig.45: Alley in Fez Medina © Carlos Ibanez

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5B-04

TUNISIA | Hafsia neighborhood

The Hafsia Project: urban restructuring in the historic center

Tunis, Tunisia



Fig.46: View of Hafsia cluster, Tunis. Source: http://www.arru.nat.tn/fileadmin/medias/images/galerie-photos/Hafsia/05_Hafsia.jpg



INTRODUCTION

The Hafsia quarter is an integral part of the Medina of Tunis, a UNESCO World Heritage site since 1979.

The Hafsia Quarter project represents a remarkable effort to rejuvenate a previously dilapidated and largely abandoned area situated within the historic heart of Tunis, known as the Medina. The primary objectives of this project were to provide housing for those in need, substantially enhance the living conditions of its residents, and rekindle the vibrancy and diversity of this urban zone.

This initiative aimed to restore the area's historical urban continuity while fostering social and cultural cohesion. Rather than transforming existing structures to conform to a different cultural context, it promoted the preservation of tradition through new construction methods. Notably, Hafsia Phase I received the prestigious Aga Khan Award for Architecture in 1983, and Hafsia Phase II received the same award in 1995. These accolades recognize the project's excellence in preserving heritage and advancing the cultural and architectural legacy of the Medina of Tunis.

Main instigator
Tunis Municipality

Historic Neighborhood/ Historic Center:
Medina of Tunis

Targeted beneficiaries
Inhabitants of the Hafisa quarter and inhabitants of the Medina of Tunis at large.

Project duration
Phase I : 1972 - 1975
Phase II : 1981 - 1990

Project budget
Phase I: USD 3.7 million
Phase II: USD 12.5 million

Progress status
Complete

1. IDENTIFICATION

Size of the overall city
Surface: 104 km²
Population: 2,700,000 inhabitants

Size of the historic area
Surface: 300 ha
Population: Approximately 100.000 inhabitants.

Principal function of the city
Capital, transportation center, economic center

Principal function of the historic area
Residential, cultural heritage site, craft production, and traditional economic activities

Heritage status
The Medina of Tunis benefits from the national listing for 88 historic monuments. It also enjoys national protection for 5 monuments, 14 streets (including 3 souqs), and a square.

Income level of dwellers in the historic city
The majority of the Medina dwellers are low income.

Demographic profile
The city has a diverse population with a mix of income levels, ranging from low to high, reflective of urban economic variance. Age demographics encompass a broad spectrum, with a significant portion of the population falling within the working-age group. Education levels in Tunis are relatively high, with the city hosting universities and educational institutions that contribute to a well-educated populace.

Land tenure
Complex property tenure patterns, involving the cooperation of multiple owners and agreements between owners and tenants.

Housing role in the project
Housing played a significant role in the rehabilitation project of the Hafsia Quarter. The project aimed to provide housing for low-income families and improve the living conditions in the area. It involved the renovation of existing buildings and the construction of new housing units. The objective was to provide affordable and suitable housing options for different household sizes and income levels.

Situation and urban evolution
The city of Tunis' origins can be traced back to the Phoenician settlement of Tunes, and it later became a prominent Carthaginian city. However, it was the Romans who left a significant mark on Tunis, as they transformed it into a bustling regional hub known as "Carthago Nova."

The Arab conquest in the 7th century led to the emergence of a vibrant Islamic city within the present-day Medina, or the historic center. The Medina is a labyrinth of narrow alleyways, bustling souks (markets), and beautifully adorned palaces, showcasing a stunning blend of Islamic and Andalusian architectural styles.

During the golden age of islamic civilization, Tunis became a powerful North African capital under various dynasties, such as the Aghlabids, Fatimids, and Hafsids. Each ruler left their architectural imprint on the city, from the exquisite minarets of the Al-Zaytuna Mosque to the grandeur of the Dar Ben Abdallah Palace.

The Ottoman Empire's rule from the 16th century onwards further influenced Tunis, adding Ottoman elements to its urban fabric. The city's renowned Ottoman-era structures, like the Bab el Bhar (Sea Gate) and the Dar Hussein, reflect this period of history.

In the modern era, colonial rule by the French brought about significant urban changes and expansion in the late 19th and early 20th centuries. The French introduced wide boulevards, squares, and modern infrastructure, which can still be observed in the Ville Nouvelle (New Town) district. Today, Tunis continues to expand horizontally with the creation of new suburbs.

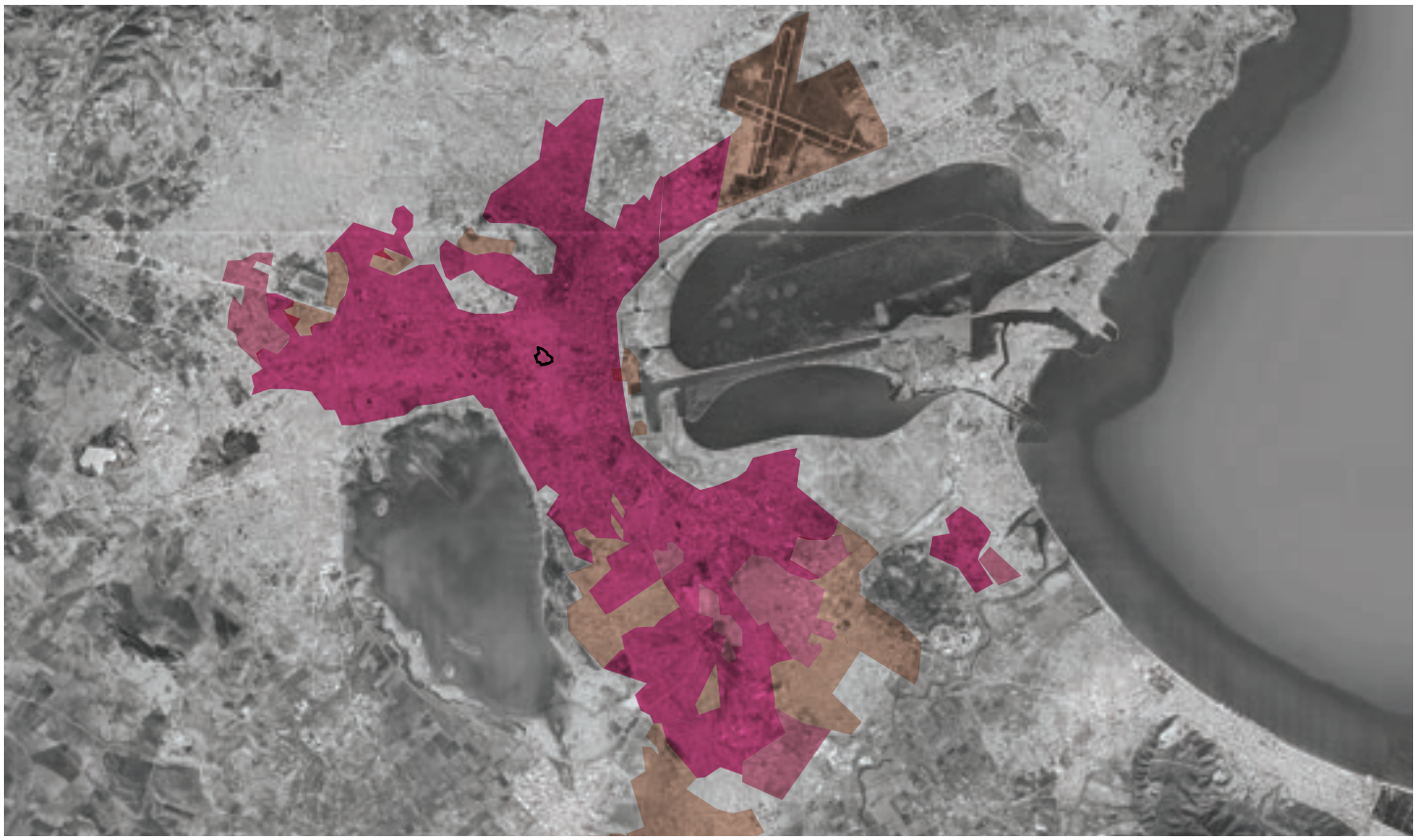


Fig.47: Hafsia cluster situation and urban evolution of the city of Tunis

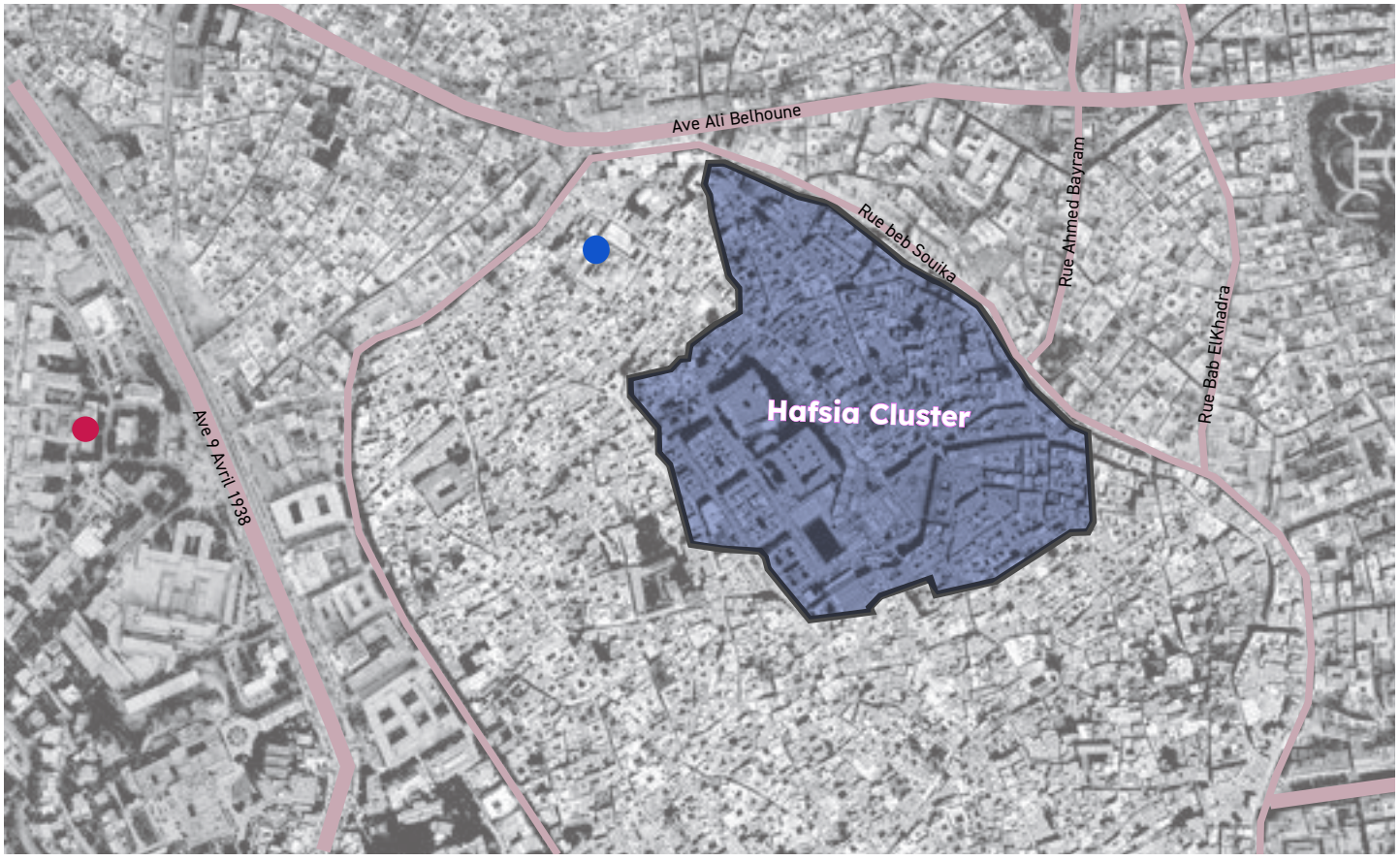


Fig.48: Hafsia Intervention area

2. STAKES

Diagnosis/Status
1,296 households resided in 256 decaying dwellings, of sub-standard quality. The majority of these structures were privately owned, and the owners had no desire nor the means to fix them. However, 403 buildings, which housed 1,600 households, were in structurally suitable buildings but in need of restoration.

Challenges
The challenges of housing in the city, particularly in the Hafsia Quarter of Tunis, included complex property tenure patterns, overcrowding, dilapidated structures, and the need for rehabilitation and consolidation. The area faced a lack of maintenance, shared sanitary facilities, and progressive deterioration due to overcrowding. Additionally, the rapid urban growth and influx of rural migrants led to the subdivision of traditional housing into low-rent, one- and two-room dwellings, exacerbating the housing challenges.

Objectives
The project aimed to achieve sustainable urban interventions that preserve cultural heritage, improve living conditions, and enhance the overall quality of the historic districts. Its objectives include:

- Infrastructure improvement: The supply or improvement of facilities, development of the road network, and enhancement of services in the district.
- Rehabilitation of degraded housing: Develop and restore degraded housing in an appropriate manner.
- Reconstruction: Construction on abandoned municipality land and demolished sites, as well as the construction of social housing, private sector housing, commercial uses, offices, parking lots, and public services.
- Preservation of cultural heritage: Ensure consistency with the historical fabric and traditional building patterns to enhance the historic environment.
- Upgrading local communities: Improve the economic, social, and environmental conditions of the district and enhance the quality of life for the local communities.
- Mitigating negative effects on lower-income groups: Address the potential negative impact of value increase in real estate assets on lower-income groups in the intervention areas.
- Establishing effective partnerships: Create collaboration between government sectors, international donors, and civil society institutions is important to secure financing for urban interventions in historic districts.
- Comprehensive vision for urban interventions: Include the rehabilitation of old buildings, restoration of historical monuments, improvement of public spaces, and development of the natural environment.
- Balancing preservation and community development: Consider the importance of preserving historical buildings while also empowering and improving the lives of the urban poor who contribute to the identity and spirit of the place.
- Good governance and multidisciplinary cooperation: Foster effective governance and cooperation among stakeholders, professionals, researchers, private institutions, and the wider public around the protection and preservation of historic districts.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : The traditional courtyard house

Period : Mid-19th century

Occupants : Small families with low income

Evolution of housing typologies
The introverted courtyard house, characterized by plain exteriors and intricately decorated interiors, has been a persistent housing typology in the Medina of Tunis. However, it has undergone various architectural phases that reflect the city's rich history and cultural influences:

Islamic and Andalusian influences: The earliest architectural elements within the Medina of Tunis date back to the Arab-Muslim conquest of North Africa in the 7th century. Andalusian influence is evident in the use of decorative tiles and intricate stucco work in the interior decoration of houses.

Golden age: During the golden age, Tunis served as the capital for various dynasties, including the Aghlabids, Fatimids, and Hafsids. This era witnessed the construction of grand palaces with stunning courtyards, intricate tile work, and ornate arches. Notable examples include the Dar Ben Abdallah Palace and the Dar Hussein.

Ottoman architecture: In the 16th century, Tunis came under Ottoman rule, introducing Ottoman architectural elements. In domestic architecture, new characteristics emerged, such as ample windows, lightness, transparency, a free plan, modular logic, and skeletal construction.

Colonial influence: In the late 19th and early 20th centuries, French colonial rule brought about some modernization and architectural changes to the Medina's periphery. While the core remained largely untouched, the Ville Nouvelle (New Town) district was developed with wide boulevards and European-style mid-rise residential or mixed-use buildings, as well as villas.

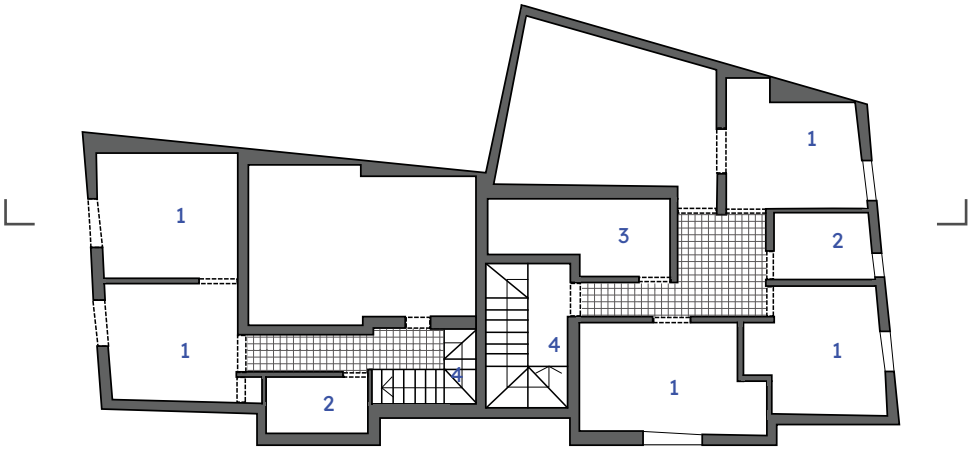
Continued traditional architecture: Over the centuries, the majority of residential and commercial buildings within the Medina have retained their traditional architectural style. These structures often include interior courtyards, ornate wrought ironwork, and latticed wooden screens known as "mashrabiyas." The consistent use of locally sourced materials, such as limestone and clay, is a defining characteristic.

Description
Hafsia, or Hara, had been the Jewish district of Tunis since the 10th century. After 1860, wealthy Jewish families moved to more modern European neighborhoods, and Hafsia gradually became one of the poorest sections of the Medina.
Many buildings in the Hafsia quarter were demolished between 1933 and 1939 after French authorities declared the area to be a health hazard in 1928.
The reconstruction plan shifted from the Medina's traditional urban structure by introducing a grid layout with large housing blocks resembling of European cities. Unfortunately, these efforts were delayed by the start of World War II, as bombings caused more damage to the region.

Spacial distribution
A courtyard house is a traditional architectural typology characterized by a central open space enclosed by the surrounding building. The surrounding rooms, including bedrooms and kitchens, are arranged to maximize the connection with the central courtyard. Architectural details such as decorative wood and plaster elements, tiled floors, and traditional materials showcase Tunis's cultural heritage. Windows and balconies are strategically placed for ventilation and views.

3.2. Condition of the historic housing units before rehabilitation

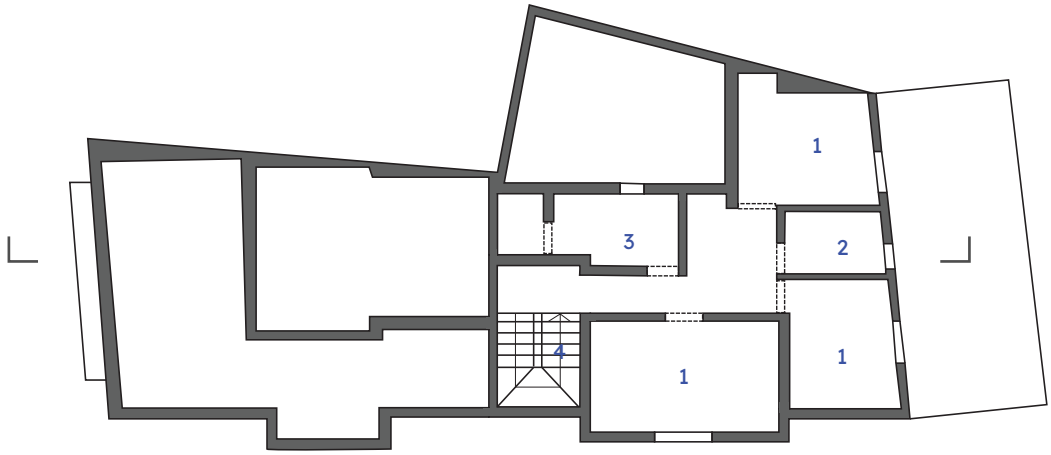
The housing units that were considered for rehabilitation in the Hafsia project were in a degraded condition. They were in need of restoration and improvement to ensure a better living environment. The project aimed to preserve the historical character and cultural heritage of the quarter while addressing the housing needs of low-income residents. The rehabilitation process included the construction of new housing units as well as the renovation of existing ones, with a focus on maintaining the traditional building massing, silhouettes and styles. The goal was to achieve urban harmony between the renewed areas and the old fabric of the neighborhood



1. Room
2. Toilet
3. Kitchen
4. Interior Stairs

0 3 6m

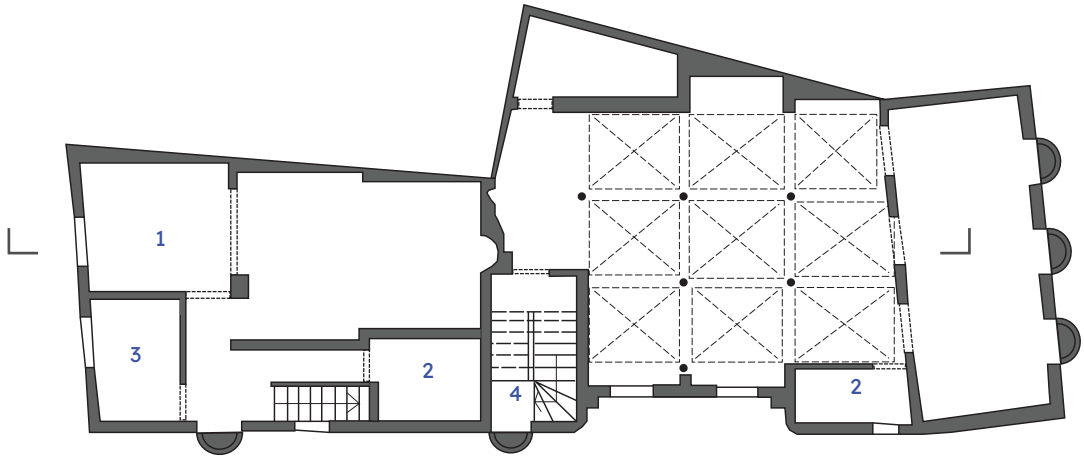
Fig.51: Example of a typical courtyard house, Hafsia, Ground Floor



1. Room
2. Toilet
3. Kitchen
4. Interior Stairs

0 3 6m

Fig.49: Example of a typical courtyard house, Hafsia, First Floor



1. Room
2. Toilet
3. Kitchen
4. Interior Stairs

0 3 6m

Fig.50: Example of a typical courtyard house, Hafsia, Second Floor

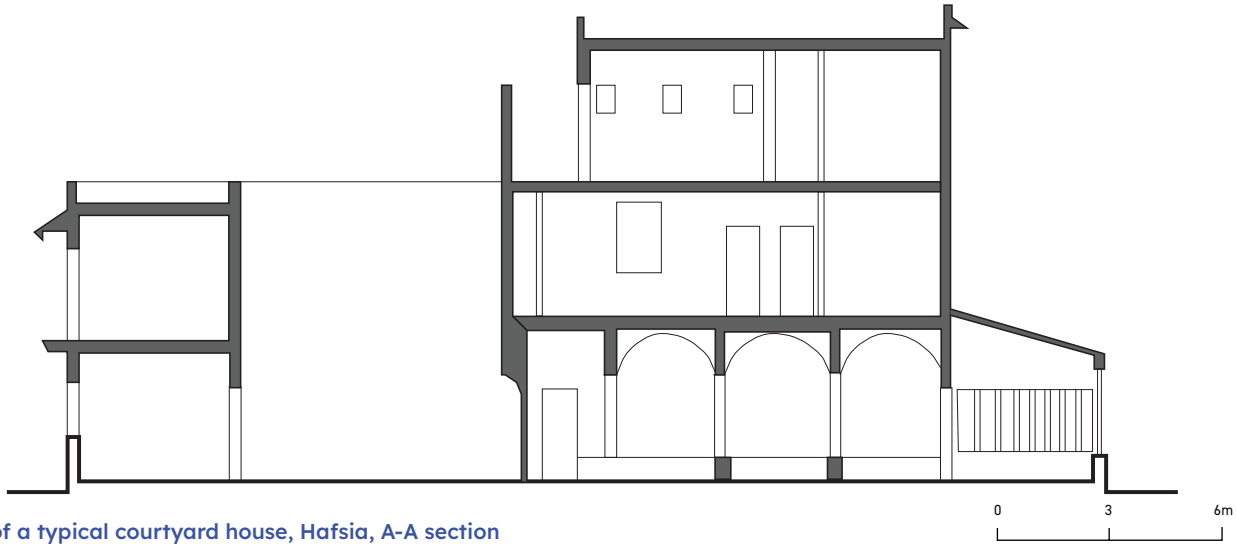


Fig.52: Example of a typical courtyard house, Hafsia, A-A section

3.3. Rehabilitation know-how, materials, and material sourcing

The Hafsia project primarily utilized local unskilled labor and low-technology construction methods. Housing units featured post and beam construction, with walls made of hollow concrete or cored terracotta brick. Standardization was employed for efficiency. Glazed ceramic tiling was used for decoration. Despite historical restoration relying on skilled artisans, most old buildings required reinforcement with new concrete elements. The 1995 Aga Khan Awards' technical assessor noted the continued use of low-technology methods by local unskilled labor.

4. MECHANISMS OF THE PROJECT

4.1. Process

The project took a holistic approach to address the environmental, economic, and social dimensions of the Hafsia Quarter's rehabilitation. The general process of the Tunis Revitalization Project in the Hafsia Quarter involved several main targets and actions. These actions included the improvement of infrastructure, such as roads and utilities, the construction of commercial buildings and housing, and the sale of serviced land to private developers. The project also involved the relocation of displaced households and the rehabilitation of dilapidated buildings known as oukalas.
Additionally, it stimulated private investment in new infill constructions and it introduced a creative financing mechanism to rehabilitate existing buildings without displacing tenants, using a home improvement credit line. The project aimed to strengthen the institutional framework and coordination among various stakeholders involved in the urban and housing sectors.
It aimed to revitalize the urban fabric, renovate houses, and involve private developers, property owners, and tenants in the revitalization effort. The project's success was measured through indicators such as employment generation, mobilization of private resources, and its contribution to the Tunisian economy.

4.2. Partners

Experts
Architects, historian, lawyer, urban planner, geographer, economist, sociologist. All the project participants were Tunisian

Public stakeholders
Municipality of Tunis (Client), Agence de Réhabilitation et de rénovation Urbaine (ARRU), Association Sauvegarde de la Médina (ASM), World Bank.

Newly created institutional structures
The Agence de la Rénovation et de la Rénovation Urbaine (ARRU) was created in 1981, as the project

implementation unit and was responsible for overseeing the implementation of the project. ARRU was involved in various aspects, including infrastructure improvements, construction of new housing, public facilities, and home improvement loans. Additionally, it played a key role in the relocation process, providing monetary compensation and alternative housing solutions for affected families.

4.3. Organization and selection

a. Organization

The project's organization is shown on the following (Fig.52).

b. Selection process

Buildings were chosen to be rehabilitated based on a detailed survey of building conditions and a comprehensive rehabilitation strategy. The assessment conducted determined the structural condition of the buildings and identified those that were suitable for rehabilitation. 403 buildings, housing 1,600 households, were found to be in sufficiently sound structural condition to be rehabilitated. The selection of buildings for rehabilitation considered factors such as the structural condition, architectural significance, ownership, and willingness of owners to participate in the rehabilitation process.

4.4. Tools

a. Implementation tools

Survey tools
The survey tools used in the evaluation study included in-depth household surveys and focused interviews of neighborhood employers and the workforce. The household survey involved a stratified sample of 91 households, reflecting location, tenure, and the status of the work, whether it was carried out by ARRU or a private developer. The survey aimed to assess the impacts of different project components on residents, property owners, and operators of economic activities.

Stakeholder engagement program
The stakeholder engagement program involved various parties, including property owners, developers, and residents, in the decision-making process. The program aimed to negotiate with property owners and developers, raise awareness of the cultural heritage value, and encourage their participation in the revitalization effort. It also involved organizing and coordinating public and private inputs to address the environmental, economic, and social dimensions of the project in a holistic manner. The success of the project was attributed to the active involvement of stakeholders and their collaboration with the municipality and other institutions

Community engagement
Some meetings have been held to discuss certain points.

Cultural activation
The interventions in Hafsia involved restoring cultural assets, integrating historical buildings into contemporary life, and supporting traditional crafts and skills through training programs. These efforts contributed to the revitalization of the districts, attracted new residents, and improved the economic and social conditions of the communities.

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

In pre-occupancy, some of the management tools used include:

- Creative financing mechanism: a home improvement credit line was granted jointly to owners and tenants as co-signatories. This mechanism allowed improvements to take place without displacing tenants and circumvented rent control.
- Relocation and compensation: Displaced

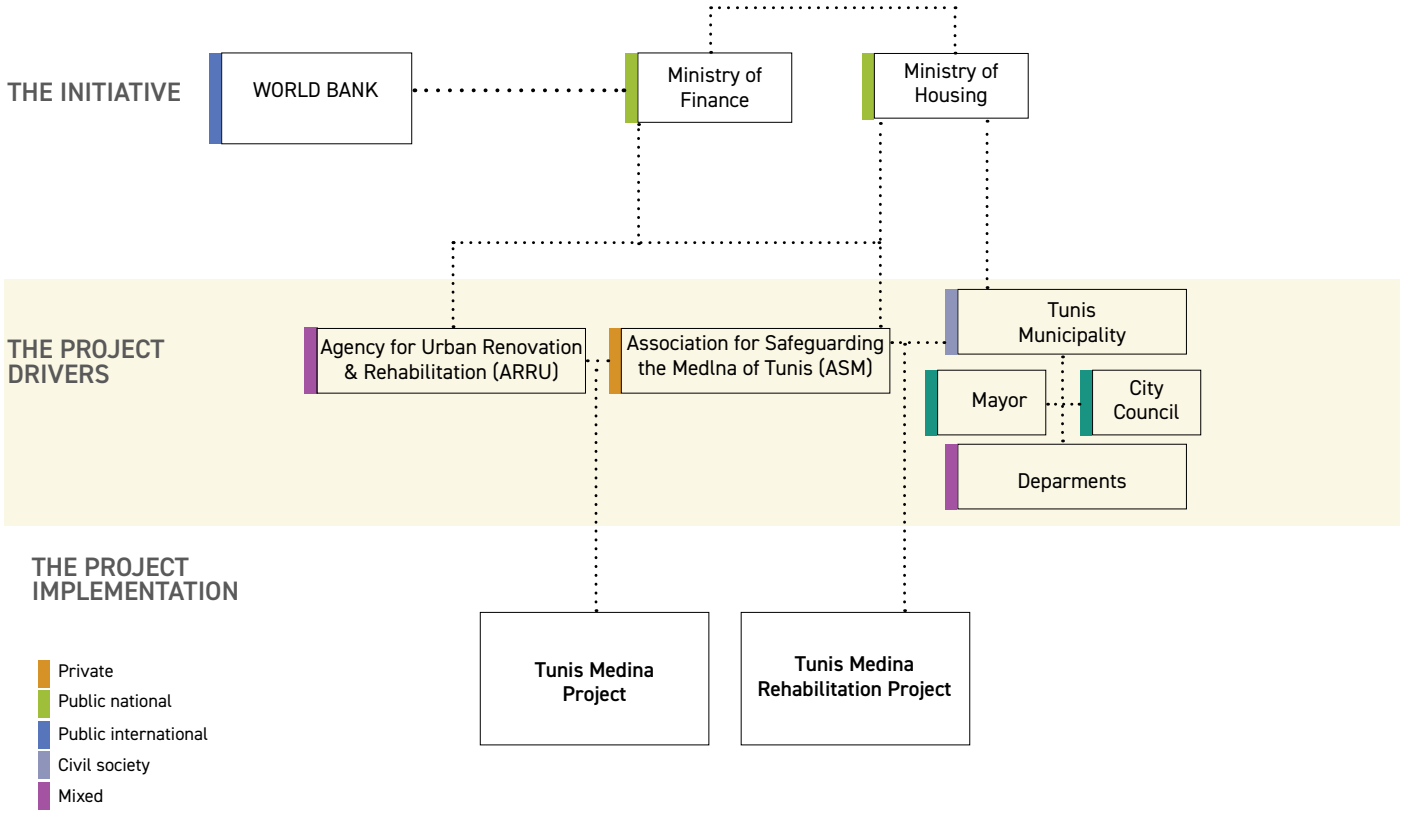


Fig.53: Organizational chart

households were provided with various options, including a serviced plot in a public project on the urban fringe or an apartment in a government-built affordable housing project.

- Coordination of public and private inputs: The project involved organizing and coordinating public and private inputs, including property owners and developers, to ensure effective implementation.

In Post-occupancy, some of the management tools used include:

- Building regulations: The project emphasized the need for conscious, simplified, and enforceable building regulations to preserve the historic fabric and individual buildings of architectural merit while enabling residents to create an environment suitable to their current needs.
- Institutional mechanisms: The project recognized the need for innovative institutional mechanisms to address the complex property tenure patterns and multiple owners in the Medina. These mechanisms aimed to foster private investment in rehabilitation and new construction while preserving the cultural heritage of the area.
- Outreach and Awareness: The municipality and the project team actively engaged in outreach and raising popular awareness of the value of the cultural heritage. This was done to encourage participation and support from the community.

Owner's commitment

Property owners and tenants were actively involved in the rehabilitation process. They agreed to contribute to the costs of rehabilitating their units, which allowed for affordable housing loans to be provided to tenants based on their individual needs. The owners' participation helped ensure the financial sustainability of the interventions and allowed for the improvement of housing conditions in the historic district.

Laws and decrees

Property owners were entitled to full compensation at appraised value for property demolished in whole or in part, and the amount of compensation was determined according to national laws governing eminent domain.

Environmental and social tools

An evaluation study was conducted to assess the social impacts of the project on residents, property owners, and operators of economic activities. This indicates

that the project team took into account the social implications of the rehabilitation efforts. Addressing the social dimensions of the problem is approached in a holistic manner, suggesting a collaborative and inclusive strategy.

4.5. Financing

Total amount :
Hafsia I Project: USD 3.7 million,
Hafsia II Project: USD 12.5 Milion

Source : World Bank, the Tunis Government

Proposed Implementation Period :
1982-1993

Grant Recipient : Municipality of Tunis

Breakdown :
Hafsia I: USD 3.7 million funded by the Government;
Hafsia 2: USD 2.8 million funded by the World Bank, USD 9.7 million by the Government.

Financing sufficiency :
Despite cross-subsidizing the upgrading of built-up areas through the sale of vacant parcels in government ownership, a feasibility study indicated a 22 percent shortfall in cost recovery, which was to be covered by the state. New construction was expected to bear the brunt of the cost of street and infrastructure improvements.

Maintenance financing :
The project followed a cost-recovery principle, where homebuyers make an initial down payment and then compensate the remaining balance as a monthly rent. This rental income is used to cover the costs of maintenance and upkeep of the housing units.

Rehousing financing :
All residents of the buildings affected by the project, regardless of the legal status of occupancy, were given the right to a relocation grant or compensation option that included subsidized housing.

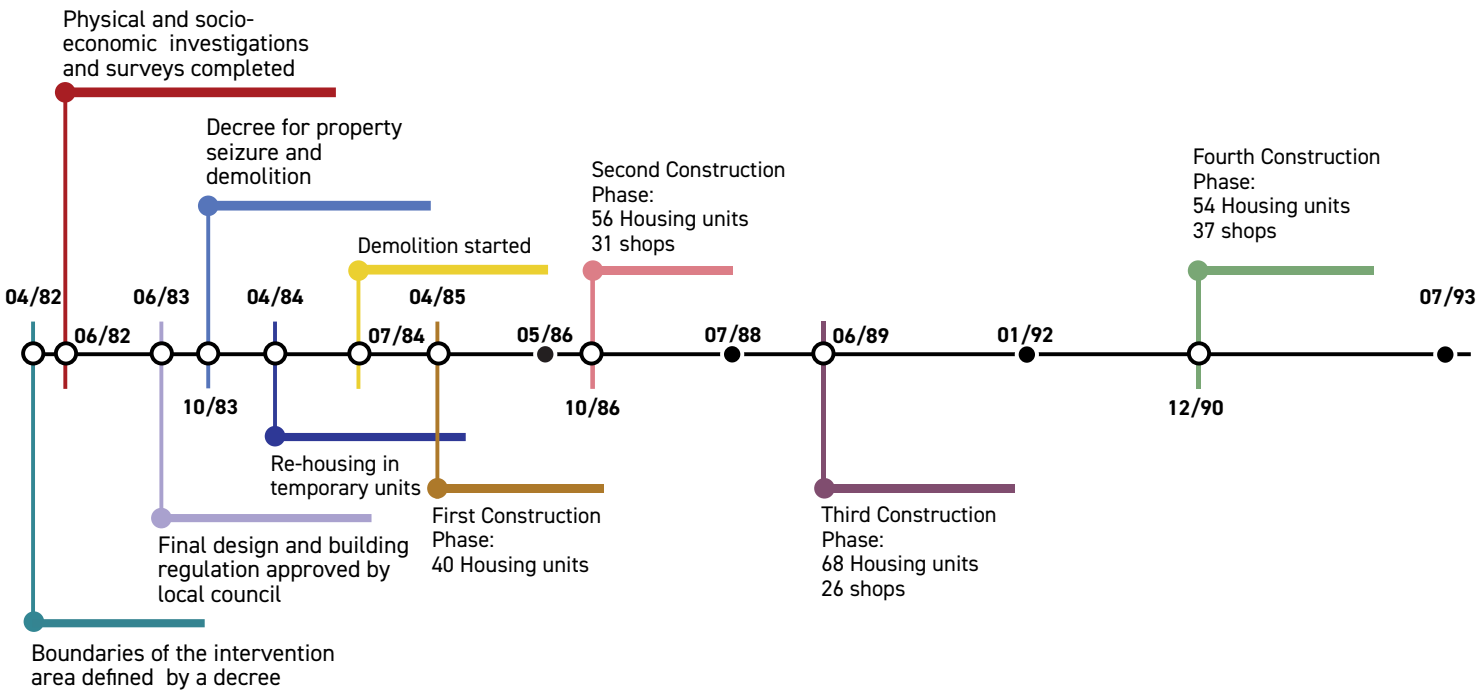


Fig.54: Timeline

4.6 Timeline

The first phase of the project was between 1972 and 1975, while the second phase took place between 1981 and 1990. Refer to figure 53 for more details.

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original

Construction techniques/materials
Multiple measure carried out including the significant structural changes, influenced by the original structural system and the condition of each building. Various buildings had different needs, such as strengthening stone-bearing walls and wood ceilings or reinforcing concrete structural systems. New constructions adopted reinforced concrete column and beam structures, with walls predominantly made of hollow concrete blocks or cored terra cotta bricks. Construction methods were generally low-tech, employing unskilled labor, except for restoration work requiring skilled local labor. Additionally, Waterproofing treatment was commonly applied to most buildings. The Hafsia quarter also benefited from an upgraded storm drainage system and road surface treatment to mitigate the impact of heavy rains.

b. Legislation changes

- Minimum housing standards: The project adopted minimum housing standards to ensure that the low-income residents benefit from the project. This helped in providing adequate and quality housing for the residents.
- Rent and payment regulations: Rents were set at 18% of the monthly income for those suffering from extreme poverty, while monthly payments were set at about 22% of the household income for those who opted to buy houses. This ensured that the housing costs were affordable for the residents.
- Cross-subsidization strategy: The project utilized a cross-subsidizing strategy, where low-income social housing was subsidized by high-income housing in the private sector. This allowed the project to sustain itself financially and ensured the availability of affordable housing.

c. Programs post-rehabilitation

In the Hafsia I project, the originally planned offices were not successful, as most units were converted into dwellings or storage spaces. However, the reconstruction led to a vibrant commercial life in the quarter. By 1978, just a year after completion, alterations were widespread: 80% of wealthier inhabitants modified their houses, 16% divided units, 25% extended their homes, and 31% were shared by multiple households. The architects had not anticipated this scale of change, leading to neighbor disputes over sunlight, views, and ventilation. The rebuilding challenge stemmed partly from the wealthier residents, not as expected in the original surveys.

d. Economic impact

The main economic impact of the project was to provide employment during and after the project's implementation:

- Employment:The project helped create new job possibilities during the quarter; 2,200 jobs were anticipated to have resulted from the project, including small projects, formal construction, supply of products and services, and construction support services. Of these opportunities, almost 44% were in low-skilled jobs.
- Business attraction: Houses were not allocated based on need, attracting wealthier occupants from neighboring areas. The Hafsia II project brought visible revitalization, improving living conditions and the area's image. This attracted more businesses, causing traffic congestion. Property values increased, and by 1995, private ownership reached 80%, with developers acquiring housing for commercial purposes.
- Financial arrangements: The project involved



Fig.55: Hafsia cluster before rehabilitation. Source : https://www.researchgate.net/figure/The-ruins-permeating-the-urban-fabric-before-the-implementation-of-Hafsia-II-23_fig5_352874679



Fig.56: Hafsia cluster after rehabilitation. Source : https://the.akdn/en/how-we-work/our-agencies/aga-khan-trust-culture/akaa/hafsia-quarter-i

various financial arrangements, such as repayment of home improvement loans, profit sharing on land sales, compensation for displaced households, and repayment on resettlement loans. These financial mechanisms helped in funding the project and supporting the needs of the residents.

e. Social impact

Gentrification mitigation

The project successfully reversed private disinvestment, increased property values, and stimulated economic activities. Additionally, it impacted subsidizing housing for low-income families.

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints

One of the major constraints was the regional inflationary trends in the 1970s, which led to a significant increase in construction costs by 121%. This increase in costs made it difficult to provide adequate housing for the poor, as the housing standards exceeded the capabilities of most residents whose average monthly income was only $33.

Another financial constraint was the disparity between the cost of obtaining a dwelling and the income of the indigenous inhabitants. The cost of acquiring a dwelling necessitated a down payment and monthly installments of $30-60 for a period of 20 years. This financial burden excluded many indigenous inhabitants from being able to afford the new housing, and instead, a large proportion of the new residents came from wealthier social sectors.

Additionally, the lack of prominent historical landmarks in the Hafsia district limited the role of tourism activity in supporting the local economy. This meant that the project had to rely on other sources of financing, such as the sale of new housing, shops, and lands serviced by utilities to the private sector, in order to achieve financial sustainability.

b. Legislative challenges

The main challenges included multiple ownership, mixed ownership, and other complexities related to the old rent law and eviction rights.

c. Tenure challenges

Tenure challenges included addressing property ownership and occupancy patterns, technical

difficulties related to the consolidation and rehabilitation of structures, widespread joint ownership, and numerous co-owners of overcrowded tenements. Additionally, the project faced expropriation and relocation requirements, including the appraisal of properties, compensation of owners, and the provision of alternative housing accommodations for displaced families.

d. Construction challenges

- Complex property tenure patterns: The project had to address the issue of multiple owners and agreements between owners and tenants, which required the creation of innovative institutional mechanisms.
- Heavy relocation loads: The project involved the relocation of households from dilapidated buildings, which posed logistical challenges and required careful planning.
- High investments and difficult cost recovery: The rehabilitation of the historic area required significant investments, and cost recovery was a challenge due to limited income households and regional inflationary trends.
- Preservation of historic fabric: The project aimed to preserve the historic fabric and individual buildings of architectural merit while enabling residents to create an environment suitable for their current needs. This required balancing the preservation of cultural heritage with the need for new construction and private investment.
- Infrastructure improvements: The project involved the improvement of infrastructure, including street pavement, water supply, sewerage, electricity, and gas networks. These improvements required careful coordination and integration with the existing urban fabric.

ANNEX

a. Contact

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c. List of figures

Fig45. Agence de Réhabilitation et de Rénovation Urbaine. (n.d.). ARRU: Rehabilitation and Renovation Project of the 'El Hafsia' Area : A Project of Reintegration, Revitalization and Improvement of the Living. Retrieved from http://www.arru.nat.tn/index.php?id=206&L=2

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Fig.57: Alley in Hafsia Medina © Lyse Barbeau

5C-06

EGYPT | al-Darb al-Ahmar

Urban Regenaration in Al-Darb Al-Ahmar District: Housing Rehabilitation beyond Physical Upgrading

Cairo, Egypt



Fig.58: View over Al Darb Al Ahmar towards The Sultan Hassan Mosque. ©Aga Khan Foundation



INTRODUCTION

The Al Darb Al Ahmar district in Cairo, with its narrow alleys, shacks, and critically poor residents, has been often seen as an urban slum. Despite its central location, pedestrian scale, historic buildings, and active community, living conditions have worsened over the past decades as the area experienced a 50% decrease in population since the 1970s, due to lack of maintenance of infrastructure, severe deterioration of private housing and monuments, outdated planning constraints and widespread insecurity of tenure. With all this in mind, Al-Darb Al Ahmar (ADAA) has remained socially far more cohesive and architecturally more authentic than other parts of Cairo. The Revitalization Project hence came to consolidate the existing urban fabric, improve the quality and quantity of housing, while maintaining original architectural features and providing fair and secured tenure.
Since the year 2000, the Aga Khan Trust for Culture (AKTC) and its partner funding agencies, with support from the Governorate of Cairo and the Supreme Council of Antiquities (SCA), and with the direct participation of the area's residents, have developed a series of projects on the eastern edge of Al-Darb Al-Ahmar that combine social and economic initiatives with physical improvements. These include micro-credit for business development and housing rehabilitation, employment-generation, as well as direct investment in the restoration of monuments, the re-use of historic buildings, and the improvement of small-scale infrastructure and open spaces.

Main instigator
Aga Khan Trust for Culture (AKTC)

Historic Neighborhood/ Historic Center:
Historic Cairo, Old Cairo, Islamic Cairo

Targeted beneficiaries
330 households - 132 houses rehabilitated out of the 200 target

Project duration
11 years - 1997 until 2008
Study Phase : 1997-2001
Phase 1 : 2000-2004
Phase 2 : 2005-2008

Project budget
EGP 4 million (approximately USD 800 000 based on the Egyptian Pound's value in the year 2000)

Progress status
Completed

1. IDENTIFICATION

Size of the overall city
10,000,000 inhabitants (in 2018), Surface : 3,085 km2

Size of the historic area
58,489 inhabitants (in 2017), Surface : 1.2 km2

Principal function of the city
Capital, administrative, economic, industrial

Principal function of the historic area
Current : Residential, historic neighborhood, economic (craftsmanship and small businesses), monuments and heritage
Past : Center of political, cultural and economic activity in Cairo for 700 years

Heritage status
ADAA is part of Historic Cairo, a UNESCO World Cultural Heritage site since 1979.
Al-Darb Al-Ahmar (ADAA) is endowed with 65 registered monuments and more than 140 historic buildings.
Due to its advanced deterioration, Al Darb Al Ahmar made it to the 2008 UNESCO world heritage danger list.

Income level of dwellers in the historic city
- Low income families living on less than the equivalent of one dollar per day
- Residents below the poverty line: 70%

and average household expenditure levels show that more than 50% of people's incomes are spent on food items.
- The employment rate is low, only 39.3% (35.9% M, 3.4% F) of the inhabitants have access to a job.

Demographic profile
- A young population:

0-15 years: 28% (14% F, 14% M)
15-60 years: 65% (33% F, 32% M)
> 60 years: 8% (4% F, 4% M)
- High population retention:

95% of the residents have lived in the neighborhood for over 20 years
83% were born and raised in al-Darb al-Ahmar
65% live and work in Al Darb Al Ahmar, mostly in traditional woodwork, carpentry, tent making, handmade tiles, copper, brass, leatherwork/ shoes, silver, and carpets.
- Low literacy and poor academic attainment:

45% Illiterate
24% Basic education
7% Without formal education
11% Diploma
6% Secondary school
7% University degree

Land tenure
ADAA is 56% occupied by tenants and 44% occupied by owners.

Housing role in the project
Housing played a core role in the project given that it is the dominant land use in the selected area of intervention.

Situation and urban evolution
Al-Darb Al-Ahmar is centrally located in the old city of Cairo. It is south of the prestigious Al-Azhar Mosque and the popular Khan Al-Khalili, Cairo's principal tourist bazaar, and is bound by Al-Azhar Street to the north, the Ayyubid Wall to the east, and Al-Darb Al-Ahmar Street to the West.
ADAA uniquely blends architecture from the Fatimid, Ayyubid, Mamluk, Othoman and modern eras.

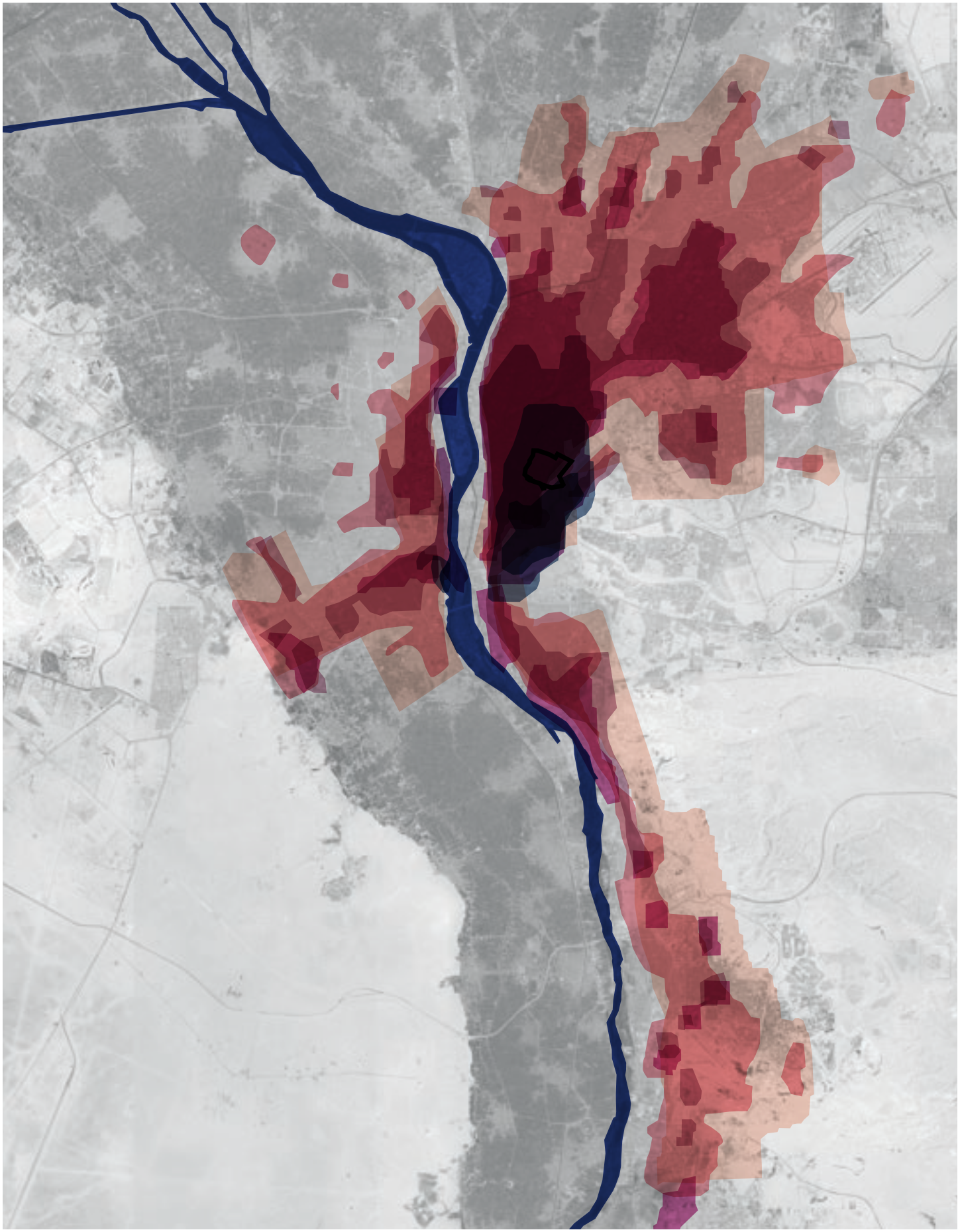


Fig.59: Situation of the project and the urban evolution of Cairo, Egypt

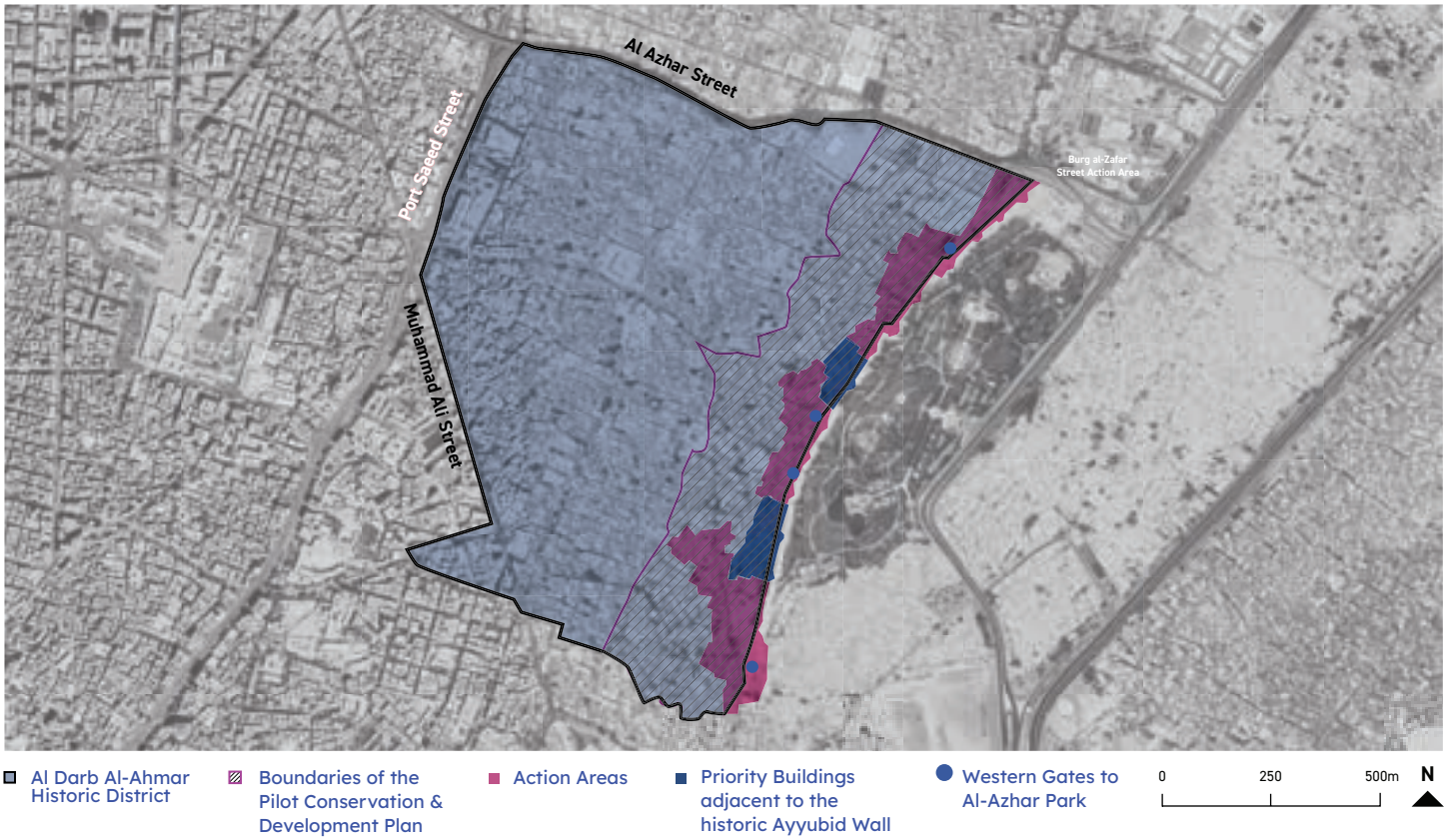


Fig.60: Al-Darb Al-Ahmar intervention area

2. STAKES

Diagnosis/Status

In 1983, a new law was introduced by the Supreme Council of Antiquities (SCA) called the Antiquities Protection Law. It stipulated that existing monuments are to be surrounded by a buffer zone where all types of construction or development are prohibited in order to presumably protect the monument. The complete implementation of this plan would have led to the demolition of significant stretches of ADAA's urban fabric to "preserve" the adjacent Ayyubid Wall. Fortunately, this plan was never implemented, but it caused a downward spiral of disinvestment and deterioration as ADAA inhabitants were not allowed to build or restore their houses.

On the other hand, 78% of the lease agreements of housing units in the neighborhood were subject to the Rent Control Law No. (136/1981), paying negligible rent, often less than EGP 10 per month. As a result, property owners stopped profiting from their property and lost the incentive to perform the required maintenance and upkeep of their leased houses. In fact, these owners preferred to see the building collapse and sell the land instead of collecting the meager rent.

In addition to these challenges, ADAA has been losing its heritage value and characteristics to a new breed of contemporary apartment buildings that exceed the dominant building heights, thus blocking the view to cherished monuments (minarets and domes), as well as natural light and ventilation from neighboring buildings.

Challenges

At the turn of the century, the housing situation in Al Darb Al-Ahmar reached a critical all-time low. 22% of the dwelling units had no private sanitary facilities, forcing many families to share public toilets. 51% of the households didn't have access to a consistent water supply in their kitchens. 32% of the dwellings had non ventilated rooms. As a consequence, the health consequences such as poor eyesight, rheumatism and chest diseases were widespread among the Al Darb Al-Ahmar population. However, 86% of the residents wished to continue living in their neighborhood despite declining living conditions.

Another challenge was finding a solution to how to improve quality of life and public health in Al Darb Al-Ahmar and introduce a fairer tenure policy while preventing gentrification and including the population in the project's implementation, financing and post-occupancy management of their neighborhood, in order to prevent ADAA from regressing in another cycle of degradation.



Fig.61: Entrance of a traditional house in Al-Darb Al-Ahmar
© Aga Khan Trust for Culture

Objectives
Al-Darb al-Ahmar rehabilitation project aimed to empower local inhabitants by supporting them financially and technically to restore the structural safety of houses and reorganize their living spaces to better suit their needs :

- Legal support : Revise the institutional mechanisms to bridge the gap between legislative policies and the residents' needs
- Financial support : Facilitate residents' access to housing grants and affordable loans
- Technical support : Improve security of tenure through resolution of legal conflicts between owners, tenants, and institutional organizations
- Administrative support : Promote higher conservation and building standards through advice, training, and monitoring of construction activities in the area.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Traditional townhouse

Period : Between 1880 and 1920 - but the building layout and patterns remain even in newer constructions

Occupants : Originally, wealthy upper class (less than two centuries ago), currently : low income, poor class, with a low level of education.

Evolution of housing typologies in Al Darb Al-Ahmar:

Mamluk period (13th-16th century) : The first notable residential expansion in ADAA dates back to the Mamluk period in the 14th century. However, very few standing early houses remain, as most of them were destroyed to make way for the buildings of later patrons seeking to build houses, palaces and mosques in the ADAA then-prime location.
While Al Darb Al-Ahmar remained a prestigious area, it nevertheless housed a very mixed community, allowing for the poorer classes living in complexes of multi-family units to live in proximity to more affluent mansion owners.

Othoman period (16th-19th century) : Under Ottoman rule, the building of residential structures in ADAA proliferated to meet the expanding population, and a series of residential and commercial buildings sprouted

in the centrally-located ADAA street. The grandest houses were generally located on main thoroughfares, while poorer families tended to live in the narrow alleyways abutting the eastern city wall.

Seat of power move (1860s) : Inspired to start a European-style capital following his visit to Paris, Khedive Ismail moved the seat of power from the Citadel in ADAA to Abdin Palace in the newly created Ismailiya quarter West of the historic city. Despite its widespread eclecticism, ADAA still retained a sense of economic vitality, and architectural standards remained high even in the most modest buildings.

Independence from British rule (Early 20th century) : The first few decades of the twentieth century saw the immigration of the upper classes of the inhabitants towards the modern extents of Cairo, leaving their valuable houses empty without care or maintenance. On the other hand, public funding was diverted to support the military, leaving repair and maintenance of heritage districts heavily underfunded, which accelerated the decay and deterioration of the infrastructure in the Old City.

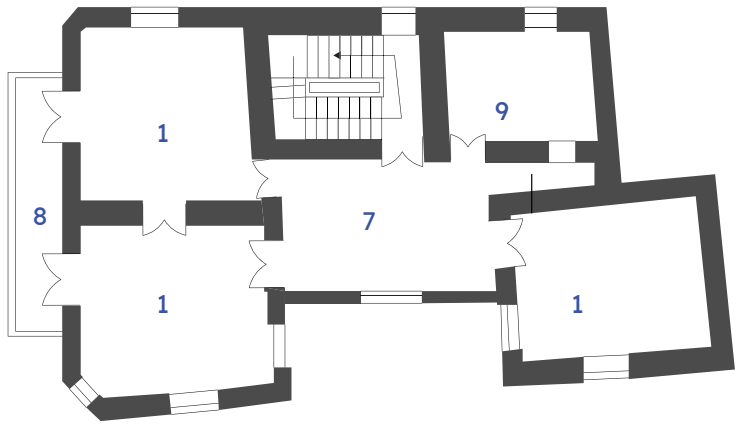
Modernism era (1950s-1960s) : New construction techniques, using reinforced concrete, began to replace traditional building materials, and “modernist” urban design policies came into effect. While innovation had always been an important factor in Darbal-Darb al-Ahmar's development, earlier modernisation attempts had still maintained strong links to the past. The new mindset, however, saw little value in tradition, and the impact of this was profound.

Earthquake following long decay (1992) : An earthquake of 6,8 points on the Richter scale caused many structural deformations to the buildings across the Old City. The earthquake was an alarm which brought attention to the danger of the continuous neglect inflicted on the historic neighborhoods

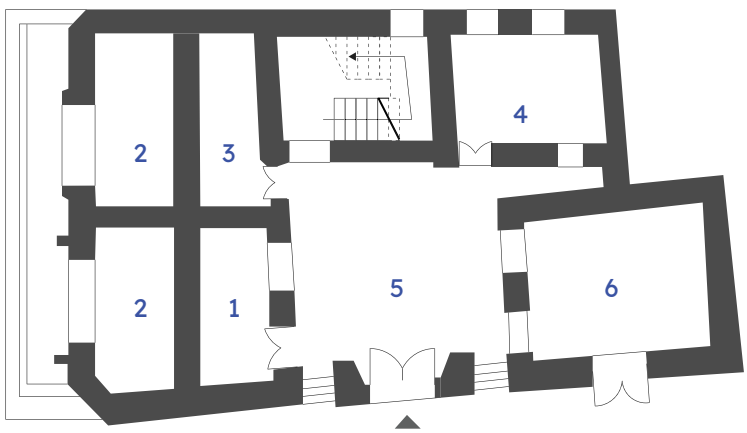
Description :
Traditional townhouses are residential buildings that were initially constructed between 1880 and 1920. However, given that they best meet the specific urban and social conditions of the area, their architectural principles remained popular even in the later part of the twentieth century, when more modern building types had taken over in other parts of the city.
Many of these buildings are constructed on small and narrow plots of land, therefore with a linear-based arrangement of interior spaces, and, given the fact that most of them have only one façade, they often include a lightwell or a courtyard.
Although this structure has many of the typical features found in traditional townhouses, the decorative elements, such as the ornate molding lines, indicate it was built with added expense to allow light and air into the rear of the building. Since the average plot size rarely exceeds forty square meters and can sometimes be as small as twenty square meters, stone corbels or wooden beams are frequently used to allow cantilevers on the upper floors, thus providing additional space.



Fig.62: A photo of Bayt Sokkar’s facade, characteristic of the Mamluk architectural style with mashrabiya balconies. © Bassma Reda.



1st Floor plan



Groundfloor plan

1- Room
2- Shop
3- Food store
4- Service (Family Kitchen)
5- Entrance & family hall
6- Guest Reception
7- Living Room
8- Balcony
9- Floor Service

0 2 5m

Fig.63: A floor plan of Bayt Sokkar, a reflection of the traditional living style.

In spite of the fact that most of these buildings are essentially residential structures, commercial activities are often found on the ground floor, namely in buildings located on main streets such as Darb Shoughlan. In such cases, the spaces with direct access to the street are generally designated for commercial activities, while the back of the ground floor retains a residential function. In smaller alleyways, however, buildings were constructed to be solely residential, indicating that ever since the late nineteenth century there was a privacy and a function hierarchy between residential and mixed-use streets.

3.2. Condition of the historic housing units before rehabilitation

The surveys conducted by AKTC in 2005-2006 during the preparation of ADAA Conservation Plan covered a significant area of the urban fabric including approximately 4,800 buildings. The results of these surveys show that in 2005-2006 building conditions (including mostly residential buildings) were as follows: 14% of the buildings were in good condition, 44% in deteriorating condition, 35% in poor condition and 7% were identified as ruins or partial ruins. In terms of type of construction: 38% of the buildings were traditional, 46% were modern, 9% were mixed traditional/modern structures and 7% were ruins or partial ruins. (see charts below)

3.3. Rehabilitation know-how, materials, and material sourcing

All the materials used were locally sourced :

- Wood
- Recyclable concrete
- Steel beams
- Terrazzo
- Brick
- Lime
- Cement (was reduced by 85% compared to conventional construction)
- Limestone
- Sand

The reconstruction methods and materials followed three principles :

- Satisfy esthetic, structural and economic criteria combined

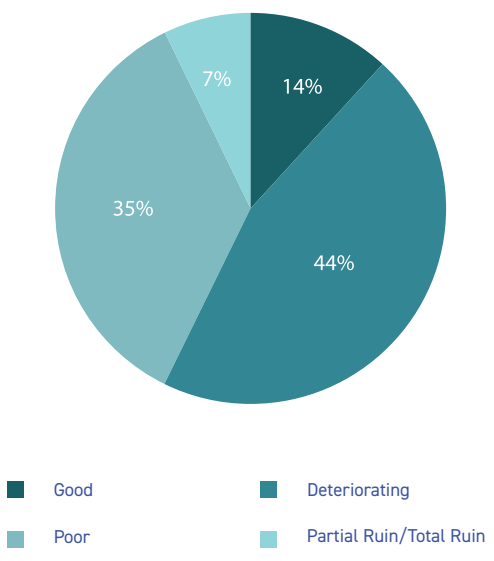


Fig.64: ADAA Survey Results in 2005-2006, building conditions

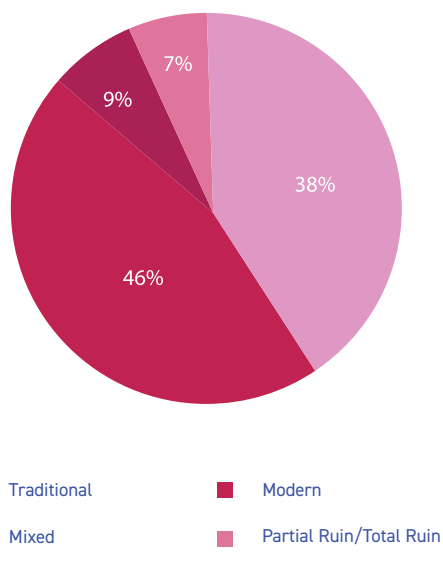


Fig.65: ADAA Survey Results in 2005-2006, type of construction



Fig.66: Before and after renovation and stabilization. On the left, The historic Ayyubid wall. © Aga Khan Trust for Culture

- Allow for 100% recyclable and reusable elements and peacemeal modules, such as dismantlable staircases, wood joints, stones, etc.
- Maximize the use of local materials and the implication of local labor.

3.4. Rehabilitation stages

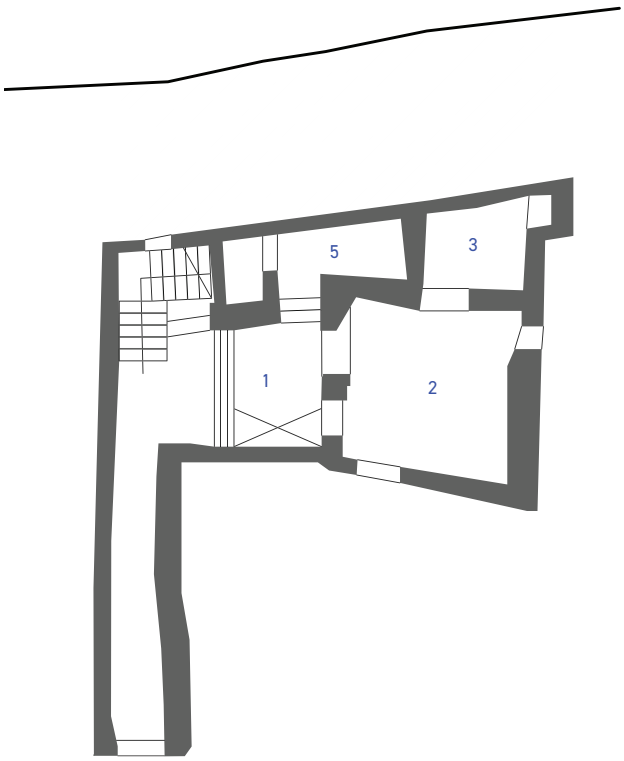
Rehabilitation stages consisted of :

- House surveying by drawing plans of the existing conditions
- Eliminating extra storage rooms or unlivable areas to maximize the use of limited spaces
- Rearrange spaces and propose a modified floor plan that enhances the livability of the house.

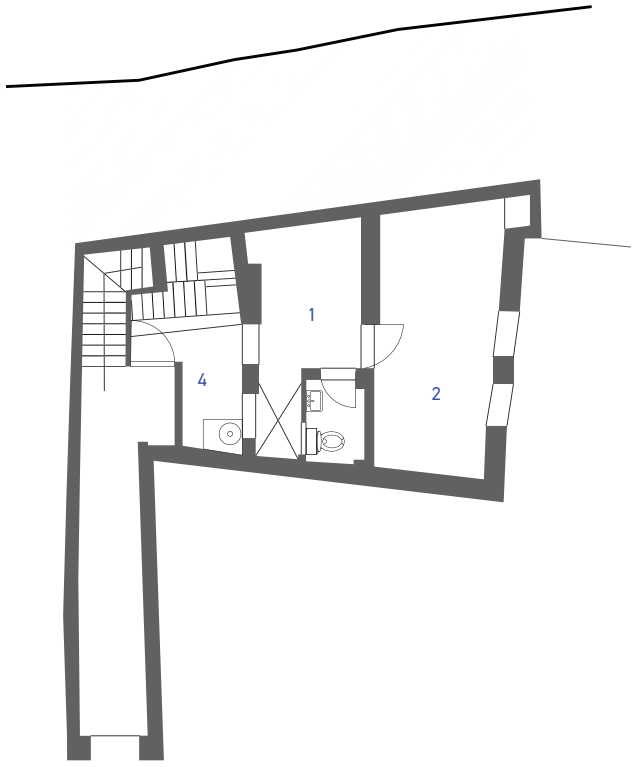
4. MECHANISMS OF THE PROJECT

4.1. Process

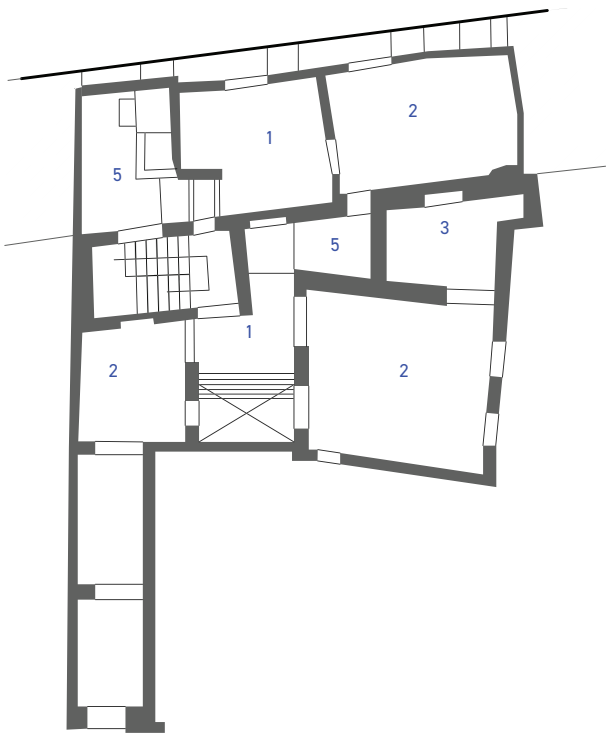
Based on the survey's findings, it was decided that Al-Darb al-Ahmar socio-economic programme would focus on the following development sectors: Housing and Open Space Upgrading, Access to Credit, Employment and Basic Social Services (the latter subdivided into Health, Education & Solid Waste Disposal). These sectors are combined and integrated in order to lay the foundation and create the pre-conditions needed for the physical and social rehabilitation of the area. In addition to these



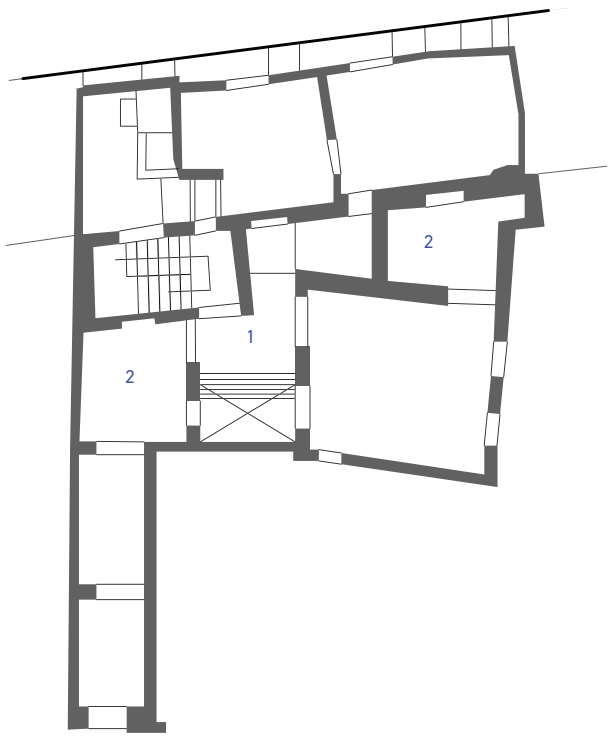
Existing Ground Floor Plan



Proposed Ground Floor Plan



Existing Second Floor Plan

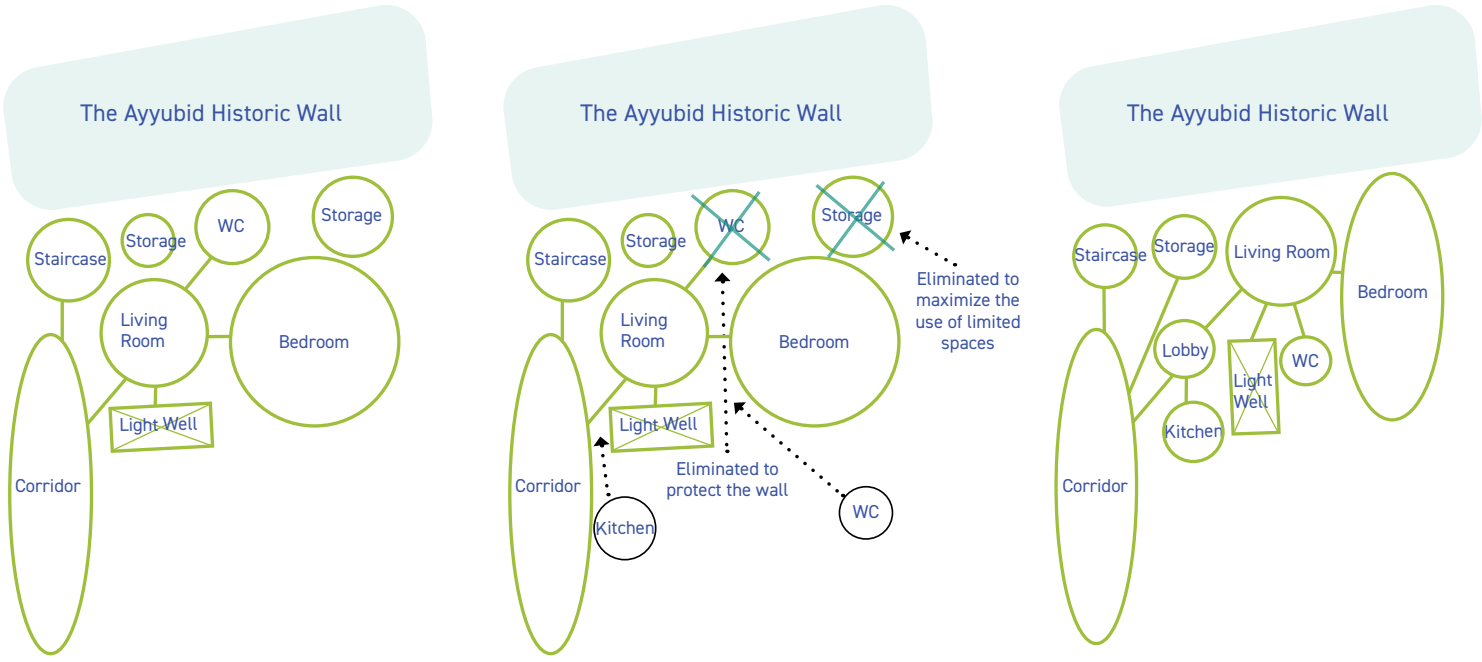


Proposed Second Floor Plan

1- Living room 2- Bedroom 3- Storage 4- Kitchen 5- WC Ayyubid historic wall

0 1 5m

Fig.67: Before and after renovation and stabilization. The historic Ayyubid wall is on the left. Based on original drawings of Aga Khan Trust for Culture.



Existing Ground Floor Plan | Intervention Process | Proposed of Ground Floor Plan

Fig.68: Stages of professional intervention, al-Darb al-Ahmar project. Documentation, analysis of existing uses and problems, and development of proposals based on residents' needs and possibilities. Based on original drawings of Aga Khan Trust for Culture.

sectors, three priority issues were identified as "cross-cutting", in other words, they interact with all five development sectors. These cross-cutting issues are: the environment, gender, and organizational and institutional development.

4.2. Partners

Experts
Architects, Architect restorers & heritage experts, Structural engineers, Micro-credit financing expert, Legal team, Beneficiary outreach team, masons and workers, Monitoring & Evaluation Unit

Public stakeholders
Aga Khan Trust for Culture, Cairo Governorate, Local Districts, Supreme Council of Antiquities (SCA), National Organization for Urban Harmony (NOUH), General Organization for Physical Planning (GOPP), Egyptian Awqaf Authority

Newly created institutional structures
A newly created joint company, equally shared by AKTC (50%) and the Social Fund for Development (SFD) (50%), the Darb al-Aḥmar Community Development Company (DACDC) carried out the implementation of the project.
A Monitoring & Evaluation Unit was established in the framework of the project to measure socio-economic progress.

4.3. Organization and selection

Organization
The project's organization is shown on the flowchart in figure 67.

Selection process
A social housing team has been engaged by the project to assist with convincing the various parties occupying each single house to collaborate in the rehabilitation effort. Its full time mission was to make sure that all the non-physical conditions are met before physical rehabilitation can take place. Following a preliminary agreement reached with the residents of the buildings earmarked for rehabilitation, an independent credit team carries out an assessment to establish the credit-worthiness of the individual families concerned.

4.4. Tools

a. Implementation tools

Stakeholder engagement
By working directly with local authorities, community groups, and other initiatives such as vocational training and employment, the HRP was able to gather resources and implement rehabilitation strategies towards its goals. These resources included financial support from the Social Fund for Development, Aga

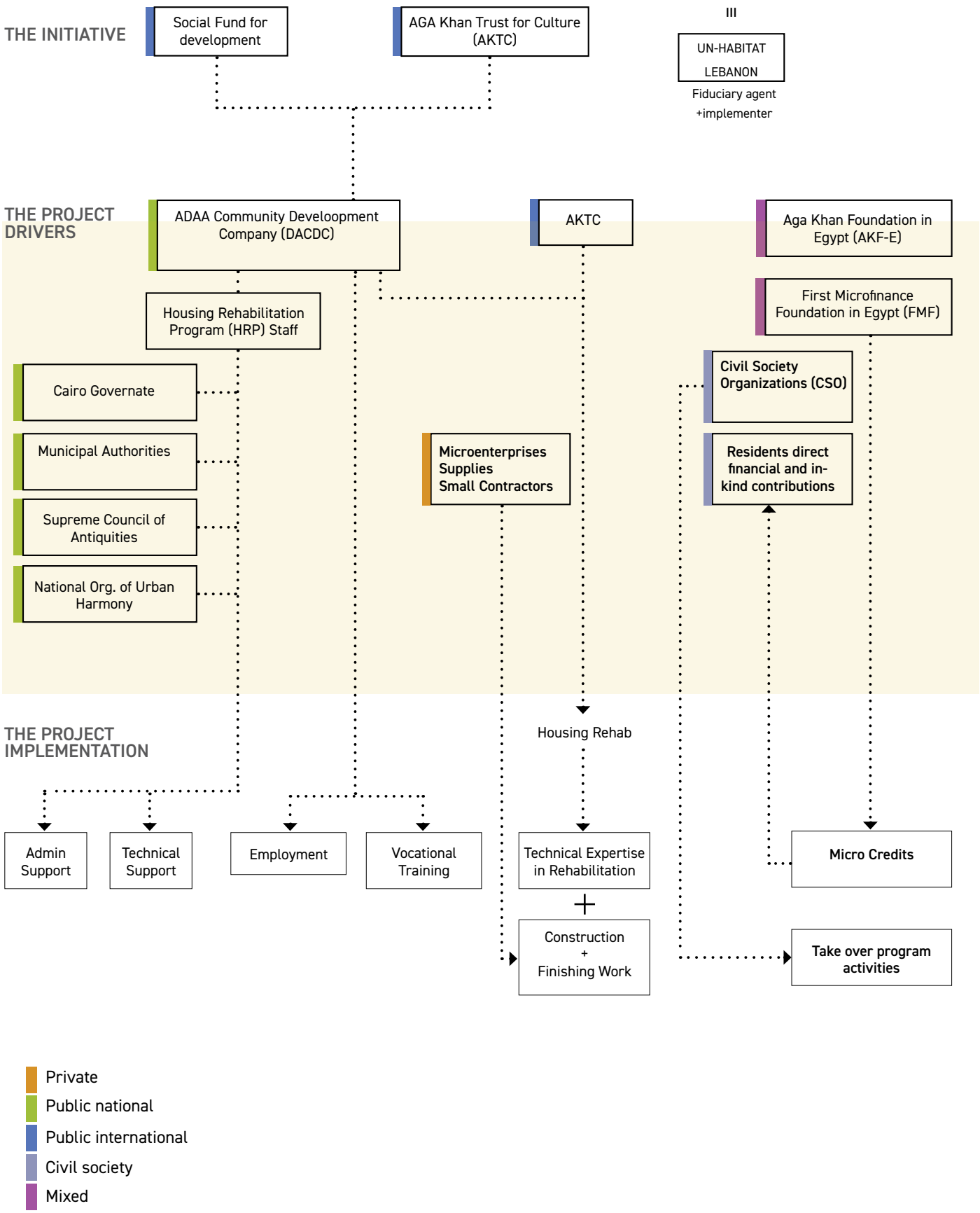


Fig.69: Organizational chart

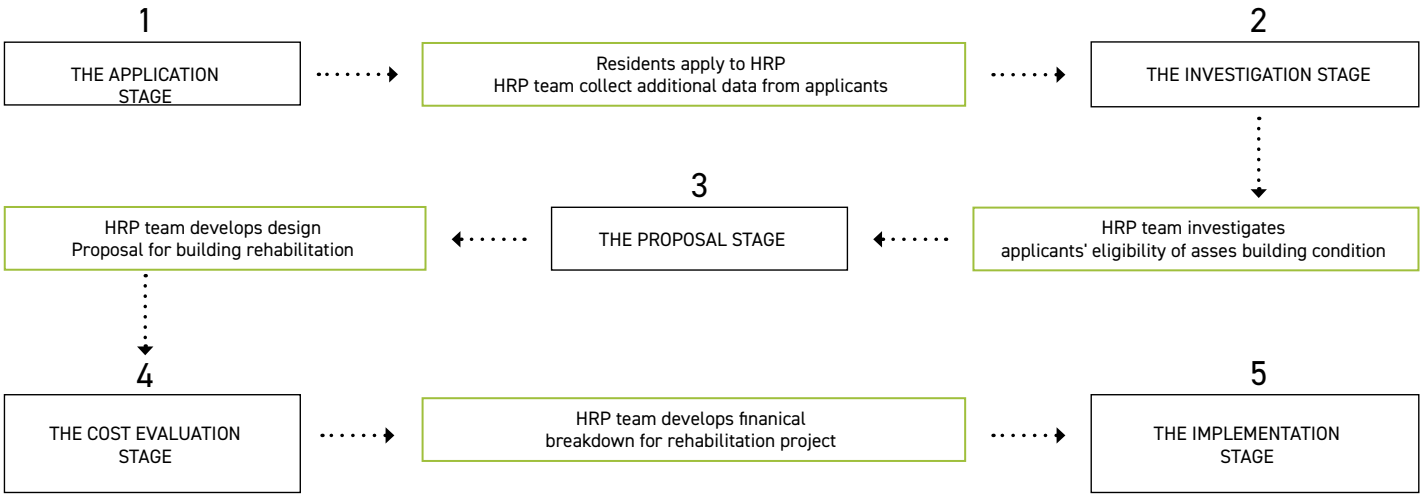


Fig.70: Process to select the houses to rehabilitate

Khan Trust for Culture, and Ford Foundation grants, as well as direct financial and in-kind contributions from residents (covering 30% to 50% of rehabilitation costs). To support different income levels, the Aga Khan Agency for Microfinance also provides housing loans. Technical expertise in rehabilitation is provided by the Aga Khan Trust for Culture and the Community Development Corporation, in collaboration with partners at various levels, ranging from Cairo Governorate, municipal authorities, community-based organizations, to community members. Additionally, local HRP staff provides administration and technical support. Microenterprises, suppliers, and small contractors in Al-Darb al-Ahmar are responsible for construction and finishing works. Institutional and administrative resources are mobilized and facilitated through the Cairo Governorate, the Supreme Council of Antiquities, and Social Fund for Development.

Community engagement

Planned workshops and training on rehabilitation Multiple consultation sessions took place with the architect and the occupants. It was decided early on in the project that residents had to visit their houses during the construction period to familiarize themselves and adjust to the changes.

The third and final phase of implementation (2009 - 2013) focused on the sustainability of community-based interventions by transferring skills and development experience to the local community by strengthening and mentoring the Civil Society Organizations (CSO's) that will take over the program activities.
Another major community empowerment was through access to micro credits.

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

Laws and decrees

The housing stock in Historic Cairo is controlled through a set of institutional, legislative and financial tools. However, some of these tools are not effective, and are sometimes counterproductive, especially laws and decrees. Despite the fact that the "Rule of Law" is not effective in terms of controlling the built environment in Historic Cairo, especially after the revolution, it would be useful to outline some of the existing legal instruments and assess their impact on the built environment. These laws, policies and procedures need to be further studied in detail to understand their complex relationships, deficiencies and, sometimes, their contradictions with heritage conservation requirements.

- Regulation Lines: these are building lines within which building activities are not permitted. These building lines are inherited from previous outdated plans prepared for Historic Cairo since the early 1970s and in some cases are based upon SCA buffer zones. These lines are set to widen existing roads, open new roads cutting through the old city or along important monuments. Despite the fact that this policy has proved to be futile, these lines still exist - hindering some upgrading plans.

- Regulation Decrees: these are administrative decrees issued by the Local District to decide; based on technical investigation, whether an existing building should be rehabilitated, partially demolished or totally demolished. These decrees are mandatory to issue a permit regulating the recommended action. The main problem with these decrees, which represents a major obstacle against rehabilitation of existing buildings in Historic Cairo, is that they are issued without any heritage related

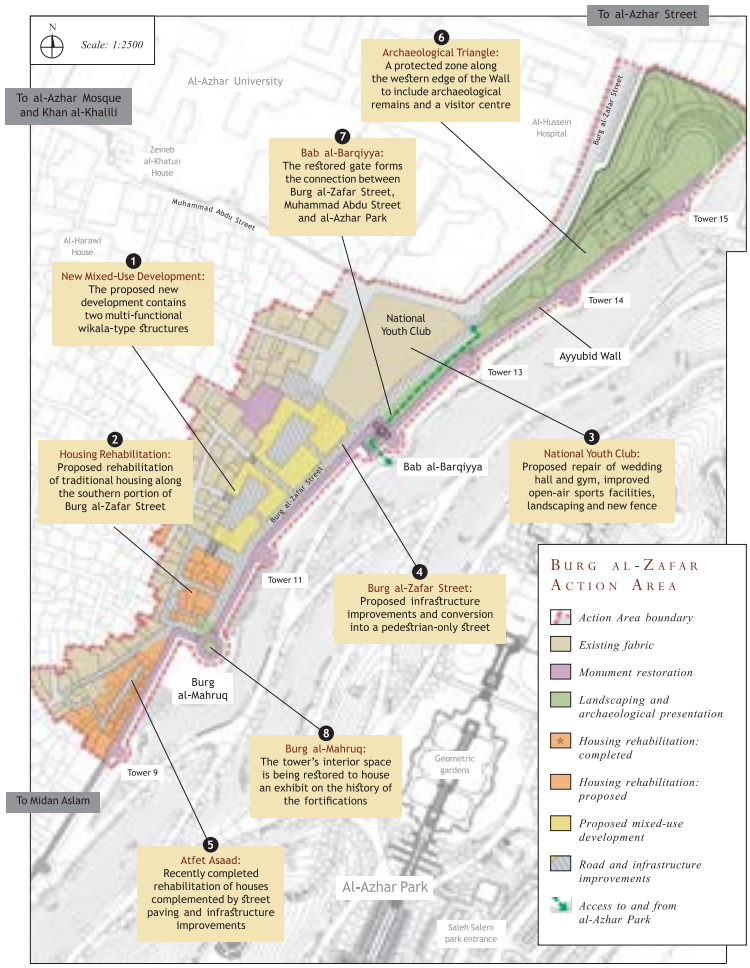
consideration.
In addition, demolition decrees, once issued, cannot be reversed by the executive authorities and can only be abolished through a court case. As a result, these decrees endangered hundreds of traditional and architecturally significant buildings in Historic Cairo.

- The Unified Building Law no. 119/2008
- The Antiquities Protection Law no. 117/1983
- The Antiquities Protection Law no. 117/1983
- The Law of Regulating the Demolition of Non-Dilapidated Buildings and Establishments, and the Preservation of Architectural Heritage no. 144/2006
- Laws no. 49/1977, no. 136/198, no. 4/1996, and no. 137/2006, controlling the relationship between tenants and owners for residential and nonresidential units.

Post occupancy evaluation
After moving back into their house, a POE (Post Occupancy Evaluation) analysis was conducted to assess their satisfaction. The first surveys showed that the interior finishing was unsatisfactory, and sometimes the dwellers wanted to upgrade tiles or bathrooms. This resulted in an accumulation of experience for both designers and residents until the project team fully developed the Housing Rehabilitation Program manual in 2004. Housing rehabilitation entered its second phase after 2005 based on application.

Conservation masterplan
The conservation masterplan was sectioned into three action areas, each with its own special character, needs, and opportunities. which included a mixed program of monument restoration, housing rehabilitation, proposed new facilities, landscaping and open space improvement, and road and infrastructure upgrading. The main action areas are (Figs. 69 to 71):

- The Burg al-Zafarr and its immediate surroundings;
- The Aslam Neighborhood action area;
- And the Bab al-Wazir area and its extension along ADAA street.



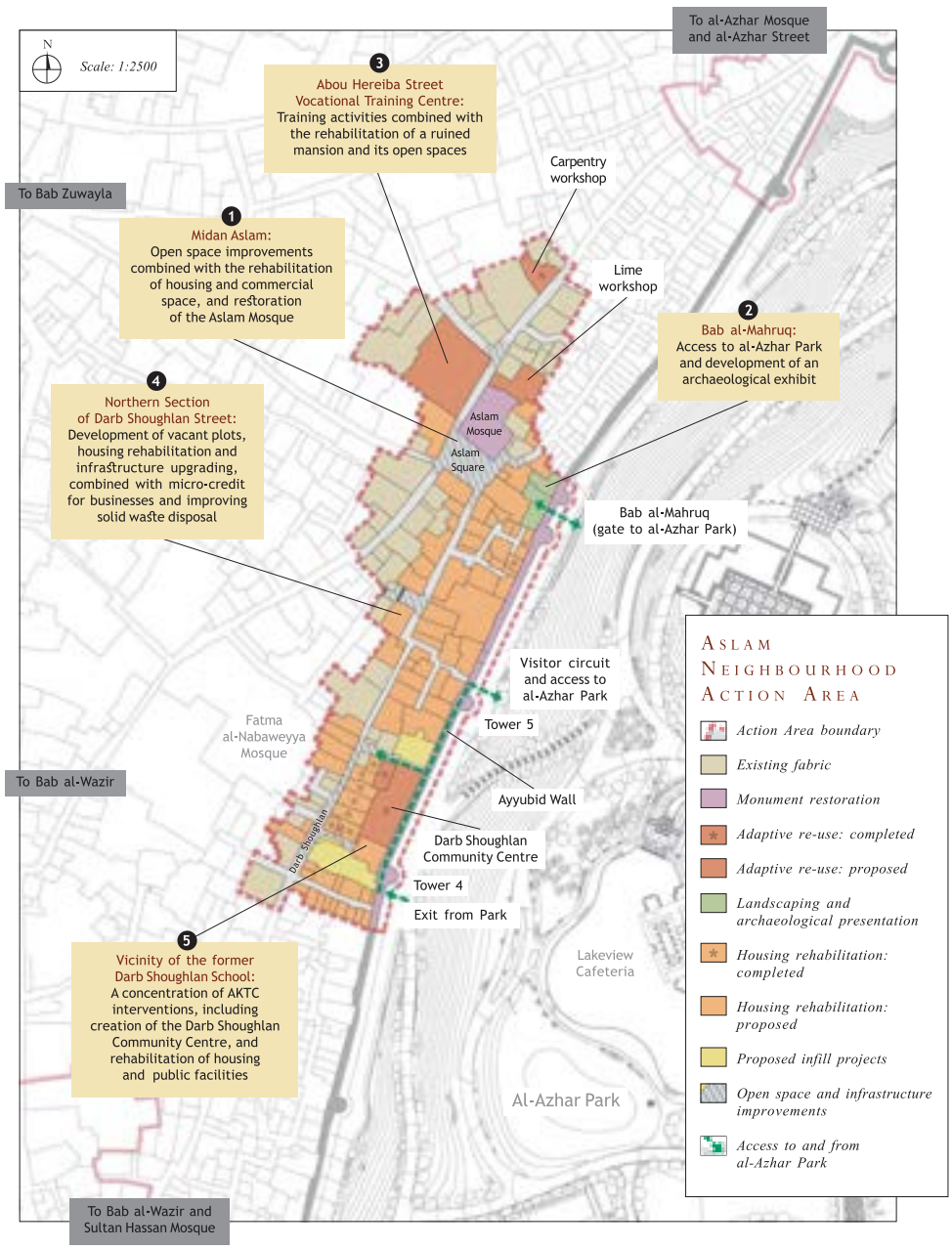
1. New mixed-use development
2. Housing Rehabilitation
3. National Youth Club
4. Burg al-zafar street
5. Atfet Asaad
6. Archeological triangle
7. Bab al-Barqiyya
8. Burg al-Mahruq

Fig.71: Masterplan of Burg al-Zafar action area ©Aga Khan Trust for Culture

4.5. Financing

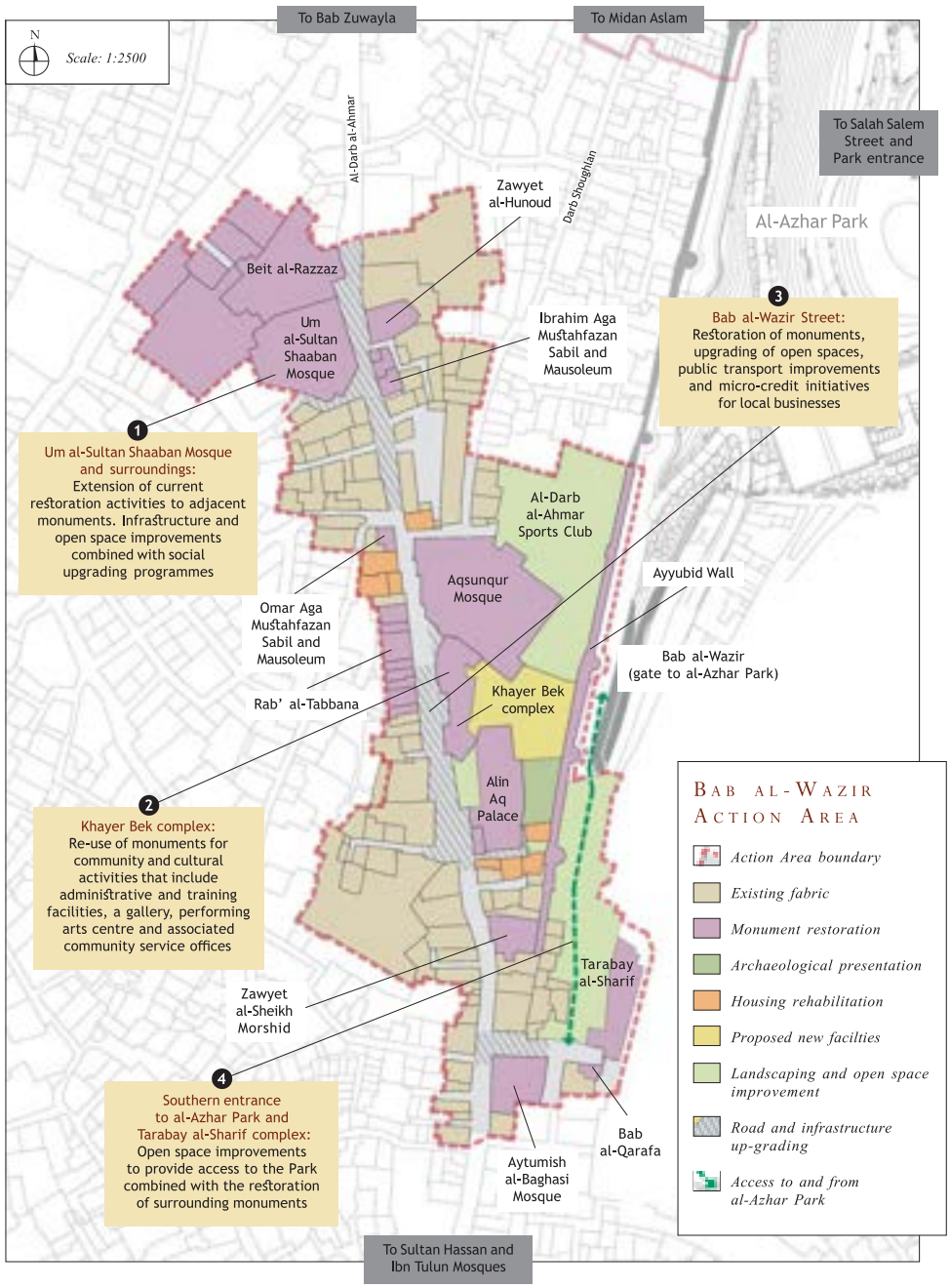
Total amount : 4 million EGP (approximately USD800,000 based on the Egyptian Pound's value in the year 2000)
1 million EGP in the estimate of the beneficiaries direct and indirect contribution, such as relocation expenses)

Source : Aga Khan Trust For Culture Education Programm



1. Aslam Square
2. Bab al-Mahruq
3. The Abou Hureiba Street Vocational Training Centre
4. Northern Section of Darb Shoughlam Street
5. Vicinity of the former Darb Shoughlam School

Fig.72: Masterplans of Aslam Neighborhood action area ©Aga Khan Trust for Culture



1. Um al-sultan Shaaban Mosque & surroundings
2. Khayer Beik Complex
3. Bab al-Wazir Street
4. Southen entrance to al-Azhar Park and the Tarabay al-Sharif complex

Fig.73: Masterplan of Bab Al-Wazir action area. ©Aga Khan Trust for Culture

Proposed Implementation Period : 33 months (Feb 2022 - Dec 2024)
Grant Recipient : Al Darb Al-Ahmar Residents

Breakdown :
Phase 1 : 2000-2004 (AK trust for culture + Egyptian swiss development fund)
Phase 2 : 2005-2008 (social development fund + german)
30 donors : social and economic aspects
Residents contribution :
1st set of beneficiaries : 8%
2nd : 12%
3rd : 30%
4th : 50%
5th : 100%

Financing sufficiency :
Despite the increasing demand on the housing rehabilitation, financing was cut short and the project stopped abruptly due to the 2008 economic crisis.

Maintenance financing :
None appointed.

Rehousing financing :
None appointed. It was part of the residents' contribution to the project.

4.6 Timeline

The project started in 1984 and ended in 2008. (See Fig.72).

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials

The design and construction team had to develop new building techniques which allowed new building materials to mimic old construction methods, and old materials to be used in an innovative way to meet traditional needs in buildings such as modularity and reuse.

b. Legislation changes

Legislative change in Egypt, especially when it comes to heritage preservation, is low, tedious, and extremely hard to obtain. Despite the fact that the project didn't trigger any legislative change, it nonetheless drew attention to the dangers of what's called the "Buffer Zone Law" and succeeded in blocking the law in the Al-Darb Al-Ahmar area.

The policy of demolishing buildings in Al-Darb al-Ahmar, which resulted in the eviction of hundreds

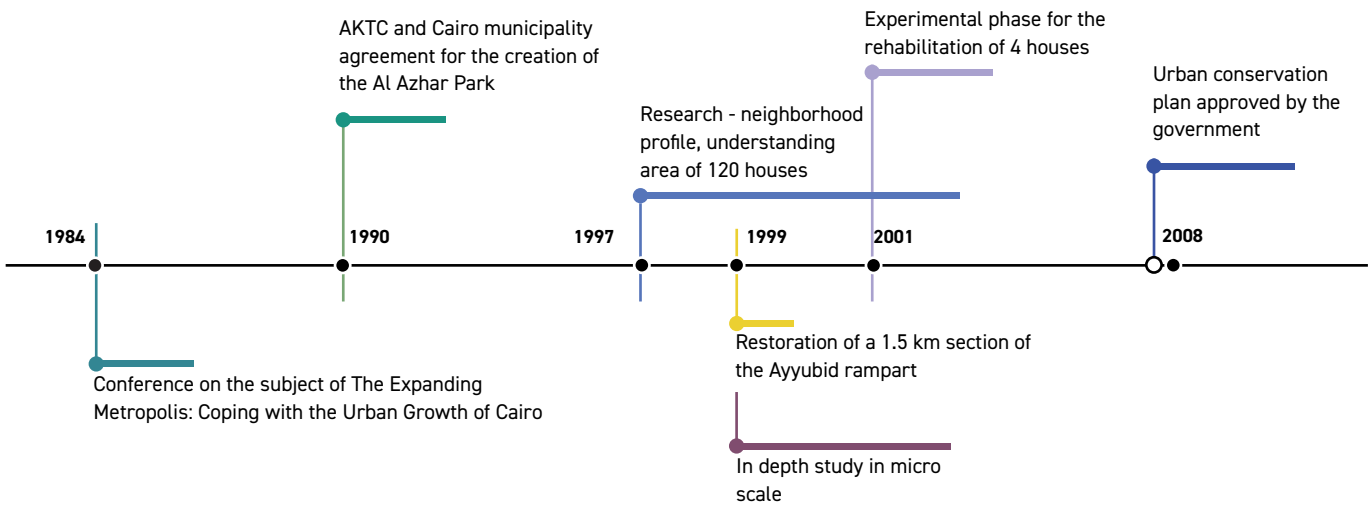


Fig.74: Timeline

of families, was changed by the Supreme Council of Antiquities. Consequently, the Cairo Governorate reevaluated the 1973 District Plan that allowed massive demolitions based on SCA policies and in 2008, approved the new Conservation Plan for Al-Darb al-Ahmar. The HRP was recognized as a best practice by the National Organization for Urban Harmony in their 'Guidelines for Historic Areas' in 2007, and it was recommended to be implemented at the national level. In 2008, the Cairo Governorate modified the legal requirements for rehabilitating existing housing stock to promote a better rehabilitation process.

c. Programs post-rehabilitation

Programs are mainly residential and commercial in mixed typologies.

d. Economic impact

During the project:

Thanks to the project, 25 professionals were employed, and 250 workers in the different construction bodies. The project had a positive impact on the local economy, reinvigorating the supply chains by creating a demand for construction materials and skilled labor.

Post project:

Property value has increased by 400% over 4 years between 2004 and 2008, with no gentrification occurring.

Additionally, owners of initially disused spaces and shops due to lack of maintenance were able to rent them after rehabilitation.

By the end of the program, the clients applying for rehabilitation were younger than the first beneficiaries, which means that project has contributed to young workforce retention in ADAA.

The workers who were trained in the projects were demanded in further rehabilitation projects.



Fig.75: Cleaning and restoration of a decorated wooden ceiling. ©Aga Khan Trust for Culture

e. Social impact

Perception shift
AKTC's initial six-year effort in Darb al-Ahmar has substantially enhanced the image and perception of the area and it provides a sound framework for collateral investment and donor participation. Mobilizing jointly public institutions, donor organizations, residents, local business people and private investors now is essential to achieve the critical mass needed to make the final turn-around happen.

The shift in perception among the different professionals and decision makers consisted in the new awareness that addresses the historic cities not only on the physical level but accounting also for the socio-economic and demographic problems.

Education
The project contributed in creating new knowledge and reviving old traditional craft practices such as tile making, lamp making and furniture design and manufacturing. The project has also spread knowledge and adoption of nonconventional low-cost building techniques while establishing a recognized rehabilitation mechanism.Land tenure improved - new contracts written solidifying the tenure

f. Gentrification and tenure change

Land tenure improvement Gentrification mitigation
The collaboration between owners and tenants has led to a secure tenure with the majority of contribution coming from the tenants. Despite the rising cost of building materials, the program has seen an increase in demand for local craftsmen and contractors. The introduction of microcredit HRP loan has been successful with a repayment rate of 99.6% in the last five years. The project has also spread knowledge and adoption of nonconventional low-cost building techniques while establishing a recognized rehabilitation mechanism.Land tenure improved - new contracts written solidifying the tenure

g. Environmental impact

Access and consumption of water were limited in ADAA. In order to improve water access and use, a system was put in place to collect and reuse water condensation from AC.

5.2. CHALLENGES/ CRITIQUE

Lack of documentation
Despite the innovative construction solutions incrementally accumulated and implemented on site, these techniques remain undocumented, which exposes them to permanent loss and prevent them to be capitalized and transferred in other similar projects.

Financial constraints
Most residents were not able to access mortgages due to collateral complications and low incomes. The program's housing finance mechanism combined grants and loans, catering to different income levels, and promoting social equity through flexible intervention packages. Furthermore, the HRP aimed to lower costs by utilizing low-cost building technologies.

Legislative and tenure constraints
Lack of cultural heritage protection regulations resulted in full agency of owners to demolish buildings of high heritage value such as the Al Qirabiya building.

ANNEX

a. Contact

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b. Media

Official project's website : https://aldarbalahmar.com/

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Fig.76: View of Umm Al-Sultan Sha'ban Madrasa and Mosque. Flickr ©Aga Khan Foundation

5C-07

EGYPT | Esna Old City

Esna: Unveiling Egypt's Hidden Gem

Esna, Egypt



Fig.77: Local antiquities vendor in Old Esna, Egypt. Flickr © Ernie R



INTRODUCTION

Despite being home to a breathtaking compound of heritage buildings from various historical periods, Esna has been suffering from a high vacancy rate due to the out-migration of owners and the overshadowing of neighboring Luxor.
Through this project, the historic city of Esna benefited from the design, implementation, and promotion of an alternative tourism development approach, that improves the town's potential for responsible cultural tourism. This approach strikes a balance between heritage conservation, tourism requirements, and local development needs. This activity improves the economic benefits from tourism for the local community and engages community members to become part of the revitalization process. The activity promotes a new brand for Esna to highlight Esna's diverse heritage assets and increase the potential for cultural tourism.
The adaptation of better heritage conservation and site management practices as well as improved services and better communication around and interpretation of Esna's cultural heritage assets aims to enhance the visitor experience. Thus creating new job opportunities and increasing revenues and economic benefits for the community.

Main instigator
Ministry of Tourism and Antiquities

Historic Neighborhood/ Historic Center:
Historic city of Esna

Targeted beneficiaries
- Shop owners
- Shopkeepers
- Residents of Esna

Project duration
Overall : 2016-2024
Phase 1 - RECHA : October 2016 - November 2020
Phase 2 - VISIT-Esna : January 2021 - September 2024

Project budget
Overall : 8.6M USD
Phase 1 - RECHA : 2.6M USD
Phase 2 - VISIT-Esna : 6M USD

Progress status
Phase 1 - RECHA : Completed
Phase 2 - VISIT-Esna : In progress
- Ongoing documentation
- Finalizing caravanserai rehabilitation
- Improving Temple visitor area : services + interpretation
- Bazar street upgrading
- Renovation of 6 houses + more through incentives

1. IDENTIFICATION

Size of the overall city
2.9 km² with 344,000 inhabitants (in 2017)

Size of the historic area
0.336 km² with 87,000 inhabitants (in 2017)

Principal function of the city
Cultural, heritage, agricultural, commercial (textile trade, furniture, etc.), religious (Church), Nile front.

Principal function of the historic area
Idem

Heritage status
The history of Esna dates back to the Pharaonic era, when it stood as the capital of one of Egypt's regions at the time. The city remained important for over 2,000 years as a hub of trade and commerce that left behind assets and wealth of the Pharaonic, Greco-Roman, Coptic, Islamic and modern eras.
Its prominence, however, started to fade at the beginning of the 20th century with the rise of Luxor as a major tourist destination in the country, in a process that eventually led to its gradual deterioration before being forgotten.

A few monuments are listed as national heritage such as the caravanserai and the temple, but no residential buildings are listed, despite some being considered as buildings of interest.

Income level of dwellers in the historic city
xxx

Demographic profile
738 households, 460 households live in houses classified as unsafe

Land tenure
Private : residential and commercial, Awqaf : monuments
70% of the residents are owners, 30% tenants.

Housing role in the project
The housing component in the project was secondary, as opposed to commercial, cultural and touristic buildings. The aim of the project being the economic and touristic revitalization of the city, as well as job creation and capacity building, residential buildings were only considered for façade retrofitting when they had a significant architectural value and were located on a touristic arterial. However, some homeowners started renovating their houses as the demand for accommodation increased in Esna thanks to the present program.
The focus in the next stages will likely shift to housing given that the economic and touristic viability in Esna has been reinvigorated enough to increase the demand for housing.

Situation and urban evolution
Refer to figure 77.

Regional context
Esna is one of the temple cities boarding the Nile along with other highly visited ones such as Luxor and Aswan.

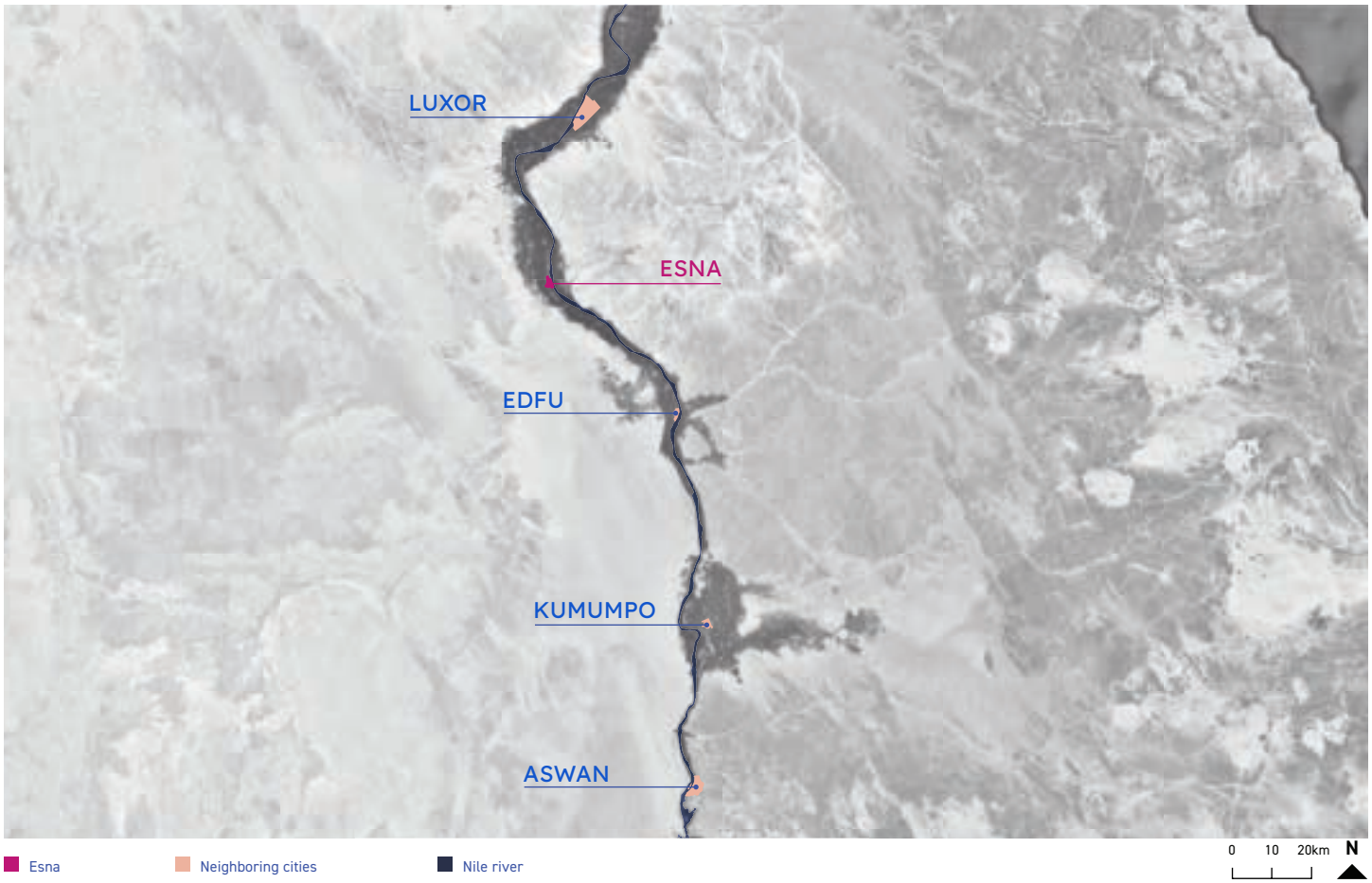


Fig.78: Regional map of Esna, Egypt



Fig.79: Esna's Urban Evolution



Fig.80: Rehabilitation interventions in Esna, Egypt.

2. STAKES

Diagnosis/Status

The old city of Esna is considered as one of the few historic cities in Upper Egypt to have conserved its original urban fabric as a holistic, functioning system. Unlike the other cities bordering the Nile which only conserved their temples, Esna is the only city on the Silwan-Luxor strop that has maintained its old city. It is therefore considered a rare example of civilizational stratification of nearly 25 centuries. Visually and morphologically, the temple is an integral part of the fabric and not at odds with it as is the case in the other temple sites. Additionally, Esna stands out from the surrounding cities thanks to its authentic craftsmanship and local markets. However, its close knit residents are both the reason for its decline and safeguarding. The old politically and economically affluent families composing the majority of landowners in Esna are so close knit and so attached to their homeland that selling or leasing their properties is not common practice. Those who moved out of their houses left them to deteriorate, preferring to keep them unattended than to sell or rent them. Such practice resulted in a high vacancy rate of what has become a frozen in time city.

Challenges

- The high vacancy rate of the old city due to out-migration of affluent owners is resulting in a rapid decay of the heritage buildings and the urban fabric.
- Inexisting property mobility due to owners' attachment to the land and their refusal to sell and sometimes even to lease, preferring to leave the buildings to deteriorate than put them to sale.
- The external reductive perception of Esna is limited to the Greco-Roman temple
- Rapid decaying of the public infrastructure in the old city center (roads, services, public lighting, etc.)
- Environmental decay of the surrounding natural ecosystems (solid waste, loss of vegetation and trees, construction wastes, etc.)
- Lack of services for visitors and tourists such as accommodation, restaurants, baths, interpretation center, etc.)
- Absence of marketing and branding strategies of the city as a whole and of the local craftwork and products specifically
- Absence of training programs for guides and professionals in the tourism industry
- Heritage buildings of high value are exposed to

demolition since they were not listed and therefore not protected
- Absence of prescriptive master plans and design guidelines to preserve the historic integrity of the old city
- High unemployment rate, weakened economy and absence of local commerce in the temple historic area

Objectives
- Conserve and renovate locations on a tourist path in historic downtown Esna, including the Wakalet el-Geddawy, a caravansary built in 1712 to store trade goods and lodge traveling merchants; the facades of architecturally significant buildings in the neighborhood; and a portion of the Al-Qisariyya market
- Develop a management plan for the Wakalet el-Geddawy and implement an updated Esna City Center Revitalization Plan
- Develop and implement a cultural heritage communication and interpretation plan for Esna to promote its diverse cultural heritage
- Create an economically sustainable model through which tourism development activities and the training of community members can provide economic benefits to the people of Esna

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Information not available
Occupants : Information not available
Evolution : Information not available
Description : Information not available

Spacial distribution : (Fig. 82)



Fig.81: A street in Esna near the temple of Khnum. © Takween Integrated Community Development

3.2. Condition of the historic housing units before rehabilitation

75% of the buildings in the study area are in an advanced state of degradation and are deemed unsafe to occupy.
The rehabilitated houses were selected with minimal structural damage such as light cracks, in order to obtain quick but impactful results to demonstrate the economic value of such investment and encourage other homeowners to undergo their own housing rehabilitation.

- 738 households
- 1027 buildings, 754 unsafe (75%)
- 636 occupied buildings
- 465 shops
- 460 households live in houses classified as unsafe, 289 have shops.

The housing projects selected, however, were among the easily repairable buildings that would yield quick and visible results, in order to improve the urban landscape and increase the city's attractivity in the one hand, and inspire locals to follow suit on the other. The Qaysariya or caravanserai was in an advanced level of degradation. Its successful rehabilitation gave the inhabitants the trust and confidence to rehabilitate their own houses.

3.3. Rehabilitation know-how, materials, and material sourcing

- Mud bricks (recycled)
- Tiles (high resistant roman titles 80x36x4cm revived)
- Wood (limited) from Luxor or Cairo
- Palm tree trunks (local)
- Lime

Capacity building for professionals (architects and engineers) and local contractors (carpenters, masons, plummers, etc.) helped reduce the need for external expertise and workers by 50% for the former and 100% for the latter.

4. MECHANISMS OF THE PROJECT

4.1. Process

Heritage preservation (vision)

1. Original fabric
2. Safeguarding of high value heritage buildings
3. Clearing of unsafe and abandoned structures
4. Redensifying following the original fabric layout

Housing rehabilitation (demand based) :

1. Support request application
2. House inspection : Physical inspection, economic investigation and potential adaptive reuse, tourism potential investigation



Fig.82: Interior damages in a residential building in Esna.
© Takween Integrated Community Development



Fig.83: View on a typical townhouse in Esna, Beit Felfel © Takween Integrated Community Development

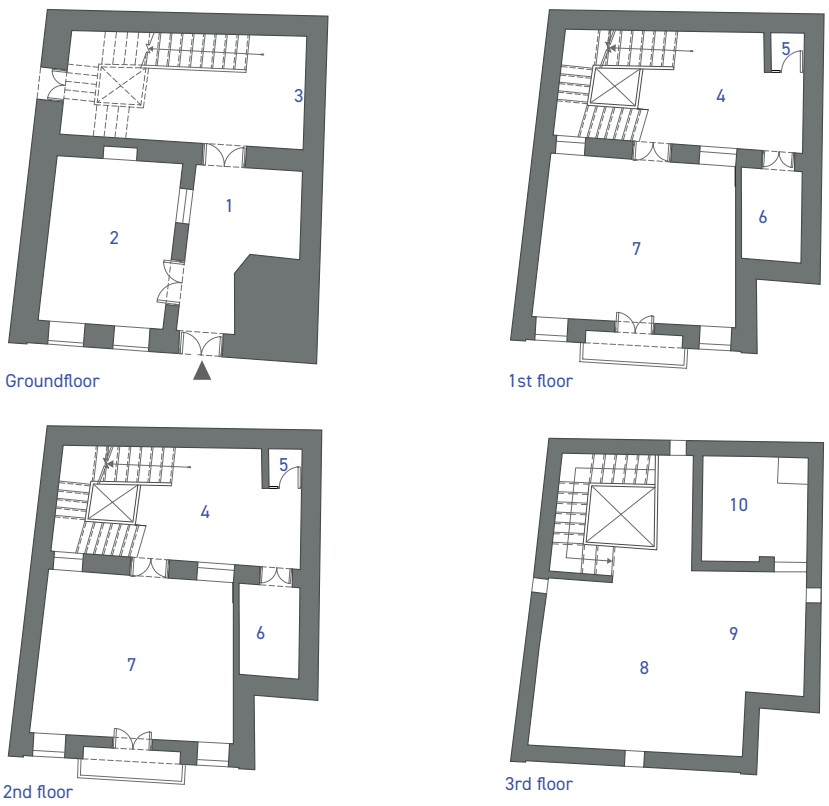


Fig.84: Typical layout of a townhouse in Esna, Beit Felfel

3. Design
4. Cost estimate and subdivision of shares (direct supply of materials by the owners)
5. Implementation
6. Delivery

Economic incubation :

1. Selection process
2. First contact with owners by social workers
3. Signed agreement and government permit
4. Implementation and rehabilitation
5. Interior design : minimal change based on existing assets
6. Co-financing and acceleration (1 year)
7. Workshops, soft skills building, management training, specialized 1 on 1 mentoring based on the specificities of the business (focused training, branding, etc.)

4.2. Partners

Experts
Heritage experts, multidisciplinary restorers, architects, civil engineers, economic and capacity development experts, tourism industry branding, craftsmanship and art trainers (Jameel Arts Center, KSA)

Public stakeholders
Ministry of Tourism and Antiquities (MoTA)
Luxor Governorate
Ministry of International Cooperation (MoIC)

Newly created institutional structures
N/A

4.3. Organization and selection

a. Organization
The project's organization is shown on the flowchart on the right (Fig.84).

a. Selection process
Representative of a typology
Occupied building
Heritage value
Minimal structural damage (cracks)
Resident agreement

4.4. Tools

a. Implementation tools

Tourism value chain mapping
Establishing a complete and full high value tourist experience, from accommodation and catering to transportation, information and guiding, tour operations, attractions, shopping, etc.

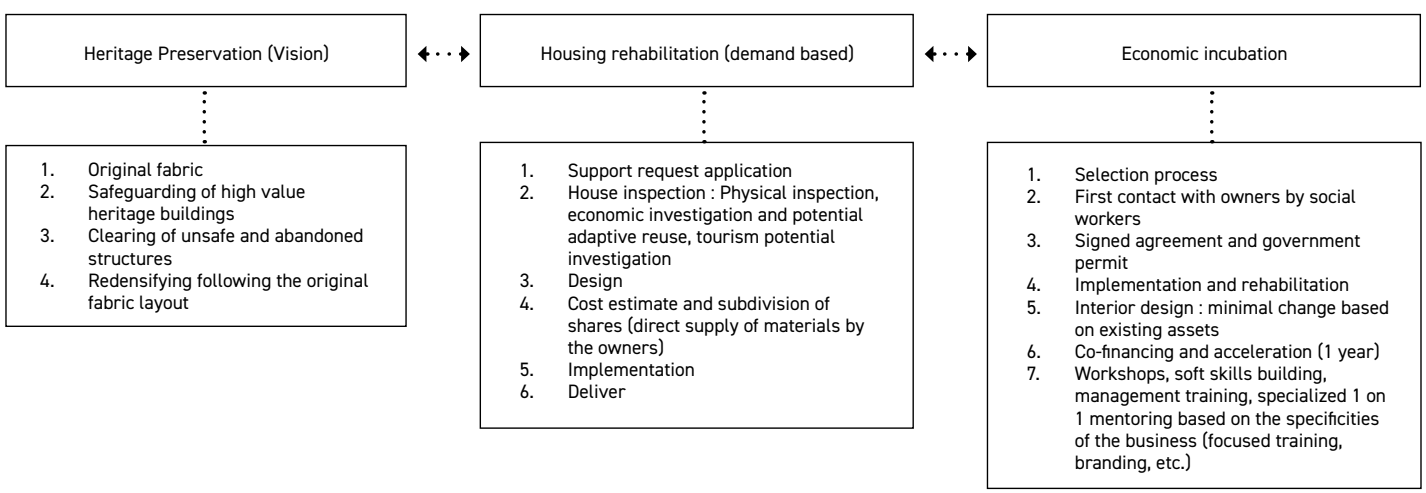


Fig.85: Process of houses to rehabilitate

THE INITIATIVE

LUXOR GOVERNATE

ESNA CITY COUNCIL

MINISTRY OF INTERNATIONAL COOPERATION (MoIC)

MINISTRY OF TOURISM & ANTIQUITIES (MoTA)

THE PROJECT DRIVERS

U.S Agency for International Development (USAID)

Takween Integrated Community Development

CID Consulting

Local Residents

- Particcipate in design sessions
- Owners/tenants of residential buildings
- Owners of local businesses

Bazaar/Shop Owners

- Provision of retail services for domestic and foreign visitors of the area
- Contribute financially to upgrading different business facilities

Tourism Police

- Guarding and provision of protection to Listed Monuments and Touristic Areas

THE PROJECT IMPLEMENTATION

Tour Operators

Domestic & Forein visitors

Local Contractors

- Project consults with the visitors and tour operators to understand their needs, wants, and expectations from the area
- Their feedback, along with the residents, informs our programs of economic intervention.

Private
Public national
Public international
Civil society
Mixed

Fig.86: Organizational chart

b. Community engagement

Community empowerment through capacitation and skill development.
Training is provided in :

- Accommodation industry
- Gastronomy by documententing local recipes and launching a kitchen school, as well as a cooking competition.
- Wooden crafts training and exhibitions
- Business development, branding and design, handicrafts and rehabilitation

c. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

Laws and decrees

The housing stock in Historic Cairo is controlled through a set of institutional, legislative and financial tools. However, some of these tools are not effective, and are sometimes counterproductive, especially laws and decrees. Despite the fact that the "Rule of Law" is not effective in terms of controlling the built environment in Historic Cairo, especially after the revolution, it would be useful to outline some of the existing legal instruments and assess their impact on the built environment. These laws, policies and procedures need to be further studied in detail to understand their complex relationships, deficiencies and, sometimes, their contradictions with heritage conservation requirements.

- Regulation Lines: these are building lines within which building activities are not permitted.

These building lines are inherited from previous outdated plans prepared for Historic Cairo since the early 1970s and in some cases are based upon SCA buffer zones. These lines are set to widen existing roads, open new roads cutting through the old city or along important monuments. Despite the fact that this policy has proved to be futile, these lines still exist - hindering some upgrading plans;

- Regulation Decrees: these are administrative decrees issued by the Local District to decide; based on technical investigation, whether an existing building should be rehabilitated, partially demolished or totally demolished. These decrees are mandatory to issue a permit regulating the recommended action. The main problem with these decrees, which represents a major obstacle against rehabilitation of existing buildings in Historic Cairo, is that they are issued without any heritage related consideration. In addition, demolition decrees, once issued, cannot be reversed by the executive authorities and can only be abolished through a court case. As a result, hundreds of traditional and architecturally significant buildings in Historic Cairo are endangered by these decrees.

- The Unified Building Law no. 119/2008

- The Antiquities Protection Law no. 117/1983

- The Antiquities Protection Law no. 117/1983

- The Law of Regulating the Demolition of Non-Dilapidated Buildings and Establishments, and the Preservation of Architectural Heritage no. 144/2006

- Laws no. 49/1977, no. 136/198, no. 4/1996, and no. 137/2006, controlling the relationship between tenants and owners for residential and nonresidential units.

4.5. Financing

Total amount : USD 8.6 million

Source : USAID U.S. Agency for International Development (USAID) within the framework of the bilateral agreement 'Sustainable Investment in Tourism in Egypt' (SITE) between the governments of Egypt and the United States

Proposed Implementation Period : October 2016 – September 2024
Grant Recipient : Takween Integrated Community

Development

Breakdown :
Phase 1 - RECHA : 2.6 million USD
Phase 2 - VISIT-Esna : 6 million USD
In al-Qissariyya Market (114 shops), the Luxor Governorate contributed EGP 187,891 (USD 11,600) in electrical infrastructure. Twenty-three shopkeepers have invested more than EGP 176,300 (USD 10,900) to renovate their shops.

Financing sufficiency :
Ongoing project.

Maintenance financing :
No

Rehousing financing :
No maintenance fund for the housing buildings.
The management plans for the renovated monuments included revenue generation items to make them self-sustaining through services and activities annexed to the building's primary function.

4.6 Timeline
Timeline represented in figure 85.

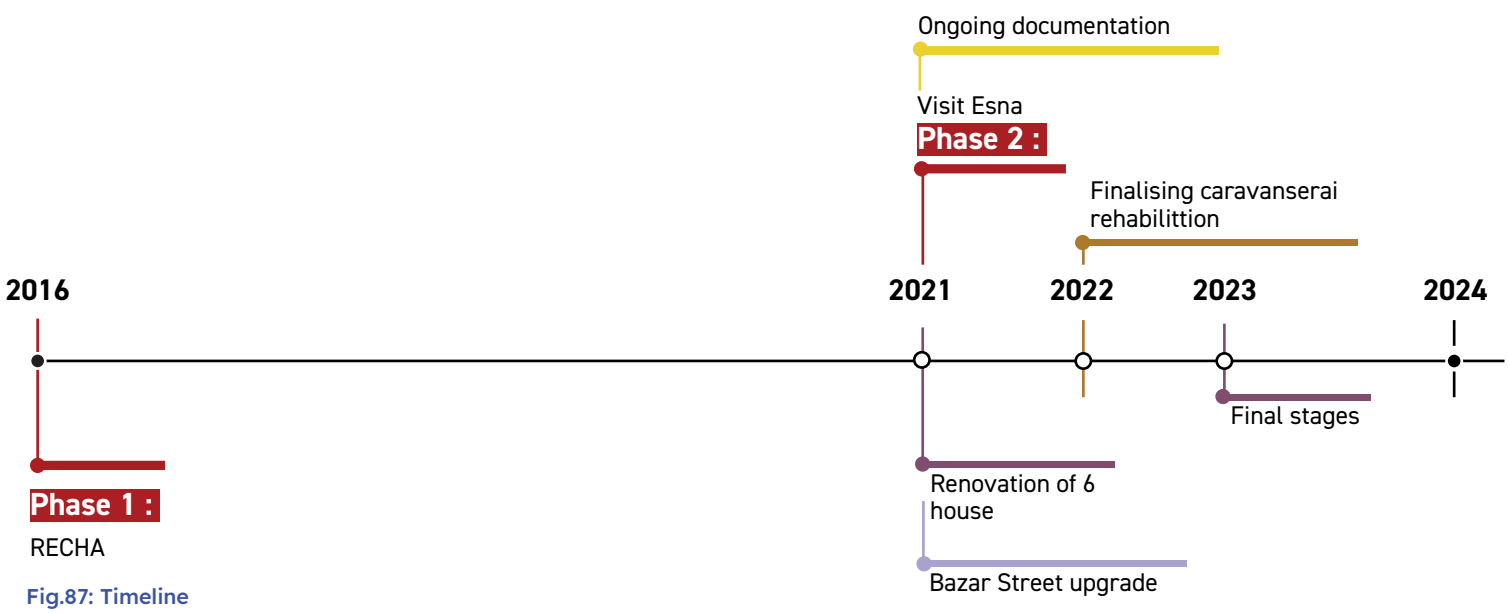


Fig.87: Timeline

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials
- Introduction of lime as a plaster which was unknown to the locals, given its higher water resistance compared to the original clay plasters.
- Recycling of old mud bricks by soaking, fermenting and re-molding them.

b. Legislation changes
The education efforts deployed in this project, as well as the pilot projects conducted, played a key role in inspiring the first institutional decrees to protect the historic city.

c. Programs post-rehabilitation
- Mixed-use (residential + commercial)
- Housing
- Accommodation (bed and breakfast)

Economic impact

During the project:
The project provided job opportunities : more than 18,600 person-days as of September 2019 for local unskilled labor from Esna in the areas of urban rehabilitation and conservation.
In addition, 72 local artisans and craftsmen (68 women and 4 men) benefited from capacity building in the areas of handicrafts skills (weaving, palm fronds' products, accessories, and woodwork), quality control, and marketing in collaboration with two local NGOs.

A curriculum was created in product design where women were enrolled and were better performing than their men counterparts. A competition and a showroom followed.

Post project:
The number of visitors in Historic Esna increased from 20 000 in 2017 to 70 000 in 2023.

The project stimulated public and private sector investments in the city and contributions to the activities. 60 to 70% of the shops were closed prior to the rehabilitation. Shopkeepers have seen their income increase significantly, selling in a matter of weeks what they used to sell in months.
The business incubation program was so successful it has resulted in a waitlist and a demand that is surpassing the program's capacity.
The workers who were trained in the projects were demanded in further rehabilitation projects.

Branding:
The project has an active presence on social media with 17 000 followers, and a branding strategy was created for the city, including a promotional video, brochures, experience maps, etc.

d. Social impact

Gentrification mitigation
It is unclear whether the project is contributing to the increase of land value, but the increase in demand for a limited land and housing pool in the project area may have an impact on rental prices.

Perception shift
The project helped change the public perception of Esna from only having a temple (Khnum Temple) to a historic city with multilayered history and diverse cultural heritage assets.
A Facebook group with 50000 members was created by locals mainly to exchange information on Esna's history and heritage.

Awareness around the socio economic component of historic safeguarding
Addressing the historic cities only on the physical level without paying attention to their socio-economic and demographic problems cannot be sustainable in the long run. The project has gone from a supply mode where private money was invested in a pilot project to prove the economic value in heritage preservation, to a demand mode where residents are actively involved in the rehabilitation of their own shops and houses.

Another example of social transformation was best illustrated by the first female shopkeeper in Old Esna, which was considered revolutionary given that commerce activity was overwhelmingly monopolized by men.

Education
A heritage awareness program for Esna's public schools was launched to help youth understand ongoing restoration and rehabilitation activities.
Raised awareness about the city's cultural assets to establish a connection between the city's residents and their cultural heritage, and how that heritage can have economic benefits through increased and improved tourism activities.
Art and photography street exhibitions took place in Esna to bring the residents' attention to the beauty and value of the Esna heritage. Many, including the Governor, discovered some of Esna's gems for the first time thanks to these exhibitions. This was a turning point in Old Esna's fate.

e. Environmental impact
The project relied greatly on recycling materials from the ruins in Old Esna, an example of which is the recycling of 500 000 mud bricks for the rehabilitation of the caravanserai. As a result, the project significantly reduced the need for new materials.

5.2. CHALLENGES/ CRITIQUE

a. Political constraints
Mainly focused on the temple area following luxor's

tourism model, the governorate failed to see any value in keeping the original fabric of the city intact as it was perceived as an abandoned cluster of ruins that needed to be razed down to the ground.
A moratorium was enforced on all rehabilitation works in preparation for an opaque master plan projects where residents weren't included.
On another level, the flocks of shoppers coming weekly to the Market in the old city of Esna were considered a threat to the Temple area. Consequently, the bus station was removed, cutting Old Esna off economically from the rest of the city.

b. Financial constraints

None. A vision master plan was produced with an estimate of USD 60M for the full rehabilitation of the project area.

c. Legislative and tenure constraints

The lack of cultural heritage protection regulations, and the difficult listing process and its costly implications, exposed many buildings of high heritage value to the risk of demolition.
The centralized nature of heritage preservation also plays in its disfavor, leaving the local authority with tied hands and limited capacity and resources.

d. Construction challenges Loss of local know-how

Recycling materials such as mud bricks and reviving indigenous building techniques, such as the anti seismic wood joints or the elaborate woodwork and wood carving, constituted a learning curve for the project team due to the loss of local know-how in the construction field.

ANNEX

a. Contact

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b. Bibliography

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Fig.88: Columns inside Esna's temple
© Takween Integrated Community Development

5D-08

KSA | al-Balad

Gate to Makkah, Historic Jeddah al-Balad

Jeddah, KSA



Fig.89: View of Bayt Noorwali, Al Balad - Jeddah. ©Omar Kamal



INTRODUCTION

Jeddah's historic center, called Al Balad and listed as a UNESCO World Heritage site in 2014, stands out as a significant traditional urban hub in Saudi Arabia and the Red Sea region. With its fine coral houses, ribats (the traditional infrastructures created for the reception of pilgrims), suqs, small public squares and mosques, Jeddah's historic center is an outstanding reflection of the Red sea urban and architectural tradition, a construction style once common to cities on both coasts of the Red sea, of which only limited vestiges are preserved today outside the Kingdom of Saudi Arabia. Al Balad symbolically acted as a gateway to Makkah for Muslim pilgrims reaching Arabia by boat since the 7th century AH, when the 3rd Caliph Othman Ibn Affan made it the official port of Makkah. This role allowed it to host throughout the centuries a multicultural population from Asia, Africa and the Middle East, who resided and worked in Al Balad.

The historic area of Jeddah city was subject to many studies, development and conservation projects. Being listed on the World Heritage List inspired even more efforts from the private sector, municipality and Saudi Commission of Tourism and Antiquities.The "urban regeneration plan of Jeddah's historic district" project furthers past efforts and projects, and proposed an ambitious, decade long vision extending till 2030, and encompassing UNESCO designated historic center, its immediate surrounding districts zone, and its waterfront.

Al Balad and most of its surroundings still beholds a unique architectural character despite the demolition of the city's 16th century fortification walls in 1947 and the drastic modifications of its surrounding context.

The project's site includes a substantial portion of the 350 historic buildings situated in Al Balad as listed in a 1981 survey by the British architect Robert Matthew, who was commissioned in the 1970s by the Saudi Government to develop conservation strategies and guidelines for Jeddah's historic center, including a total of 649 heritage buildings overall.

The rehabilitation project "Gate to Makkah" aims to revive the historic center, emphasizing the preservation of original structures and promoting cultural heritage. This initiative includes cleaning and restoring ancient water cisterns, offering a glimpse into Jeddah's historical past and contributing to the ongoing revitalization efforts through cultural and touristic activation.

Main instigator
The Saudi Commission for Tourism and Antiquities.

Historic Neighborhood/ Historic Center:
Historic City Center of Jeddah

Targeted beneficiaries
651 historic buildings

Project duration
2020-2030

Project budget
USD 55 million

Progress status
In progress

1. IDENTIFICATION

Size of the overall Jeddah Historical District

Approx. 3,4 million inhabitants, Surface : 2,5 km2

Size of the UNESCO-designated historic area
17.92 Hectares



Fig.90: The dense fabric of Al Balad, Jeddah. Flickr ©Alastair Humphreys

Main function of the city
Capital, religious, touristic, economic, heritage area

Main function of the historic area
Histori, touristic

Heritage status
Historic Jaddah comprises of 648 Historic buildings, and has been a UNESCO world heritage site since 2014, criteria (ii), (iv), and (vi).

Income level of dwellers in the historic city
Mid to low income population with a monthly income of less than 3,000 SR (USD 1,100).

Demographic profile
In Historic Jaddah, Al Balad, most buildings belong to prominent Saudi families who rent them or use them as headquarters of their companies. The main remaining occupants of Al Balad are expatriate workers and owners of the commerces located in the ground floors of buildings. The low-income newcomers that have progressively replaced the merchant families don't originate from the local rural areas, as in other countries, but rather from the neighboring muslim-majority poorer countries.

Land tenure
Mixed ownership, private family historic houses, adminstration buildings.

Housing role in the project
Housing plays a central role in the Urban Regeneration Plan of Jeddah's historic district, in both the historic area and in the new waterfront development area. Indeed, the largest proposed program in the overall project is housing, with 274,038 m² of existing housing rehabilitated and 367,430 m² of new housing units.
In phase 1, of the 649 listed historic buildings, 14 have been restored, 40 reinforced, 56 are under reinforcement and 28 are under study. The majority of these buildings are residential, many with commerces in the ground floor.

Situation and urban evolution
The coastal port city of Jeddah is located in the Makkah Province of Saudi Arabia, surrounded by the Hijaz Mountains to the east and by the Red Sea to the west (Fig. 90). Site Excavations in the old city suggest that Jeddah was founded as a fishing hamlet in 522 BC by the Yemeni Quda'a tribe, who left central Yemen to settle in Makkah. Under the Caliphate of Uthman, in 644-56 AD, Jeddah gained recognition as the "Gateway to the Holy City" and developed as an important hub for the Islamic world. During the 7th century, the Persians settled in the city, constructed the first city walls and established the harbor as a prominent trading point.

During the Ottoman Empire's rule in the 16th century, Jeddah experienced significant urban development.



Fig.91: Gallery of Masjid Shafi'i. ©Arnold Paira, Laif, Redux

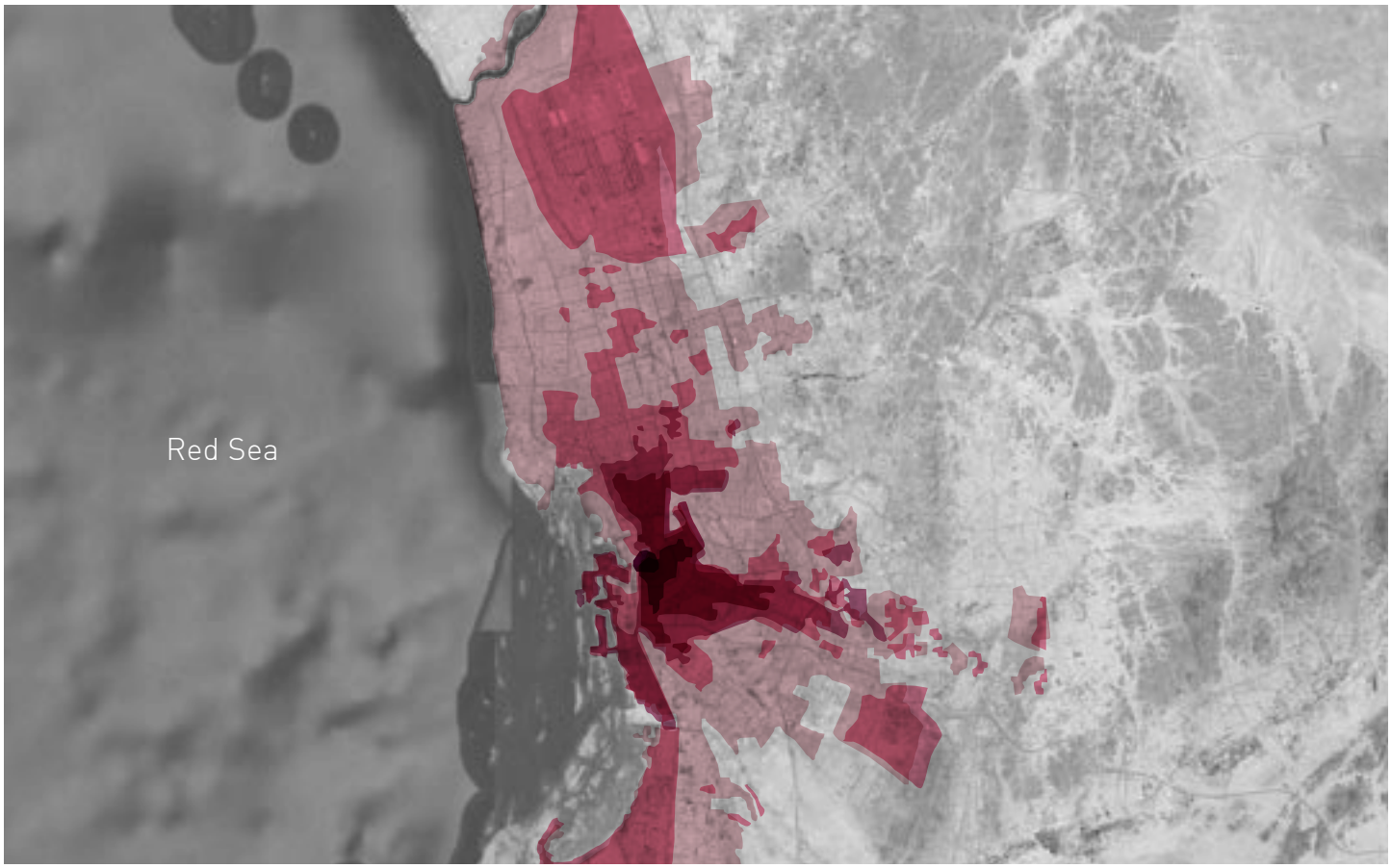


Fig.92: Urban evolution of the city of Jaddah, KSA.



Fig.93: Al Balad intervention area in its four historic quarters

The Ottomans fortified the city with impressive walls and expanded it Westward with landfill, establishing it as a key administrative center in the region. Many historic buildings and structures from this era still grace the cityscape, reflecting Ottoman architectural styles.

With the discovery of oil, Jeddah has undergone many alterations of its urban fabric, building character and land use since the 1970's. Until the mid-twentieth century urban growth was limited within the fortification surrounding Al Balad. Unfortunately, the historic wall was demolished in 1947, resulting in a period of large scale modern urban sprawl. Broad roads such as Al Dahab Street, cut across the city, scaring and fragmenting the historic urban fabric. Many historic buildings on the waterfront have been demolished and replaced by high-rise commercial and office buildings, eliminating Al Balad's historic connection with the seafront. The remaining historic district of Al Balad, which houses around 649 historic buildings, was listed as a UNESCO World Heritage Site in 2014. Around the same time, the Jeddah Urban Development Company was formed to lead the restration efforts of Al Balad.

Intervention area
The project comprises three main areas (Fig. 91):

1. the designated UNESCO heritage site historic area that was once a whole gated city, and which is now only a small district within the city itself, and its immediate surroundings East, West and North Today, Al Balad is a living urban environment primarily hosting residential and wholesale commercial activities, with some mosques. In the immediate surroundings of the area some traditional and cheap hotels and accommodations for pilgrims can be found. The traditional infrastructures created for the reception of pilgrims, the Ribats, and the ground floors of private houses, that used to be rented out to pilgrims, are now mostly empty or replaced by other commercial activities. The historic mosques within the area perimeter have maintained their function and role for the community and most of their original features. It should be noted that large areas of the Yemen, Mazloum and Sham quarters are still preserved to their overall original structure. The overall sector (UNESCO and 4 historic quarters) preserves a very evident coherence at the urban, architectural, economic and social levels. Therefore, it can be said that the existing historic area, though covering only part of the original walled-in city, contains the ensemble of the attributes that convey its outstanding universal value.

2. The area between the Shams Square and Al-Bahr quarters and the waterfront.

3. The North area along the waterfront.

2. STAKES

Diagnosis/Status
In its present state, the urban environment of Al Balad is no longer able to provide the comfort required by the Saudi families. The replacement of its original residents that moved to the rich modern suburbs has gradually transformed the heart of the city into a low-class ghetto, mostly rented out to poor foreign immigrants, contributing to the accelerated deterioration and the collapse of many of its fragile traditional coral masonry houses.The area has also deteriorated with the passage of time due to in major transformation and addition built by their inhabitants, and due to the fragility of their structural system.

The scale and intimacy of Al Balad's heritage, which is characterized by multicultural influences, and intricate wood and stone detailing, necessitates a comprehensive approach to the diagnostic phase, drawing upon contributions from various disciplines. The evaluation of this rich heritage involves three key stages:

1. Expert-led visual analysis of deterioration, requiring on-site visits and detailed descriptions by a multidisciplinary team to accurately identify Pathologies and potential causes
2. Graphic mapping of decay phenomena through images, consolidating information from site visits to comprehend the deterioration's extent and patterns.
3. Instrumental diagnostics, including non-invasive

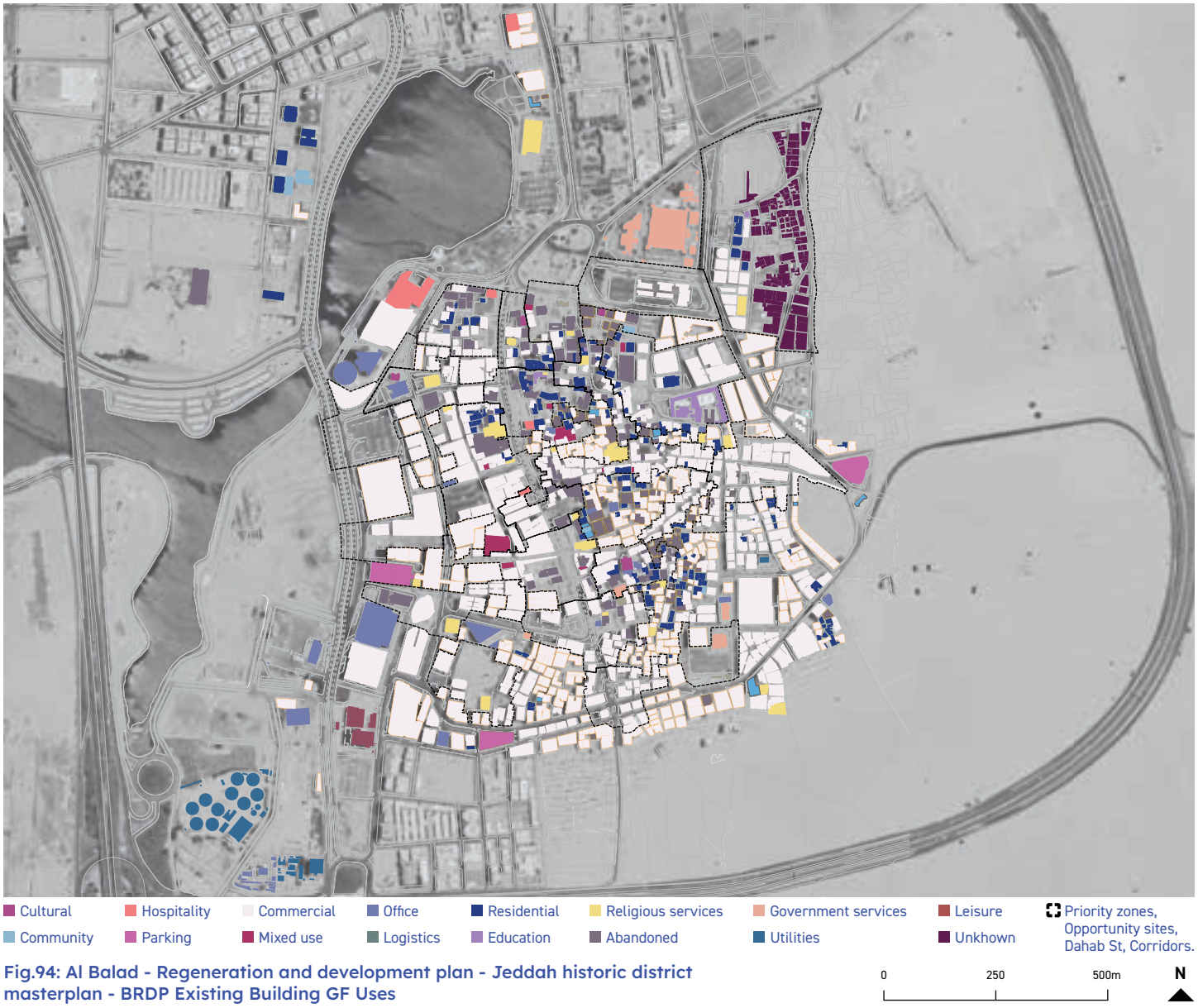


Fig.94: Al Balad - Regeneration and development plan - Jeddah historic district masterplan - BRDP Existing Building GF Uses

tests like thermography and geo-radar to validate identified decay phenomena

Challenges

Historic Jaddah has been faced with a borad set of challenges either common to historic settlements in the Arab region or specific to the Saudi context:

- Neglect of heritage buildings;
- Damage from new infrastructure such as new roads;
- Disconnection from the waterfront;
- Public space occupied by cars and parkings;
- Inappropriate scale and grain of modern developments;
- Inappropriate and low quality buildings.

Objectives

The main objectives of the rehabilitation project of Historic Jeddah can be summarized as follows:

protecting “at risk” heritage assets;

To restore and maintain heritage buildings and sites in Historic Jeddah through investment and rehabilitation.

- Achieve stalled material interests of the owners
- Entice the owners to invest in the rehabilitation of their properties.
- Add a distinct tourism product on the Jeddah city map.
- Implement a standard experience for the rehabilitation of built heritage buildings and sites.
- Create new jobs
- Maintain the continuity of heritage architectural identity of Jeddah city.
- Take advantage of tourism as a means to activate the economic activity in the heritage buildings and sites in Historic Jeddah
- Attract sustainable projects that benefit the owners and investors in heritage buildings and sites

- Revive handicrafts and traditional industries and the intangible heritage in Historic Jeddah
- Encourage private investments in heritage buildings and sites in historic Jeddah.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

The architecture in Al Balad has been strongly influenced by Turkish, Egyptian, and Syrian traditions. The preservation of traditional building methods and designs can be attributed to both social conservatism and a lack of technological innovation. This is particularly evident in Jeddah's 19th-century tower houses. While no intact tower houses from the early Islamic period remain, oral tradition references ancient water cisterns servicing the houses which still have remnants. The majority of the tower houses are between 200 to 300 years old and were originally established as ancestral homes by affluent merchant families. They were constructed using coral blocks or Al-Mangabi stones extracted from the Red Sea. These stones are assembled with wooden pieces known as "takaleel," which evenly distribute the weight across the walls, ensuring the durability of the houses. To enhance both insulation and aesthetics, the stones are covered with "nourah" plaster.

Houses are designed tall to capture sea breezes on upper floors, and every house is built in a way that its residents can see the main street without being seen from the street, which leads us to a pprominent feature of Hejazi architecture; the screened balconies, often referred to as "mashrabiyas" or "rawasheens." These intricately designed rawasheens serve to maintain a cool and airy atmosphere within the spaces. Historically, women would sit in these bay windows to observe potential suitors, who would frequently propose in the "majlis," the largest room in an Arab house, typically located on the ground floor. Some buildings are characterized by vertical rawasheens extending up to three or four floors, while others feature horizontal ones. What makes these latticework



Fig.95:Jeddah’s roshan-s. ©S. Ricca, 2009

oriel windows special is their unique shapes, sizes, designs, and colors, each contributing to the distinctive charm of Hejazi architecture.

Another characteristic feature of the architecture in Al Balad are the intricately-carved doors and large wooden latticed windows, some of them painted in striking blue and emerald green. Most of these structures are ancestral homes founded by wealthy merchant families and built from blocks of coral or Al-Mangabi stones extracted from the Red Sea. The rock masonary are separated by pieces of wood or takaleel in order to spread the weight evenly over the walls enabling Hejazi buildings to stand the test of time. The rocks are covered with nourah (plaster) for insulation and aesthetic purposes.

Name: Traditional Hejazi House, Bayt Al Nassif as an example.
Period: 19th ce.
Occupants: Affluent merchants.
Eg. Landowner Umar Effendi Al-Nassief, the wakil of Jeddah for the sharif of Makkah.

Description :
The primary entrance of bayt Nassif is situated on the northern side, preceded by a set of steps. Facing this direction, the house overlooks a small square adorned with a tree, a rare sight in Jeddah during that period. Another entrance, exclusively used by the women, is located on the western side of the structure. The wooden carvings on the main double doors of the house feature motifs like a tree and a sun. Upon entering, one finds themselves in the dihlic. Towards the rear of the house, accessible through the dihlis, is an exceptionally broad staircase. This staircase extends to the top of the house, serving as an internal shaft for circulating air. On the ground floor, there are two water cisterns, while the upper floors house several spacious rooms. Each floor is equipped with latrines, and one of them, situated on the third floor, includes a domed shower.

Evolution:
The evolution of vernacular architecture in Jeddah, Saudi Arabia, has been influenced by various factors, including changes in family structure, lifestyle, and living conditions.

In the past, traditional residential Hijaz buildings in Jeddah were constructed with multiple levels to accommodate several individuals from the same family. These structures were designed to serve different families coexisting and contributing to each other as a support system.

However, with the advent of modernization and the introduction of high technology, there was a shift away from these traditional architectural practices. The passive techniques used in the past were overlooked and replaced, and the way people lived and interacted with each other also changed.
Despite these changes, there have been efforts to reintroduce Jeddah's vernacular structures to a new communal residential building1. This approach aims to keep a connection with the heritage for future generations and improve people's lives through passive techniques and community-inspired residential complexes.

In conclusion, the evolution of vernacular architecture in Jeddah has been a journey from traditional Hijazi structures to modern buildings, with recent efforts aiming to reintegrate elements of the past to suit the needs of present-day Saudi families.

Some of the more famous heritage houses in Al Balad include Banaja, Al-Jamjoom, and Al-Nassif, the latter a four-floor, 40-room structure that is said to have been built 145 years ago.

3.2. Condition of the historic housing units before rehabilitation

The selected buildings' physical fabric is in relatively good condition. Preservation measures outlined in the Management Plan are being implemented by the SCTA and the Municipality of Jeddah. Their joint efforts, including conservation and restoration projects, counteract decay and development pressures



Fig.96: Exterior damage, Jamjoum house. ©F. Cristofoli, 2009

previously faced by the buildings.
Cracks sems to appear at the junctions of main load-bearing walls due to overall structural weakness. Traditional walls typically consist of stone masonry with a small module laid in mud mortar, reinforced with round wooden elements horizontally sealed within the wall. These wooden ties provide resistance to tensile stresses but can deteriorate over time due to aging pathologies like breaking, rotting and termite damage. Addressing the decay of wooden ties and ensuring their regular upkeep is crucial for preventing long-term structural issues.
Local materials used in the construction of Al Balad include coral stones that are prone to wear, therefore preservation, including replacement and reinforcement, is crucial in ongoing city rehabilitation efforts.

Types of damages include:

- Decays due to inappropriate previous interventions (partial subsidence, deformation in the wall and the appearance of cracks);
- Additional dead-load to the original floors, leading to an overload and additional stres to wooden joists;
- Overload of roof structure due to new additions of rooms and large water tanks;
- Decay due to environmental conditions and lack of maintenance - Deterioration of wooden elements of staircases due to exposure to factors such as insects, fungi and humidity;
- Distortion and misalignment of windows causing loss of structural integrity and apparent cracks.

3.3. Rehabilitation know-how, materials, and material sourcing

Jeddah's architecture is shaped by local materials and climate demands

The materials used were are:

- Mangabi stone, a coral limestone, is the primary material, known for easy cutting, light weight, and good insulation; it requires plaster for protection against the salty airs;



Fig.97: Typical residential building layout in Al Balad, KSA



1. Entrance hall
2. Dining room
3. Guest room
4. Central hall
5. Sitting room
6. Roshan balcony
7. Servants bedroom
8. WC
9. Service room
10. Sitting area
11. Suffah Transitional Room
12. Master Majles Saloon
13. Majles Guest Room
14. Bedroom
15. Bathroom
16. Sauna Bathroom
17. Kharjah Open air room
18. Mabeet Sleeping room
19. Kitchen
20. Storage
21. Roof for rain water collection
22. Room for viewing

Fig.98: Interior kitchen, Byat Naseef. Source: https://www.archnet.org/sites/3794?media_content_id=127630

- Coral blocks, similar to mangabi stone but lighter, are used intermittently due to their higher extraction cost;
- Mortar binding consists of dark-brown clay from al-Manqabah lagoon mixed with lime.
- Structures are reinforced with horizontally embedded teak beams tied to crossbeams, but fragility and collapses are common due to unstable soil;
- Floors and roofs use “gandal”, wood imported from India, while higher-quality teak wood called “jawi” is preferred for doors and windows;
- Lime whitewash or paint for exterior finishing.

4. MECHANISMS OF THE PROJECT

4.1. Process

The project went through the following phases :

- Phase 1 aims to initiate a revitalized core of projects, acting as a catalyst for subsequent phases by introducing upgrades to public spaces, infrastructures, and selected restoration in Al Balad.
- Phase 2 builds on Phase 1’s priorities, comprehensively rejuvenating Historic Jeddah. This involves advancing identified opportunity sites, infill development, restoring historic routes, enhancing public spaces, and reconfiguring Allegiance Square to reduce vehicular traffic.
- Phases 1 and 2 collectively form the “Regeneration of Al Balad”
- Phase 3 expands to the broader revitalization of Historic Jeddah and the Gate to Makkah, leveraging Al Balad’s success. It extends development to the waterfront, introducing a new park and establishing two communities north and south of the expanded lagoon.

4.2. Partners

Project promoter: Jeddah Historic District (part of the Ministry of Culture).

Experts
The Amana & Heritage Comission

Public stakeholders
Saudi Heritage Commission (Ministry of Culture)
The Amana: Jeddah Prefecture Municipality
The Municipality: Historic Jeddah Municipality
The Community: everyone who contributes by all means possible to support heritage in Historic Jeddah

Private stakeholders
Allies and Morrison (masterplan)
Buro Happold (engineering)

4.3. Organization and selection

a. Organization
The project’s organization is shown on the flowchart below (Fig.98).

b. Selection process
The selection process for the rehabilitation of Jeddah, particularly its historic center, involved a heritage-led investment approach. This approach emphasizes

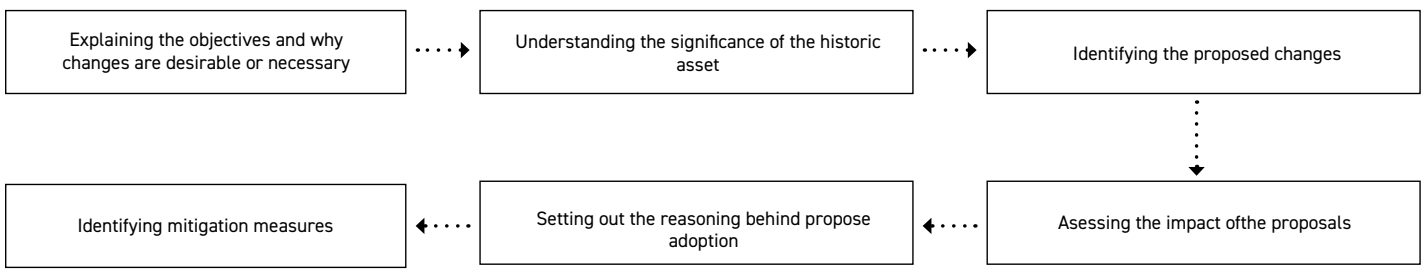


Fig.99: Stages of Heritage Impact Assessment

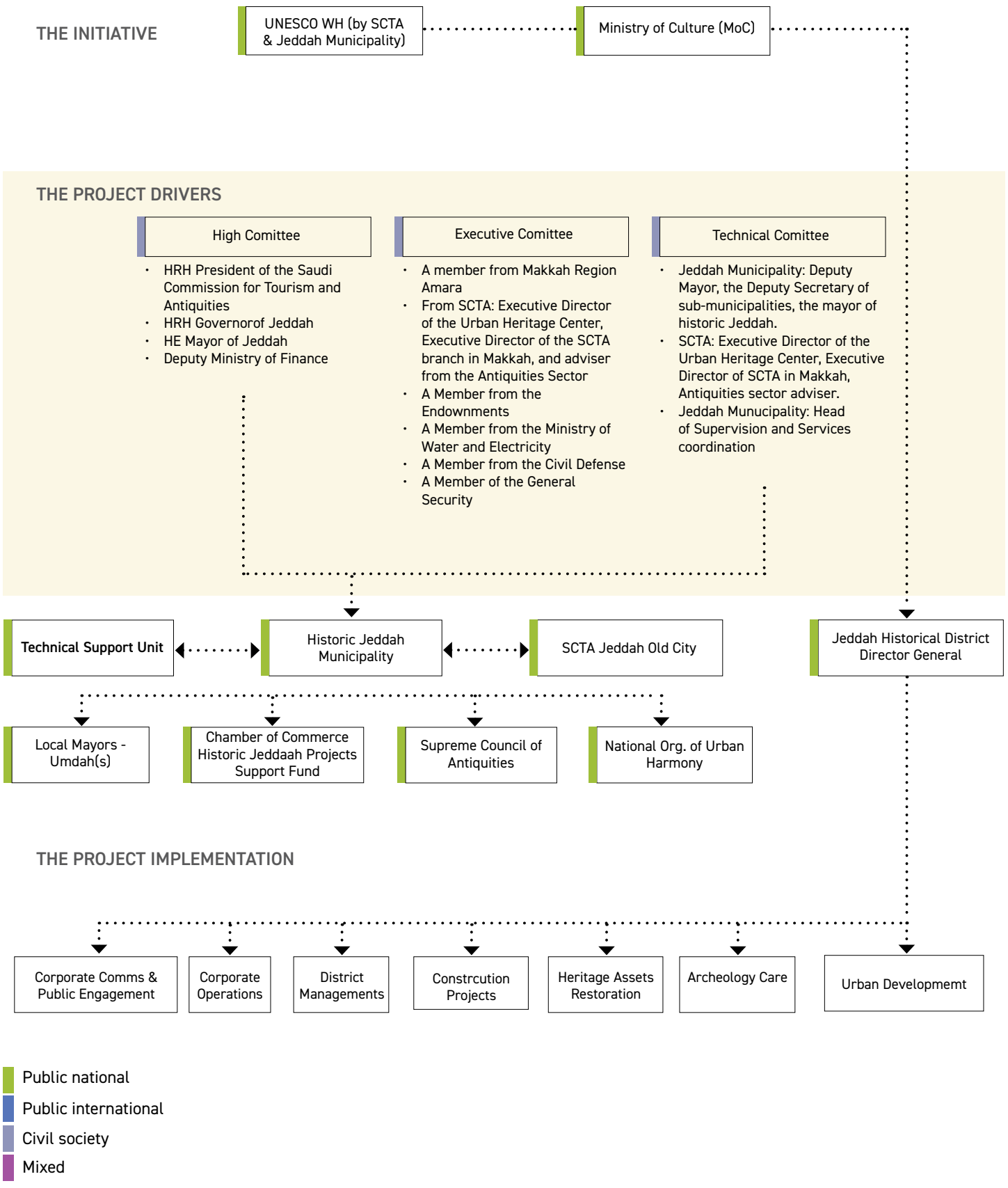


Fig.100: Organizational chart

the preservation and enhancement of a city's historic assets while generating a range of economic, social, and cultural benefits.

4.4. Tools

a. Implementation tools

Survey tools

- Topographic Survey
- Scan to BIM
- Photogrammetry
- Measured Drawings (Plans & Elevations)
- Minimal Requirements for restoration works

Community engagement

The management plan envisions active community involvement, coordinating with traditional leaders (*umdah*-s) under the Saudi Minister of Interiors and Jeddah citizens' association active in the old city

b. Management tools : (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.) pre and post occupancy:

Laws and decrees

Showcasing Saudi Arabia's commitment to preserving urban heritage and fostering international collaboration for cultural and economic use, several decrees have been voted to protect Al Balad:

- The Law of Antiquities issued by Royal Decree No.M/26 dated 23/6/1392 (August 3, 1972);
- The Council of Ministers Resolution No.78 dated 16/1/1429 H (March 24, 2008), otherwise known as the Statute of the Saudi Commission for Tourism and Antiquities;
- The Council of Ministers Resolution No.66 dated 5/3/1430 H (March 2, 2009), regarding urban heritage site;
- The approval of the New Antiquities and Museums Law by the Shoura Council in its 78th Session held on the 31st of December 2012.



Fig.101: Unesco nominated property boundary and surrounding buffer zones.

The most efficient legislative tool was the urban regulations approved by the municipality in 2012 set a new, much needed legislative framework, providing the legal tools permitting the control of the speculative moves that have caused the loss of many historic buildings in the past.

The map in figure 99 presents the preserved area, in addition to its surrounding buffer that was divided into four different categories. Each of these buffer areas has its own building regulations.

Environmental and social tools

The project plans to plant 3300 new trees and create gardens along the edges to the lagoon to purify its water.

The project proposes periodical events organized and held in the heart of the heritage area with a variety of activities, shows, and content to attract different audiences within a wide range of age groups. These events include:

- Jeddah Art Week, which is an annual event consisting of performances, exhibitions, and other shows that celebrate the art state of the city.
- Jeddah Heritage Festival, which celebrates the city's history and culture featuring music and dance related to local culture.
- Jeddah International Book Fair, which features books and authors from around the world with historical book reviews and
- seminars to promote awareness of the history of the place.



1. Restore the historic buildings



2. Create a series of connected mixed use places



3. Stitch together the damaged urban fabric



4. Engage with the historic wall and its gates



5. Expand Al Balad's principles outwards



6. Reconnect Al Balad to the water and

Fig.102: Six key regeneration strategies. ©Ministry of Culture, the Jeddah Historic District program

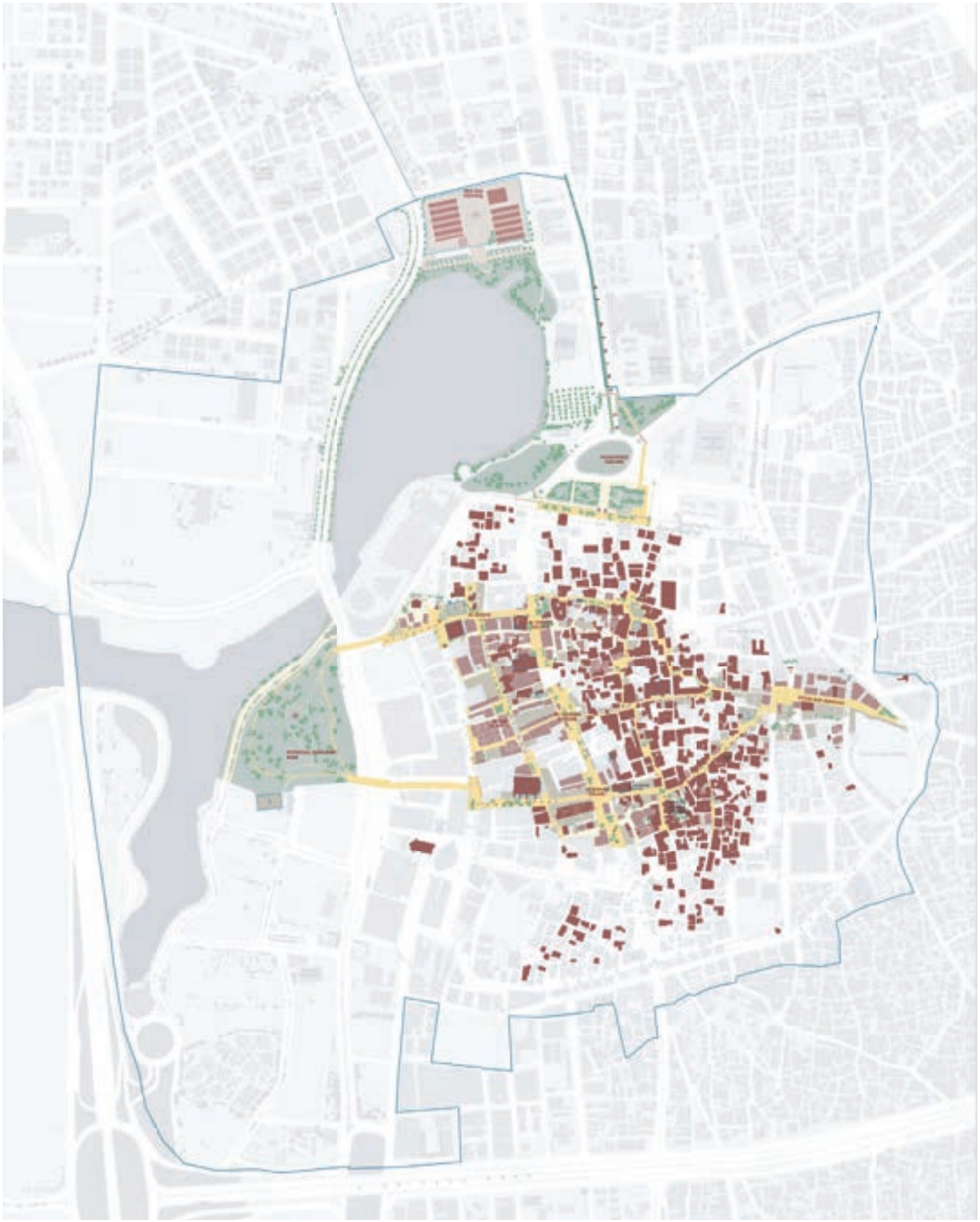


Fig.103: Al Balad - Regeneration and development plan - Jeddah historic district masterplan - BRDP Phase 1 scope
©Ministry of Culture, the Jeddah Historic District program

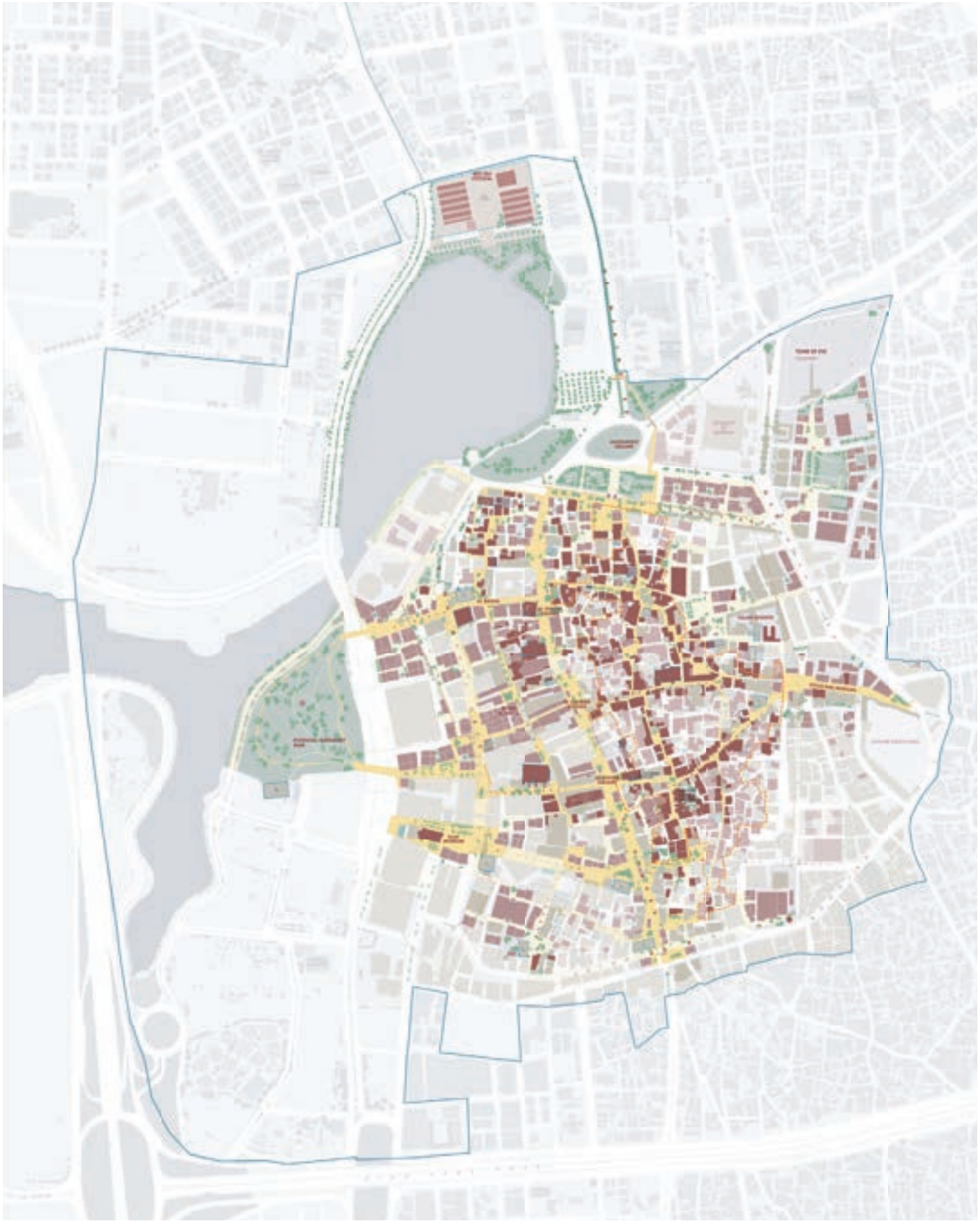


Fig.104: Al Balad - Regeneration and development plan - Jeddah historic district masterplan - BRDP Phase 2 scope
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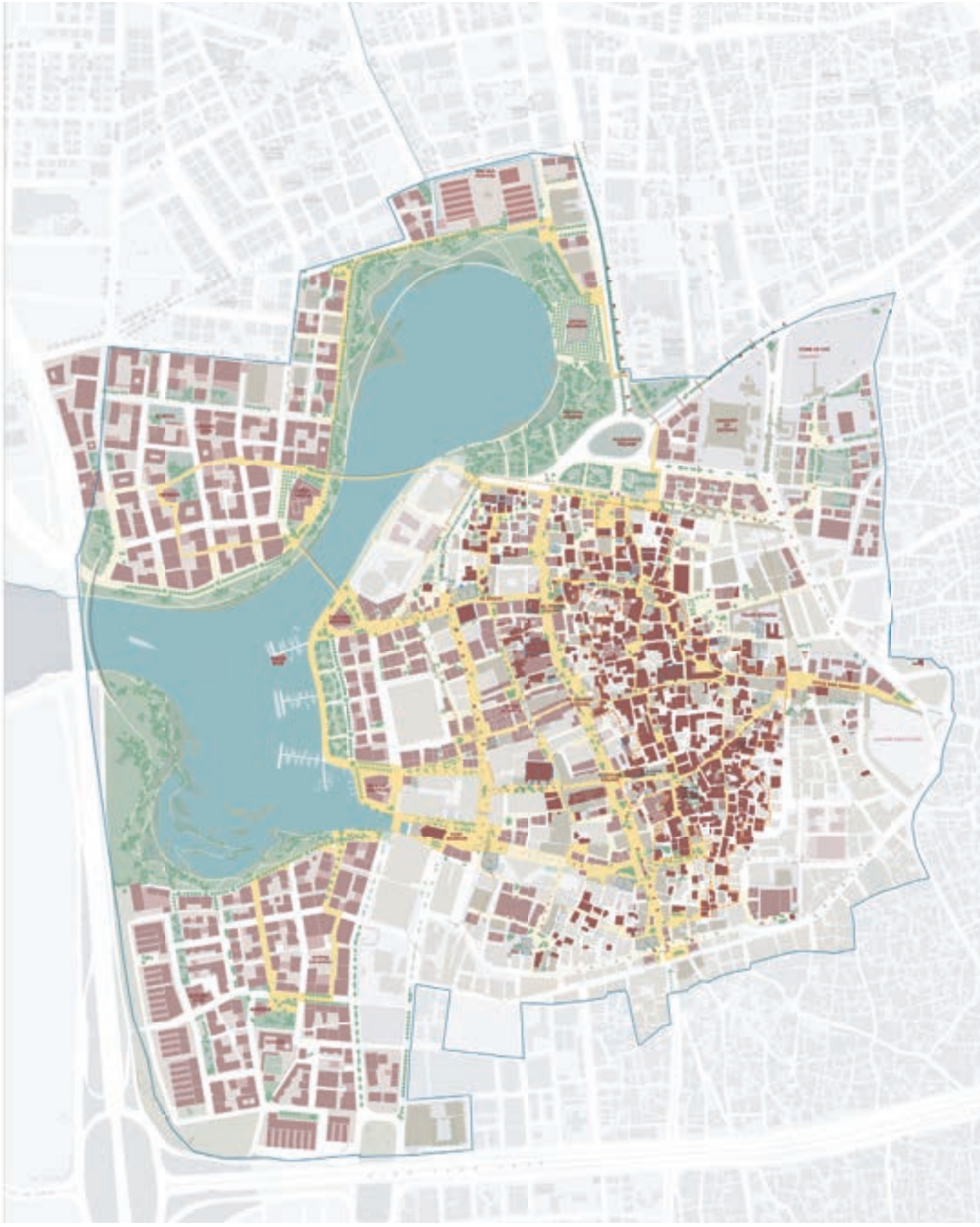


Fig.105: Al Balad - Regeneration and development plan - Jeddah historic district masterplan - BRDP Phase 3 scope
©Ministry of Culture, the Jeddah Historic District program

- Jeddah Film Festival which is held annually with guests of the film industries from all over the world.
- Jeddah Comedy Festival, which features international as well as local stand-up comedians which is attended by many different age groups.

Masterplans

During the 1970s, the first initiative from the Saudi government to preserve historical and cultural areas was the commissioning of British architect Robert Matthew to develop a plan for the conservation strategies and guidelines (Fig. 100). The plan was based on the following principles:

1. Preservation of the historic fabric of Al-Balad including its buildings, streets, and open spaces which was suggested to be achieved through the adaptation of local materials and methods. This relied on two strategies:
- the classification of heritage buildings: Heritage buildings, especially in the third region, were classified into three categories (A-B-C) according to their historical importance and condition.
- The division of the area into four heritage zones, the first of which is from the western side, in which the area was linked to new urban extensions, and services were provided. Its urban fabric is being changed.

2. Involvement of the community was one of the essential points of the conservation process. Public meetings and workshops were held to hear the thoughts and opinions of the residents.

3. Sustainability incorporation in the conservation plan, as he proposed using traditional materials and methods.

Matthew's plan was implemented during the 1980s and 1990s which resulted in good outcomes, though the efforts were not enough and scale of the heritage area was judged to be very limited, with many important historic buildings not included.

With the nomination of Al Balad in the UNESCO World heritage Site List in 2014, an Action Plan, The Historic Jeddah conservation project, was proposed and built upon the work of Matthew. It relied on improving the environment in the area, starting with restoring buildings and improving their condition by improving and paving roads and pedestrian paths with appropriate materials that match the site character. Additionally, landscape elements were provided, such as street lighting units, signboards, and garbage collection boxes, following the area's character.

4.5. Financing

Total amount : USD 55 million

Source
The project is financed by the Kingdom of Saudi Arabia represented by the Ministry of Culture and the Jeddah Municipality. The financing to individuals is through loans granted by the government to owners for restoring their homes under the supervision of the Ministry and the municipality and special grants offered as a grant from His Highness the Crown Prince, to restore 55 homes, estimated at 50 million Saudi riyals.

Proposed Implementation Period : 2018-2030

Maintenance financing :
No

Rehousing financing :
No.

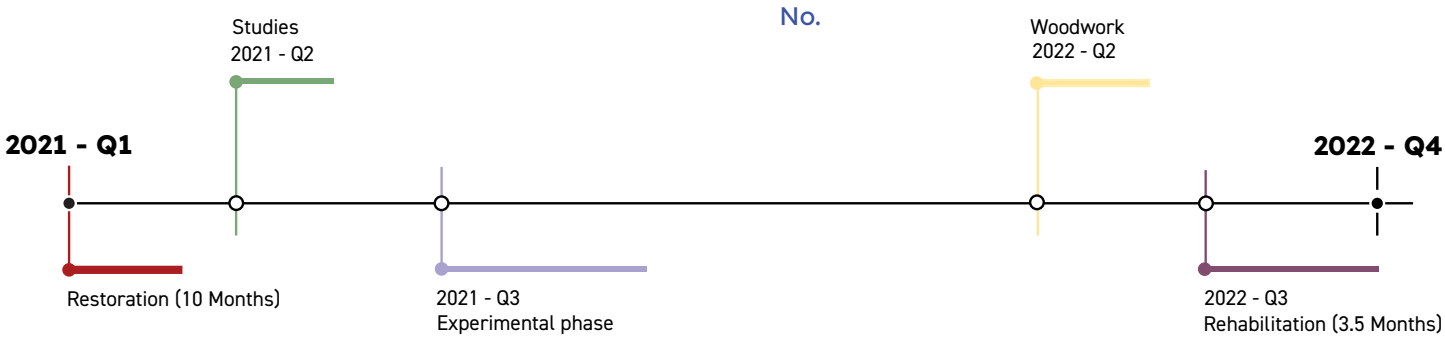


Fig.106: Timeline

4.6 Timeline
See figure 104.

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements, construction techniques and materials

Some of the materials used in the rehabilitation of Historic Jeddah and their sources are:

- Coral limestone: This is a building stone extracted from the coral reefs along the Red Sea coast, and some were brought from Al-Ruwais beach;
- Sea mud: This is used as an alternative to cement, and it is brought from the bottom of the Lake Arbaeen in Jeddah;
- Wood: This is used as a basic material for the entrances, windows, and decorations of the houses. Wood was imported from outside Jeddah, and the highest quality wood came from India and East Asia;
- Traditional paints: These are used to restore the original colors and patterns of the houses, and they are made from natural materials such as lime, gypsum, and egg whites.

The rehabilitation interventions consisted of :

General interventions
- Removing excessive loads on the roof (Additional constructions & water tanks);
- Replacing all deteriorated takalil using adapted wood species and traditional construction methods;
- Dismantling and reconstructing all decayed slabs using traditional methods and materials
- Reinforcing foundation as per structural assessment recommendations;
- Replacing & reconstructing decayed stones affected by rising damp;
- Replacing all previous reparations and interventions constructed with different stone masonry blocks (Cement based mortar), with traditional masonry walls (lime based mortar with takalil).

Interiors
- Document, study and remove plaster for investigation in order to reveal traces of the original plan composition of the house.
- Restitute original condition and plan composition of the house.
- Reopen / Restitute all enclosed openings based on architectural analysis and site investigations. Rebuild internal partitions based on architectural analysis, site investigations and findings.
- Remove all previously installed modern MEP equipment's and installations.
- Preserve previous irreversible interventions on the building, namely: Installation of steel beams etc

Exteriors
- Restore / reconstruct existing wooden elements. New and reconstructed woodwork to be made by implementing the same details within the same or similar existing elements, using traditional techniques and materials.
- Reconstruct missing elements, roshans, windows & shaboura, based on architectural analysis and site investigations and findings. Reopen enclosed window openings.

b. Legistlation changes
The project did not trigger any legislative changes.

c. Programs post-rehabilitation
While the aim is to turn Al Balad unto a tourist attraction, social, economic and education hub for the city of jeddah, diverse programs are proposed in the rehabilitated houses: apartments, official residences for institutions, hotels, cultural institutions, shops, offices and schools.

d. Economic impact
- Preparation and organization of training courses and programs for craftsmen on an ongoing basis through a local labor training institute.
- Provide technical support by professional consultants and consulting firms with the expertise.

e. Social impact

- Education

The `umdah, aided by NGOs, charities, and dedicated individuals, has initiated educational programs held in local mosques, engaging hundreds of boys and girls from the historic city.

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints

The project did not encounter any financial limitations.

b. Legislative challenges

There were no legal obstacles that the project had to face.

c. Tenure challenges

There were no tenancy obstacles that the project had to face.

d. Construction challenges

The reconstuction process faced the following challenges:

- Some buildings were at high risk of collapse;
- The issue of inaccessibility by owners, lack of access was the biggest challenge confronted, preventing a complete internal assessment of many of the buildings;
- Partial or total collapse of abandoned buildings;
- Floods during periods of heavy rains;
- House fires.

ANNEX

a. Contact

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b. Bibliography

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Fig.107: View of historical rawshan, Noor Wali house. © Maged Attia

5E-09

OMAN | Harat al-Aqr

Rehabilitation and adaptive reuse of Harat al-Aqr

Nizwa, Oman



Fig.108: Aerial view on Harat Al Aqr. ©sharonang pixabay.com



INTRODUCTION

Harat Al-Aqr is an important historical site situated in the wilayat of Nizwa, Oman. It is a significant part of Omani heritage and evidence of its antiquity, and it can be found within one of the oldest gates in Harat al-Aqr, Bab al-Moathar, which apparently dates back more than 1,200 years. The area has been revitalized and transformed into a tourist-friendly neighborhood, featuring innovative and exciting projects that cater to and attract tourists.

The oasis of Nizwa and the core settlement Harat al-Aqr, are ancient sites. It was the Islamic City of Culture in 2015 and is a national heritage site of high significance. Tourism has grown in the region significantly and more recently Harat al-Aqr has attracted a large number of local Omani tourists, especially during the Eid Holidays. A small section of locals are living there, and as described above several houses have been given over to touristic facilities.

Main instigator
Project 0: Ministry of Regional Municipalities and Water Resources
Project 1: Ministry of Heritage and Tourism
Project 2: Ministry of Housing and Urban Planning

Historic Center
Harat al-Aqr (fortified center)

Targeted beneficiaries
The inhabitants of Harat al-Aqr, Omani and international tourists.
Bawareq Project has benefitted 25 houses.

Project duration
Phase 0 - 2003-2004: Heritage Management Strategy, Masterplan and Selective Detailed Design
Phase 1 - 2015-current: Tourism related redevelopment of existing heritage assets (Bawareq Development)
Phase 2 - 2023-24: Sustainable Urban Development Policy and Guidelines

Project budget
The housing rehabilitation and adaptive reuse project is not publicly funded.
Information from private contractor not available.

Progress status
Phase 0: Complete
Phase 1: Ongoing
Phase 2: The 2022-24 work builds on the previous heritage management and masterplan (phase 0) and it is hoped that the guidelines will be implemented very shortly.

1. IDENTIFICATION

Size of the overall city
Population: 94,035 inhabitants
Surface: 31,9 km²

Size of the historic area
Surface: 8.7 ha

Main function of the city
Old capital, commercial, religious

Main function of the historic area
Heritage, tourism, crafts, agriculture

Heritage status
Harat al-Aqr in Nizwa is part of a national listing of heritage oases in Oman. Nizwa oasis also contains the Falaj Daris, an ancient irrigation system inscribed on the UNESCO World Heritage Site list since 2006, citerion (v).

Income level of dwellers in the historic city
Renters (low-income rentings) or squatters.
Homeowners living outside of the old town: Unknown.

Demographic profile
Male Population: 53,699 (57.1%)
Female Population: 40,336 (42.9%)
Median Age: 26.8 years

Central Omani oasis settlements were based on tribal organisation, with smaller settlements having a mono-tribal character. Larger settlent quarters, such as Harat al-Aqr had a multi-tribal make up, with tribes and populations representing all the neighbouring tribal regions. These are settled tribal groups with strong nomadic and semi-nomadic "*Shawawi*" tribalties. Nizwa being a key oasis town had a range of agricultural and crafts activities, including copper and silversmithery and crafting of delicate ornaments and daggers (*Khanjar*). Indigo dying and other textile and agricultural crafts were also present.

Land tenure
The land is 100% private.
For the Bawareq development, the ownership of the properties remain with the owners, who partially invest in the rebuilding costs and then lease their properties to private bed and breakfast investors.
The rehabilitated buildings were lying empty and in ruins. Some were converted into poor quality accommodation for expatriate agricultural laborers and workers by their Omani owner employers.

Housing role in the project
The project involved the rehabilitation and renovation of existing housing which was repurposed into touristic facilities.

Situation and urban evolution
Bounded by the Jabal Hallah on the west and al-Hawrah ridge on the east, Nizwa oasis has a linear configuration structured around the valley formed by the two *wadi*s, Abyad and Kalbu. The *wadi*s divide the oasis into two parts: Alayat (Upper) Nizwa and Sufalat (Lower) Nizwa. These contain the important and ancient residential quarters of the oasis: Samad

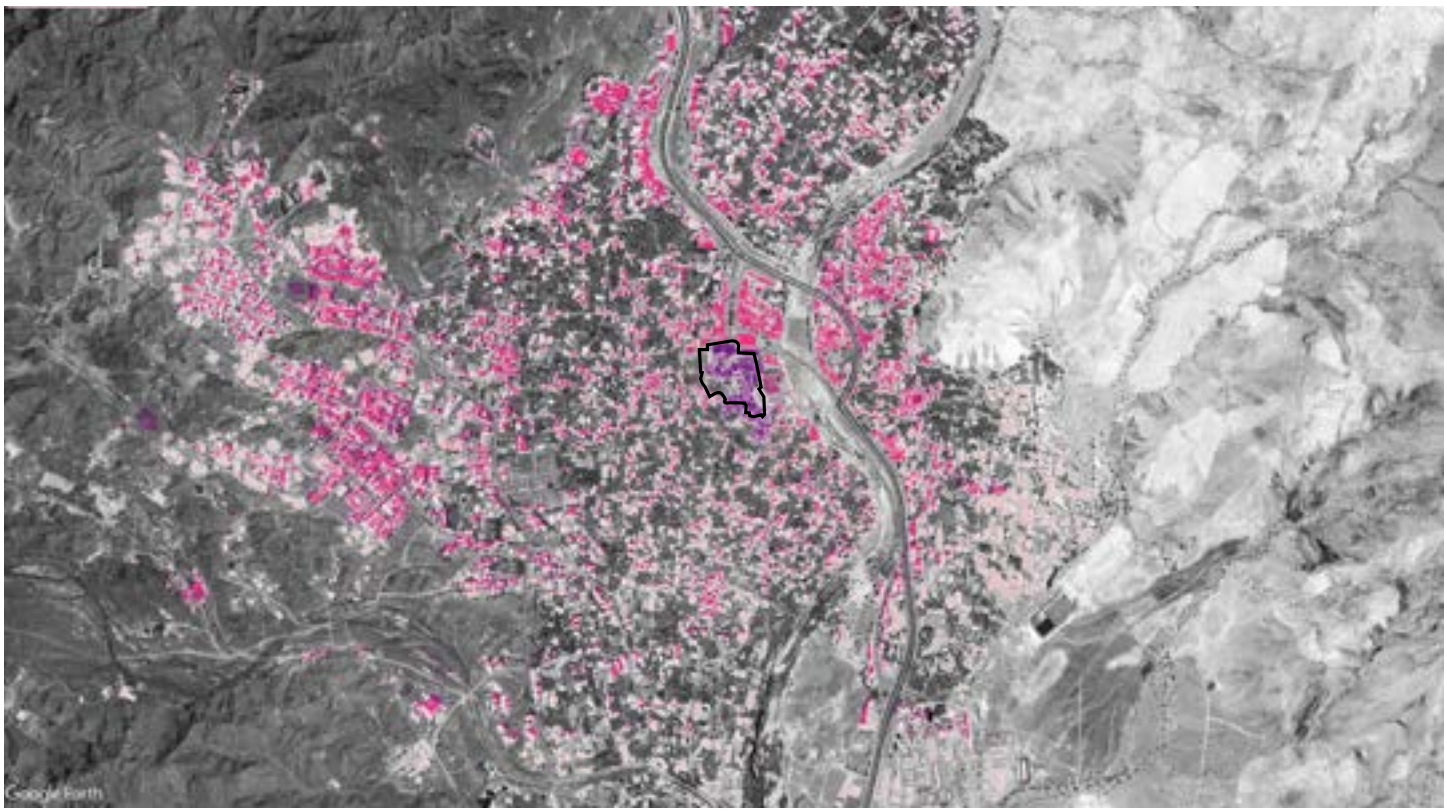


Fig.109: Situation of the project and the urban evolution of Nizwa

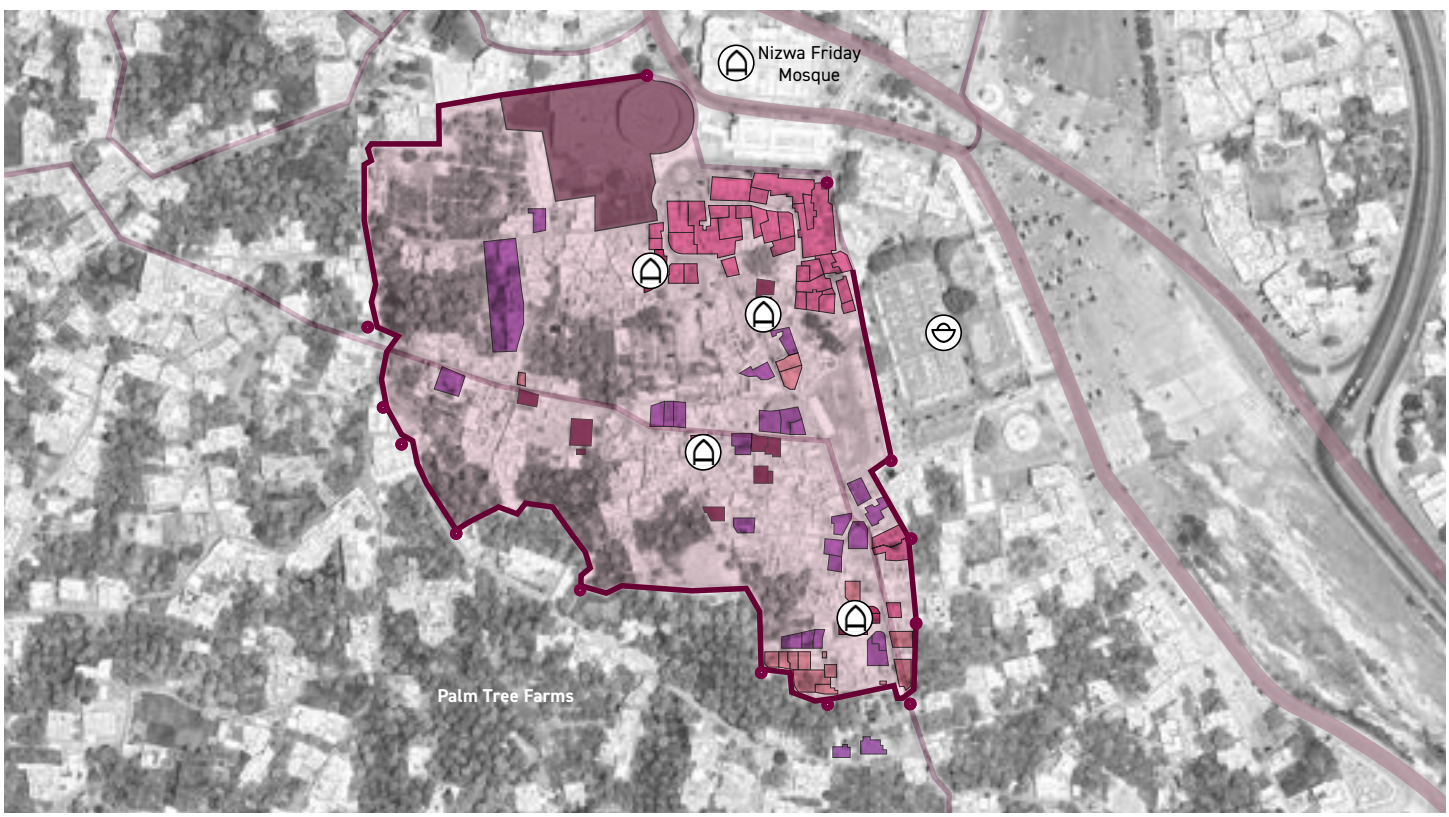


Fig.110: Harat al-Aqr intervention area



Fig.111: Nizwa axonometric drawing



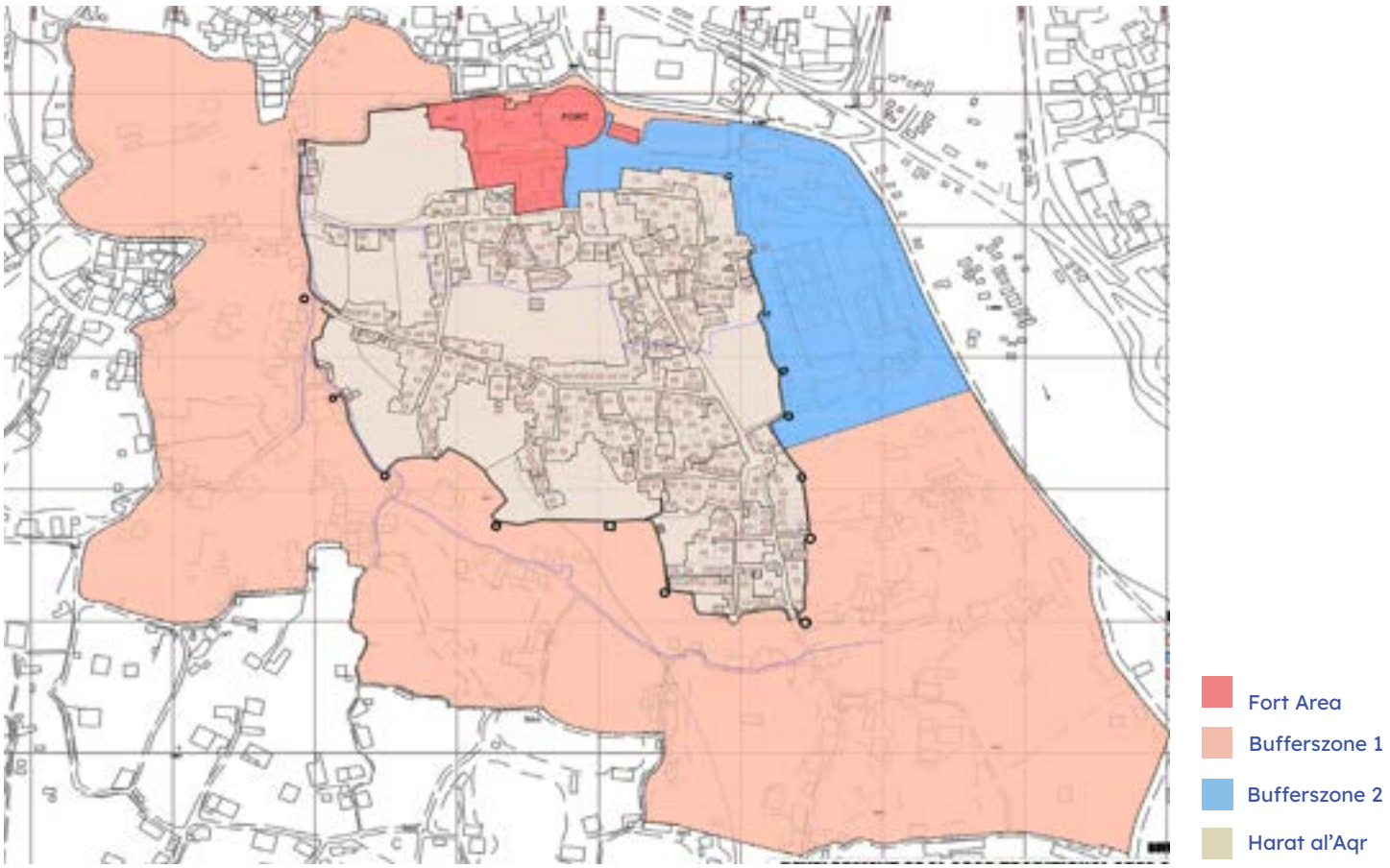


Fig.112: Nizwa buffer zone

al-Kinda in Upper Nizwa, and Harat al-Aqr and Sa'al in Lower Nizwa. The two *wadi*s meet near Harat al-Aqr, where the main market "*suq*" and the Friday Mosque are located. The old Friday Mosque stood on a promontory within the *wadi*, and the *suq* on its southern edge. Both emerged in the shadow of the imposing round tower of Nizwa Fort (also, Hisn al-Aqr) which, in its present form, was built in the late-seventeenth century and is attached to Harat al-Aqr, the residential quarter of our concern. The main water distribution infrastructure (*aflaj*) for Nizwa oasis, Falaj Daris, is an ancient irrigation system now inscribed on the UNESCO World Heritage Site list.

The Nizwa Fort consists of a large rectilinear enclosure (approximately 90m x 70m, north-south) with a further western extension, and a distinctive tower on the north-eastern corner. This present fort, erected by the Ya'aribah imam, Sayf bin Sultan, around 1660 CE, which reputedly took over twelve years to build, incorporated the older structures that had been repaired by Sayf's predecessor, the first Ya'aribah imam, Nasir bin Murshid (in c. 1626 CE). This rebuilding of the fort was resourced through the wealth gathered following the plunder of Portuguese-held Diu on the west coast of India.

Settlement structure:
The entirely fortified settlement of Harat al-Aqr, the core settlement quarter of Nizwa, occupies a large area of approximately 8.7 hectares, partially defined on the north by the vast expanse of the fort. The northern gate–the one near the fort (Bab al-Hisn)–has long since disappeared, with no physical indication of its previous location, but the eastern (Bab as-Sabah), southern (Bab al-Moathar) and western (Bab al-Sukhni) gates still exist in various states of preservation.

There are two key streets: the main street (over 300m in length) runs approximately north-south close to the eastern edge of the settlement and once connected the northern entrance square and the southern gate. The western gateway is connected to the main street

through a street running east-west, almost equal in length to the former (just under 300m).
Several other streets and lanes complete the settlement structure and townscape.

2. STAKES

2.1. Diagnosis/Status

Despite its social, political, and historical importance, Al-Aqr experienced a decline starting in the late 1970s. This progressive desertion led to the abandonment and decay of many vernacular houses.

As part of the response to the decline, most of the houses in Al-Aqr were either rebuilt using cement or left to decay. This transformation likely contributed to a loss of the traditional vernacular architecture and character of the settlement.

The Bawareq Nizwa International company, in its efforts to assist the community, performed small upgrades such as preparing parking spaces and installing a sewage system. This highlights the infrastructure challenges that the settlement faced and the need for comprehensive improvements to support both residents and visitors.

In the face of the historical decline and desertion of the Al-Aqr settlement, the transformation of traditional houses, economic viability, infrastructure improvements, and ongoing uncertainties related to the post-pandemic period, the creation of the Bawareq Nizwa International company and its efforts to repurpose and manage heritage buildings played a pivotal role in addressing these challenges.

Ongoing developments include the preparation of more hotels and guest houses for the post-COVID-19 period. This indicates that, while progress has been made, there are still challenges and uncertainties related to the ongoing transformation and development of Al-Aqr.

2.2. Challenges

The need to refurbish and rebuild the ruinous vernacular dwellings in order to repurpose them as guest houses presented a significant challenge. This process required attention to preserving the traditional architecture and historical authenticity.
The establishment of Bawareq Nizwa International in 2015–16 indicates that addressing the issues in al-Aqr required external intervention. The company, founded by Omani investors, played a crucial role in the regeneration and redevelopment efforts.

The thriving of the Nizwa Heritage Inn, despite setbacks such as the noticeable impact of the COVID-19 pandemic in 2020, suggests the economic challenges facing the revitalization efforts. The success of the hotel and ongoing developments in the area are essential for the economic sustainability of the project.

One challenge is that only recently have privately owned traditional houses been included in the registration activities of the Ministry of Heritage and Tourism (MHT). This late inclusion suggests a historical gap in the recognition and regulation of privately owned traditional houses. Prior to their recent inclusion in registration activities, the restoration and renovation operations of vernacular houses were regulated as if they were new constructions. This approach may not adequately address the unique characteristics and preservation requirements of traditional structures.

2.3. Objectives

The aim of the project is to leverage the rich cultural heritage of Oman's traditional houses and settlements to create a sustainable cultural tourism experience.
The specific aims of the project include:

1. Renovation of Traditional Houses: The project aims to renovate traditional houses, preserving and showcasing the unique architectural and cultural

aspects of Oman's built heritage.

2. Revival of Settlements: There is an intention to revive settlements, indicating a broader goal of rejuvenating the entire community and its associated cultural and historical significance.
3. Authentic Visitor Experience: The project aims to provide an authentic experience for visitors, one that reflects the genuine attachment of the community to its heritage. This includes efforts to preserve and revive traditions and restore dignity to the community.
4. Community Involvement and Control: The ultimate goal is for local communities to control the flow of cultural tourism. This suggests an emphasis on community involvement, empowerment, and decision-making in the management of tourism activities.
5. Sustainable Income Generation: Local communities aspire to share their built heritage with visitors as a means to generate a sustainable income for their populations and settlements. This indicates a commitment to economic sustainability through tourism.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name: Omani house
Period: Around the 18th century
Occupants: Omani families, merchants, and religious scholars

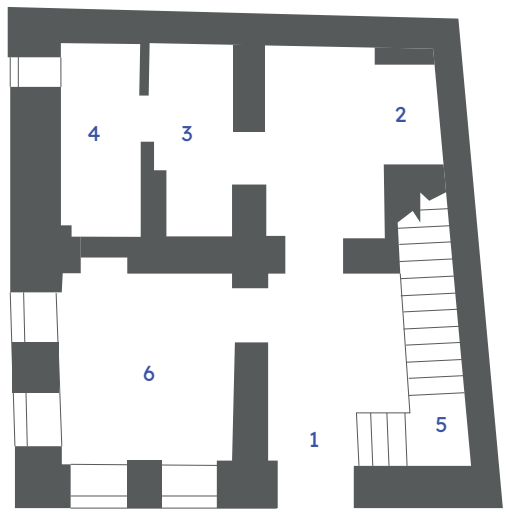
Evolution of housing typologies
The earliest remains of settlement in the Nizwa region go back at least to the 3rd millennium BCE. At the time of Islamisation of the Oman Peninsula in the 8th century the area around Nizwa was ruled by the Julanda family, who also provided the first Ibadi imam, al-Julanda bin Mas'ud (748-50 CE). From this time onwards Nizwa became a centre of Islamic philosophy, learning and culture and for several extended periods, the capital of Ibadi Oman. This remained the case until the end of the Ibadi imamate in the 1950s.

Harat al-Aqr has been the cultural center of Oman and the seat of the Ibadi Imamate until the early-1950s. It represents a distinctive example of central Omani settlement that developed within agricultural land and was supported by the ancient *aflaj* irrigation system. This fortified settlement quarter is distinct from, for example, the neighboring Bahla WHS, which developed on the edge of agricultural land. The dwellings, while sharing characteristics with neighboring Bahla WHS and Manah, are also distinctive. Unusually, many dwellings at Harat al-Aqr have a circular stone column in the middle of the dwelling organization.

Description
The traditional dwellings in al-Aqr are mud-brick structures and a significant proportion of these of have now been replaced by modern construction. Most modern structures are residential-commercial in nature, incorporating shops on the ground floor. More recently some traditional structures have been modified or extended using modern construction and materials for their use in the growing tourism industry. A range of traditional dwelling types are found. An overwhelming majority of these are two-storied structures except for a few which have three floors. In most double-storied dwellings a small cut-out on the first-floor slab, often located over the well, allows some light penetration and ventilation into the ground floor but also helps to draw well water up to the upper floor. The sizes of traditional dwellings vary widely with some of the largest dwellings concentrated on the main north-south or east-west streets. Many dwellings, irrespective of size, had exquisite ceiling and wall decoration.

Space distribution
The Omani house in Al-Aqr neighborhood includes in its ground floor a family room, vestibule, storerooms for dates and other produce and animal pens, and a washroom (*sharuni*) usually associated with a private well (*tawi*). Sometimes a collective of houses may share a well. The first floor arrangement varied

Fig.113: Example of a traditional Omani house in Harat al-Aqr (Ground Floor)



1: Entrance

2: Living area

3. Laundry room

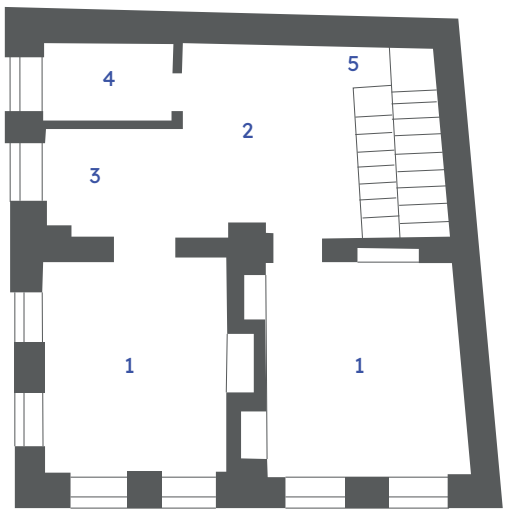
4: Storage

5: Interior Stairs

6: Room



Fig.114: Example of a traditional Omani house in Harat al-Aqr (Upper Floor)



1: Room

2: Hall

3: Kitchen

4: Storage

5: Interior Stairs



according to the needs of the household, and included sleeping rooms, one or more covered loggia, storage rooms, a pit-latrine, and open-to-sky terraces.

As for the kitchen, it was mostly on the upper floor the upper floor, and sometimes in a mezzanine room off the stairs. One of the most important furniture and possessions of the house is the *muqaraa*, a stone for grinding grains and preparing coffee, usually located in the entrance vestibule or the family room. The area of the houses ranges from 60 square meters to 200 square meters.
There are no very large and luxurious houses in Al-Aqr like those found in some villages in Oman. This is due to several reasons.

As for the doors, they are carved wooden doors, with beautiful arches, and their ceilings are made of palm trunks, with painted decorations and engravings. Written on them are dates, Qur'anic verses, and some verses of poetry. Their windows are wooden with four openings so that the residents can open the upper ones but not the lower ones if they so desires.

The houses always contained large containers for storing drinking water (*jahla*). On the walls are supports, shelves, and hangers for clothes and artifacts of everyday use. Ground floor walls are often 0.9m - 1.0m wide to support the upper floors, where the walls were 0.45m - 0.6m in thickness. Some of the dwelling walls, as well as ceilings contained decorative patterns in green, red, and white, and Quranic inscriptions

3.2. Condition of the historic housing units before rehabilitation

The general state of preservation has remained poor and many dwellings are close to collapsing. The ones that have been rebuilt by Bawareq as touristic facilities have been salvaged but their typology significantly modified. Significant funding investment would be needed to rehabilitate the historic quarter and the remaining housing stock. The main damage is due to loss of habitation (deserted or partially inhabited by the agricultural labor force for some time), and poor and inappropriate building and maintenance



Fig.115: Degraded state of housing units in al-Aqr. ©Ministry of Heritage and Tourism

(extensive use of concrete by Bawareq that is incompatible with adobe/mudbrick construction).

3.3. Rehabilitation know-how, materials, and material sourcing

Bawareq has employed concrete frame and blockwork construction, and pigmented cement render to approximately match the appearance of traditional dwellings. ArCHIAM masterplan, design and adaptive reuse strategy (Phase 0: 2003-04, and Phase 2: 2022-24) have advised the use of traditional methods combined with carefully defined areas/ elements of contemporary construction to clearly distinguish between traditional fabric and new additions. It is hoped that the future phase of work will adopt this internationally accepted approach.
The work was undertaken by local contractors employing expatriate workforce (Indian, Bangladeshi, Pakistani). No traditional material or construction system has been used so far.

Much of the local building knowhow has nearly disappeared. However, there are pockets of expertise in the region and a growing interest in the need to revive lost traditions. There are a small number of reliable heritage conservation and adaptation contractors available which could be deployed.
Silver and copper crafts, and pottery traditions have continued. Thus, it is possible to move away from conventional contractors.

The limited participation of architects, structural engineers, and qualified technicians and builders with expertise in restoring vernacular earthen and stone architecture puts the building safety at risk during and after structural restorations.
There are also concerns about the use of standardized, mass-produced elements, such as beddings, and the potential erasure of significant parts of houses, including the uprooting of centenary palm trees for hotel amenities. This raises questions about the viability and authenticity of such initiatives.

4. MECHANISMS OF THE PROJECT

4.1. Process

Phase 0 (2003-04): With a local Muscat-based consultant, CES (no longer existing), Liverpool School of Architecture, University of Liverpool undertook extensive data collection, research, master planning and developed rehabilitation strategies, guidelines and detailed design propositions in 2003-2004 for the Ministry of Regional Municipalities to rehabilitate the historic core and its traditional dwellings. The central principle of this masterplan was to rehabilitate traditional housing and ensure the continued occupation by local inhabitants. This heritage management masterplan did not progress into implementation.

Phase 1 (2015-current): In 2015-16 a private profit-making/sharing company, Bawareq Nizwa International was established to rehabilitate 6 dwellings into a hotel (Nizwa Heritage Inn). This private sector tourism-led commercial development has since refurbished another 19 dwellings for similar bed-and-breakfast facilities. These have been financially very successful. However, the lack of appropriate attention to heritage assets (houses, special structures, architectural features, materials, etc.), has led to the loss of heritage values and significances.

Phase 2 (2023-24): Following this initiative, ArCHIAM is now collaborating with the Ministry of Housing and Urban Planning, Oman to develop developmental guidelines for residential and civic amenities at Harat al-Aqr (due to be completed in 2024, funded by UK Government). Ministry of Housing has also commissioned a consultant to develop a high-level structural plan for the Nizwa region. It is hoped that the 2022 and 2023-24 strategies and approaches and 2003-04 masterplan will be applied soon.

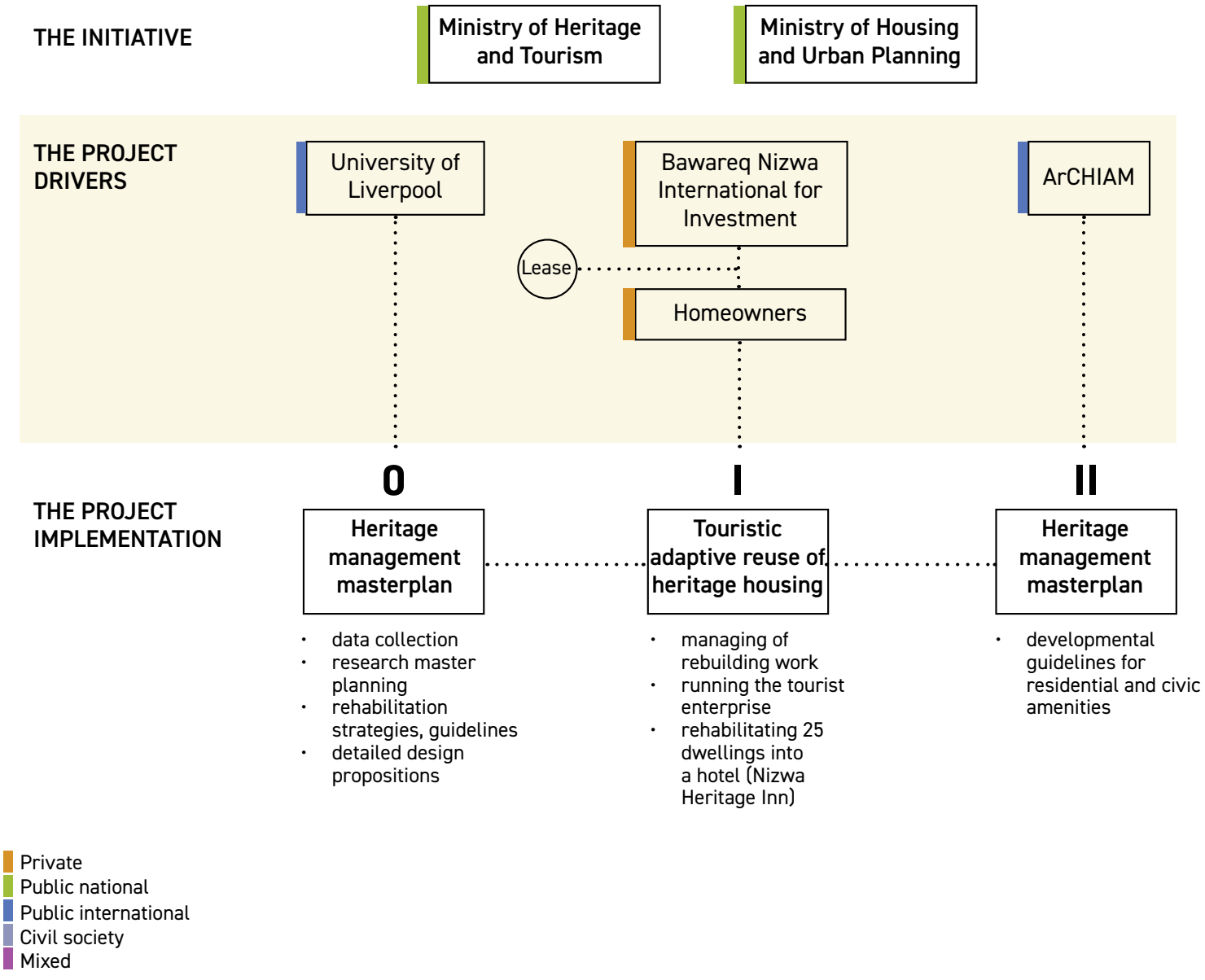


Fig.116: Organizational chart

4.2. Partners

Experts
Bawareq used local contractors in conventional concrete construction, which has been to the detriment of the traditional dwellings.
However, if implementation goes ahead based on the masterplan already available, and strategy and guidelines prepared now (2022 & 2023-24), local expertise will be used and fully optimized.

Phase 0: University of Liverpool, UK, with Consulting Engineering Services (CES), Muscat.
Phase 1: Bawareq Nizwa International with private owners.
Phase 2: ArCHIAM, University of Liverpool, UK, with Ministry of Housing and Urban Planning, Oman(MoHUP)

Public stakeholders
- Phase 0: Ministry of Regional Municipalities and Water Resources initiated project; Soumyen Bandyopadhyay from University of Liverpool, UK providing heritage and master planning expertise; Consulting Engineering Services (CES), Muscat providing building technology and structural support;
- Phase 1: Sultan Qaboos University, Muscat providing heritage expertise (with Bawareq);
- Phase 2: Initiated by ArCHIAM in collaboration with the Ministry of Housing and Urban Planning with further support from Ministry of Heritage and Tourism. In 2022, the Getty Conservation Institute (GCI) has run urban conservation training week at Harat al-Aqr in collaboration with ArCHIAM as part of the GCI Earthen Architecture Course for international heritage professionals using the Historic Urban Landscape (HUL) approach.

Newly created institutional structures
No new institutions were created. However, Bawareq Nizwa International was formed as a company to liaise with local stakeholders and the relevant government bodies for finance and management purposes, as well as for dealing with the governmental institutional bodies. As part of Phase 2, ArCHIAM has proposed an integrated institutional approach for managing heritage, emphasizing the need for establishing a local level institutional body for coordinated action.

4.3. Organization and selection

a. Organization
The project's organization is shown on the following flowchart (Fig. 116).

4.4. Tools

a. Implementation tools
Survey tools
Phase 0: Extensive urban, architectural and ethnographic documentation was undertaken using terrestrial surveying methods, aided by aerial photographic data.
Phase 1: Not available.
Phase 2: Historic Urban Landscape (HUL) tool employed, integrating stakeholder engagement. The HUL Quick Scan tool was used for GCI Earthen Architecture training course for heritage professionals.

Stakeholder engagement
The original owners were involved to the extent that they leased their properties to Bawareq and shared the profits derived from the tourism business. ArCHIAM proposal aims to fully involve owners in a public-private profit sharing enterprise.

The cooperation between the government, public investors, and local communities, as a form of "vertical cooperation", was implemented at different levels of decision-making, including both local communities and central government authorities. This collaboration has been in place since 2016 and is aimed at encouraging initiatives related to vernacular heritage conservation and management.

On a "horizontal cooperation" level, the exchange of experiences, concerns, and ideas of future project ideas among the communities with similar heritage conservation and management concerns were

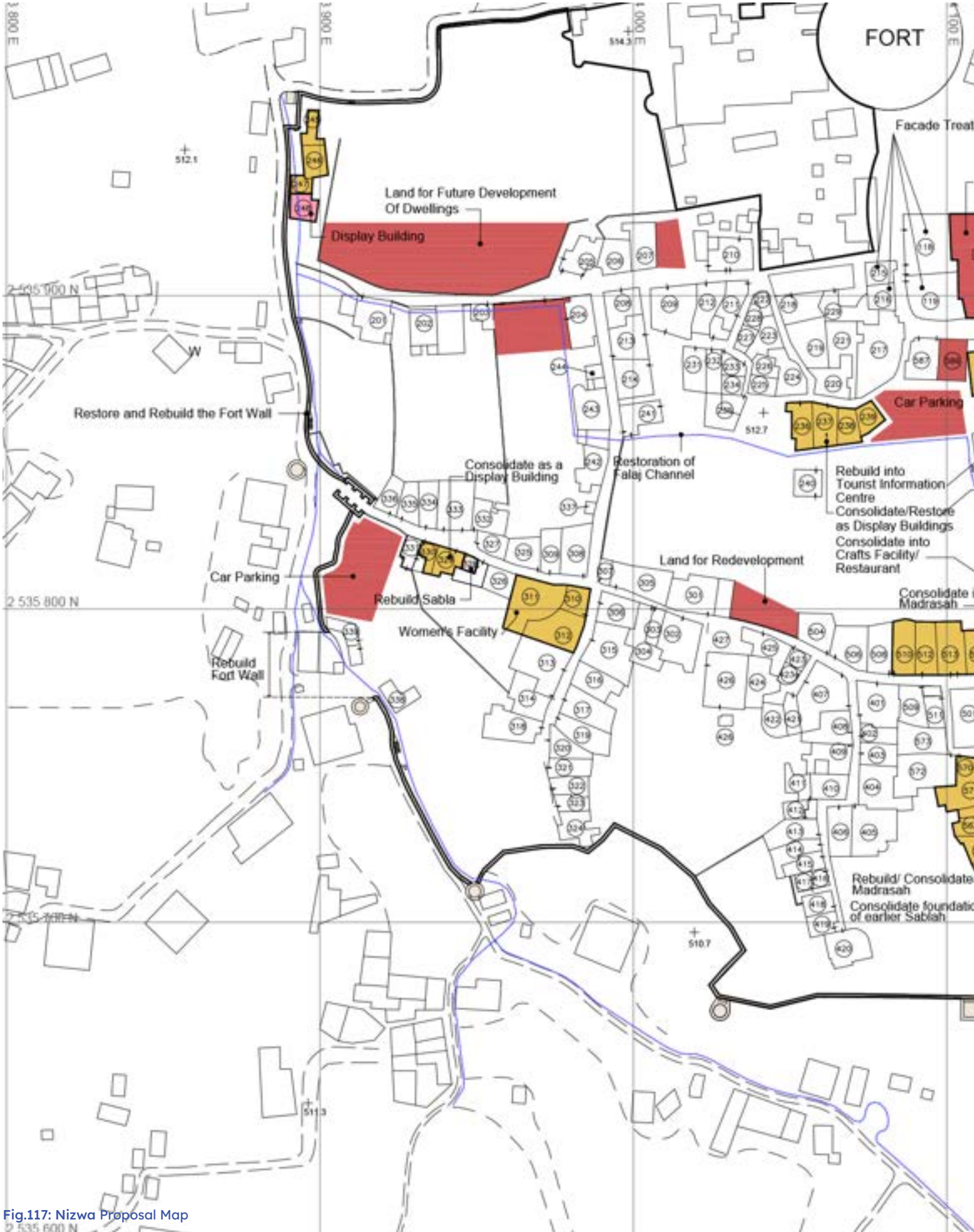
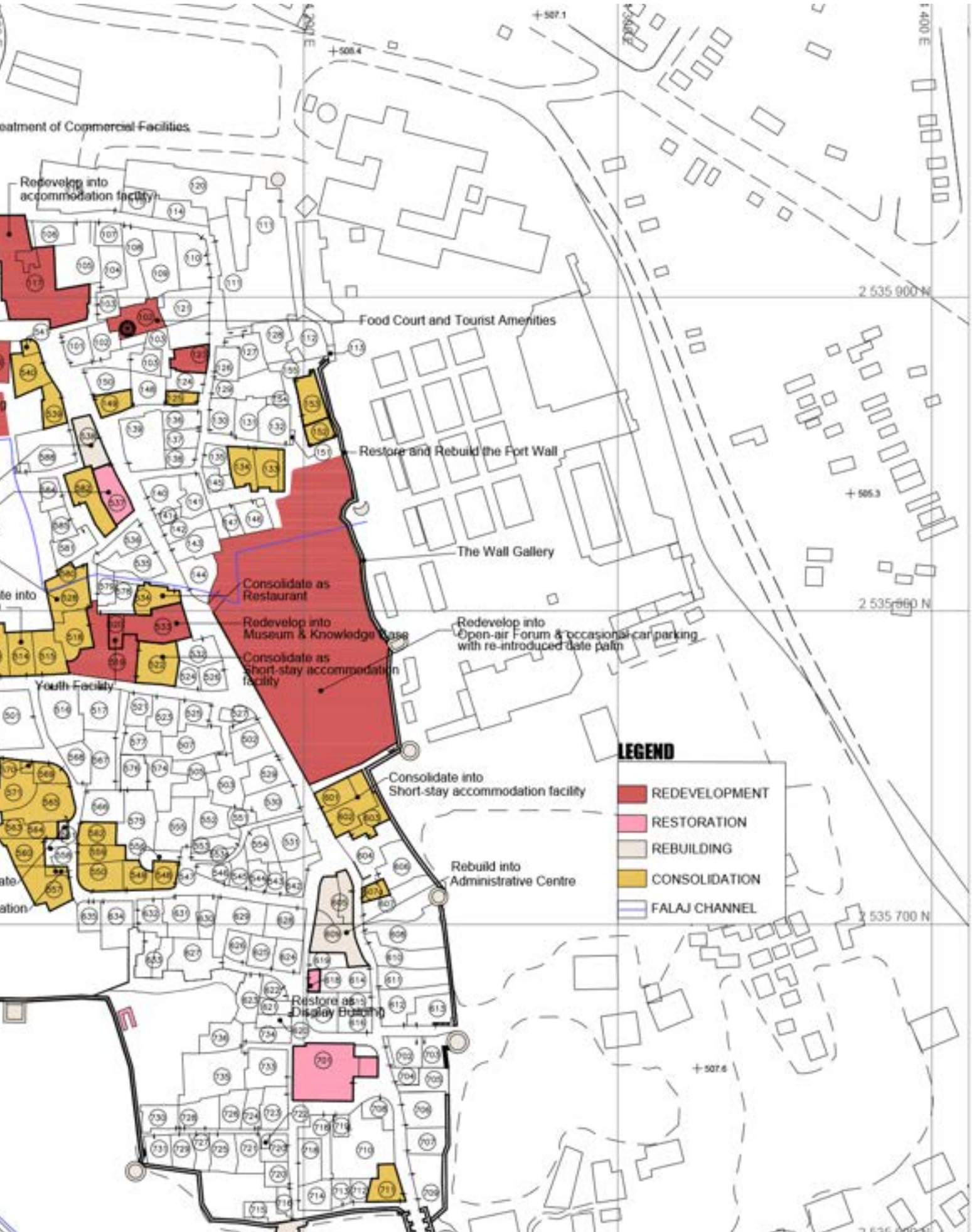


Fig.117: Nizwa Proposal Map


eatment of Commercial Facilities
Redevelop into accommodation facility
Food Court and Tourist Amenities
Restore and Rebuild the Fort Wall
The Wall Gallery
Consolidate as Restaurant
Redevelop into Museum & Knowledge Base
Redevelop into Open-air Forum & occasional car parking with re-introduced date palm
Consolidate as short-stay accommodation facility
Youth Facility
Consolidate into Short-stay accommodation facility
Rebuild into Administrative Centre
Restore as Display Building
LEGEND
REDEVELOPMENT
RESTORATION
REBUILDING
CONSOLIDATION
FALAJ CHANNEL
2 535 900 N
2 535 800 N
2 535 700 N
+507.1
+508.4
+505.3
+507.6

significant. This led to greater cooperation between al-Aqr and other historic oasis sites in the central Oman region, which included al-Hamra and Misfat al-Abriyin (winner of UN-WTO Best Tourism Village Award, 2021). The community of Misfat al-Abriyin, known for its pioneering experience, actively engaged in a collaborative relationship with the people of al-Hamra and al-Aqr. This collaboration involved regular meetings among community representatives to discuss their experiences, share concerns, and plan future projects.

Community engagement
The heritage management masterplan and the historic urban landscape strategy have had stakeholder engagement.
The local population leased out their properties to Bawareq for tourism facilities, which are run entirely by Bawareq.

The local community played a central and active role in managing its built heritage. Decisions regarding the conservation and management of the vernacular heritage were discussed at the community level.
The decision-making process followed a "bottom-up" approach, meaning that decisions originate from the local community itself. This approach ensures that the community's perspectives, needs, and priorities are taken into consideration.
Once decisions are made at the community level, they are conveyed to representatives of the community. These representatives then share the decisions with the local government. This suggests a structured communication channel between the community and the government.

b. Management tools pre and post occupancy (Bylaws, Zoning masterplans, Conservation Management Plan, Committees, Laws, Regulations, etc.):

The project utilized various tools for monitoring and reporting, including internal assessments, discussions with partners, and transparent monitoring tools.
These tools enabled the project management team to efficiently monitor progress, address challenges, and ensure the accomplishment of project activities.

However, it was noted that there was a shortfall in monitoring results and enabling full operationalization due to understaffing and unexpected increased work.

Post-occupancy, the project aimed to activate different parts of the building through community engagement and learning, with a focus on tourism revival. The project also emphasized the importance of continuous awareness, supervision, and involvement of the local community to preserve and protect the building. Additionally, the project involved the use of smart electronic systems for control and utilized green-building techniques, such as eco-friendly sewerage systems and smart lighting.

Laws and decrees
The Royal Decree on Heritage Protection (2019).

Environmental and social tools
Passive cooling measures (north-south cross-ventilation; evaporative cooling through water pool features within the building; stack ventilation) tested through digital modeling, daylight introduction measures through the creation of new openings in the ground floor walls and air and light shafts.



Fig.118: Gate of a rehabilitated guesthouse. ©Ministry of Heritage and Tourism

4.5. Financing

Total amount: Unknown

Source: Private finance and local stakeholders for Bawareq-led project.
The current funding for the Bawareq project is private. It is hoped that in future, for a wider implementation of the ArCHIAM masterplan, public-private funding models will be deployed.

Proposed Implementation Period:
Phase 1: 2015-current
Phase 2: 2023-2024

Grant Recipient:
- Phase 1: Private investment
- Phase 2: ArCHIAM

Financing sufficiency:
Bawareq financial data not available

Maintenance financing:
Bawareq financial data not available

Rehousing financing:
Laborers have been rehoused to accommodations outside the historic quarter.

4.6. Timeline

Refer to figures 115 and 116 for more details.

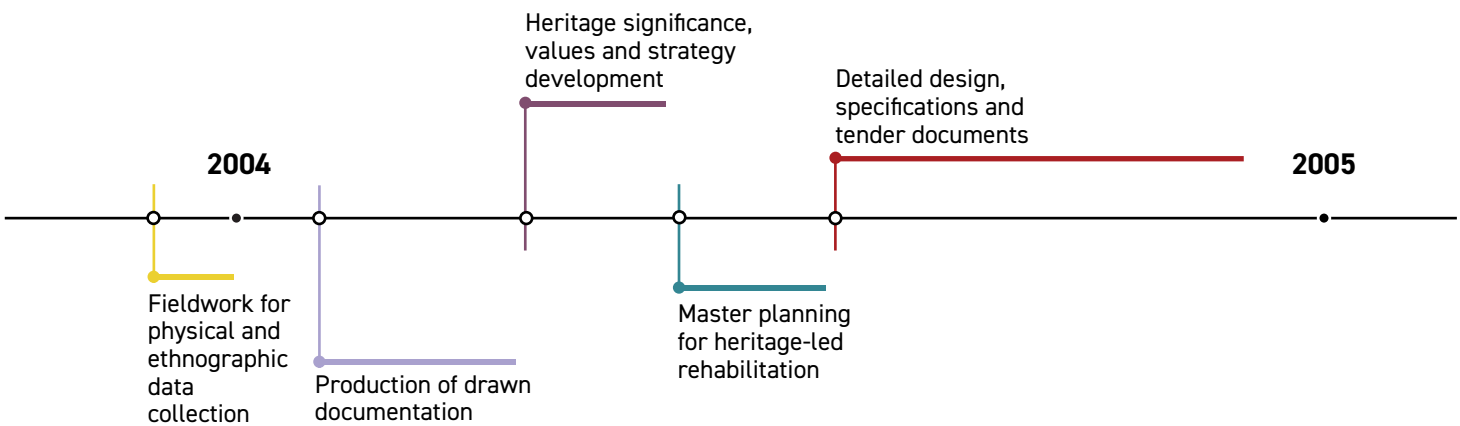


Fig.119: Timeline of Phase 0: Heritage Management Strategy, Masterplan and Selective Detailed

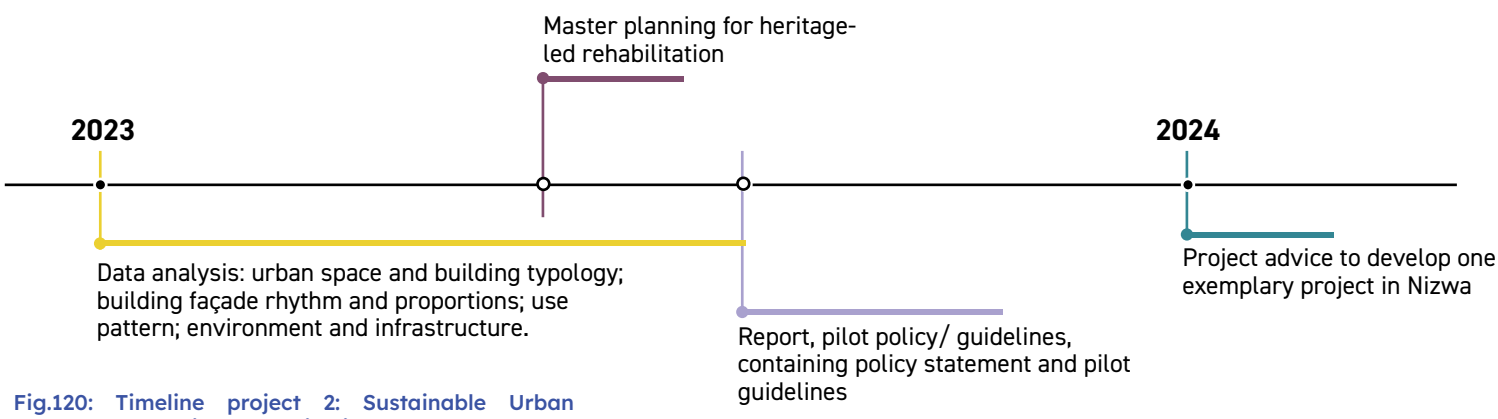


Fig.120: Timeline project 2: Sustainable Urban Development Policy and Guidelines

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials

The traditional method of construction consists of mudbrick courses over initial courses of stone, on a very shallow foundation. The flat mud roof was laid over local timber or date palm log beams, date palm matting and compacted earth. In other locations useful examples of modified traditional construction exist combined with clearly distinguished contemporary construction. ArCHIAM will aim to use such methods if the master plan goes ahead.

The only realized aspects through Bawareq implementation has been contemporary construction and air conditioning. However, it should be possible to minimize these impacts in future interventions with a more sympathetic and heritage-aware approach.

b. Legislation changes

None yet. However, both the Bawareq project and the masterplan developed by ArCHIAM, if employed, will necessitate changes to housing procurement and building regulations.

c. Programs post-rehabilitation

The rehabilitated housing units started operating as tourist hotels.

The Harat al-'Aqr master plan (2003-04) had proposed a balanced reuse strategy, combining tourism with continued habitation, education and training, cultural institutions, and traffic management. In addition to continued inhabitation, some rehabilitated houses would have converted into commercial, community and local institutional and training use. For Bawareq-led projects the focus has been on tourism-led rebuilding (2015-current). For Historic Urban Landscape (HUL) led strategy and guidelines (2022-24), the focus has been on maintaining the morphology and typology of dwellings, while accepting that significant changes have already occurred in Harat al-Aqr.

d. Economic impact

Job Creation

- Bawareq: Tourism industry and other tertiary industries.
- ArCHIAM (envisaged): holistic development of jobs and training opportunities related to the traditional building procurement sector.

e. Social impact

Gentrification

Bawareq data not available, but one would assume that the property value will have risen significantly from being negligible (derelict property).

Bawareq project implementation has consolidated the properties under a tourism company. Thus, there has not been any gentrification. The significant growth in tourist numbers, however, will have an important impact on the local population.

Education

Bawareq data not available. However, the ArCHIAM proposal aims to integrate all vulnerable groups, including training and education measures for upskilling and enhancing awareness, and bringing together the elderly and younger generations.

The various components of the project have attempted to raise local, national and international awareness indifferent ways. The immediate local awareness regarding heritage has been boosted by the commercial success of the Bawareq private enterprise. This is reflected in the large number of Omani tourists who are now visiting Nizwa. The national awareness has been raised through the above but also the heritage management master plan and historic Urban Landscape strategy developed over two different phases of work by the ArCHIAM center, and the University of Liverpool. The international dimension has been highlighted through the interest of the Getty Conservation Institute and the visit and training of international heritage professionals in Harat al-Aqr in 2022.

f. Environmental impact

Phase 0: The Liverpool/ArCHIAM masterplan proposes to use a combination of passive comfort measures,

and energy and transport alternatives.
Phase 1: The current Phase 1 initiatives employ electric-powered vehicles for transporting tourists across the site. However, there is a heavy reliance on mechanical cooling systems and concrete construction.
Phase 2: The guidelines rely on a sustainable heritage management approach.

This being a heavily built-up urban site with pockets of agricultural land, the heritage management masterplan had put special attention to the retention of these and maintaining their distinctive character. Adhering to this will minimize impact on local flora and fauna.

5.2. CHALLENGES/CRITIQUE

a. Financial constraints

Reconsideration of project targets groups and beneficiaries due to financial constraints caused by the increase in building materials and the nationwide, economic crisis. Also, reliance on more sustainable and locally sourced materials for construction would be beneficial.

b. Legislative challenges

There are several legislative constraints present in Oman. One of the key ones being the absence of mechanisms and regulations to allow the approval for buildings aiming to employ traditional construction methods (municipal building approval rules). In the absence of this, large scale housing planning and adaptation employing traditional building material and construction methods will be impossible.

A more detailed set of legal challenges is as follows:

- Case-by-Case Basis for Building Permits: Municipalities responsible for issuing building permits for restoration and renovation operations proceed on a case-by-case basis. This lack of a standardized approach may lead to inconsistencies and insufficient consideration of the authenticity of the final restored product.

- Lack of Coordination between MHT and Municipalities: there is a lack of coordination between the MHT and municipalities regarding the delivery of permits. The MHT is responsible for permits to open guest houses within heritage buildings, while municipalities handle various construction permits. The absence of coordination may result in regulatory gaps and inconsistent approvals.



Fig.121: House rehabilitation and adaptive reuse.
©Ministry of Heritage and Tourism

- Absence of Regulations for Preservation and Land Use: Both the MHT and municipalities deliver authorizations for punctual interventions without regulations for the preservation of authenticity or coherent land use in historic settlements. The absence of specific regulations poses a challenge in ensuring the preservation and sustainability of the historic fabric.

- Limited Documentation and Planning: While some endangered settlements and their buildings have been documented by the MHT, there is a lack of developed management or land use plans for these settlements. This absence of comprehensive planning can hinder the sustainable preservation and development of historic areas.

c. Tenure challenges

All 25 rehabilitated buildings have been in relatively straight forward private ownership. Complex, multiple stakeholder owned properties will pose an especial challenge and tenure issues. These may have to be addressed through innovative cooperative structures. However, an initial challenge regarding tenure has been the difficulty of convincing local residents to make their dwellings available for development in the absence of any compelling legal obligation.

d. Social challenges

While the involvement of communities in the renovation and adaptive reuse of their built heritage is seen as an opportunity to balance the roles of politicians, experts, and owners, it also introduces challenges related to expertise and technical knowledge. The limited awareness among communities regarding the value of their vernacular heritage and the components and unique characteristics of the heritage can pose a significant challenge to its preservation. This lack of knowledge can lead to unintended alterations that may compromise the authenticity of the heritage.

5.3. Lessons learned

The current Harat al-Aqr heritage work has brought forth important lessons about the need for mechanisms and instruments for protecting heritage and the need to follow the Historic Urban Landscape (HUL) approach and its key tools: stakeholder engagement (partially successful), financial instruments (partially successful), heritage protection legislation and regulation (not applied) and heritage knowledge (not applied). The ArCHIAM management masterplan incorporates these and other developmental and safeguarding measures and thus will add the protections if implemented.

The Bawareq Project has been able to bring together local stakeholders who now realize the monetary value of their heritage properties. Thus, it has been able to introduce a bottom-up approach and enhance heritage asset value. The implementation has been able to significantly boost tourism, and in this sense it has been financially successful. The areas where this has not been successful is in its ability to safeguard heritage and protect heritage assets through legislation, building capacity, implementing appropriate spatial and material interventions, and undertaking knowledge-led interventions. The ArCHIAM management masterplan incorporates developmental and safeguarding measures and thus will add the protections if implemented.

While some endangered settlements and their buildings have been documented by the Ministry of Heritage and Tourism, there is a lack of developed management or land use plans for these settlements for the sustainable preservation and development of historic areas. It is important that any heritage-led housing implementation should safeguard heritage as a key socio-cultural and economic asset. A masterplan along with regulations and guidelines exist for Harat al-Aqr. The ArCHIAM management masterplan incorporates developmental and safeguarding measures and thus will add the protections, if and when implemented. But the masterplan was never implemented (2003-04). This was ahead of its time in its approach (following a comprehensive approach to heritage management planning). The main challenges have been the lack of political will and stakeholder buy in. However, it is hoped that with the strategy and guidelines prepared now (2022 & 2023-24), implementation will take place.

ANNEX

a. Contact

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Ali Al Adawi, Director of the Department of Heritage and Tourism at the Ministry of Heritage and Tourism

Ali H. Al-Mahrooqi, Ministry of Heritage and Tourism, Muscat

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Gaube, H. & Gangler, A. 2011. Chapters 10-12. Transformation Processes in Oasis Settlements of Oman. Muscat: Al Roya Press. Limited Documentation and Planning: While some endangered settlements and their buildings have been documented by the MHT, there is a lack of developed management or land use plans for these settlements. This absence of comprehensive planning can hinder the sustainable preservation

ArCHIAM Team: Prof Soumyen Bandyopadhyay, Dr Giamila Quattrone, Dr Mary Shepperson, Dr Konstantina Georgiadou, Claudia Briguglio, Matina Vrettou, Julian Djopo, Guyu Bao, Chetan Karadia



Fig.122: House rehabilitation and adaptive reuse. Creative Commons www.pexels.com

5E-10

OMAN | Salalah

Salalah Urban Renewal Plan

Salalah, Oman



Fig.123: Salalah street scene. Source: ©ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan



INTRODUCTION

Salalah is a city in southern Oman on the Dhofari coast. The old city of Salalah has three historically significant city sections; ash-Sharqiyah in the eastern part of the city, al-Wusta in the center, and al-Gharbiya in the west. These quarters form part of a National Built Heritage Inventory, which comprises all vernacular oases and historic centers of the Sultanate of Oman. The al-Wusta and al-Gharbiya quarters particularly still host grand merchant houses in traditional buildings dating approximately to the 18th century. Despite this historical significance and unique regional architecture, Salalah does not have an established tourism industry around these sites. The al-Wusta and al-Gharbiya quarters are largely populated by an expatriate labor force and low-income communities. Large infrastructural and commercial developments in surrounding areas are rapidly changing the local economy and have led to the abandonment and dilapidation of historic quarters such as these, putting them at the risk of further degradation. In order to preserve these important historical quarters, combat stigma surrounding these areas, generate a tourism economy, and integrate the historical indentity of these areas with the local modern needs, a rehabilitation research and planning project was undertaken for central parts of Salalah town (al-Wusta and al-Gharbiya quarters) by the ArCHIAM Research Center of the University of Liverpool from 2015 to 2016. This included documenting extensive areas of vernacular housing in historic central Salalah. This extensive research phase was followed by the rehabilitation of one pilot merchant house beteween 2016 and 2017.

Main instigator
ArCHIAM Research Center

Historic Neighborhood/ Historic Center:
Salalah al-Wusta & al-Gharbiya

Targeted beneficiaries:
Expatriate workforce, Omani communities and property owners, tourists, cultural institutions.
477 neighborhood buildings surveyed

Project duration
October 2015 - October 2016

Project budget
Estimated OMR 300,000 (exact figure not available) or USD 780,000 (2016 average rate, adjusted for inflation)

Progress status
- Completed: Pilot 18th century merchant house rehabilitation implementation. Rehabilitated as a cultural center.
- Completed: Heritage Management Development Plan (HMP).
- On hold: Masterplan implementation.

1. IDENTIFICATION

Size of the overall city
Population: 448,000 inhabitants (United Nations World Population Prospects Survey, 2023)
Surface: 1,500 km²

Size of the historic area
Salalah al-Gharbiya: 196,142m²
Salalah al-Wusta: 298,687m²

Main function of the city
Capital of Dhofar Governorate, administrative, political, economic, historical agriculture and trading.

Main function of the historic area
Historic merchant neighborhoods, residential.

Heritage status
Salalah is part of a National Built Heritage Inventory since 2002, which comprises all vernacular oases and historic centers of the Sultanate of Oman.

Income level of dwellers in the historic city
The majority of families within the project focus area are low-income.

Demographic profile
Expatriate laborers below the poverty line, low-income Omanis.
The age and gender groups in Salalah:
Median age: 29.4
0-15 years: 17% (6% M, 10% F)
15-60 years: 79% (51% M, 28% F)
> 60 years: 3% (1% M, 2% F)

Land tenure
The heritage quarters are mostly inhabited by a large expatriate tenant community. The land and houses are 100% private and owned by families and landlords.

Housing role in the project
Housing played a core role in the project given that it is the dominant land use in the selected area of intervention

Situation and urban evolution
The historical quarters of Salalah are situated inland north of the coconut palm groves as well as in Al-Haffa on the coastline. The modern development areas of Al-Jadida grow and continue to expand north of the coconut palm groves around the historical quarters. Al-Husn, is located along the coastline west of historical Al-Haffa and the Al-Husn Souq.

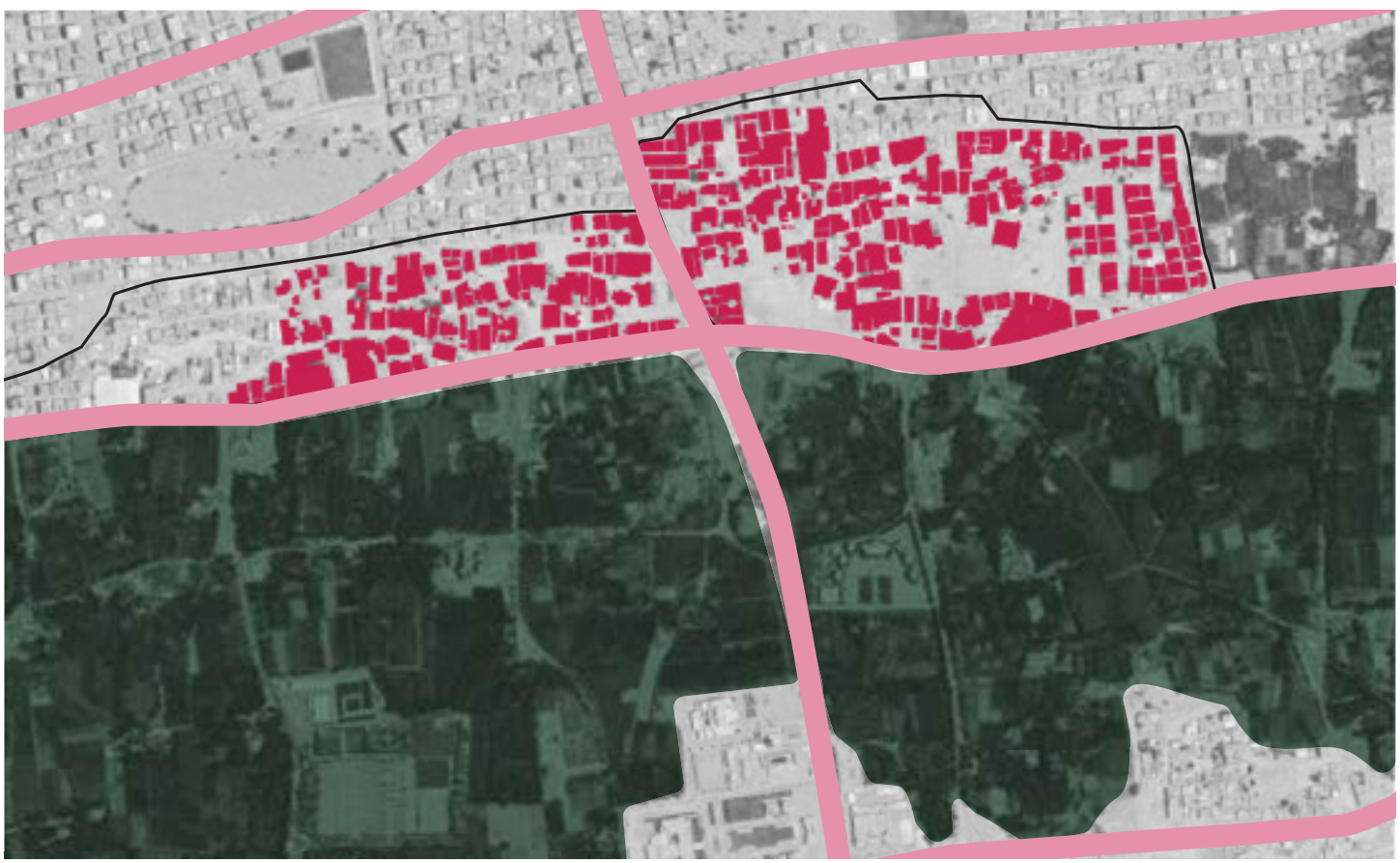
12th-16th century: The oldest built city in Salalah is the coastal city of al-Baleed (historically Zafar) which was most active between the 12th and 16th centuries. It was well fortified and situated close to the water given its important role in the frankincense trade. Due to attacks and changes in trading networks, the city began to lose its significance and population starting in the 13th century.



Project area | Heritage areas | Modern development | Governmental & Resorts

0 400 800m N

Fig.124: Situation and urban evolution of the city of Salalah



Site boundary | Major road | Natural feature | Considered in project

0 250 500m N

Fig.125: Localisation of the rehabilitation interventions



Fig.126: State of Documentation Process Maps images from ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan

15th-16th century: The beginnings of an established city of Salalah consisted of a series of informal settlements that moved from the abandoned and heavily ruined Al Balid by the coast, northwards above the coconut palm groves. The three traditional quarters of Salalah ash-Sharqiyah, al-Wusta, and al-Gharbiya found today took shape from the steady groupings of these settlements that formed in the area. The grand merchant houses that are the primary focus of this project do not appear until approximately the 18th century.

1800s: The Sultanate of Oman gained control of the Dhofar region and further established military presence in the city of Salalah. This change in regional isolation brought future national infrastructural developments to the region.

20th century: The agricultural presence in the oasis area between the coast and the modern city increased rapidly through the 20th century due to advances in infrastructure and technological access. Agriculture also developped in the Salalah oasis as a result of increased demand for produce from a rapidly growing population. Due to the speed of these ecological changes, it has been found that the water table in Salalah has experienced a large drop in recent years. The city itself has also experienced significant growth since the 1970s as a result of the increase in population and growing economy.

2. STAKES

Diagnosis/Status
Built settlements of historical significance situated in the Salalah plain were added to the National Built Heritage Inventory, along with other historical sites in Oman, starting from 2002 by the Center for Documentation and Conservation at the Faculty of Architecture in RWTH Aachen University. Under this same initiative, the nearby historical site of Al Balid was designated as an archaeological park with work on the site conducted between 1994 and 2000. This initiative, as well as the later Dhofar Governorate Documentation and Heritage Management Plan for Salalah al-Wusta & al-Gharbiya, was made possible through the National Heritage Protection Law of 1976 promulgated by Royal Decree No. 6/80. This new law was decreed with the objective of preserving national heritage sites in Oman through new protective measures. It also promoted efforts to combat the natural deterioration or degradation of built heritage sites.

Al-Wusta and al-Gharbiya, being two of the historical neighborhoods of Salalah, fall under these heritage designations. The vernacular architecture that can be found in these neighborhoods is one of the primary motivators for their conservation. According to the ArCHIAM report, these neighborhoods were in a seriously dilapidated state and at risk of collapse, despite the small number of houses that were well maintained and preserved. Documentation, diagnostics, maintenance practices, and rebuilding methods were therefore key concerns in the ArCHIAM Plan. The identity of Salalah has also been changing. The rapid growth of the city and its population as well as the predicted influx of tourism to the city given the proximity of the Al Balid archaeological park were other important factors considered during this project. Finding ways to integrate these historic neighborhoods within the changing urban landscape was a primary objective.

Challenges
The main challenges facing the Salalah rehabilitation project were low levels of maintenance, over-occupancy of historical houses, inadequate services and water utilities, alterations and damages inflicted on heritage buildings prior to or following the National Heritage Protection Law, stigma towards communities living in historic neighborhoods, and an overall lack of regulations. Other challenges noted, specifically during the pilot rebuilding project, were lack of awareness around adaptive reuse

and conservation practices and difficulty finding local rehabilitation construction industries. On site, the research team found that Salalah's historical neighborhoods posed access challenges. In addition to the over occupancy issues, the neighborhoods' lack of sanitation utilities led to severe health hazards in the community. Buildings were often too damaged to be accessed. Lack of onsite materials and access to interviewees were also challenges encountered during the fieldwork process.

Objectives
The objectives of the Salalah al-Wusta & al-Gharbiya, Dhofar Governorate Documentation and Heritage Management Plan project are to document the status of heritage buildings in the historic quarters of Salalah, assess the living conditions of their residents, create a heritage management plan based on onsite research, and propose a strategy for rehabilitation and intervention through the pilot house rehabilitation of Bait as-Sail.

The first priority for the Salalah Urban Renewal Plan was to steadily improve the quality of life for residents of the heritage quarters through improved utilities and public services. The second priority was to maintain the urban morphology of Old Salalah through integrating existing street patterns and buildings into the new plan.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name: Dhofari merchant houses
Period: 18th century
Occupants: Originally wealthy mercantile class, currently, low income expatriate workers

Evolution of housing typologies
The historical housing typologies of coral limestone evolved over time into the stone and concrete developments in Al-Jadida and grand villas in Al-Husn.



Fig.127: Bait as-Sail pre-rehabilitation. Source: ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan

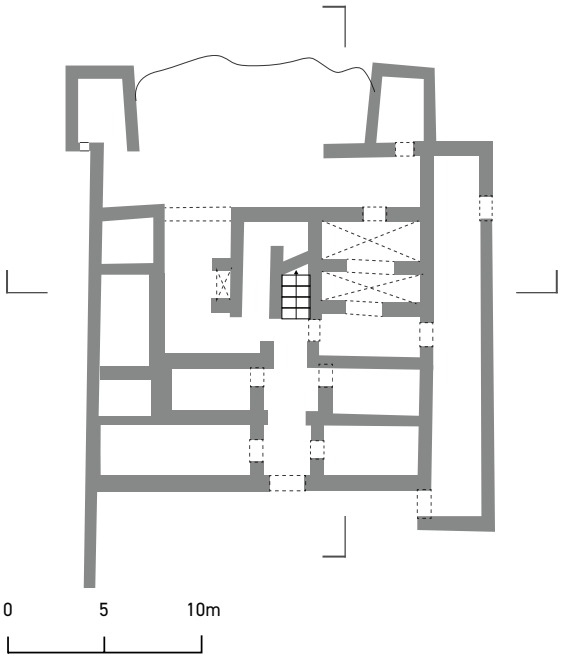


Fig.129: Ground floor plan before rehabilitation, Bait as-Sail.

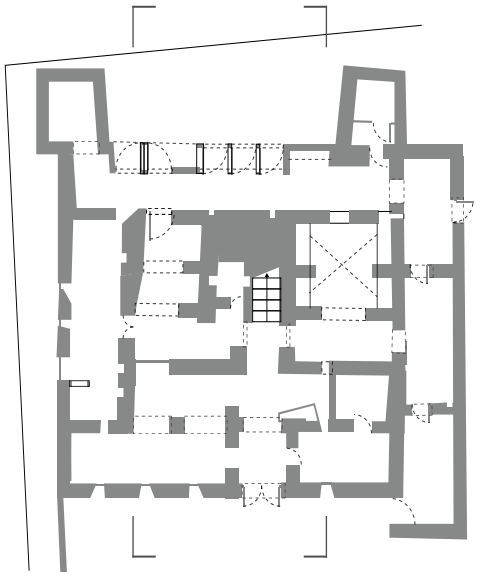


Fig.130: Ground floor plan post-rehabilitation, Bait as-Sail.



Fig.131: Bait as-Sail sections before rehabilitation



Fig.128: Bait as-Sail sections post-rehabilitation

The historical quarters have a tightly knit organic fabric made of relatively rectilinear structures. Much of the urban growth in those surrounding areas occurred in the 1970s following significant economic growth in the region. Al-Jadida's morphology is largely composed of mixed-use units that somewhat resemble the historic quarters from an aerial perspective in terms of scale, however they have a more grid-like organization.

Description :
In the two historic quarters of al-Wusta and al-Gharbiya, buildings are usually large rectilinear free-standing structures. While the number of storeys varies, as can be seen in the ArCHIAM's map (Fig. 129), the majority of buildings are between one and three storeys high. The structures are typically arranged around interior courtyards with primary entrances facing south, seawards. This orientation allows the structure to passively cool through catching cool winds and circulating them through the structure in the summer months and to reject cold winds coming from Jabal Qara in the winter months. These houses were usually built using local coral limestone. The mortared blocks of this stone were traditionally supported through wooden ring beams which are now often severely damaged. The rectilinearity of the houses is unique compared to the more organically shaped, mud brick, structures found throughout northern Oman. The use of arches was uncommon in the region and openings such as doors and windows are usually reinforced with horizontal wooden lintels instead. Wall masonry is hidden behind external plastering and whitewashing. An important characteristic of the Salalah houses is the detailing at the top of exterior walls in corners. Stepped crenelations of the same stone are used there, creating an elongated heightened point at each major building's corner.

The larger stone houses were historically wealthy mercantile houses. Therefore, the ground floors of these houses were used for storage, shops, or other commercial uses (Fig. 128). The upper private levels are usually terraces facing onto the interior courtyards with many openings for air circulation. The wealth of the house owner was displayed through decorative masonry or wooden doors and window frames. These doors and windows display unique architectural typologies and are one of the key heritage features for these structures.

3.2. Condition of the historic housing units before rehabilitation

At the start of the project in 2015, only a small number of historic buildings on site were adequately preserved. Of the 447 buildings surveyed, only four were determined to be adequate, with many deemed to be presumably adequate. A large number of buildings were found to be not appraisable and in a state of disrepair (Fig. 127).

In the ArCHIAM report notes common elements of building failure found on site. Common failure types listed were: wall feet erosion, wall surface erosion, detachment of coatings, wall cracks, detachment of built fabric, and loss of built fabric.

3.3. Rehabilitation know-how, materials, and material sourcing

materials and sourcing: All materials listed in the Salalah Rehabilitation Plan are sourced locally:

- Stone for foundations and walls;
- Sandstone and limestone for walls;
- Lime and clay plaster (clay/sarooj) for external and internal rendering;
- Clay/stone flooring;
- Timber or coconut palm beams, reed/palm matting, compacted mud or flagstone for composite flooring and roofing;
- Terracotta or wooden water spouts;
- Local timber for doors and windows;
- Traditional water proofing and protective materials.

Key building materials for the rehabilitation pilot project were sourced locally. Timber beams (candel wood) were sourced from East Africa in accordance with the traditional wooden elements of the original houses. Other materials included limestone and clay render, some concrete structural elements, and limited use of non-historical material.

Sadly, much of the knowledge within the local community on vernacular construction techniques has vanished. The construction was largely informed by the knowledge of the expatriate construction workforce. However, by enlisting a local contractor it was possible to convey the importance of using traditional materials and methods for timberwork restoration.

Methods and materials were chosen based on adaptive rehabilitation criteria, enhanced authenticity, structural stability, affordability, comfort, and ease of maintenance. This included reworking passive cooling systems within the house for better functionality. The proposed actions for each building depended on the state of preservation determined in the previous project phase.

4. MECHANISMS OF THE PROJECT

4.1. Process

After the project's approval, the 'Preparation and Fieldwork' phase began in 2015. This process began with 'Preparatory Work' to procure data, conduct background research, and establish consistent



Not appraisable
Presumably adequate
Adequate
Inadequate
Acceptable
Ruinous

Fig.132: Salalah Gharbiya State of Preservation, map taken from ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan



Excavated plot
Ground level
1 storey building
2 storey building
3 storey building
4 storey building
5 storey building
6 storey building
7 storey building

Fig.134: Salalah Gharbiya, Number of Floors, map taken from ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan



School
Dwelling
Shop
Storage
Mosque
Apparthotel
Transformer room
Empty plot
Drainage room
Well
Tomb
Not appraisale

Fig.133: Salalah Gharbiya, Settlement Components , map taken from ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan



Not appraisable
Presumably adequate
Adequate
Inadequate
Acceptable
Ruinous

Fig.135: Salalah Al-Wusta State of Preservation, map taken from ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan



Excavated plot
Ground level
1 storey building
2 storey building
3 storey building
4 storey building
5 storey building
6 storey building
7 storey building

Fig.136: Salalah Al-Wusta, Settlement Components , map taken from ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan



School
Dwelling
Shop
Storage
Mosque
Apparthotel
Transformer room
Empty plot
Drainage room
Well
Tomb
Not appraisale

Fig.137: Salalah Al-Wusta, Number of Floors, map taken from ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan

fieldwork methodology. After this phase, a research team surveyed the important smaller nearby town of Mirbat for further historical context and to test the fieldwork methodology. Next, the research team began their fieldwork in Salalah through a four week period. Following the fieldwork phase, analysis maps were created to display researched conditions found during fieldwork. The next steps of the project were to create different rehabilitation strategies for various states of building preservation found on site and to assess common areas of building failure, to then find methods of addressing these concerns. During this process, the report outlined the 'Principles & Approaches to Heritage Management', proposing approaches and guidelines to the Heritage Management Plan (HMP). Following this strategizing and guideline phase, the new Masterplan associated with the HMP was created for both heritage quarters, using the reasoning developed in the 'Principles & Approaches to Heritage Management'. After this plan was created, the implementation of the pilot Bait as-Sail rehabilitation project began in 2016.

4.2. Partners

Experts
ArCHIAM Centre for the Study of Architecture and Cultural Heritage of India, Arabia and the Maghreb - team of architects, researchers, historians, conservation experts, archaeologists.

Public stakeholders
Ministry of Heritage and Culture (now Ministry of Heritage and Tourism), Dhofari Municipality, Local communities, private owner stakeholders.

Newly created institutional structures
No new organizational structures were created through this project.

4.3. Organization and selection

a. Organization
The project's organization is shown on the flowchart on the right (Fig. 134).

b. Selection process
The Ministry of Heritage and Culture selected two case studies in the southern Dhofar region for a national heritage documentation and management strategy. Excluding the central region of Oman, two to three sites were selected per region. ArCHIAM was given responsibility for carrying out the documentation and strategies for a select number of these sites and regions, one of which was the Salalah project.

4.4. Tools

a. Implementation tools
Survey tools
The rehabilitation of the Bait as-Sail pilot project is currently ongoing. After initial surveys and documentation conducted at the start of the Salalah al-Wusta & al-Gharbiya, Dhofar Governorate Documentation and Heritage Management Plan, ArCHIAM researchers have created a series of orthographic architectural drawings with details of proposed new plans for the heritage house. (Fig. 135)

Stakeholder engagement
The private client, the Ghassani family, was involved in the Bait as-Sail pilot project throughout the process. The project was commissioned and overseen by members of their representation who are responsible for its long term management and maintenance.

Community engagement
The community of Salalah was engaged through community outreach efforts made during the 'Preparation and Fieldwork' phase of the project. The research team engaged members of the local community during various meetings. Additionally, the research team worked with a local crafts center

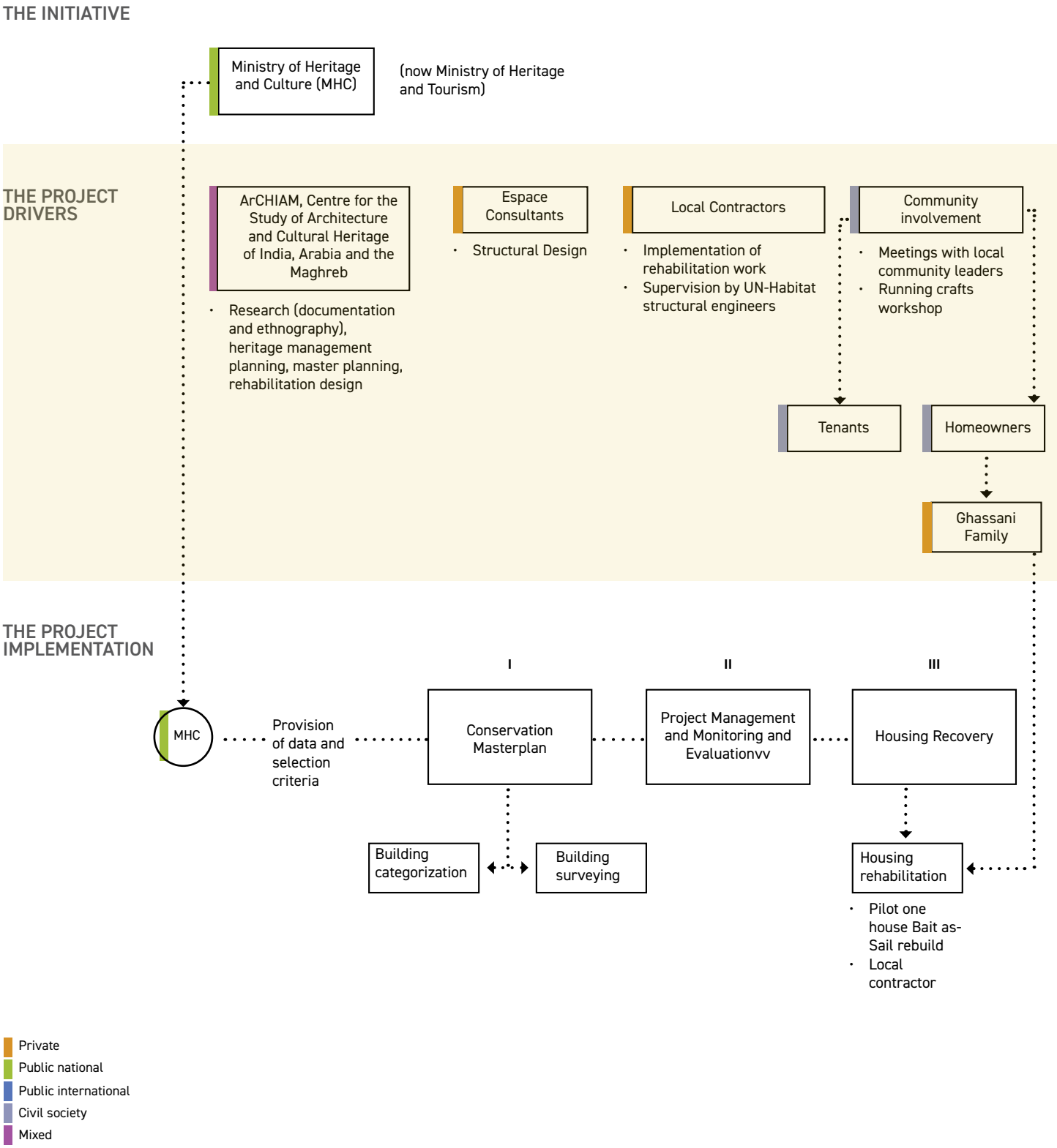


Fig.138: Organizational chart

involved in upholding local ceramic, woodworking, and textile techniques and skills. Given that the implemented pilot project was entirely privately owned, the larger community was not involved in the Bait as-Sail project.

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

Laws and decrees
National Heritage Protection Law promulgated by Royal Decree No. 6/80.

Conservation Masterplan
See figure 136.

4.5. Financing

Total amount : Estimated OMR 300,000 (exact figure not available)

Source :
Public: Ministry of Heritage and Culture: Heritage Management and Development Plan.
Private: 18th century merchant house rehabilitation.

Proposed implementation period : 2015-2017

Grant recipient : ArCHIAM research center

Breakdown :
Public: preparation of Heritage Management and Development Plan.
Private: pilot rehabilitation of merchant house, design and implementation, materials, labor and finishes.

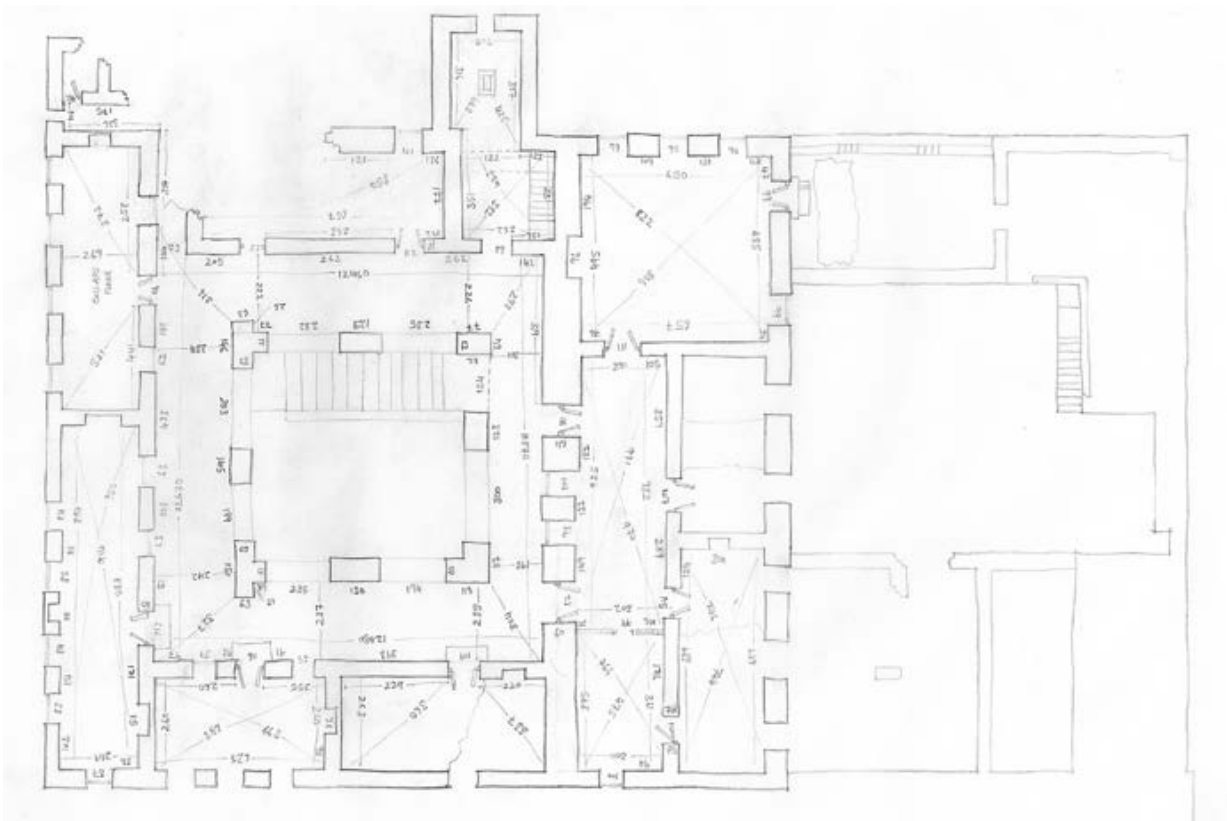


Fig.139: On Site Documentation Sketch from First Project Phase. Source: ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan

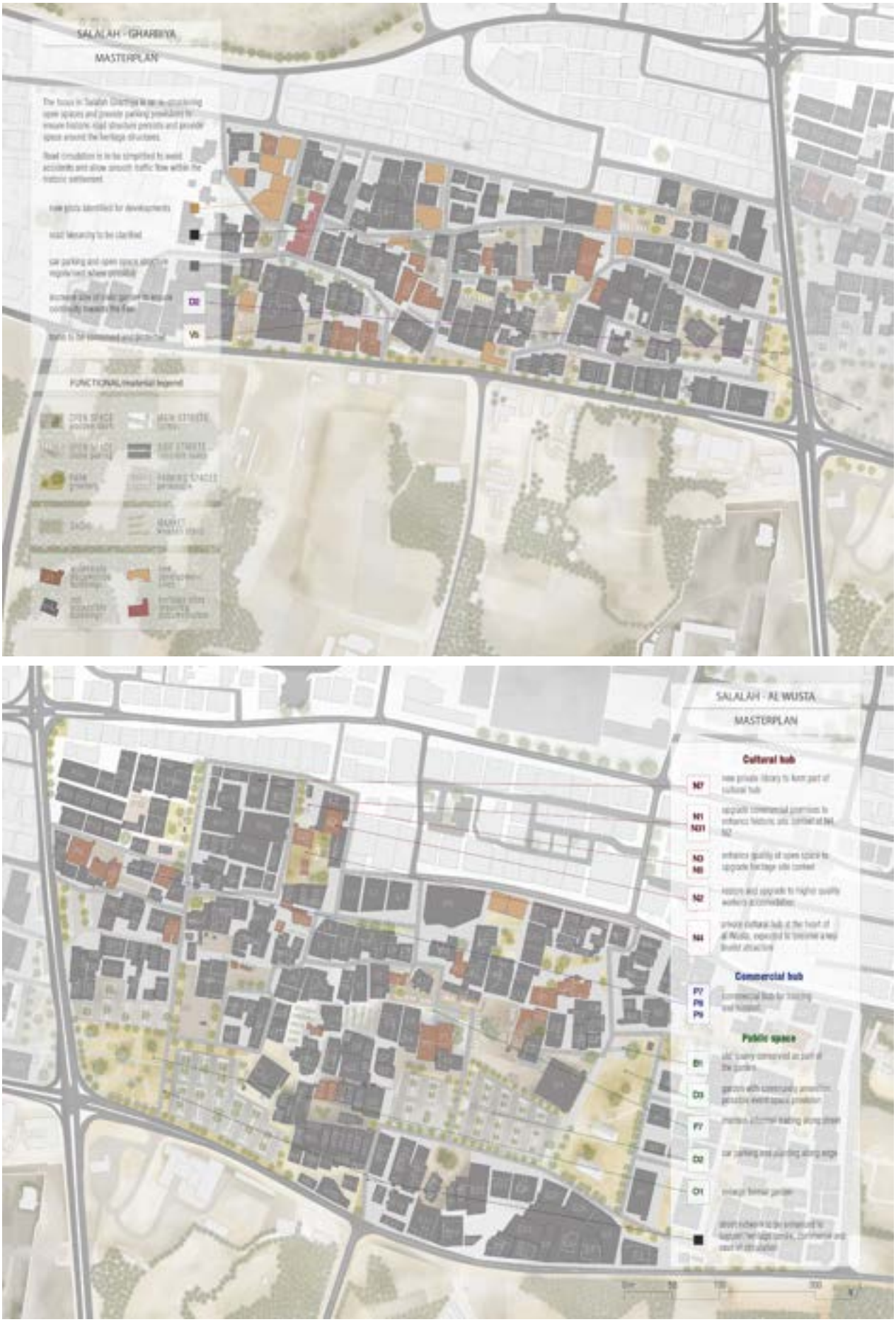


Fig.140: Masterplan Proposal. Source: ArCHIAM Salalah Al Wusta & Gharbiya - Heritage Management and Development Plan

Financing sufficiency:
Financing was not sufficient for the project's scope.

Maintenance financing :
Maintenance financing is not included in the overall budget.

Rehousing financing :
N/A

4.6 Timeline
Refer to figure 137 for more details.

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials
Modern adaptive rehabilitation methods were selectively used alongside traditional materials to ensure structural stability, affordability, comfort, and to allow for easy maintenance. This involved the use of concrete at vulnerable points such as door and window systems and concrete structural elements.

b. Legislation changes
There was no change in legislation as a result of or to accommodate the project.

c. Programs post-rehabilitation
There are no known changes in program post-rehabilitation.

Bait as-Sail was a residential property and remains a residential property post-rehabilitation.

d. Economic impact
The project's impact on the economy is not known. Direct employment opportunities to the site workers, architectural design team, and the structural design team were created during this project. Site workers were trained by the local contractor on local wood restoration expertise for timber door and window restoration.

e. Social impact
It is not assumed that the project has changed the perception of the neighborhood.
It is not known how the project has raised local awareness regarding the socio economic component of historic safeguarding.

Gentrification:
The project did not result in any direct or indirect gentrification.

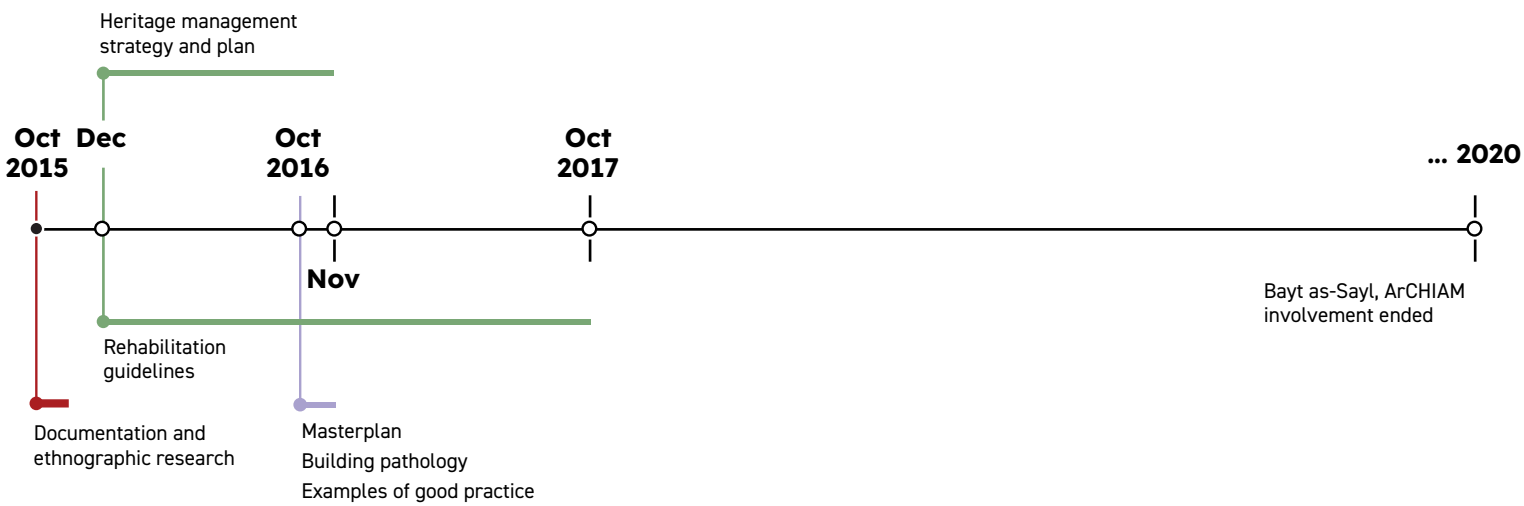


Fig.141: Timeline

Education:
There are no known educational impacts to the community stemming from this project.

Environmental:
The project is not in the direct proximity of a natural habitat or ecosystem and given its urban setting there was no direct impact to local wildlife or plant species. Regarding environmental sustainability measures, passive cooling was integral to the research and implementation phases of the project.

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints
The financing for the project was not sufficient and did not account for the cost of maintenance. The public financing covered the preparation of the Heritage Management and Development Plan and the private financing covered the pilot rehabilitation of the merchant house, including design and implementation, materials, labor, and finishes. Readjustments to the project had to be made in order to accommodate the budget including the alteration of design elements and finishes. A slight increase in budget was made, however not enough to avoid these project adjustments.

b. Legislative and tenure constraints
The legislative constraints faced by the project were the prevailing municipal regulations and the guidelines provided by the Ministry of Heritage and Culture. Municipal regulations and guidelines provided by the Ministry of Heritage and Culture were the primary legislative constraints of the project. However, the land tenure played in favor of the project given the support of the National Heritage Protection Law promulgated by Royal Decree No. 6/80. The project therefore did not require a change in legislation to allow for its implementation.



Fig.142: Sunset atmosphere in the harbour with boats back from fishing and waiting in Port Salalah, Oman. ©Tanja Cotoaga

ANNEX

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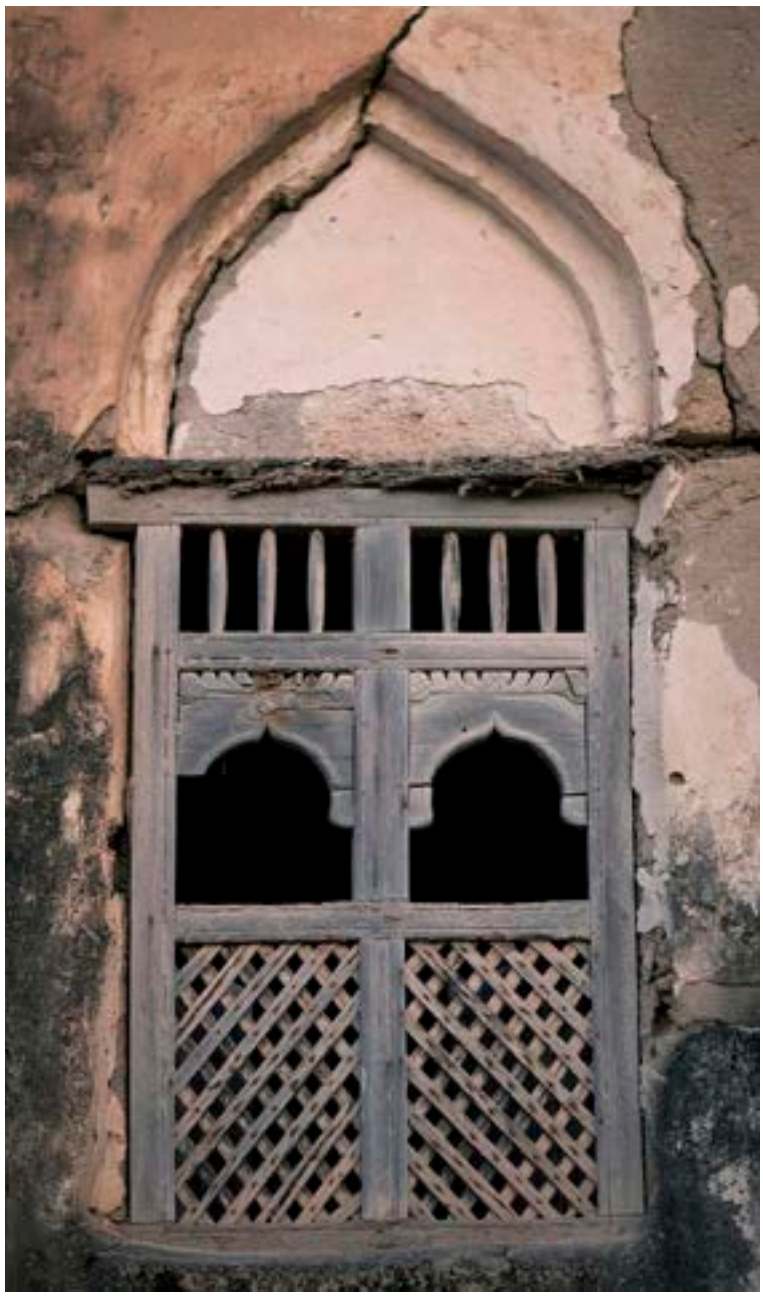


Fig.143:Old Window In Salalah, Oman. ©Eric Lafforgue

5F-11

BAHRAIN | Muharraq

Pearling Path, Conservation Plan of Al Muharraq

Muharraq, Bahrain



Fig.144: View of Muharraq Souq featuring street scenes. Source: https://www.expedia.co.kr/en/Muharraq-Souq-Muharraq.d5532486339903088876.Vacation-Attraction



INTRODUCTION

Muharraq, which was once the capital of Bahrain until 1932 and a significant center for pearling and trade, still retains its old Arab city charm with traditional architecture, narrow streets, and historic buildings, making it an important cultural and heritage site. It remains today one of the best preserved examples of early 19th century urban settlements on the Arabian Coast of the Gulf. As the once capital of the Pearling Economy in the Gulf region, Muharraq was also one of the largest and most developed cities, and its preservation was thus crucial in safeguarding a physical testimony of the ear of pearling that was central to many countries, and the main source of livelihood.

Muharraq was a single product economy until the demise of the pearling economy in the mid 1930s, and thus all of the built heritage of that era relates directly to the economy of pearling. However, like many historic sites across the world, old Muaharraq suffered from many problems: the change of the socio-demographic composition of the city, the neglect since the 1930s, the introduction of cars into a city that was planned for pedestrians and donkeys as modes of transportation, the harsh climate, etc.

The year 2010 constituted a turning point in the fate of Old Muharraq. The old town has benefited ever since from a rehabilitation project followed by a conservation plan. The first project, Pearl Road, aimed to rehabilitate the Muharraq UNESCO site consisting of three oyster beds, a seashore, and sixteen architectural properties, each representing an aspect of the pearling economy. A visitor pathway connects these properties and includes 18 public spaces that serve as meeting points. The pathway also addresses the need for green open spaces.

Currently, four site components and a visitor center are open to the public, along with two public squares.

The second project, the Conservation Plan of AlMuharraq, recognizes the need for a more sustainable and comprehensive conservation process that benefits the city and its inhabitants by creating a network of activities and developments connected to the local community.

Main instigator
Bahrain Authority for Culture & Antiquities (BACA)

Historic Center:
Old Muharraq

Targeted beneficiaries
- Local residents
- Tourists
- Rehabilitation of 16 heritage buildings
- Rehabilitation of 18 public spaces

Project duration
2010-ongoing

Project budget
USD 110,000,000

Progress status
Work in progress. Large parts of the Pearling Path have been successfully completed.

1. IDENTIFICATION

Size of the overall city
57.5 km^2 - 263,373 inhabitants (in 2020)

Size of the historic area
1.45 km^2 (project site area : 330,000 m^2) - 92,323 inhabitants

Main function of the city
Economic, historic

Main function of the historic area
Current : Heritage center, commercial hub.
Past : Trade center, pre-colonial capital, chief headquarters for the pearl-diving industry.

Heritage status
Old Muharraq contains a site inscribed on the UNESCO Work Heritage (Criterion iii) since 2012. It has a surface of 35,086.81 ha in addition to a buffer zone of 95,876.44 ha.

Additionally, the project inscribed properties of the site on the National Heritage List, to ensure their management and protection.

Income level of dwellers in the historic city
The historic city in mainly inhabitant by low-income workers.

Demographic profile
Muharraq is home to a large number of single men, who are mostly migrant workers earning low wages and sharing accommodations to save money to send back home. Although many wealthy families have moved away, some traditional families still reside there and take pride in their community. This project has attracted the interest of these families, who are investing in the revival of their family homes. The cultural venues established as part of this project primarily cater to the local audience, while also appealing to people interested in visual and performing arts.

The city is today made up in parts by Bahrainis, expatriate families mostly from Egypt, Yemen and South East Asia, and workers from South East Asia. The families tend to live in the residential neighborhoods where most of the Bahraini families also still reside and the workers are mostly concentrated around the Suq area in communal living facilities or “dorms” in crammed and ill-ventilated housing conditions. Many workers also live in old dilapidated houses spread across the city.

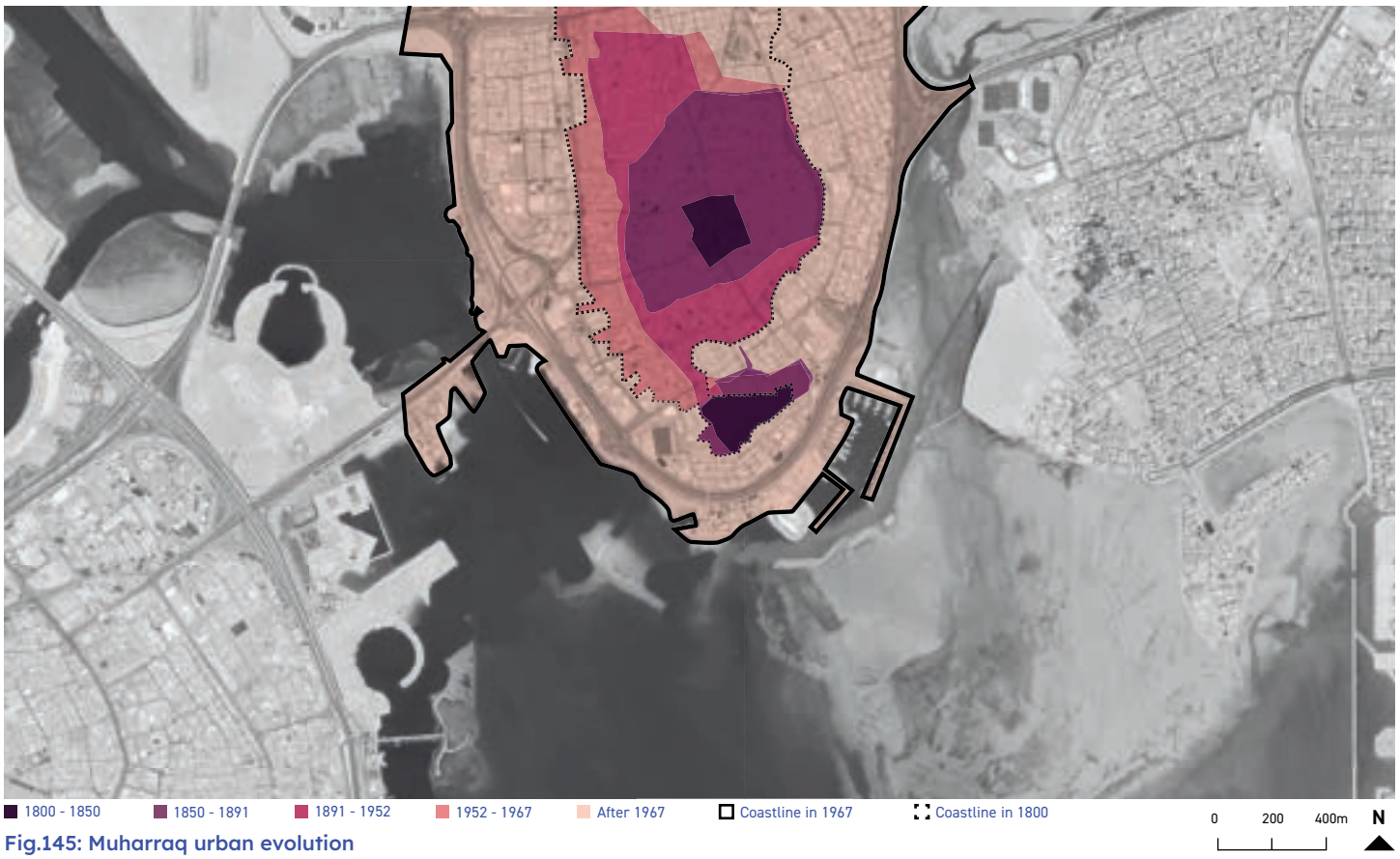


Fig.145: Muharraq urban evolution

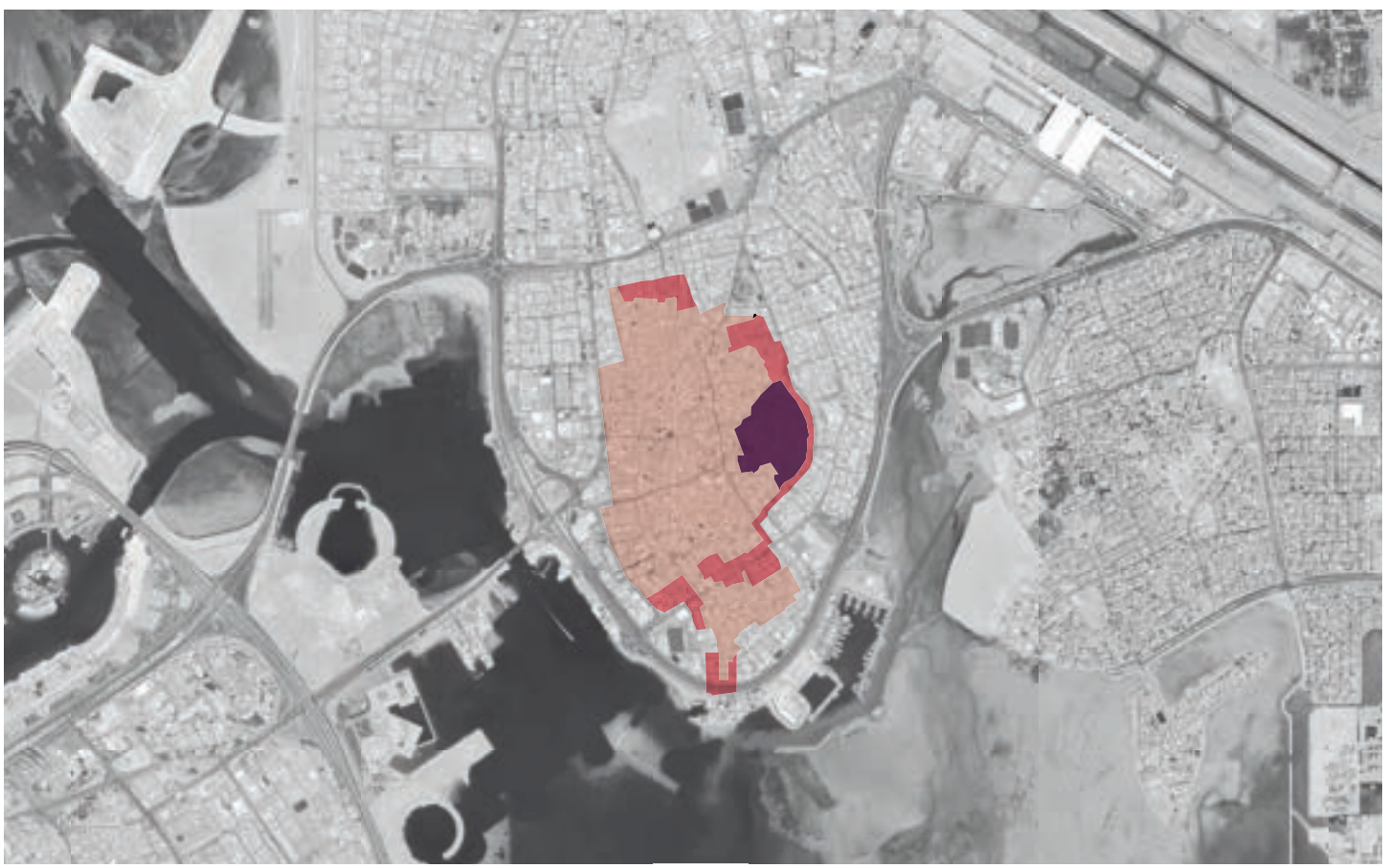


Fig.146: Muharraq intervention area

Families are the dominant household type with a portion of 75%. Bahrainis constitute the majority of residents at 46%, followed by non Arabs representing 35% of the overall population.

Land tenure
An average of 41% of the housing units in Muharraq were rented out, while close to 55% were owned by the inhabitants.

Housing role in the project
A few houses were selected for conservation along the path of the Pearl Road project, namely : Siadi House, Nukhidhah House, Murad House, Fakhro House, Al Alawi House, Al Jalahma House, Badr Ghulum House, Turabi House, and Al Ghus House.

Situation and urban evolution
The Pearling Path is situated in Muharraq, one of the islands of Bahrain. It is surrounded by shallow seas and is characterized by a very hot and humid climate in the summer and very mild and dry climate in the winter months.

Initially, Muharraq was a small town, but it gained importance when the ruling family settled there in 1810, as Bahrain was a significant center for pearling and trading between the Far East, India, and Europe. This had a significant impact on the culture and heritage of the country, particularly in Muharraq.

The primary research location was determined by overlaying the 1930 map onto the 2013 map of Muharraq. The 1930s marked a turning point in Muharraq's cultural and economic development, as the Pearling Era ended, new technologies emerged, and land reclamation around the island accelerated. Additional areas were included to supplement and provide context to the historical town in the present day.

2. STAKES

Diagnosis/Status
The buildings in Muharraq that hold historical significance possess a blend of both architectural and functional importance. The intricate architectural details and techniques, such as decorative plaster ornaments, hold immense artistic, aesthetic, and technological value. Furthermore, various urban properties harbor underground remains of built structures and activities dating back to the pearling era, which are of considerable archaeological value.

Beyond just their heritage context, the historic area and surrounding buffer zones hold great personal and local significance as they serve as the daily living environment for the local community. During the oil boom, Muharraq was seen as a symbol of poverty and primitiveness. As a result, the city underwent rapid modernization and urbanization which led to the deterioration of the old buildings and infrastructure, the invasion of modern buildings and commercial activities, and a change in the population profile due to the influx of foreign labor. This shift from tradition to modernity resulted in the loss of Muharraq's traditional built environment and spatial identity. Although some local communities decided to stay, a significant portion of the city's architectural heritage was misused by foreign laborers who occupied its abundant houses.

Challenges
The overarching challenge of the project was to connect Old Muharraq to the present and future of the city and its evolving needs, especially in terms of transportation and infrustructure, while revisiting its past identity intimately connected to an economy and a political status long lost. The drive behind the project was to tackle deficiencies in the delivery of community services, which have made al-Muharraq a relatively challenging environment for present-day Bahrainis.

Technically, the main challenges regarded buildings that were originally built to last 20-25 years at most, hence the materials used are not durable on the long term. Additionally, most buildings were built without any foundations, which rendered them extremely structurally vulnerable and sensitive to soil settlement. The other challenge had to do with rising humidity that, due to the lack of foundations, infiltrates the coral stone walls and affects plaster and solidity of the walls.

Objectives

The project aimed to preserve and adapt sixteen architectural properties, build two visitor centers and a pedestrian bridge to connect the seashore to the town, and improve the façade of the buildings through an urban design project.

The conservation plan has three overarching objectives:

- Preserving the historical significance of the town and enhancing its interpretation;
- Creating a better living environment for the locals and promoting community involvement in heritage and public space governance;
- Fostering a local economy based on cultural tourism.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Traditional Bahraini houses
Period : Before the 1940s
Occupants : Wealthy merchants

Description :

The traditional houses of Muharraq are coral buildings ranging between one and three floors.

They usually have a modular layout, with multiple rooms surrounding a large courtyard that is accessed









Fig.147: Right: Traditional buildings on commercial streets tend to have long shuttered balconies
Top left: Rehabilitation of Muharraq, Bahrain. © Aga Khan Trust for Culture / Cemal Emden
Bottom left: Traditional Muharraq woodwork. Bottom right: Traditional roofing materials of Muharraq architecture. The beams are usually from mangrove trees ©Seif El Rashidi

through a bent entrance. Most houses also have rooftop rooms, which are open on all sides and designed to capture wind for passive cooling. To improve the flow of air, houses may have wind towers and vents. The interior spaces are decorated with incised stucco panels, and upper-story rooms have colored glass windows. Some houses also have a portico before the entrance. If the house is on a commercial street, it may have a long-shuttered balcony covering the entire facade called Musharabiah. For houses that used to be on the seafront, the balconies are wide and expansive, and are usually not shuttered.

The design of houses in Bahrain was influenced by various factors such as societal rules, cultural beliefs, weather conditions, and the availability of building materials. Moreover, Bahrain's advantageous location facilitated the integration of construction technologies.

Evolution of housing typologies

- 1930s - 1940s : The morphology of houses was influenced by various factors such as social customs, cultural beliefs, weather conditions, and the availability of building materials and technology. Moreover, Bahrain's strategic location allowed the integration of construction technologies, materials, and labor that flowed from neighboring countries like Iran and India. One such example is the Badjir or wind towers, which were originally invented in Iran and were widely utilized in traditional Bahraini houses as a means of ensuring natural ventilation throughout the different areas.

- Post-1940s : The architecture of Muharraq houses after the 1940s has gone through an interesting transformation. Although the basic architectural style remains the same, the use of new construction materials such as concrete has resulted in the addition of some new features such as pilotis. Houses constructed during this period also feature claustra made of cast cement and other materials, Crittall metal windows, and terrazzo floors. Sometimes, steel I-beams are also used. Due to the fact that many of these items are produced on a large scale, the proportions of the houses change slightly. While some houses still retain the traditional interior stucco-work panels, others do not.

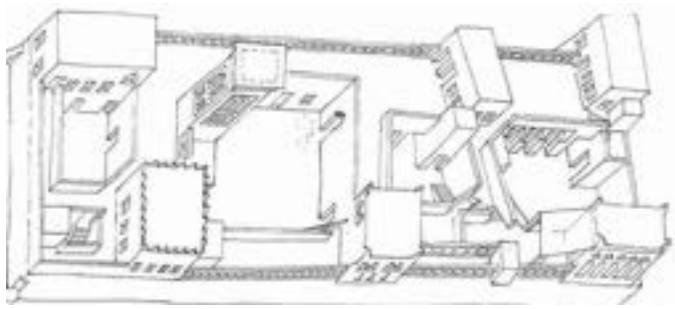


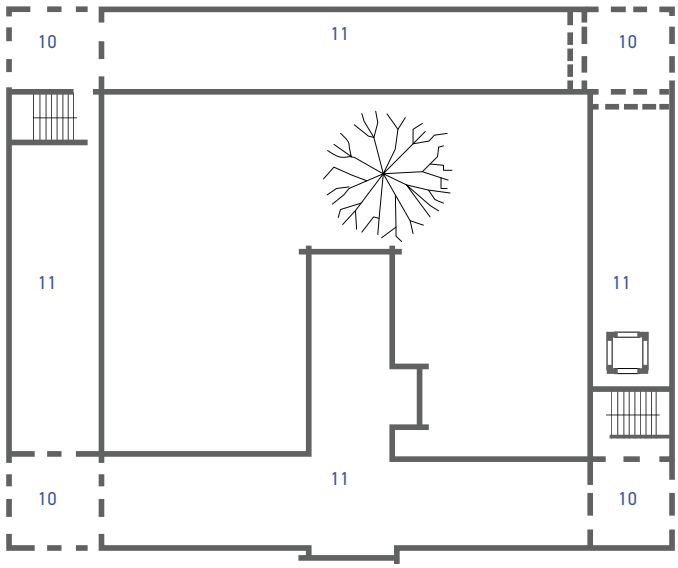
Fig.148: An axon showing the anatomy of the spatial composition, the unique architectural language and the visual features of Muharraq houses, the case of Sh. Salman House. ©Yarwood, 1988.



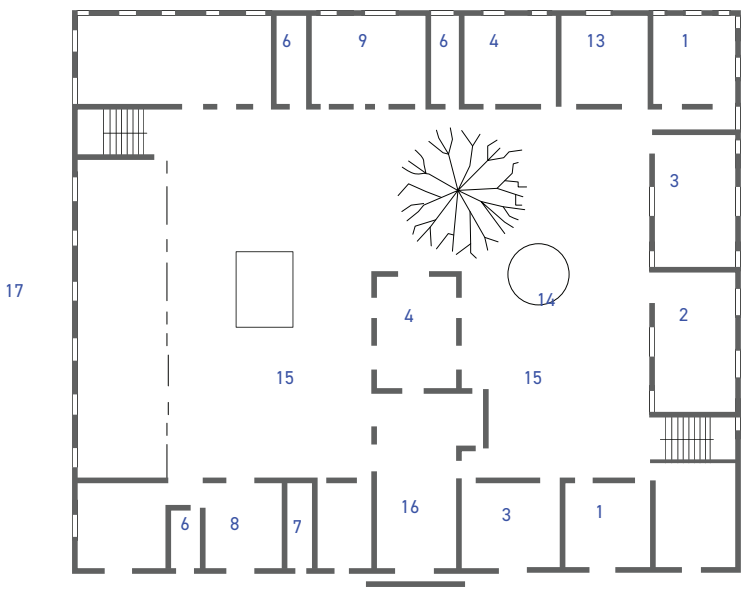
Fig.149: The unique architectural vocabulary of Muharraq's traditional architecture, Isa Bin Ali House. ©Ali A. Alraouf



Fig.150: The main courtyard of Al Zayed House covered with a modern skylight while preserving its traditional features. ©Ali A. Alraouf



Roof Plan



Ground Floor Plan

1- Al-Houjer
2- Al-Majlass
3 - Al-Mooktasr
4- Kitchen
5- WC
6- Storage
7- Al-mussala (praying room)
8- Canal room
9- Al-Leewan
10- Bedroom
11- Roof
12- Al-ktteea
13- Al-toowala
14- Al-Jeleep
15- Courtyard
16- Dehreez
17- Al-Toofa
18-Maddabese
19-Al-Saabt
20- Al-Saria
21- Stairs
22- Keshteel

0 2 4m

Fig.151: Typical space distribution and domestic program in a Bahraini traditional house (Source: Al-Oraifi, 1978).

Spacial distribution :
The space distribution can be appreciated through the typical plan in figure 146 showcasing the domestic program in a Bahraini traditional house organized around a courtyard.

3.2. Condition of the historic housing units before rehabilitation

The houses in the project area are mostly occupied by a large number of people for very low rents. They are in critical condition and are usually unsanitary and structurally unsafe. A small number of homes are abandoned.

3.3. Rehabilitation know-how, materials, and material sourcing

Only some crafts-related know-how remained with some active artisans in the city namely in carpentry, gypsum carving, and plaster application.
General know-how on sustainable construction methods have unfortunately disappeared.

For new constructions, exposed reinforced concrete was used, occasionally tinted to give it a warmer tone. For historic buildings, priority was given to materials replicating the original ones as accurately as possible. The loss of local know-how was bypassed by involving local, regional, and international experts in the required fields and by setting up a small testing and research department as part of the Pearling Path project.

In both projects, the main materials used were:
- Wood: mainly danchal wood for the beams and teak or redwood for the doors and windows- they're were imported from India, but this was always the case as Bahrain doesn't have any forests;
- Gypsum plaster: traditionally made locally but the materials have either been depleted or their composition has changed because of man-made environmental changes namely land reclamation. Today the sand is mainly imported from Saudi, the plaster from Italy or Spain;
- Bamboo mats: imported from India as they were traditionally;
- Coral Stones: sourced locally from debris of demolished houses (coral is protected today in Bahrain and thus its extraction is forbidden;

Many building materials are imported due to the remarkably small size of the country, and its strategic location and mercantile culture. Even glass panes are imported, for example.
- For structures: Reinforced concrete was used for most modern constructions, while wooden beams were used for the oldest houses, sometimes augmented with I-beams in 20th-century structures.
- For localised repair: Traditional building materials were used whenever possible. Pre-rusted steel columns have been used for additional support when necessary.
- At streetscape level, infill materials included interlocking cement blocks, and terrazzo for street furniture, surfaces, and way-finding lighting fixtures. For larger-scale interventions reinforced concrete is used frequently.
- Finishes: For conservation work, painstaking research has been undertaken to analyse the components of historical finishes, and to recreate these. Also in conservation work, original paint has been stabilised and cleaned, rather than repainted. (This has a significant bearing on the visual aspects of historic buildings, which have not lost the sense of historical integrity.)

4. MECHANISMS OF THE PROJECT

4.1. Process

The conservation plan of Old Muaharraq went through two steps :

a. Conducting a comprehensive analysis and survey to identify the heritage structures and gather all relevant

historical and socio-demographic data.

b. Suggesting a series of approaches and corresponding measures for preserving the area, along with the primary instruments needed to put them into practice. These may include legal safeguards, urban development plans, and government programs.

The survey was conducted at three levels: Study Area 1: full survey using the survey sheet attached in the Tools chapter, Study Area 2: survey of levels of significance, heights, uses, materials, condition and age, Study Area 3: survey of levels of significance only.

4.2. Partners

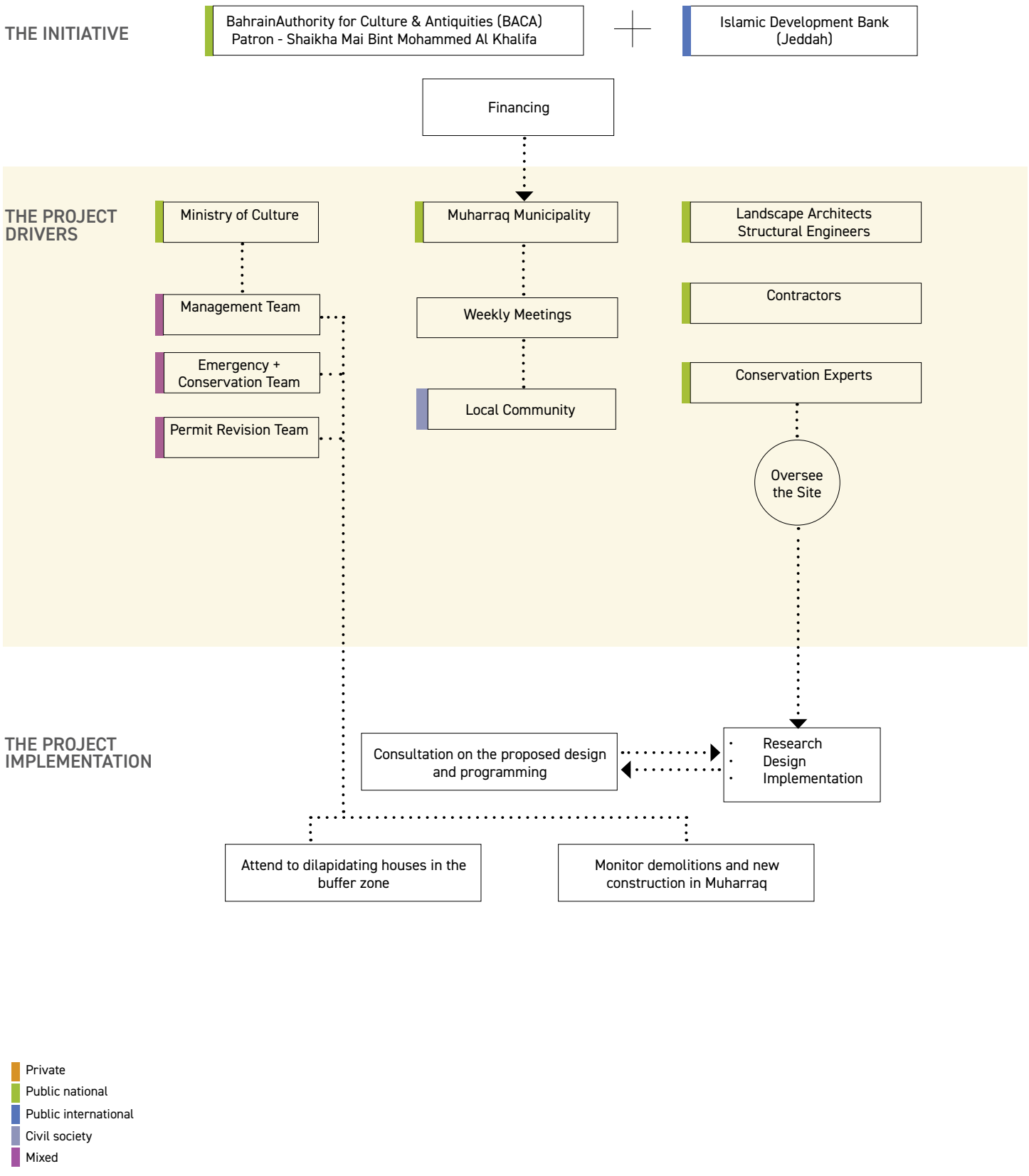
Experts
The experts involved in this project came from diverse backgrounds.
Architectural competitions related to the commissioning of major new projects have attracted talented professionals from around the world.
The expert team was composed of:
Architects, Architect restorers & heritage experts, Structural engineers, Micro-credit financing expert, Legal team, Beneficiary outreach team, masons and workers, Monitoring & Evaluation Unit.

Public stakeholders
Bahrain Authority for Culture & Antiquities, under the Ministry of Culture, the main commissioner of the project;
Ministry of Works, who is overseeing part of the improvement of the public realm;
Ministry of Housing, who was concerned with pilot projects to reintroduce subsidized housing in the city and is currently working on a wider plan to introduce more housing in Old Muharraq;
Ministry of Interior, through the Coast Guard Base who made public and accessible part of the Muharraq coast that was previously private;
Muharraq Municipality.



Fig.152: The severe deterioration of traditional architecture in old houses of Muharraq ©Bahrain Ministry of Culture.

Fig.153: Organizational chart



Newly created institutional structures
A special unit was created within the Ministry of Culture to manage the project. Currently, the management model of the project is implemented by a specially created management team within the BACA to oversee the site, an emergency conservation team was created to attend to dilapidating houses in the same buffer zone, and a permit review team was created to monitor demolitions and new constructions in Muharraq.

4.3. Organization and selection

a. Organization
The project's organization is shown on figure 149.

b. Selection process
The buildings were selected within the buffer zone along the old Pearl Path UNESCO-inscribe site, which stretches from the seashore with its oyster beds to the Siyadi Mosque.

4.4. Tools

a. Implementation tools

Survey tools
See survey sheet (Fig. 151).

Stakeholder engagement program
None

Community engagement
The local population was involved in consultations on the proposed designs and programming of the project. The project team held weekly sessions in different majlises in the city in order to establish close consultation with the local community.

Various community-centered initiatives have been put in place to address the lack of community facilities for children through the establishment of library and play areas. Additionally, new neighborhood squares have been constructed with the aim of catering to families and providing a space for children to play and spend their leisure time.

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

Laws and decrees
The legal texts that allowed the project to take place were the existing laws related to construction projects enhanced by the UNESCO World Heritage status of the site.
Additionally, the law allows the state to solicit the owner to renovate their house. If the house is abandoned and isn't registered, the state then interferes directly.

Conservation masterplan
See figure 150 for thhe conservation and adaptive reuse masterplan.

4.5. Financing

Total amount : USD 92,000,000
Cost of land: USD 26,000,000

Source : The financing source is mainly public through the Housing Bank of the Ministry of Housing.
It covered the costs of the management and execution team, the research for the management and conservation plan, all the consultancy costs and the execution of the projects.
Islamic Development Bank, Jeddah

Proposed Implementation Period : 33 months (Feb 2022 - Dec 2024)

Grant Recipient : Bahrain Authority of Culture and Antiquities (BACA)

Breakdown :
The public financing accounted for approximately 70% of the costs and the private sector for around 30%.



Fig.154: Conservation and adaptive reuse masterplan ©Bahrain Ministry of Culture.


15


4


14


5


13


PS


12


2


10


6


9


7

Reference No.: MH- 213-

Survey and Documentation of Old Muharraq

Block: 213	Street:	Building No.:
	Street:	Building No.:
Date : 17 02 2014	Surveyor:	Plot no:
Current state: ☐ Construction	☐ Demolition	☐ Restoration ☐ No activity

Property ownership and uses

Ownership: ☐ Rented	☐ Partly rented	
Uses:		general remarks:
Residential	Commercial	
Residential and commer	Cultural or communal	
Residential and offices	Public administration	
Residential and other	Religious	
Educational	Health	

Building Details:

Typology :	☐ House	☐ Shop		
	☐ Apartment Building	☐ Amara/Storage	☐ Informal Shacks	
	☐ Mosque	☐ Majlis	☐ Others	
Estimated Date of Construction:	☐ Before 1950's	☐ 1950's to 1997	☐ After 1998	
State of occupancy:	☐ Occupied	☐ Not occupied		
Prevailing construction system:	☐ Concrete	☐ Stone and wood	☐ Mixed	☐ Other
Floor number:	☐ 1	☐ 2 ☐ 3 ☐ 4	☐ more than 4	
Occupants:	☐ Family	☐ Bachelors	☐ Families and Bachelors	
Nationality of occupants:	☐ Bahraini	☐ Non Bahraini arab	☐ Non arabs	☐ Mix
Condition of the building:	☐ Good	☐ Ordinary	☐ Bad	☐ Ruin
Heritage significance:	☐ Architectural	☐ Religious	☐ Cultural	☐ No significance

Buildings of Architectural significance:

Building entered	☐ yes	☐ no (information incomplete)	☐ no but visit is not needed	
Level of architectural significance	☐ Very High	☐ High	☐ Medium	☐ Low
Additions and or modifications	☐ None	☐ Compatible	☐ Light incompatible	☐ Heavy incompatible
External incompatible services	☐ yes		☐ no	
Significant architectural elements:				
☐ Courtyard, with palm-tree	☐ Windows wooden traditional		☐ Arches	☐ Badgeer
☐ Courtyard, without palm-tree	☐ Windows metallic (50's)		☐ Hamaim	☐ Doors wooden
☐ Wooden Screen (mashrabiya)	☐ Stone Walls		☐ Merzam	☐ Niches
☐ Danshal ceiling	☐ Balcony/ Agassy		☐ Wooden Ceiling (not danshal)	

Buildings with no Architectural significance:

External incompatible services	☐ yes	☐ no	
Façade general appearance	☐ compatible	☐ slightly incompatible	☐ very incompatible

Conclusions:

Permitted intervention:	Conservation	Demolition
significant bldg	Repair	Partial
	Repair and removal of incompatible additions	Total
	Restoration	
	Rehabilitation	
	Partial reconstruction	
non significant bldg	Repair	Demolition
	Repair and removal of incompatible services	Partial
	Light modifications needed	Total
	Heavy modifications needed	

Fig.155: Survey sheet sample ©Bahrain Ministry of Culture.

USD 40,000,000 came from a loan from an Islamic bank.
Some beneficiaries, namely the owners of some of the properties, contributed to part of the restoration of their homes. Their contribution in some cases accounted for 40% of the costs.

Financing sufficiency :
The initial budget was more or less sufficient to cover the needs set out in the first iteration of the project, but more needs became apparent as the project evolved.
As a result, some parts of the project had to be descoped and reported to the second phase of the project, namely a component called the Facade Upgrade.

Maintenance financing :
No maintenance budget was accounted for.

Rehousing financing :
Rehousing was not included in the scope of the project.

4.6 Timeline
See figure 152 for the the timeline of the project.

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials
The main improvement affected the building systems themselves, and included introducing hollow cross ventilated floors with natural ventilation that allowed for evacuation of any humidity that might affect the walls, a reccurent issue observed in the buildings. The second regarded the structural consolidation of the walls, which was done either by a method of grouting or by introducing a solid roof structure above the traditional roof.
The material composition of the plaster was also improved to allow for the material to be more breathable and to evacuate any humidity and salinity that would otherwise be trapped.

b. Legislation changes
The project kickstarted a change in the urban regulations of Bahrain, allowing for a special designation of zoning for Historic Cities, not only in Muharraq but in other historic cities across the country as well.

On the building permit level, one of the primary planning strategies of the project was to persuade applicants who intend to demolish their properties to restore them instead. An effective policy implemented in this regard is a requirement that any development plan should preserve at least one element from the original building on the site, to prevent complete erasure of the past. Additionally, new development

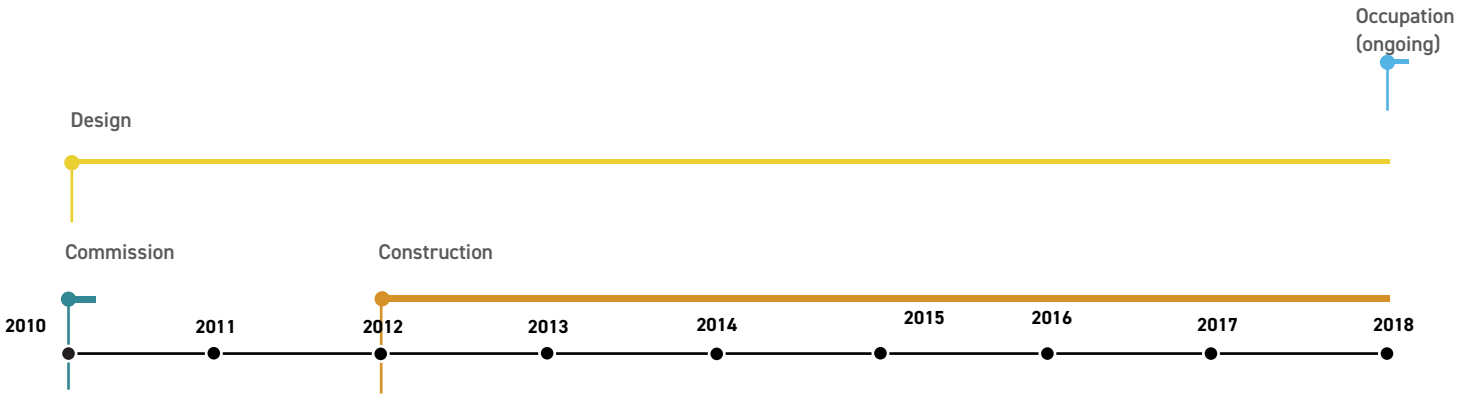


Fig.156: Timeline

plans must consider the original street line, massing, and plot dimensions.

c. Programs post-rehabilitation
Residential, cultural, commercial, public spaces.

The rehabilitated site holds various uses, ranging from everyday community use for the public spaces, to commercial use for the buildings in the souq, many of which kept their original function, to cultural activities and adaptive uses for many of the restored houses, to tourism on the route itself, including the visitor centers.

Given the high demand for parking space, the project acquired large vacant plots in the neighborhood for the construction of municipal multi-story car parks to complement a privately owned one that was built a few years ago.

The project was faced with the difficult task of transforming domestic spaces into public facilities. The project has done this successfully, creating auditoria in the heart of the historic city where the public can interact with a wide range of events and activities that would have otherwise been unthinkable.

The public squares were created on land where old houses once stood but were later demolished. Instead of reconstructing them, they were replaced by squares to cater to the needs of a modern urban environment that lacks adequate green spaces and playgrounds for children.

d. Economic impact

Employment

During Project:
Direct employment that the project created was of about 15 people employed directly by the Bahrain Authority for Culture & Antiquities to oversee the project.
The indirect employment through the contractors and other parties involved in the project amounts to 250 people.

The main economies that were reinvigorated are:
- Construction works in restoration
- Construction works in the public realm
- Local craftsmanship
- Economic activities and shops around the souq
- The real estate market

Post project:
The project has not yet been completed but the estimated direct employment of the management of the site is of 25 people.

Land Value
The project has greatly impacted the land value, which doubled in others, and increased by three-fold in others.

d. Social impact
By improving mobility within the city, increasing the public spaces and improving the hygiene and safety of the public realm, the project has improved the inclusivity of Old Muharraq to all vulnerable social categories.

Gentrification mitigation
At the start of the project, the majority of the land tenure was private, with around 10-15% of the lands publicly owned. One of the project's main priorities at its inception was to avoid, whenever possible, any expropriation of land tenure from private to public ownership which would significantly alter the city's demographics. Hence, the rehabilitated houses remained in private ownership and an agreement was signed for the rehabilitation of the houses by BACA and their adaprive use.

It is also worth noting that the financing was on the basis of a long-term loan, the house only becomes the ownership of the tenant once the loan has been paid off.

Education
By introducing an urban rehabilitation model that was based on preserving as much as possible of the original urban and architectural fabric instead of introducing a tabula rasa approach or one based on

expropriation on the site, the project helped educate the local community on a more sensitive approach to conservation. one that although slower in its pace was able to introduce new spaces in the city without altering its inherent historical spirit.

The awarding of the Aga Khan Award for Architecture in 2019, was very instrumental in making the approach of the project more widely known to a regional and international audience and celebrating a more sensitive approach to urban rehabilitation that preserves as much as possible of the old, while still introducing contemporary architecture to a historic urban fabric.

Environmental impact
Pearl Route :
The project has taken into consideration the protection of the natural environment by preserving the remaining oyster beds, the remaining stretch of beach, and the trees that grow within the neighborhood's houses. Additionally, the Archaeologies of Green Pavilion promotes the cultivation of indigenous species to remind Bahrainis of their traditional flora, which was once crucial to their diet. This is particularly relevant for young Bahrainis who may not have experienced a time when indigenous fruit-bearing trees and shrubs played a significant role in the local diet.

Pearling Path :
The site is mainly situated on land surrounding and surrounded by the sea. The coastline which was included in the project was safeguarded and is registered as a natural coastline within the World Heritage Site.

The rehabilitation project took the following sustainability measures:
- Introduction of passive cooling whenever possible;
- Introduction of naturally shaded public spaces in the city that have created micro-climates through the dense canopy of the trees;
- Preservation of historic structures instead of building anew;
- Use of local materials in the conservation;
- Preservation of courtyards as a naturally cooling system.

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints
The project was not face with noteworhthy financial obstacles.

b. Legislative challenges
The main legislative challenges had to do with the fact that there were no special urban regulations or zoning laws that took into account the historic nature of the urban area. The historic city of Muharraq had the same zoning and urban regulations as recent contemporary housing developments. There was therefore little legislature that enabled the protection of historic buildings and the historic city.

c. Tenure challenges
Although it was a significant factor in the integrity of the site, the fact that most of the properties were privately owned considerably slowed down the project, as separate agreements had to be made for each property. This was especially tedious on one of the project components called the “Facade Upgrade” where 350 facades along the Pearling Path were restored and upgraded, and 350 individual agreements

had to be signed ahead of the works.

ANNEX

a. Contact

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b. Bibliography

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Fig.157: Historic District of Muharraq. Flickr ©courthouselover.

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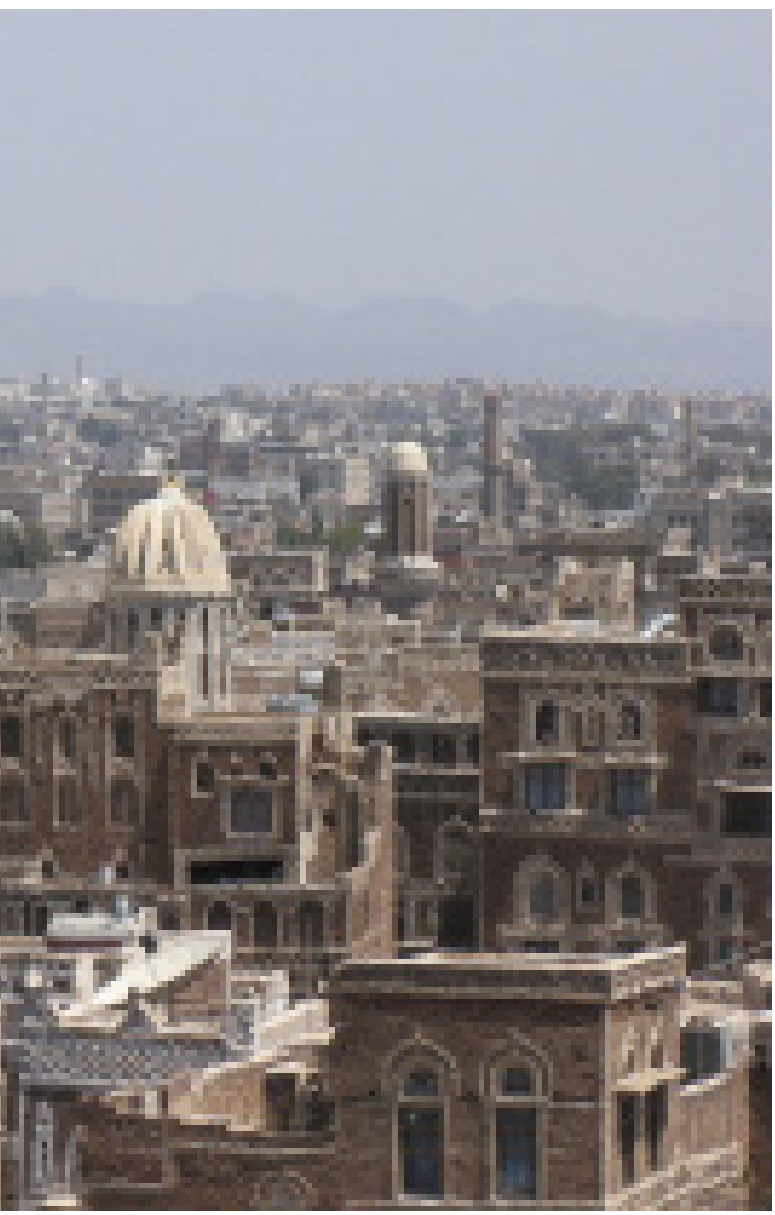
YEMEN | Cash4Work

Cask for Work Project: Improving Livelihoods Opportunities for Urban Youth in Yemen

Saan'a, Shibam, Aden and Zabid, Yemen



Fig.158: Panorama of the old city of Sana'a ©Sebastiano Mangione



INTRODUCTION

The architectural heritage of Yemen, which includes many historic cities and villages across the country, faces a range of challenges, aggravated by the recent years of civil war.

In partnership with the European Union and UNESCO, the Social Fund for Development (SFD) has launched the "Cash for Work Project: Improving Livelihoods Opportunities for Urban Youth in Yemen" to provide emergency relief assistance, safeguard heritage, and foster sustainable cultural development.

The project objectives are twofold:

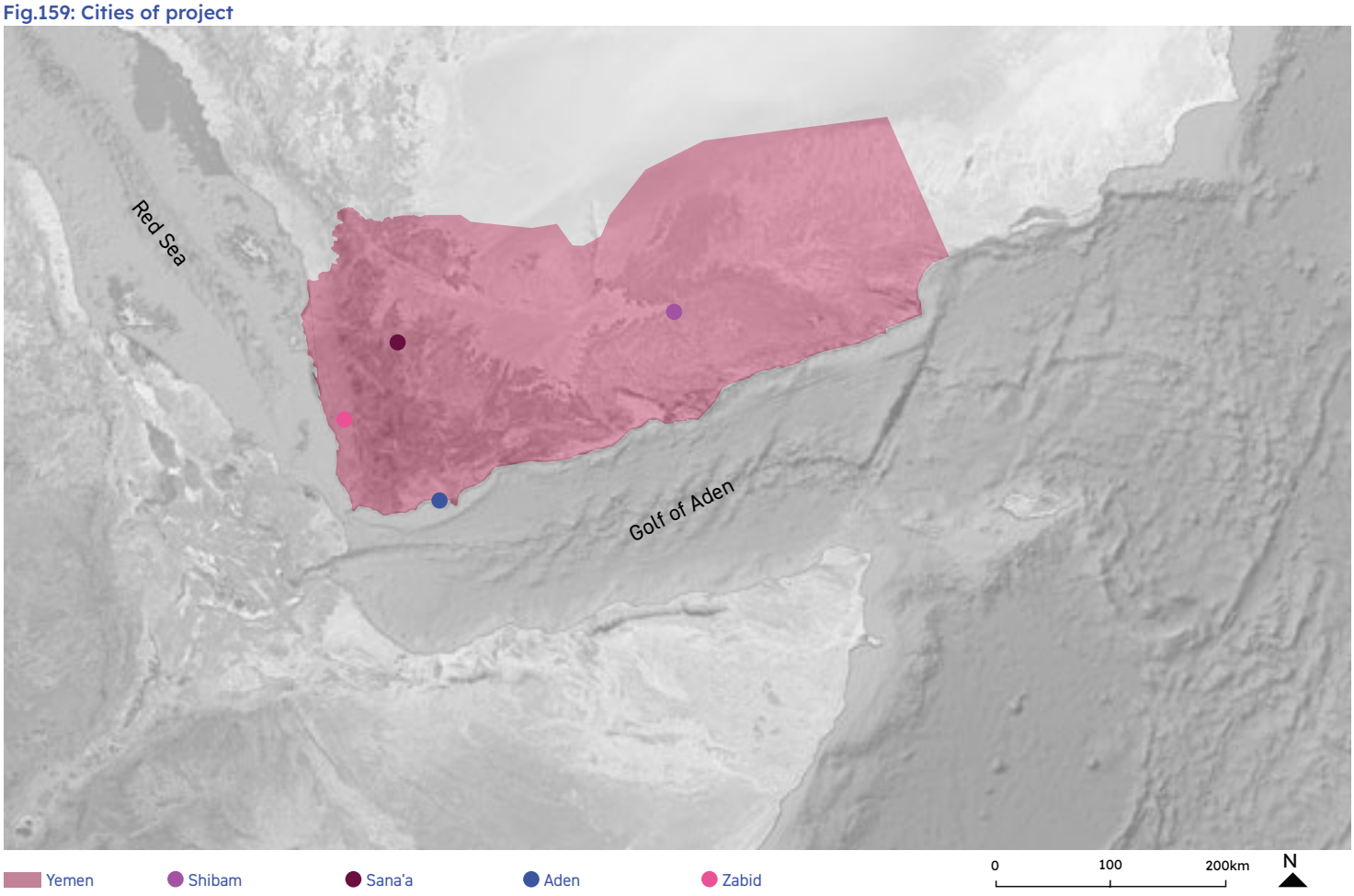
1. Provide economic relief to local communities through cash-for-work programs that distribute cash wages to needy youth engaged in urban rehabilitation in four historical cities (Sana'a, Shibam, Zabid, and Aden);
2. Support cultural development initiatives that build the capacity of civil society organizations and improve professional development opportunities for young artists and cultural workers.

Sana'a, Zabid, and Shibam are Yemen's three World Heritage Sites included in the project. They represent respectively three distinct cultural and geographical regions: the highlands, the coastal Tihama, and the desert valley of Hadramaut. The port city of Aden, which is not a UNESCO World Heritage Site, was also included in the project because of its significance as a lively urban center for numerous ethnic groups as well as a major maritime hub connecting Africa, Asia and the Middle East.

Main instigator
Social Fund for Development (SFD)

Historic Centers
Old City of Sana'a, Walled City of Shibam, Historic center of Zabid, Aden's Crater and Al-Tawahi District.

Fig.159: Cities of project



Targeted beneficiaries
Youth from local communities were the primary beneficiaries of this project throughout the four cities. The number of beneficiaries exceeded the initial target, reaching 4,996, including 565 women. The cash-based urban rehabilitation focused on 427 historic sites and approximately 400 households.

Project duration
36 months - September 2019 until August 2022

Project budget
Funded by the European Union and SFD own contributions, to tune over $5 million USD and more funding became available with the success of the project and the huge need of Yemen.

Land tenure
All houses rehabilited were 100% privatly owned. However, other interventions of the Cash for Work Project targeted public buildings.

Objectives
- Increase livelihood opportunities for young Yemenis and appreciation of Yemeni heritage through cash-for-work restoration of historic urban areas.
- Support long-term, community-led youth programming in the arts and the cultural sector;
- Improve heritage management capacities among government and civil society stakeholders;
- An initial target of 500,000 working cash-for-work days, 4,000 urban youth employed and 8,000 heritage buildings and sites assessed.

Housing role in the project
Housing held a significant position within the project, where one of its primary objectives was the restoration and enhancement of privately-owned residences in the four historic cities. The program was designed to rescue the residential houses, that have been damaged or collapsed by the recent crisis, that have affected the local community who are still living in the city.

1. MECHANISMS OF THE PROJECT

1.1. Process

Project management
SFD Specialist's ensured proper management and monitoring. Close monitoring gradually improves implementation capacity and standards, enabling proper maintenance and execution by local authorities and stakeholders. SFD has proven effective, enabling robust site management in a restricted time frame and various challenges. The project was executed in collaboration with UNESCO and local stakeholders. The nomination and selection process of the houses involved cooperative efforts. The final submissions were forwarded to the implementing body, the Social Fund for Development.

Phase 1: Preparation

Housing nomination
This phase was carried out by the General Organization for the Conservation of Historical Cities in Yemen, (GOPHCY), which formed a committee to select buildings composed of the local authority and representatives of civil society. this committee was in charge of proposing the private house nomination after a comprehensive analysis.

Technical studies
The preparation of the technical studies for the intervention included:

- Architectural documentation and photographic documentation.
- Damage assessment .
- Suggested structural treatments .
- Bill of quantities and specifications.
- Studies review and approved

Phase 2: Pre-implementation

- Financial arrangements between financiers and executors.
- Nomination of the implementation team, the technical and administrative supervisor.
- Registration of the female skilled and unskilled workers wishing to work in the project's labor registration system.

Phase 3: Environmental and social management plans
The project was implemented in partnership with UNESCO and the local stakeholders, to determine the houses nomination and final selection will be submitted to the executing agency, the Social Fund for Development.
The nomination phase is carried out by the General Authority for Historic Cities, which forms a committee to select buildings composed of (the authority's office, the local authority and representatives of civil society) The project focused primarily on occupied buildings directly affected by the conflict, including historic private houses and public and residential spaces. GOPHCY proposes the private house nomination after a comprehensive analysis.
Preparing technical studies for the intervention, including:

- Damage assessment
- Architectural documentation and photographic documentation
- Damage assessment
- Suggested structural treatments
- Bill of quantities and specifications
- Studies review and approved
- SFD Specialist's ensured proper management and monitoring

Close monitoring gradually improves implementation capacity and standards, enabling proper maintenance and execution by local authorities and stakeholders. SFD has proven effective, enabling robust site management in a restricted time frame and various challenges.
Financial arrangements before starting work between financiers and executors. It begins with the nomination of the implementation team, the technical and administrative supervisor. Prior the implementation, community awarness programs are held on the implementation mechanism, time, and the implementation system. Besides, awareness on the complaint channels for workers. Acquire work materials according to procedures, mechanisms,

security and safety tools before starting for all projects.
Preparations before starting the registration of the female worker wishing to work in the project's labor registration system, in order for the unskilled and skilled female to get an opportunity.
Preparing environmental and social management plans
Beginning the stages of implementation from signing contracts with the beneficiaries and agreeing to start implementing and above the terms of the concluded agreement and clarifying the terms of intervention.
Before entering the building, sign a contract on the commencement of work, mentioning the terms of intervention with the owner.
Implementation work commences according to the working hours that are determined to the site nature of each geographical area.
An important element in the project was securing occupational health and safety standards. To this end the SFD trained workers skilled / unskilled, consultant on the health and safety procedures and practices. This included a robust monitoring system to identify compliance and hazards and daily recording of any safety incidents. Moreover, on the commencement of work every morning, a toolbox session is held which includes a safety checklist for every project site (for every house).

- Community awareness programs were held on the implementation mechanism, time, and system, and awareness on the complaint channels for workers
- Acquiring work materials according to procedures, mechanisms, security and safety tools.
- Contract signature with the beneficiaries on implementation start date and the terms of agreement, while clarifying the terms of intervention.
- Implementation work commences according to the working hours that are determined to the site nature of each geographical area.
- Dissemination of occupational health and safety standards through workers training program, this included a robust monitoring system to identify compliance and hazards and daily recording of any safety incidents.

Phase 4: Implementation

Toolbox session including a safety checklist for every project site on a daily basis.

- Opening few houses gradually in relation to the site distance and workers distrubution,
- facilitate materials delivery in the narrow routs ensure the houses works completed per the project timeline.
- Also, consider the Intervention during the holy month of Ramadan not accepted by the local community (workers and households). Accordingly, some works might bring forward or postponed after Eid holiday.
- at last consideration of any climatic change during the implementation and keep the emergency team alert.

- Toolbox session including a safety checklist for every project site.

1.2. Partners

Experts
SFD special trained architects who have worked with leading international experts, Ronald Lewcock, Issam Awwad, and Renzo Ravagnan. Coordinating all this effort SFD works closely with master builder's, especially in training the youth unskilled workers.

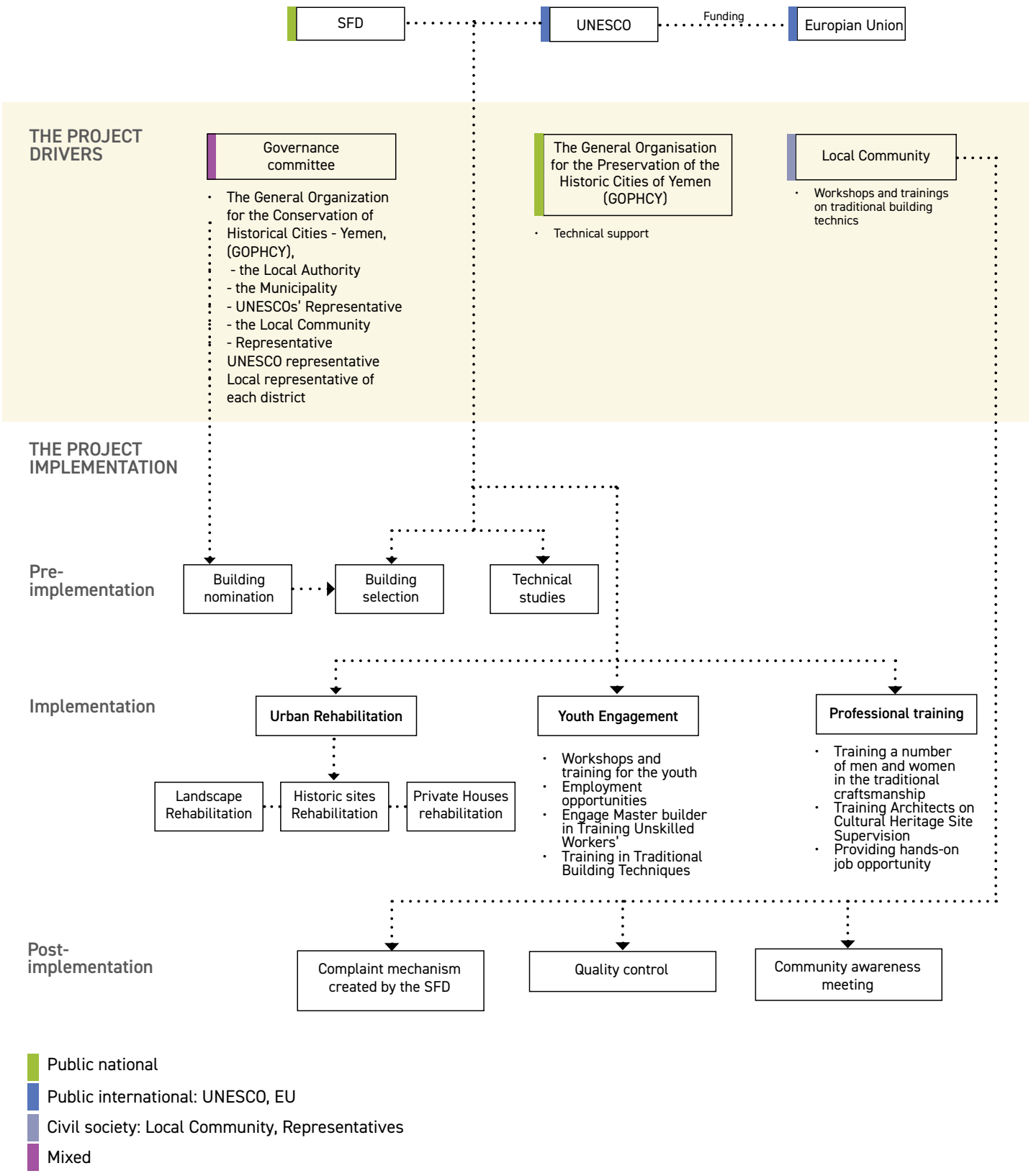
Public stakeholders
The General Organization for the Conservation of Historical Cities - Yemen, (GOPHCY), The General Organization of Antiquity and Museums (GOAM), the Local Municipality, The Local Authorities and the Local Community.

Newly created institutional structures
Center of Architectural Training and Studies (CATS) and public Universities in Sana'a and Aden

1.3. Organization

The project's organization is shown on the following flowchart (Fig. 155).

Fig.160: Organizational chart



1.4. Tools

a. Implementation tools

Survey tools
There are various tools used at each city depending on the available mapping information of the city such as GIS data, Kobo data entry, and field visits for collection of damage data. All information was collected and analyzed at the site offices. At last, the collected data was assembled in a final report for each city to provide baseline data and update local rehabilitation plans. In 2021, the SFD completed the damage assessment for 2981 buildings in Sana'a in the same year, the same survey was conducted in the entire city of Zabid, covering 12,727 buildings, among which 3,907 of the buildings proved to be damaged. Additionally, a survey of the marginalized habitant houses, reached 192 houses, of which 161 were inside the cityscape, and the rest 31 houses were outside the historical city. For Aden, a survey of 2999 historical buildings was conducted.

Stakeholder engagement
An awareness campaign and training to rescue the cultural monument during a crisis this event was organized with the presence of various local authorities, including GOPHCY, GOAM, civil defense, governmental agencies, tourism security and other community organizations. This training aimed to;

1. gather all the decision-makers and introduce methods of the rapid rescue of cultural heritage monuments during disasters;
2. re-organize the roles and responsibilities of each party for an effective response;
3. increase the qualified participants in this field, also the relevant bodies to intervene in the cultural heritage sites during crises and disasters.

Community engagement
At the early stage of the project was through raising awareness to enhance their knowledge of the project objectives, to strengthen their the local communities ownership and the houses selection criteria via various approaches as such school campaigns, brochures distribution at each city.

Capacity building
Cultural heritage professionals benefited from capacity-building and trainings in the related field as a preparatory stage for the youth architects with on-job training of, e.g. Damage assessment survey training, baseline data reporting, heritage site supervision. Overall, an upgrade on the recent techniques and practices , especially obligatory ones for the site safety and regulations.
b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

Grievance mechanism
As part of an ongoing move to improve accountability, the SFD has developed a feedback and complaint-handling mechanism (CHM) to manage, respond to, and monitor issues within its programs. The experience accumulated in the SFD in responding and interacting with all partners and beneficiaries enabled it to improve and adapt the information exchange, with a focus on institutionalizing the experience in dealing with complaints and disseminating it within management information systems.
The system is designed to receive all types of complaints in the social, financial, health, occupational safety, and environmental fields.
Several channels have been created to facilitate receiving complaints:

- The complaints box on the sub-project website.
- Tel: 8009800
- Fax: 00967 7 221238
- E-mail:chm_hag@sfd-yemen.org
- Face-to-face by visiting the Social Fund for Development office.
- Text message: 771788964
- Social media

The complaints box are opened at a formal meeting under the supervision of the local community committee weekly.

Owner's commitment
First, a community awareness program about the intended implementation was conducted, with collaboration of the stakeholders committee in charge of the house's selection. Then, the users are invited to

review and approve the intervention plan and permit for implementation.

Environmental and social tools

Many measures were implementated to mitigate the depletion of natural resources; Minimal intervention, re-use of the original materials, and recycling in some cases.

The Cash-For-Work project targeted the most needy and vulnerable in the community through a number of approaches. The first one, called "self targeting", consists of setting a daily wage rate slightly below the market rate to attract the most needy. Still, because poverty in Yemen has reached 80%, demand was higher than the needed labor for the project. Given the high turnout, priority was given to single-headed households, women-headed households, and households with members with disabilities. Children were particularly protected from labor exploitation, and priority was given to female architects or craftswomen.

4.5. Financing

Total amount : USD 10 million

Source :
The European Union, UNESCO, SFD funds

Proposed Implementation Period :
36 months (September 2019 - August 2022)

Grant Recipient :
The Social Fund for Development

Financing sufficiency :
There was a need to increase financing as some houses revealed unseen works during intervention that were critical and required immediate intervention to improve the building's condition.

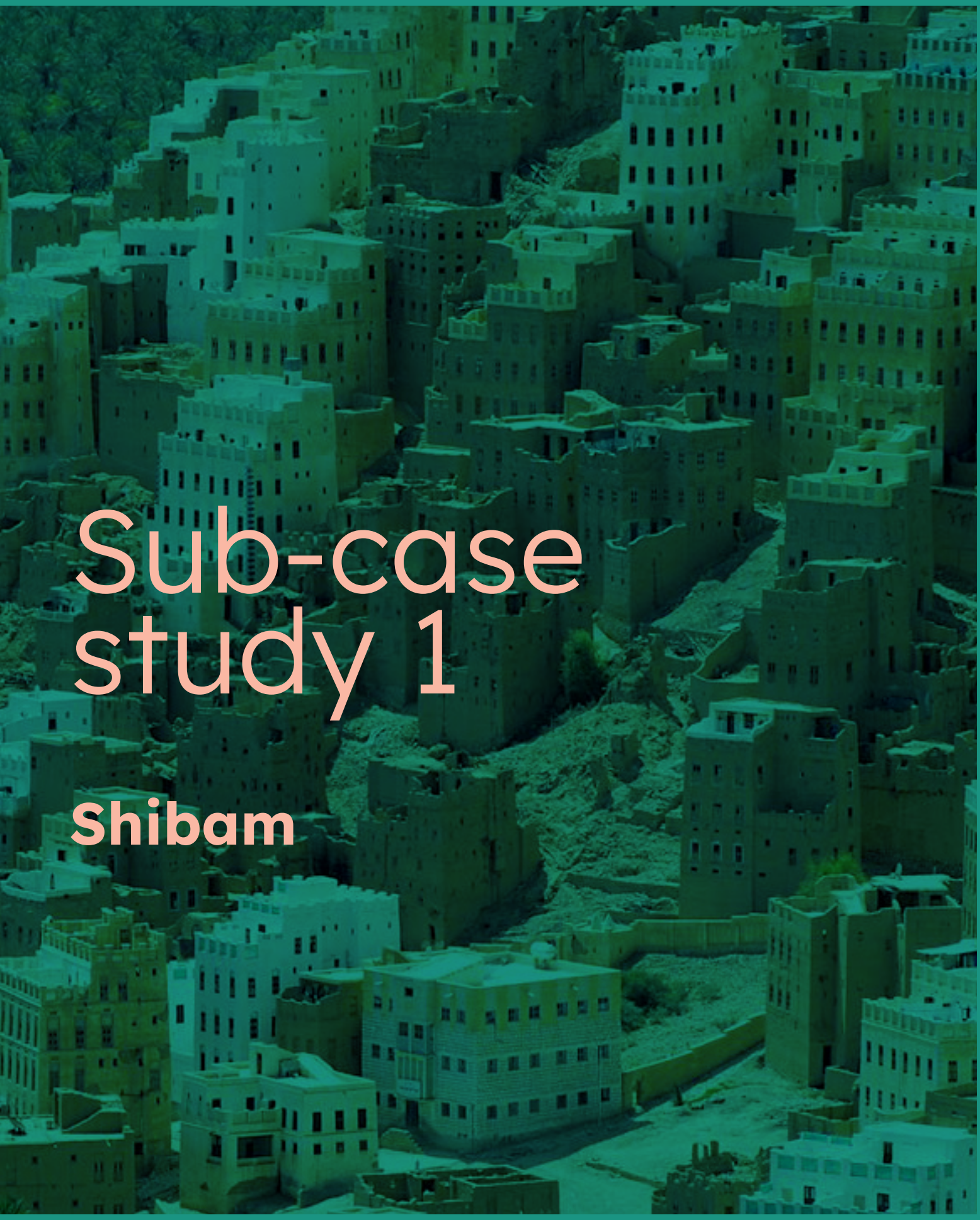
Maintenance financing :
No funds were allocated to post-occupancy maintenance.

Rehousing financing :
Specific rehousing finances depended on the house's scale, nomination of the GOPHCY, condition and work progress during the rehabilitation phases.



Fig.161: UNESCO workers in Sanaa. ©UNESCO





Sub-case study 1

Shibam

Shibam, positioned between the Rub'-al-Khali desert and From the South Mukallah Port stands on a rock promontory 600m above sea level within the fertile Hadhramawt Valley. Surrounded by lush oasis landscapes, it shares proximity with Tarim and Sayioun to the east. Shibam holds prominence as the most significant among the three Hadramite cities. Although its construction date is uncertain, early texts, pre-Islamic poetry, and temple inscriptions from around 500 BCE verify its existence and regional influence.
Situated in the valley's lower part, Shibam prospers with fertile lands and the Haramawt River. Its agricultural success complements the city's historical significance as a major caravan stop on a vital road

1. IDENTIFICATION

Size of the overall city
A small town hosting 13,373 inhabitants composed of a walled historic city and suburbs extending South and South East of the River Hadhramaut. The city covers an approximate area of 305 hectares.

Size of the historic area
The Old Walled City of Shibam covers 7.92 ha containing about 500 mud-houses, inhabited by about 7,000 people.

Principal function of the city
One of three major urban centers in the Wadi Hadhramawt region, Shibam used to be a major tourist destination before the onset of the civil war in 2014.

Principal function of the historic area
Residential, touristic, historic center

Heritage status
UNESCO World Heritage Site since 1982

Demographic profile
The median age in the District of Shibam is 18.7 years, with a population increase of +53.2% from 2000 to 2015.

Situation and urban evolution
Shibam, despite its low height, dominates the wadi, coveted for its strategic position and impressive 6-9 story mud tower houses.The city's compact trapezoidal layout, with unequal sides, prioritizes vertical growth for defense, forming an enduring pyramidal block. The architect Salma Damluji states in her book “The Valley of Mud Brick Architecture: Shibam, Tarim and Wadi Hadramut (Ancient to Contemporary Design)” that lofty houses of the wealthy were crammed into the space of Shibam proper, while the poorer social groups built to the south of Shibam, leading to centuries-old suburbs. Uncontrolled expansion in the past three decades forms Sahil Shibam, showcasing eclectic housing styles, including Indo-Islamic architectural featured villas and apartments. The city's architectural evolution reflects both prosperity and defensive considerations.

Intervention areas
Main souq, city walls, oasis, private mud houses, Sanitation & Water infrastructure, public squares and urban landscape, Sesabana trees (Fig. 157).

2. STAKES

Diagnosis/Status
Urban and architectural preservation in a conflict-torn country are difficult endeavors with uncertain outcomes. Despite not being directly affected by the civil war, Shibam faces difficulties due to limited economic potential, infrastructural deficits, and low awareness and support for heritage conservation.

The preservation efforts in Shibam and other cities around Yemen are highlighted through the Shibam Urban Development Project, a joint Yemeni-German initiative since 2000. This project aimed to renovate most half of Shibam's housing stock, improve essential services, and revitalize the old town, which was experiencing depopulation. While the initiative successfully restored over 200 houses, it left more than half of the earthen houses in a derelict state, some in ruins.

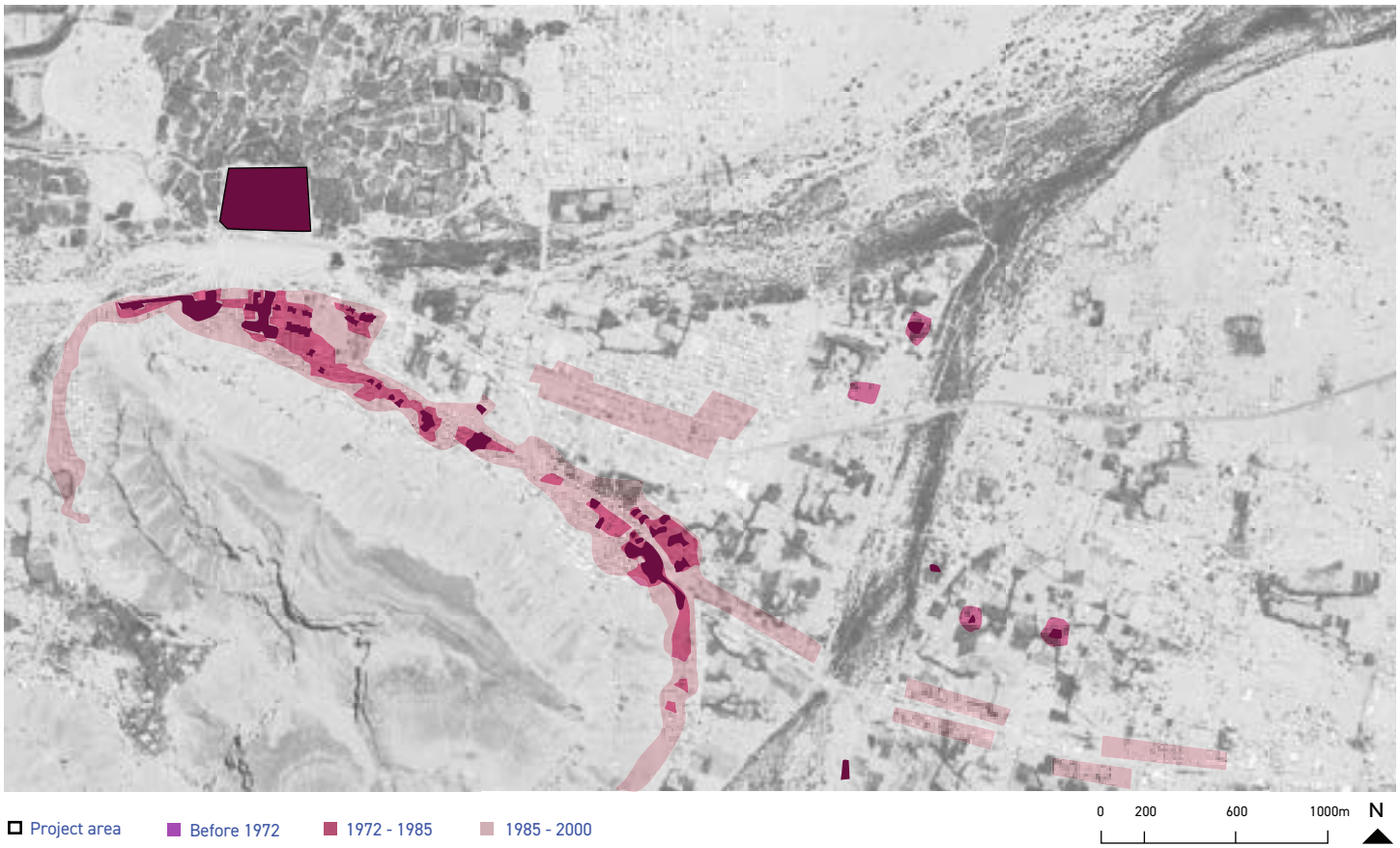


Fig.162: Project situation and urban evolution of the city of Shibam

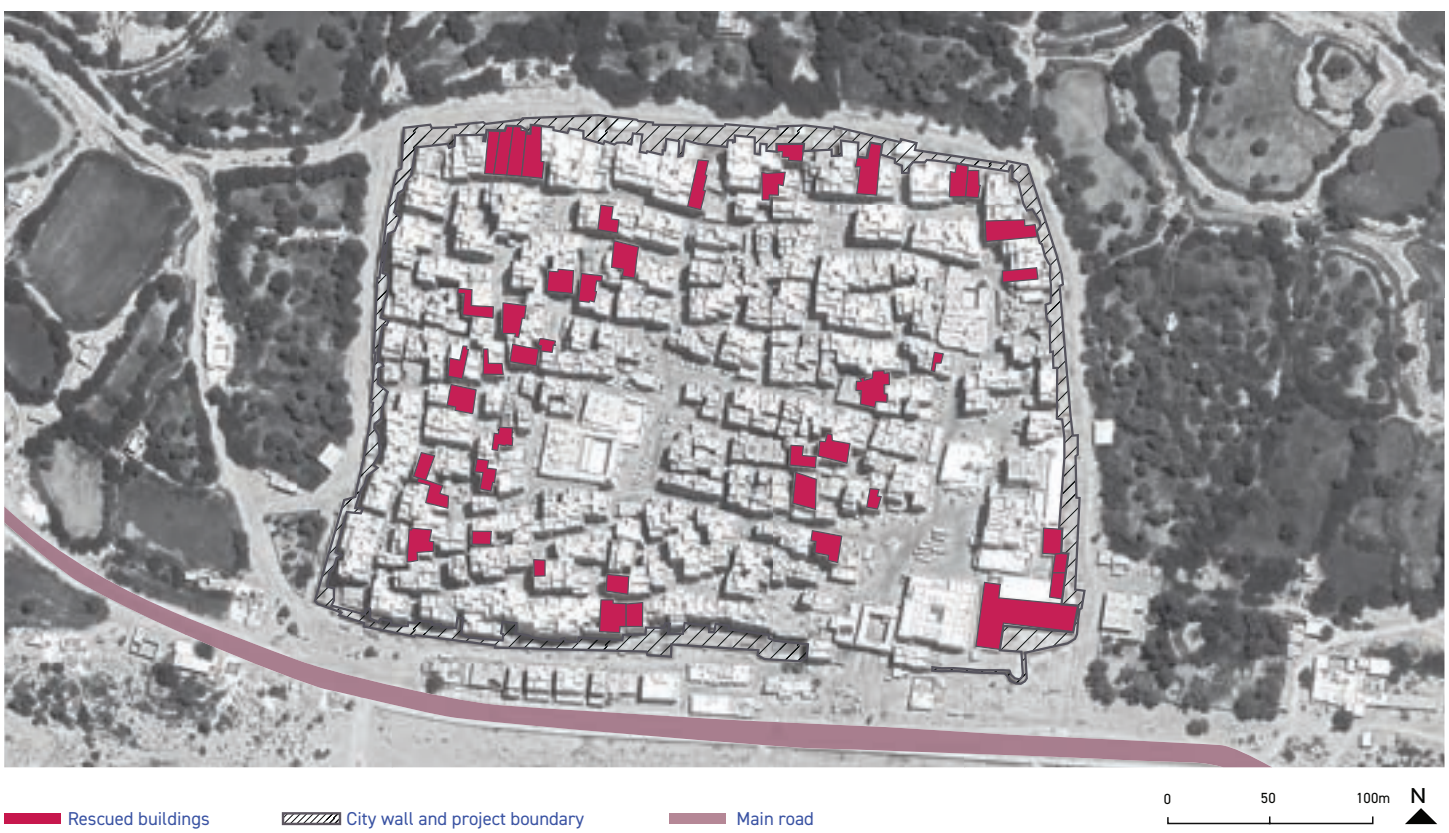


Fig.163: Localisation of the rehabilitation interventions

The historical earthen tower houses in Shibam require constant maintenance to protect against termites, erosion, rainwater, and floods, emphasizing the need for ongoing efforts to preserve their stability. The challenges faced by Shibam in preserving its heritage underscore the precarious nature of such endeavors in conflict-affected regions, where competing priorities and limited resources pose significant obstacles to maintaining cultural and architectural treasures.

Challenges

Technical
The narrow streets of Shibam made the transportation of material difficult.

Social
Several hindrances to the project's established timeline and progression emerged due to a human factor. The community exhibited high expectations for the intervention, anticipating the simultaneous completion of all project phases despite the diverse scope encompassing emergency response, stabilization, rehabilitation, and the restoration or replacement of wooden windows and doors. This expectation persisted despite pre-intervention awareness campaigns. The challenge was further compounded by the considerable size and varied conditions of houses, significantly influencing the progression of the project.
The implementation progress was also hindered by the limited workforce available to intervene on multiple houses simultaneously. The strategic decision to open a few houses at a time in order to meet project timelines posed a considerable challenge in this implementation phase. Additionally, the restriction imposed by the workers' NGO in Shibam on the participation of workers from outside the city walls adds another layer of complexity.
An additional temporal constraint arises during the holy month of Ramadan, with both the local community and workers expressing reluctance to engage in intervention activities during this sacred period. Consequently, work was postponed until after the Eid holiday.

Environment
The difficult climate conditions during the summer season impose restrictions on working hours. This climatic constraint further underscores the intricate nature of executing interventions in environments characterized by both climatic and cultural intricacies.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : The Mud tower house

Period : 16th century

Occupants : Wealthy families own multiple large houses with intricate architectural details. However, some of these families live in Persian Gulf countries and leave their houses empty leading to minimal interest in preservation. On the other hand, less affluent families wish to maintain their homes but lack the means for the necessary upkeep of earthen architecture.

Description :
The mud tower house is a vertical building articulated around a multi story staircase, typically comprising 9 floors or more. A number of tower houses form the housing unit within a quarter. Each tower house varies in the space layout and the floors number reflecting the owner's occupation hierarchy in the society. Buildings with more than six floors are rather rare, these tall houses were built in the lower part of the city, as the slope allows for elevation without dominating neighboring buildings. Nevertheless, the traditional plan limits the number of floors in a house

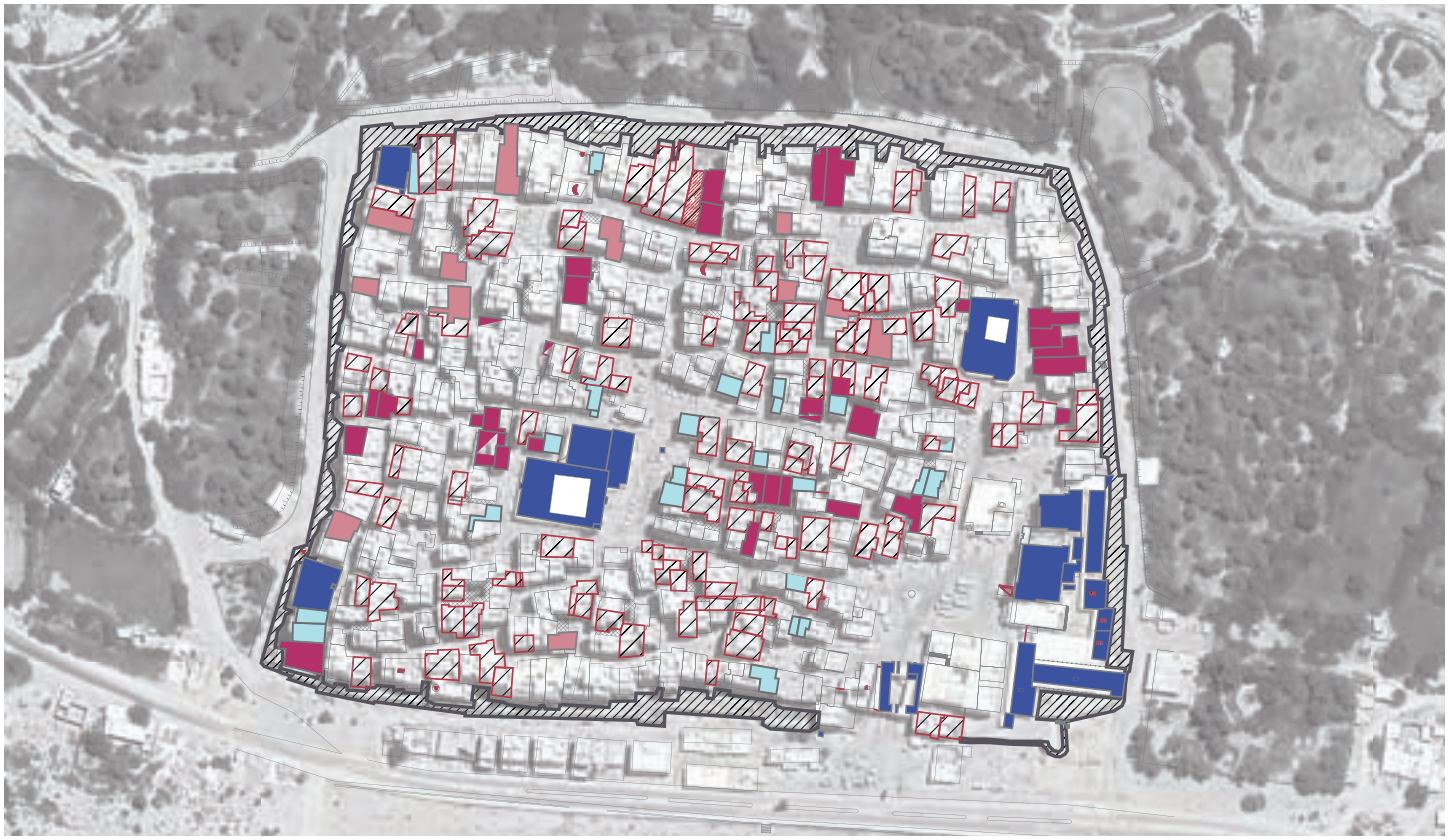


Fig.164: Land tenure inside the old fortified town of Shibam



Fig.165: Typical house in the Old town of Shibam



Fig.166: Typical house facade. ©Unesco

to five, which is already significant since the distance between the floor and ceiling is approximately 5 meters.

Spacial distribution :

Ground floor: Two doors are provided: one serves as the main entrance to the house, opening into a corridor that leads to a staircase providing access to the upper floors. This staircase is supported by a large pillar made of dried earth, called **Arus**. The other door, generally not far from the first,connects to one or more rooms, often used for commercial purposes, called **Dayka**.
On the ground floor, additional spaces are also planned, where families store food supplies. These storage rooms are known as maysama. The lighting and ventilation of the ground floor are provided by small openings and by an inner courtyard known as **Shammasa**.

First floor: It is often used as an attic in which the people of Shibam store their provisions for the entire year

Second floor: It is reserved for men. This is where the head of the family receives visitors. Two rooms on this floor are designated for reception. Friends and close acquaintances, as well as strangers to whom one wishes to show respect, are welcomed into a large hall known as **Mahdara**. It is distinguished by its beautiful ceiling supported by four wooden columns (called sahm). Another mahdara, smaller than the first, serves as an office. It is here that business matters are dealt with.

Third floor: It is used by all the family members as they gather here to eat. The kitchen can be found here as well. In this floor, there is a small room designed for childbirth called **maghlula**.

The fourth floor: It is reserved for women's social life, including reception, relaxation, and entertainment. The general layout of the rooms is similar to the previous two floors, but their arrangement is noticeably different. For instance, the large room where visitors are received (called **Mirwah** and not mahdara) communicates through wide openings with an adjacent room, open to the outside, named **Raym**. The fourth floor sometimes has a door providing access to the staircase of another building. This makes it possible to move from one building to another without using the usual route. Thanks to this clever system, women can exchange visits without being seen

The fifth floor is designated by the expression "ma bayna al-layarim," meaning "between the terraces." The rooms, fewer in number and smaller than on the lower levels, connect to terraces called raym.

For higher floors, if they exist, they serve to accommodate young couples and their children when the family is particularly large

3.2. Condition of the historic housing units before rehabilitation

Several buildings faced imminent collapse, afflicted by war-induced structural damage (walls, ceilings…), external neglect, internal deterioration, ceiling

damage, and the loss of architectural elements. Additionally, the recent climatic change of heavy rain and floods impacted on the houses structural condition and collapse of few houses.

3.3. Rehabilitation know-how, materials, and material sourcing

Local know-how was retained and revived thanks to

- Assigning a number of experts & master builders for continual support during the implementation steps (their duties included receiving materials after inspection)
- Increasing the number of supervisors.
- The use of laboratories wherever possible,
- In some cases, the use of expertise from other regions with the same characteristics

Structural techniques

Responses to structural problems in mud building include adding wooden stilts (ma'atin) along damaged facades to help reduce the load of the upper floors, using horizontal wooden beams to 'stitch' vertical cracks in walls, replacing defective structural elements, and in extreme cases removing added floors to reduce the extra loads imposed on the buildings. All these structural interventions are traditionally practiced in Shibam, though it was necessary to engage senior master builders to supervise the work of the younger members of the Cash for Work program and train them in these techniques. All structural elements are from the traditional 'Ilb (zisyphus spina christi), a local hardwood. However, in extreme cases the upper floors





Fig.167: Damage of the interior and exterior of residential buildings ©Unesco

are supported by steel tubes (a method often used in spanning ceilings in mud-brick building in Hadramut since the 1980s.

Materials

Renderings are usually made from mud mixed with local hay and straw. Alluvial mud is collected from the agricultural fields around the city after every few floods. This process allows the fields to return to their original level, and profits the farmers. The Agricultural Association established through the past German-Yemeni project uses the funds raised from the sale of the mud to maintain the irrigation system.

For waterproofing the outer surfaces of the building, Qadad lime is applied in two layers plus a final wash.

The first application is thick while the second layer is thinner and is usually mixed, while wet, with fine sand that acts as aggregate to stabilize the lime. The final lime wash is usually mixed with a small quantity of red sugar.

Shibam's houses face dual challenges of termite infestation affecting beams and increased susceptibility to flooding, particularly exacerbated by climate change. The catastrophic floods of 2008 and 2019 underscore the potential for rapid and extensive destruction. While the architectural program in Shibam continues to rely predominantly on mud brick construction, widespread use of cement introduces issues of salty humidity and structural infringements. Contemporary urban integrity is compromised by the presence of garbage, plastic waste, and air conditioners. Notably, wealthier residents prioritize the construction of opulent villas over the renovation of their inherited "town palaces." These multifaceted issues are further compounded by the current crisis, adding to the existing challenges faced by the community.

3.4. Timeline

The project started in Septembre 2019 and ends in August 2022. Refer to figure 162 for more details.

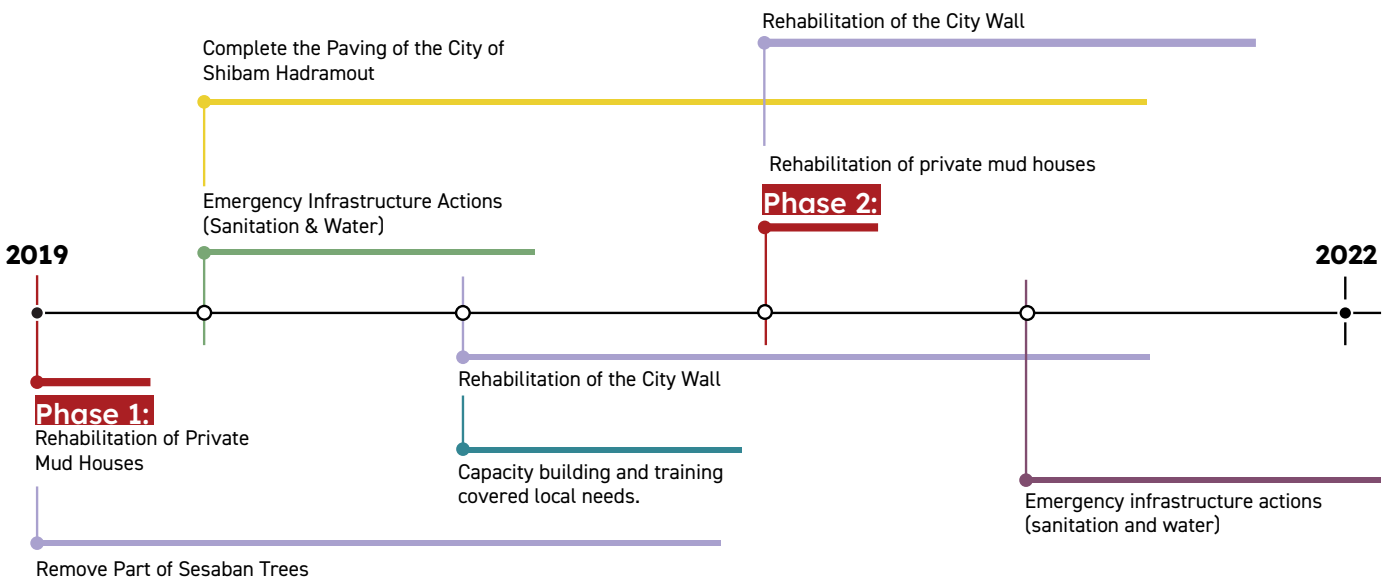
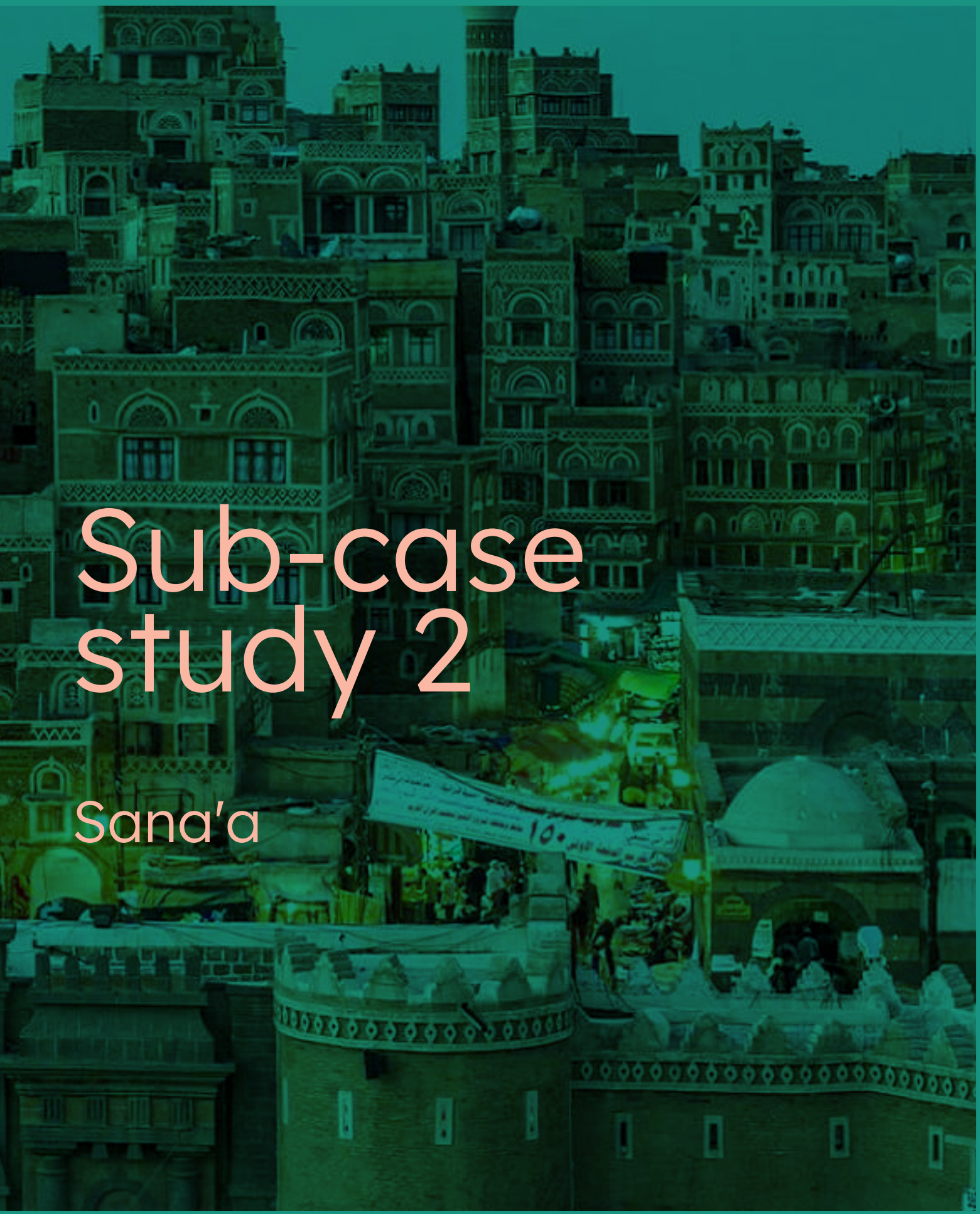


Fig.168: Shibam Timeline



Fig.169: Alley in Shibam © adventuresoflilnicki.com





Sub-case study 2

Sana'a

Sana'a is the capital and largest city of Yemen. It is located in a mountain valley 2,200 meters above sea level making it one of the highest capital cities in the world. Sana'a has been inhabited for over 2,500 years. During the seventh and eighth centuries, the city emerged as a significant hub for the spread of Islam. Built before the 11th century, the 103 mosques, 14 hammams, and more than 6,000 homes reflect the city's religious and political legacy. The numerous stories of Sana'a's tower-houses made of pisé, or rammed earth, enhance the site's splendor.

1. IDENTIFICATION

Size of the overall city
The largest city of Yemen covering 385 km2 with a population of approximately 3,292,497.

Size of the historic area
The area of the Old City of Sana'a is about 820 ha with a population of 63,398 inhabitants.

Principal function of the city
Capital of Yemen

Principal function of the historic area
Residential, historic center, commercial, touristic

Heritage status
UNESCO World Heritage Site since 1986

Demographic profile
Sana'a is the fastest-growing capital city in the world with a growth rate of 7%. Its population is very young, almost 60% of the residents are under 18 years old.

Sociological and anthropological context
The social structure of the Yemeni highlands was stratified into four main groups:

- Sayyids: Members of the Prophet Muhammad's family by birth, who formed the aristocracy of the country and devoted themselves to scholarship, administration, and legal affairs. Many Sayyids also engaged in trade.
- Qadis: Learned men who were granted the title of qadi (magistrate or judge) by the community for their wisdom and activities.
- Manasib: Leading traders and skilled artisans who were known to have tribal ancestry and were often referred to as "Arabs."
- Muzayyin: Artisans and service providers, such as shoemakers, belt makers, saddlers, tanners, brickmakers, barbers, bath attendants, butchers, café proprietors, and market gardeners.

Situation and urban evolution
The Old City of Sana'a is known world-wide as one of the most authentic and significant examples of the extraordinary urban civilisation which developed in the Arabia Felix in the 2nd century B.C. The Old City of Sana'a has more than 2,500 years of history with a rich religious and political legacy: it was once a major center for the propagation of Islam.

Intervention areas
Roofs, walls, windows and facades of private houses, public spaces around Sailah and the main Mosque, city Walls, Sana'a National Museum, Bustan gardens and Al-Qasimi, sanitation infrastructure, general infrastructure, souq area at Bab al-Sabah (Fig. 165).

2. STAKES

Diagnosis/Status
Since the 1970s, Sana'a has been the subject of numerous studies conducted by urban specialists, architects, and historians. These studies attest to its exceptional heritage values while highlighting the risks posed by the emerging modernization, adding to that the impact of the civil war during the last decade. All this factors jeopardize its authenticity and integrity after centuries of almost complete isolation.

Challenges
Economic Challenges:

- Frequent unavailability of fuel, when accessible,

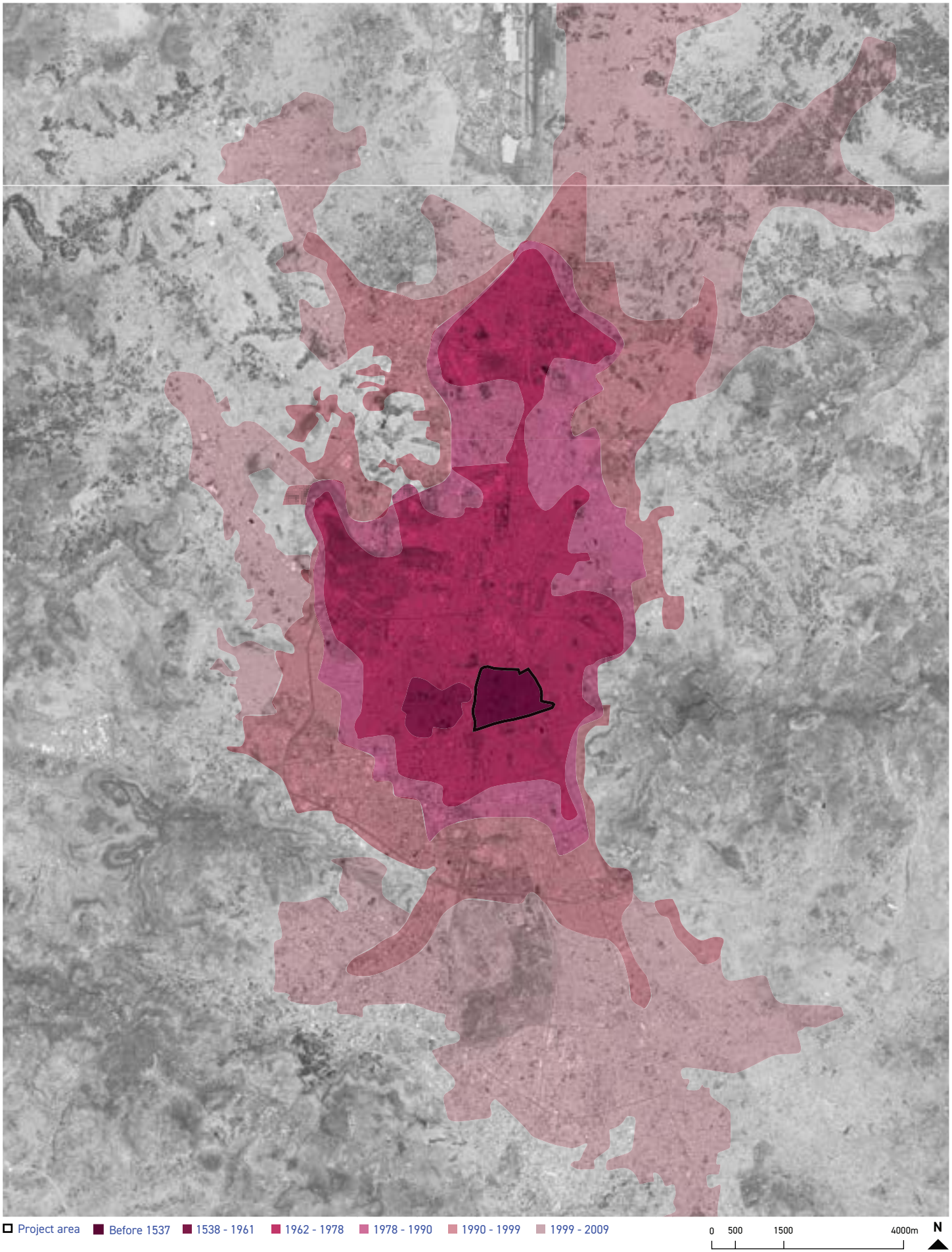


Fig.170: Project situation and urban evolution of the city of Sana'a

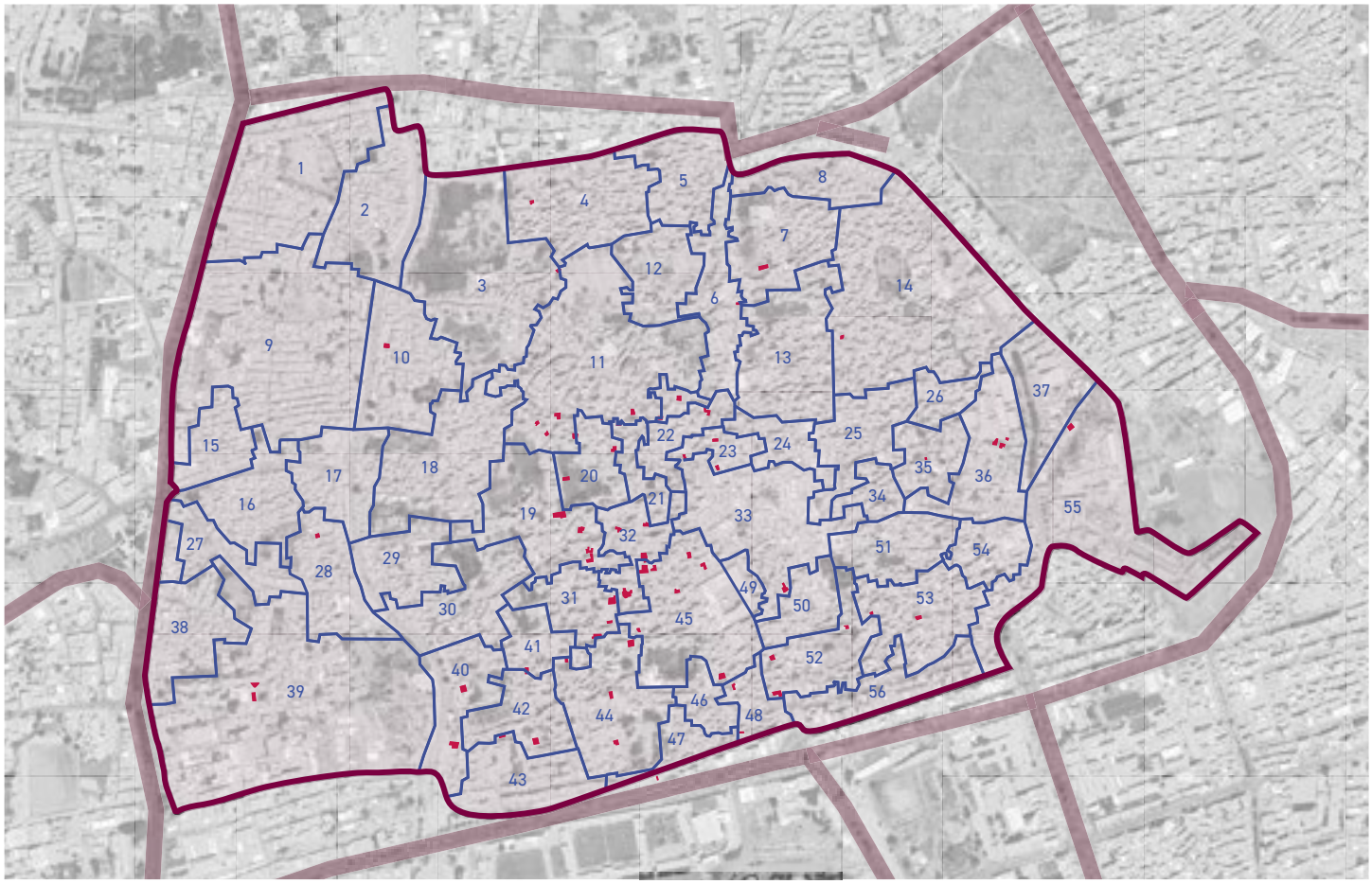


Fig.171: Localisation of the rehabilitation interventions in Sana'a

1. Al-Hurqan
2. Samrah
3. Al-Alami
4. Mu'ammar
5. Bab Shu'ub
6. Zumar
7. Khudayr
8. Al-Kharjeh
9. Al-Tabari
10. Al-Jala
11. Al-Fulayhi
12. N'aman
13. Sirhat Al Wady
14. Al Madrasah
15. Al-Kadas
16. Bab As-saban
17. Al-Naharein
18. Al-Kharaz
19. Talhah
20. Dawud
21. Suq Al-Baqar
22. Mahmud
23. Al-Shahidayn
24. Aqil
25. Yasir
26. Al-Maftoon
27. Al-Dafhay
28. Qubbat Al-Mahd
29. Al-Qusali
30. Al-Wushali
31. Muad
32. Saba
33. Al-Suq
34. Zabarah
35. Salah Al-Din
36. Al-Maidan
37. Al-Bakariya
38. Al-Mansurah
39. Bustan Al-Sultan
40. Brum
41. Al-Dar Al-Jadid
42. Al-Qasmi
43. Bustan Sharib
44. Al-Abhar
45. Al-Jami Al-Kabir
46. Hasusah
47. Bahr RajRaj
48. Bab Al-Yaman
49. Qandah
50. Al-Humaydi
51. Ghurqat Al-Qalis
52. Musa
53. Al-Nusayr
54. Al-Abzar
55. Qasr As-salah
56. Bab As-Salam



Fig.172: Street in Old Sana'a © Rod Waddington



Fig.173: Land tenure in the old city of Sana'a

incurs high costs affecting materials and transportation expenses.
- Insufficiency of studies for the estimation of costs, with a short time for implementation.

Technical Challenges:
- Buildings often exhibit critical structural conditions, unforeseen during initial studies, necessitating urgent and budget-intensive interventions. Extra specialists and craftsmen become imperative.
- Implementation during Ramadan and Eids' necessitates night shifts, with reduced productivity and heightened risks.
- The high rainy season demands special site protection and management, especially for tall buildings in critical conditions posing threats to inhabitants and surroundings.

Social Challenges:
- Presence of families in houses during implementation.
- Lack of community awareness and promotional efforts.
- Traditional practices, such as craftsmen observing holidays during Ramadan, were overridden due to factors including workers' financial constraints, their willingness to participate, owner permissions, and the project's constrained timeline. Yet challenges pertaining to both temporal considerations and safety protocols persisted.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : The tower house

Period : Over 6,000 houses were built before the eleventh century

Occupants : working class, servants and farmers (Small sized house). Craftsmen and traders (Medium

sized house). Wealthy families who work as best merchants, governors and judges (large sized houses/ tower houses clustered together)

Description :
The tower house is a vertical building articulated around a multi story staircase, typically comprising five floors or more. A number of tower houses form the housing unit within a quarter. Each tower house varies in the space layout and the floors number reflecting the owner's occupation hierarchy in the society.

In Sana'a The house spatial layout can be divided into three categories depending on the owner's social status in society as follow:

- Small sized house space layout ranges between 35 to 70 sq.metres, consisting of 2 to 3 floors belonging to the lower class workers and servants, while farmers have houses ranging from 4 to 6 floors.
- Medium sized house space layout ranges between 150 to 250 sq. meters consisting of 4 to 7 floors belonging to the middle class society like craftsmen and traders.
- Large sized houses and sometimes clusters of tower houses surrounded by courtyard space layout ranging between 600 to 1000 sq. meters consisting of 6 to 8 floors belonging to high class families who work as best merchants, governors and judges.



Fig.174: Typical tower house layout in Sana'a

Spacial distribution :

The vertical arrangement of the tour houses represents an upward transition from public to private space.

The ground floor and its mezzanine are reserved for animals and the storage of timber, fruits, and grains, it also contains a small compartment for the collection of dry excrement from the bathrooms above.

The second floor is the first habitable level and also where visitors are received in the public sitting room, or diwan. This room is usually rectangular in plan and furnished in a manner typical of almost all Yemeni rooms, whether they are used for eating, sitting, sleeping, or all three. The windows have low sills, to accommodate a seated position, and consist of two sets of openings. The lower window is for ventilation and is controlled with shutters, and the upper opening is an arched or circular transom window that allows light to enter even when the shutters are closed.

On the third floor is the main family diwan reserved for special ceremonial occasions.

Above this level are additional semiprivate rooms and the kitchen. Here the women have their primary domain.

The highest level, dominated by one private sitting room called the mufraj, is reserved for special guests or family members. Here, the afternoon social gatherings are held, usually between men. The mufraj is the most decorated of the rooms.

A central staircase, rising throughout the height of the house, provides the central stability around which the structural distribution of the house is supported.

The thermal capacity of the stone and masonry walls produces a thermal lag, which tempers the extreme day and night temperatures. Ventilation is provided throughout the house by means of projecting masonry cooling boxes (shubaq) positioned within the walls of the staircase and lobbies of each floor.



Fig.175: Interior damage in a residential building in old Sana'a ©Unesco

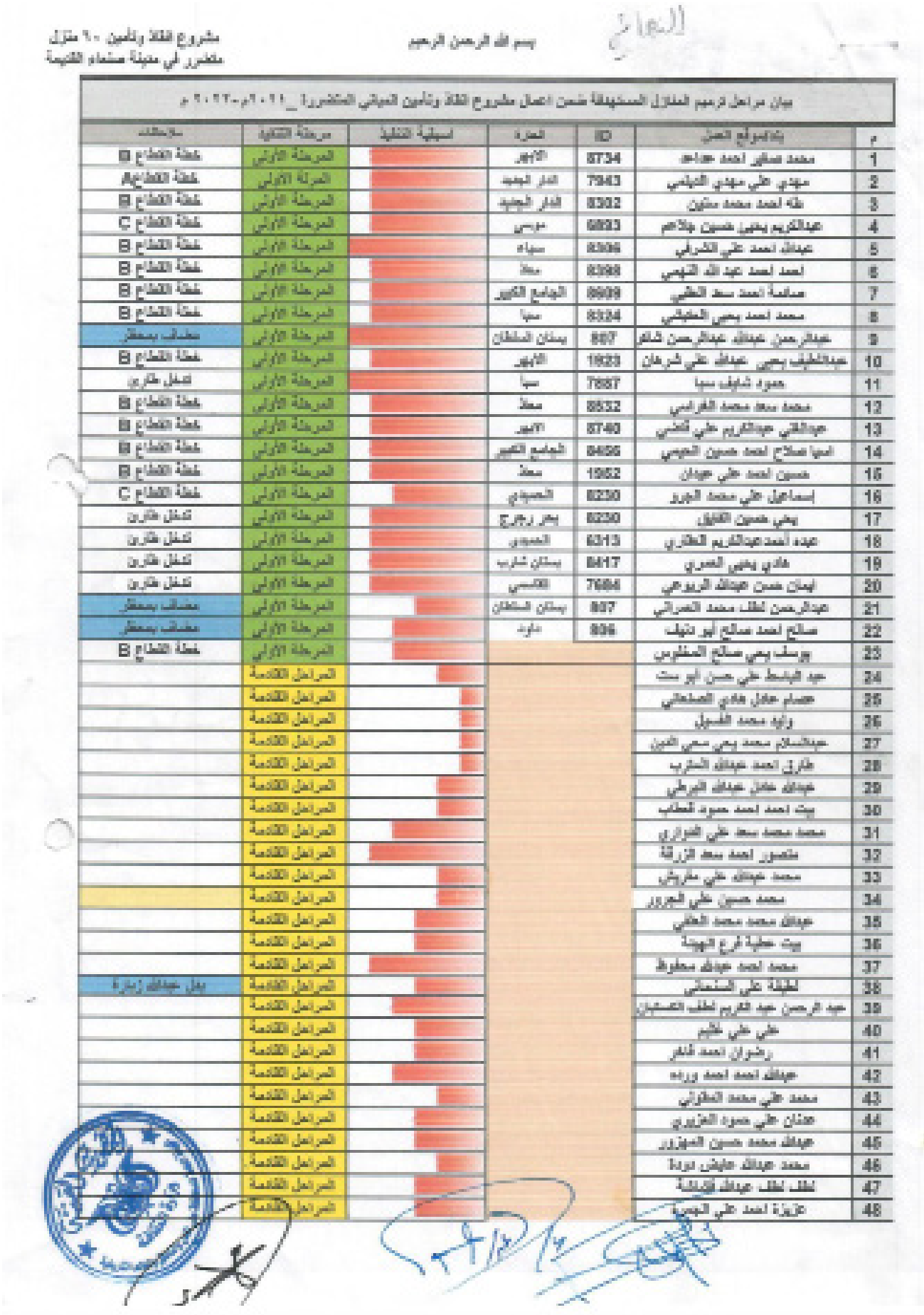
3.2. Condition of the historic housing units before rehabilitation

Several buildings faced imminent collapse, afflicted by war-induced structural damage (walls, ceilings…), external neglect, internal deterioration, ceiling damage, and the loss of architectural elements.

3.3. Selection criteria in Old Sana'a:

The most damaged houses were identified based on a survey conducted by the local authority in 2017, funded by the Social Development Fund.

An assessment committee was formed consisting of specialized engineers. This committee established 5


مشروع الفك وتأمين ٦٠ منزل
متضرر في مدينة مسعاد القديمة

بسم الله الرحمن الرحيم

بيان مراحل ترميم المنازل المستهدفة ضمن اتصال مشروع الفك وتأمين العيائي المتضررة _ ٢٠٢١م-٢٠٢٢م

م	إسم المواطن المعني	ID	العنوان	أسبقية التنفيذ	مرحلة التنفيذ	ملاحظات
1	محمد صقر احمد حداد	8734	الأبهر		المرحلة الأولى	خطة القطاع B
2	مهدي علي مهدي الديلمي	7943	الدار الجديد		المرحلة الأولى	خطة القطاع A
3	طه احمد محمد مثنون	8302	الدار الجديد		المرحلة الأولى	خطة القطاع B
4	عبدالكريم يحيى حسين هلاعم	6893	موسى		المرحلة الأولى	خطة القطاع C
5	عبدالله احمد علي الشرفي	8306	سيداء		المرحلة الأولى	خطة القطاع B
6	احمد احمد عبد الله التهمي	8398	معلا		المرحلة الأولى	خطة القطاع B
7	صادقة احمد سعد الطفي	8699	الجوامع الكبير		المرحلة الأولى	خطة القطاع B
8	محمد احمد يحيى المخلافي	8324	سيدا		المرحلة الأولى	خطة القطاع B
9	عبدالرحمن عبدالله عبدالرحمن شاكر	887	بستان السلطان		المرحلة الأولى	مضاف بسمطر
10	عبدالطيف يحيى عبدالله علي شرحان	1923	الأبهر		المرحلة الأولى	خطة القطاع B
11	حمود شايف سيدا	7697	سيدا		المرحلة الأولى	تشغل طارئ
12	محمد سعد محمد الغرامي	8532	معلا		المرحلة الأولى	خطة القطاع B
13	عبدالغني عبدالكريم علي الشمي	8740	الأبهر		المرحلة الأولى	خطة القطاع B
14	امينا صلاح احمد حسين العوبي	8456	الجوامع الكبير		المرحلة الأولى	خطة القطاع B
15	حسين احمد علي جوبان	1952	معلا		المرحلة الأولى	خطة القطاع B
16	إسماعيل علي محمد الجرو	8230	الحمدوني		المرحلة الأولى	خطة القطاع C
17	يحيى حسين الكامل	8230	بئر زرزع		المرحلة الأولى	تشغل طارئ
18	عبده أحمد عبدالكريم الطاري	8313	الحمدوني		المرحلة الأولى	تشغل طارئ
19	هادي يحيى الحمري	8417	بستان شارب		المرحلة الأولى	تشغل طارئ
20	ايمان حسن عبدالله الروحاني	7684	الكلسي		المرحلة الأولى	تشغل طارئ
21	عبدالرحمن لطف محمد العمراني	887	بستان السلطان		المرحلة الأولى	مضاف بسمطر
22	صالح احمد صالح أبو دنيف	836	داود		المرحلة الأولى	مضاف بسمطر
23	يوسف يحيى صالح المظفري				المرحلة الأولى	خطة القطاع B
24	عبد الباسط علي حسن أبو بست				المراحل القادمة	
25	عصام عادل هادي الصلحاني				المراحل القادمة	
26	وليد محمد الفضول				المراحل القادمة	
27	عبدالسلام محمد يحيى محيي الدين				المراحل القادمة	
28	طارق احمد عبدالله الشارب				المراحل القادمة	
29	عبدالله خالد عبدالله البرطي				المراحل القادمة	
30	بيت احمد احمد حميد الطالب				المراحل القادمة	
31	محمد محمد سعد علي الشراري				المراحل القادمة	
32	منصور احمد سعد الزريقة				المراحل القادمة	
33	محمد عبدالله علي مارش				المراحل القادمة	
34	محمد حسين علي الجرور				المراحل القادمة	
35	عبدالله محمد محمد الطفي				المراحل القادمة	
36	بيت عطية فرع الهيتة				المراحل القادمة	
37	محمد احمد عبدالله محفوظ				المراحل القادمة	
38	لطيفة علي الشمماني				المراحل القادمة	بدل عبدالله زيارة
39	عبد الرحمن عبد الكريم لطف العسيلي				المراحل القادمة	
40	علي علي عظيم				المراحل القادمة	
41	رضوان احمد ناصر				المراحل القادمة	
42	عبدالله احمد احمد وزيه				المراحل القادمة	
43	محمد علي محمد المطواني				المراحل القادمة	
44	عدنان علي حمود العزيزي				المراحل القادمة	
45	عبدالله محمد حسين المهزور				المراحل القادمة	
46	محمد عبدالله عايض دودة				المراحل القادمة	
47	لطف لطف عبدالله الزبادة				المراحل القادمة	
48	عزيزة احمد علي الهيمة				المراحل القادمة	

Fig.176: The renovation phases of the selected residential buildings



Fig.177: Exterior Damage in a residential building in old Sana'a ©Unesco



Fig.178: A residential building facade after renovation ©Unesco

criteria for selecting the damaged houses.

These 5 criteria are:

- Authenticity
- Historical Value
- Architectural and Aesthetic Value
- Social and Economic Value
- Degree of Damage

3.4. Rehabilitation know-how, materials, and material sourcing

Local know-how was retained and revived thanks to

- Assigning a number of experts & master builders for continual support during the implementation steps (their duties included receiving materials after inspection)
- Increasing the number of supervisors.
- The use of laboratories wherever possible,
- In some cases, the use of expertise from other regions with the same characteristics

Structural techniques

The process of salvaging and securing the buildings:

- Preparing and securing the site
- Wood work
- complete wood work for ceilings
- Fals for walls (yajuri)
- Malagh and tagsees
- Reconstruction work (Atajaweeb)

Materials

The materials used were as follows

- Clay mud
- Wood beams
- Qadad local lime plastering
- Stone
- Wood

3.5. Timeline

Refer to figure 173 for more details.

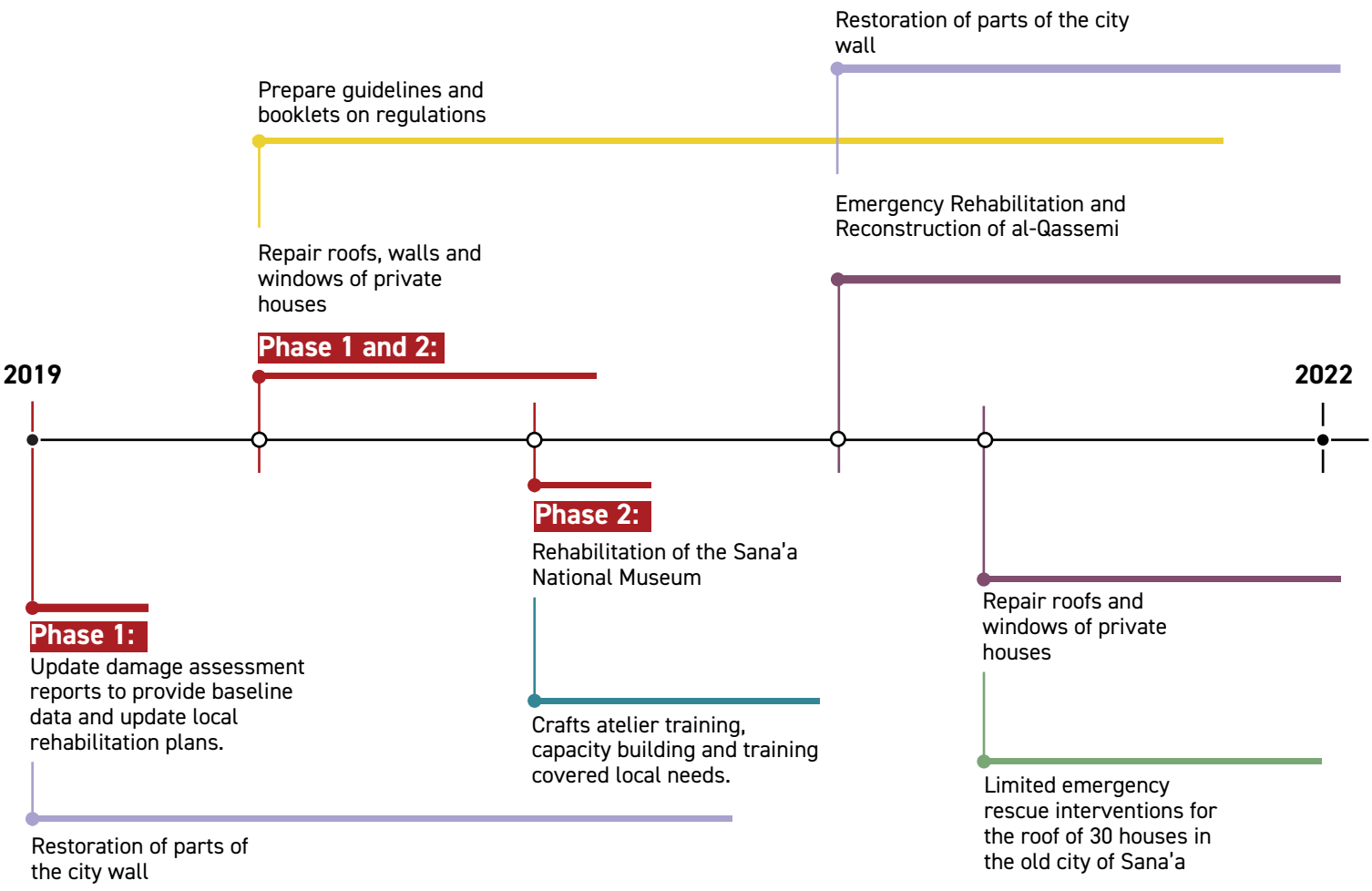
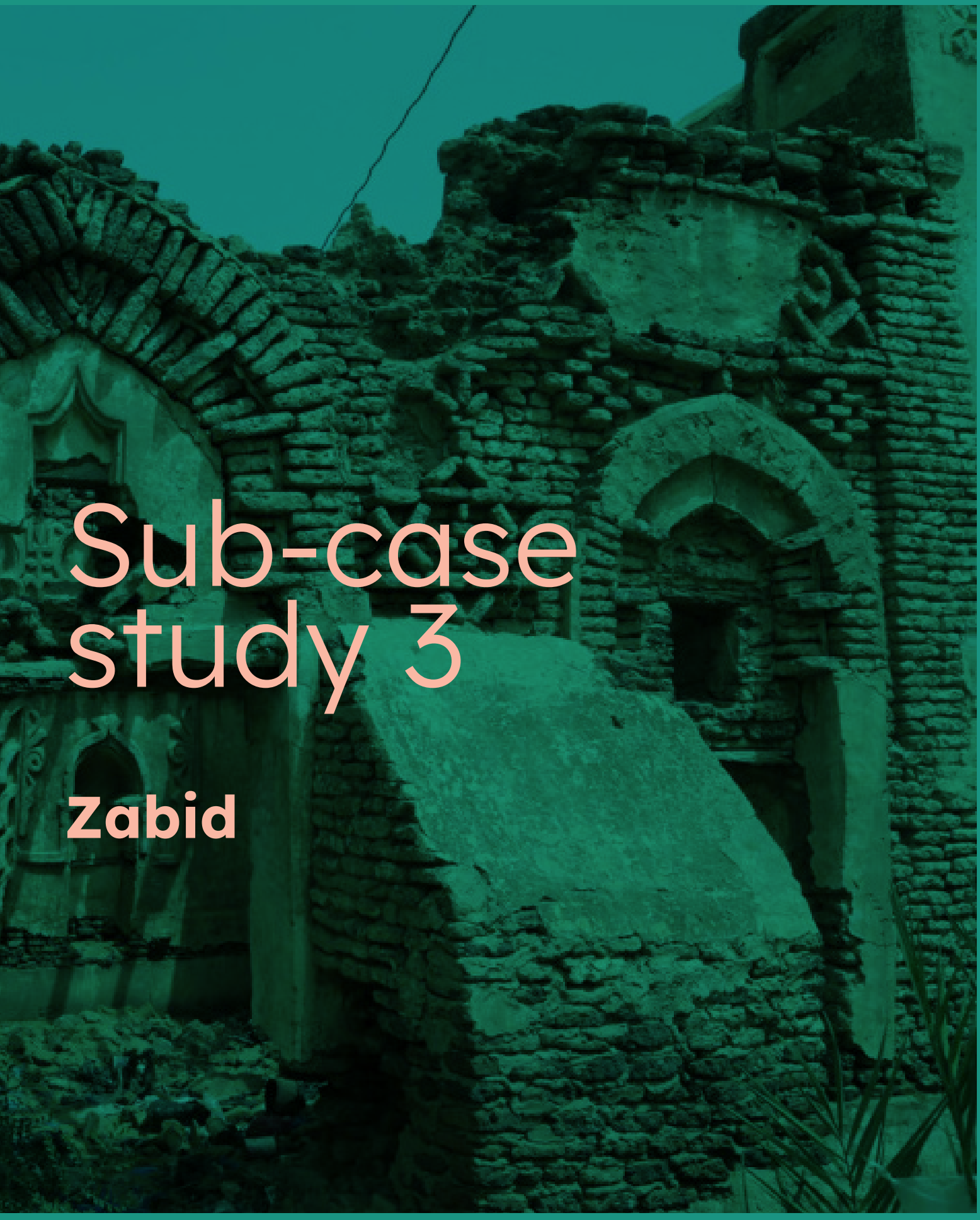


Fig.179: Sana'a Timeline



Fig.180: Photo taken during the renovation work of an exterior of a residential building in Sana'a ©Unesco





Sub-case study 3

Zabid

Zabid stands as a coastal town in the Tehama region, west of Yemen. Positioned on an elevation overlooking the river junction and fertile floodplain, this circular fortified town boasts four remaining gates and an intricate network of canals supplying water. Flourishing since the establishment of Islam in the 7th century.

Zabid played a pivotal role in the dissemination of Islam, hosting an Islamic university. The town's ancient mosques and madrasas attracted students from around the world, fostering the acquisition of Islamic knowledge and various sciences, significantly contributing to the advancement of science by Muslim scholars.

1. Identification

Size of the overall city
A small market city with approximately 52,590 inhabitants, roughly oval in plan and covering an area of 2.45 km2 .

Size of the historic area:
The historic town of zabid covers 92 ha.

Principal function of the city
Capital of culture and knowledge.

Principal function of the historic area
Residential, historic center, commercial

Heritage status
UNESCO world heritage site since 1993. In 2000, zabid was listed on the list of world heritage in danger.

Sociological and anthropological context
The community of zabid is composed of indigenous people and immigrants from various regions and countries who came to seek knowledge from the scholars who lived in the city for centuries. The socioeconomic structure of zabid is based primarily on trade, agriculture and daily crafts (construction, carpentry, blacksmithing, etc.). The social structure is stratified into two main groups: the prestigious scholarly and scientific elite and the marginalized ordinary citizens.

Demographic profile
The median age in zabid is 17 years, with a population increase of +51.4% from 2000 to 2015.

Situation and urban evolution
Zabid displays a closely-knit organic pattern of agglomeration, a result of family patterns, both nuclear and extended, interacting with land ownership patterns. These unique formations yield a rich texture that articulate the space in a series of compositions that emphasize the main pub-lic space (Citadel square), the location of both trade (souk), and prayer (mosques).

Intervention areas
Structure and architectural details of historic houses, central souq, Bab Siham and Bab Shabariq, Museum in the Citadel, Mydan square, city walls, gardening works, architectural details of buildings with architectural significance (Fig. 176).

2. Stakes

Diagnosis/Status
Ongoing degradation and accelerated loss of heritage assets in Zabid. Despite international efforts, such as expert missions funded by the World Heritage Fund, there was a lack of support from a public local and regional enhancement strategy, as well as insufficient technical and financial investments from the State Party. Notably, the conservation and rehabilitation challenges of Zabid were not a top priority for several governmental ministries at that time.
Problems/Issues

Economic and technical
the financial strain experienced by homeowners,

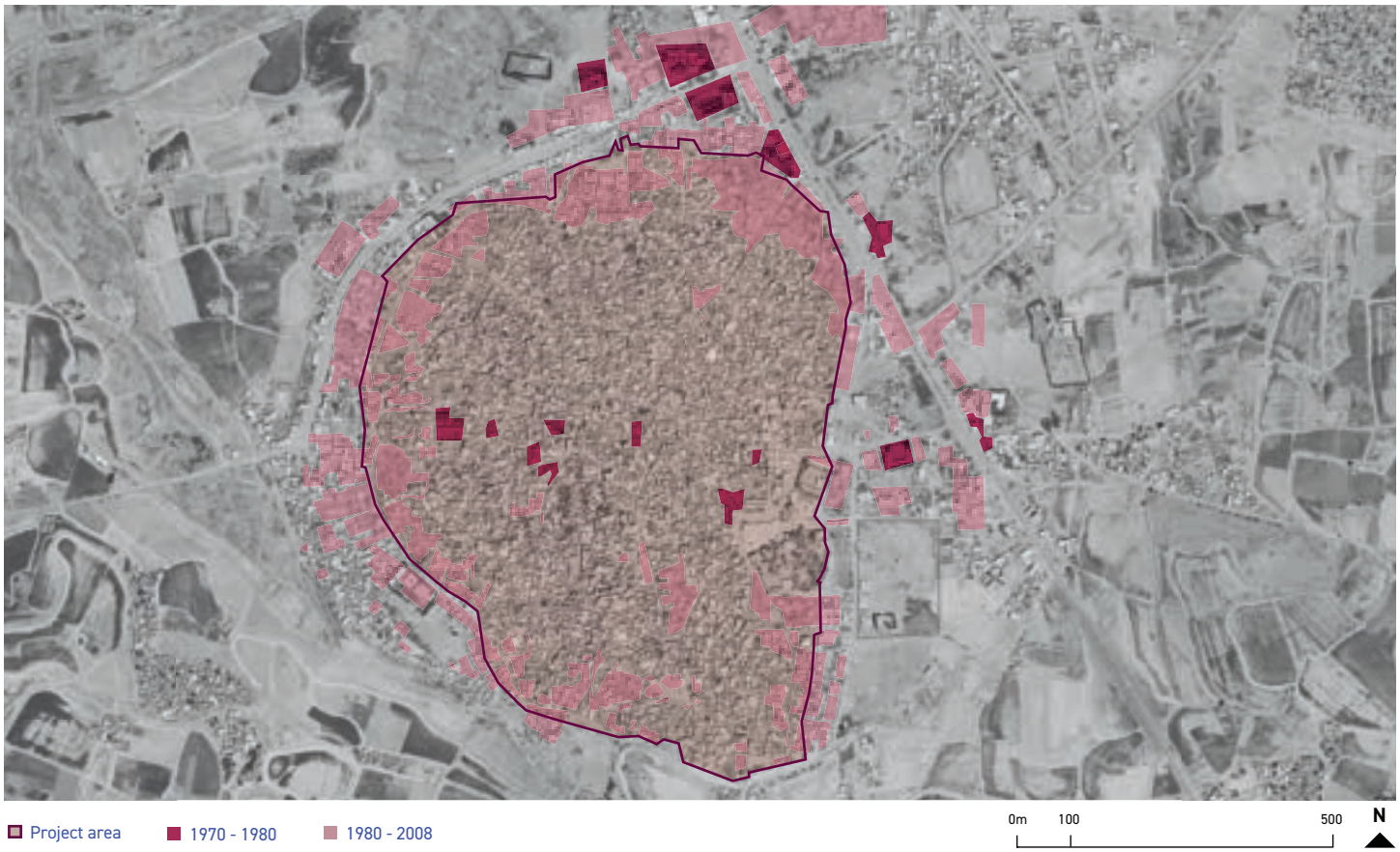


Fig.181: Project situation and urban evolution of the city of Zabid

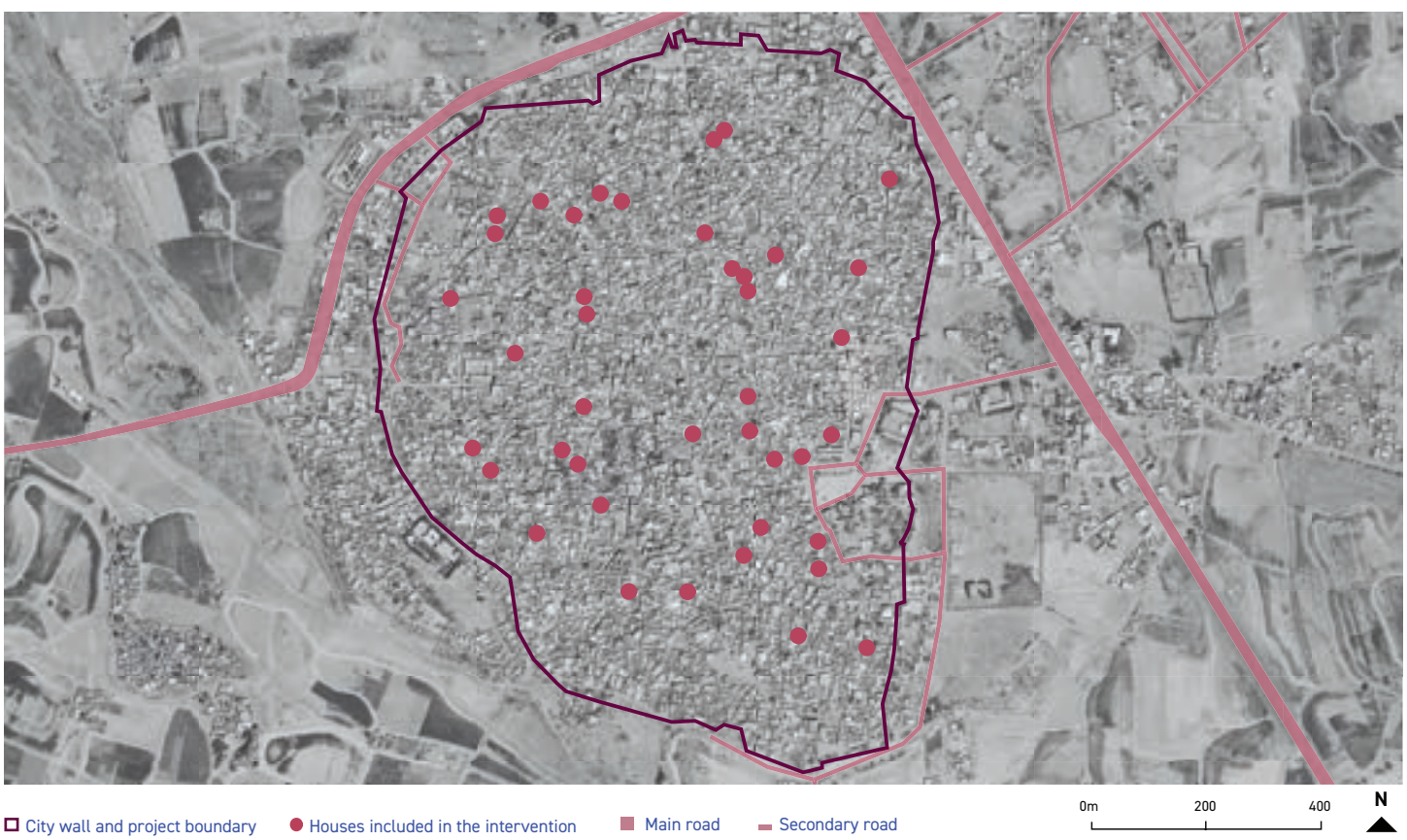


Fig.182: Localisation of the rehabilitation interventions

impeding their capacity to adequately maintain their residences. Concurrently, the prevailing political instability has engendered unemployment within households, exacerbating the economic challenges faced by homeowners. Furthermore, the inadequacy of the unskilled labor threshold has impeded the seamless continuation of construction projects. This deficiency in the labor force duration not only hinders the accumulation of on-the-job training experience but also disrupts the cohesive progression of the intervention.
The temporal gaps in the project timeline, coupled with the frequent turnover of workers, contribute to a disconcerting disruption in the flow of the intervention. Another economic repercussion pertains to the diminished demand for traditional materials preparation and building practices, prompting workers to seek employment opportunities in alternative sectors.

Social
On the social front, a conspicuous lack of awareness among homeowners regarding the intervention persists, compounded by continuous interference. Conversely, a subset of beneficiaries exhibits a neglectful approach to the maintenance of their domiciles, despite the completion of various works. In response to this challenge, a maintenance workshop has been instituted, aiming to engage beneficiaries in the final stages of surface diminishment.

Environment
From an environmental perspective, specific concerns arise in connection with the built environment and the intervention's impact on the population. Notably, the prevalence of modern construction materials, deemed economically advantageous due to their cost-effectiveness compared to traditional counterparts, introduces nuanced challenges within the intervention approach

3. Historic fabric and typology overview

3.1. Main historic housing typology(ies) in project area:

Name
Tihama style of courtyard house

Period
Historians trace their origins back 400 years

Occupants
Wealthy and aristocratic families, governmental offices, historical museum, manuscripts center, and public space.

Evolution of housing typologies
A labyrinth of narrow alleys weaves through the town, showcasing vernacular buildings typical of the southern Arabian Peninsula. Constructed from burnt brick, these houses share similar layouts, featuring reception rooms (murabbas) opening onto enclosed yards. Larger homes, extending to two or three stories, boast finely detailed interiors with skillfully carved brick walls, niches, and ceilings.

Description
The predominant house typologies within the city of zabid feature a central open courtyard, a design element that facilitates natural ventilation. These typologies are further categorized into small houses, typically comprising one or two floors and potentially lacking a courtyard, and medium to large houses, which incorporate a courtyard and range from 2 to 4 stories in height. Notably, the latter category, often associated with affluent families, exhibits distinctive decorative architectural elements on both the exterior and interior elevations of the building. These features include gypsum decorative facades, ornate interior walls, wall buttresses, stained glass windows, and

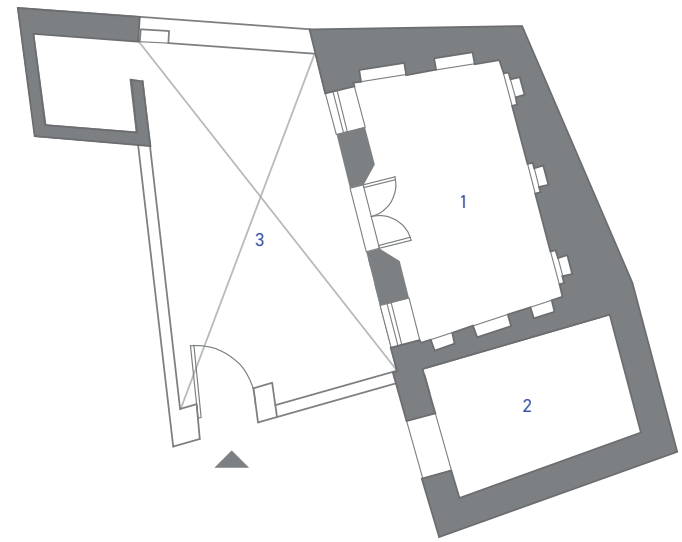


Fig.183: Typical plan of a Tihama style courtyard house in Zabid

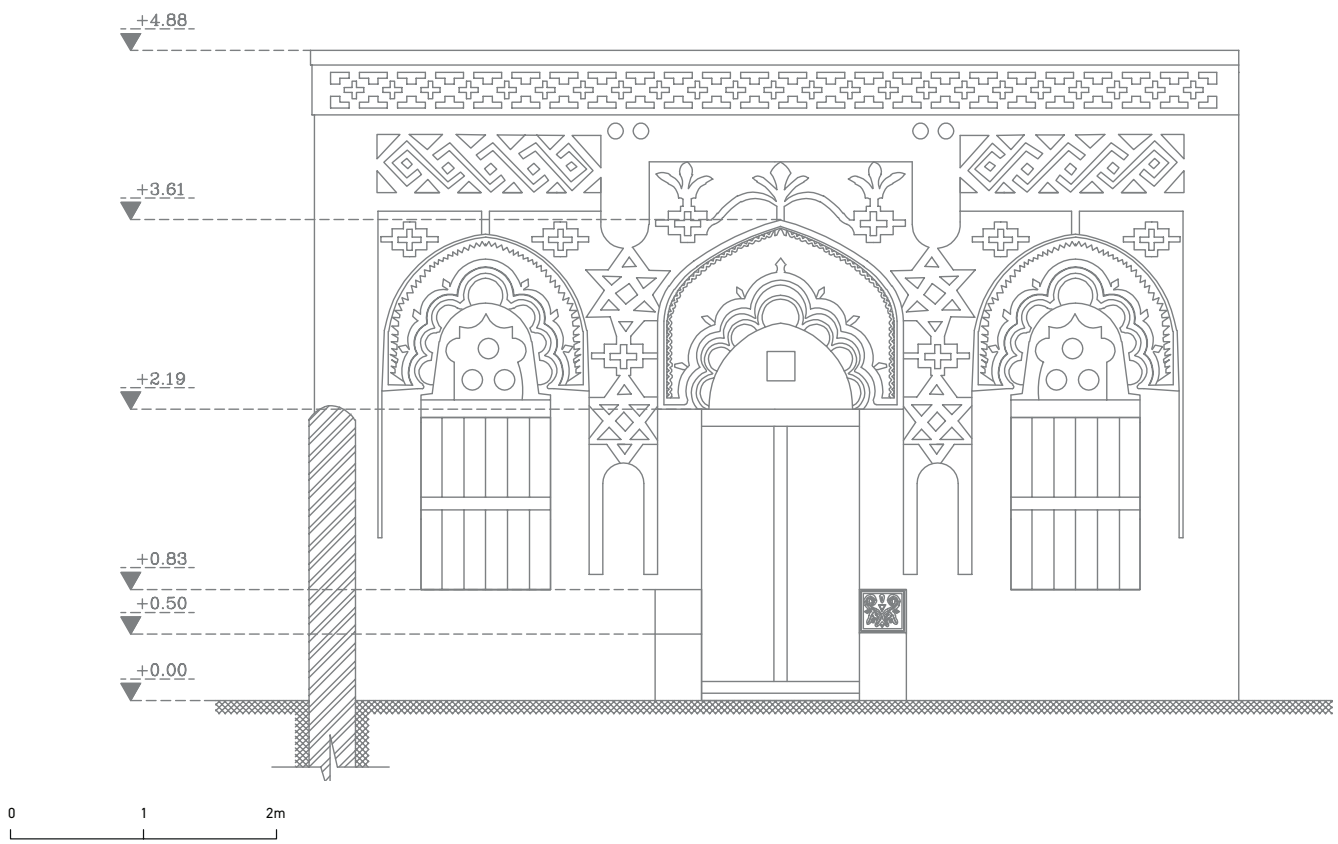


Fig.184: Typical elevation of a Tihama style courtyard house in Zabid

wooden ceiling boxes with intricate carvings and vibrant colors.

Space distribution

The zabidi household consists of a complex system of open courtyards (qabal and fina), traditionally organized along extended family bonds, with one-room houses serving different purposes and providing cells for individual families. Life in the courtyards and small houses is adapted to the need for ventilation. The basic residential type consist of a courtyard (qabal) and a one-room rectangular unit (murraba), a kitchen corner and a toilet. The next step is the addition of a second unit, the saffa (opened space, airy, ground level, for women and children); the murabba and the saffa are always symmetrical, facing eachother. The doors of each housing unit open toward the courtyard (qabal).





Fig.185: Exterior and interior damage in a Zabidi house ©Unesco





Fig.186: Exterior and interior of a Zabidi house after the rehabilitation work ©Unesco

3.2. Condition of the housing units considered for rehabilitation :

several buildings faced imminent collapse, afflicted by war-induced structural damage (walls, ceilings...), external neglect, internal deterioration, ceiling damage, and the loss of architectural elements.

2.3. Rehabilitation know-how, materials, and material sourcing

Local know-how was retained and revived thanks to

- Assigning a number of experts & master builders for continual support during the implementation steps (their duties included receiving materials after inspection)
- Increasing the number of supervisors.
- The use of laboratories wherever possible,

- in some cases, the use of expertise from other regions with the same characteristics

The materials used were as follows

- Mud bricks al-yajur (locally sourced)
- Lime plastering al-noura mortar (locally sourced)
- Wood beams (from the closer mountainous areas of raima and hajjah districts)
- Branches (locally sourced)
- Sand (locally sourced)
- Imported anti termite paint

3.4. Timeline

Refer to figure 181 for more details.

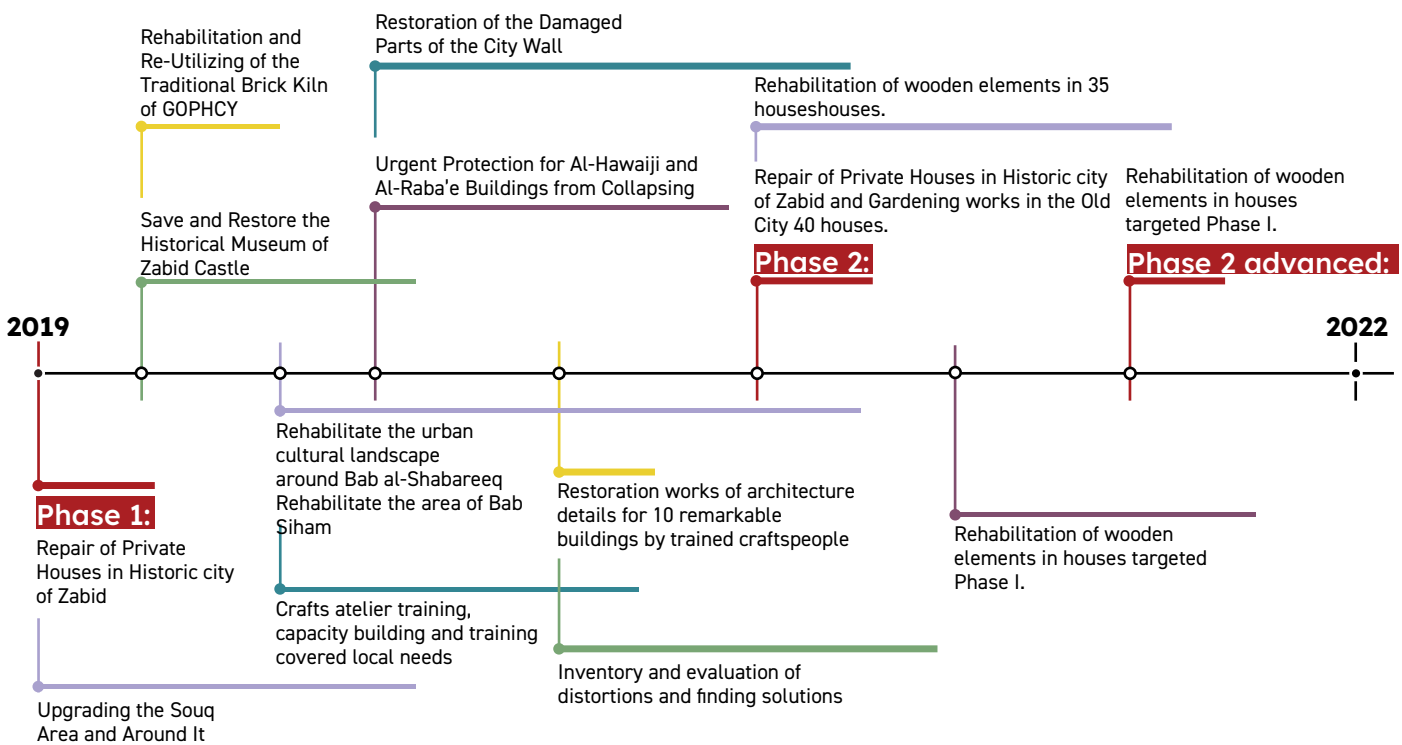
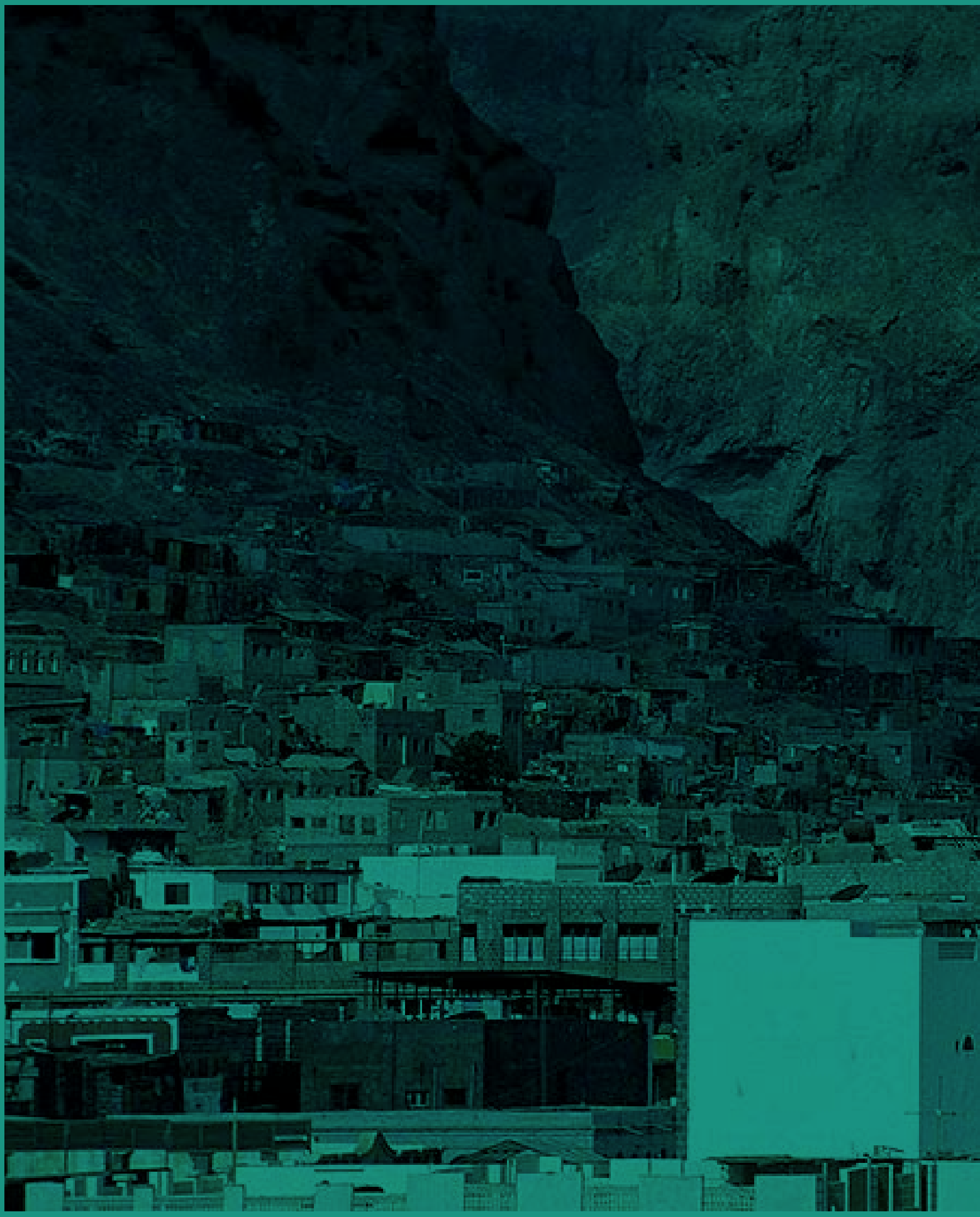
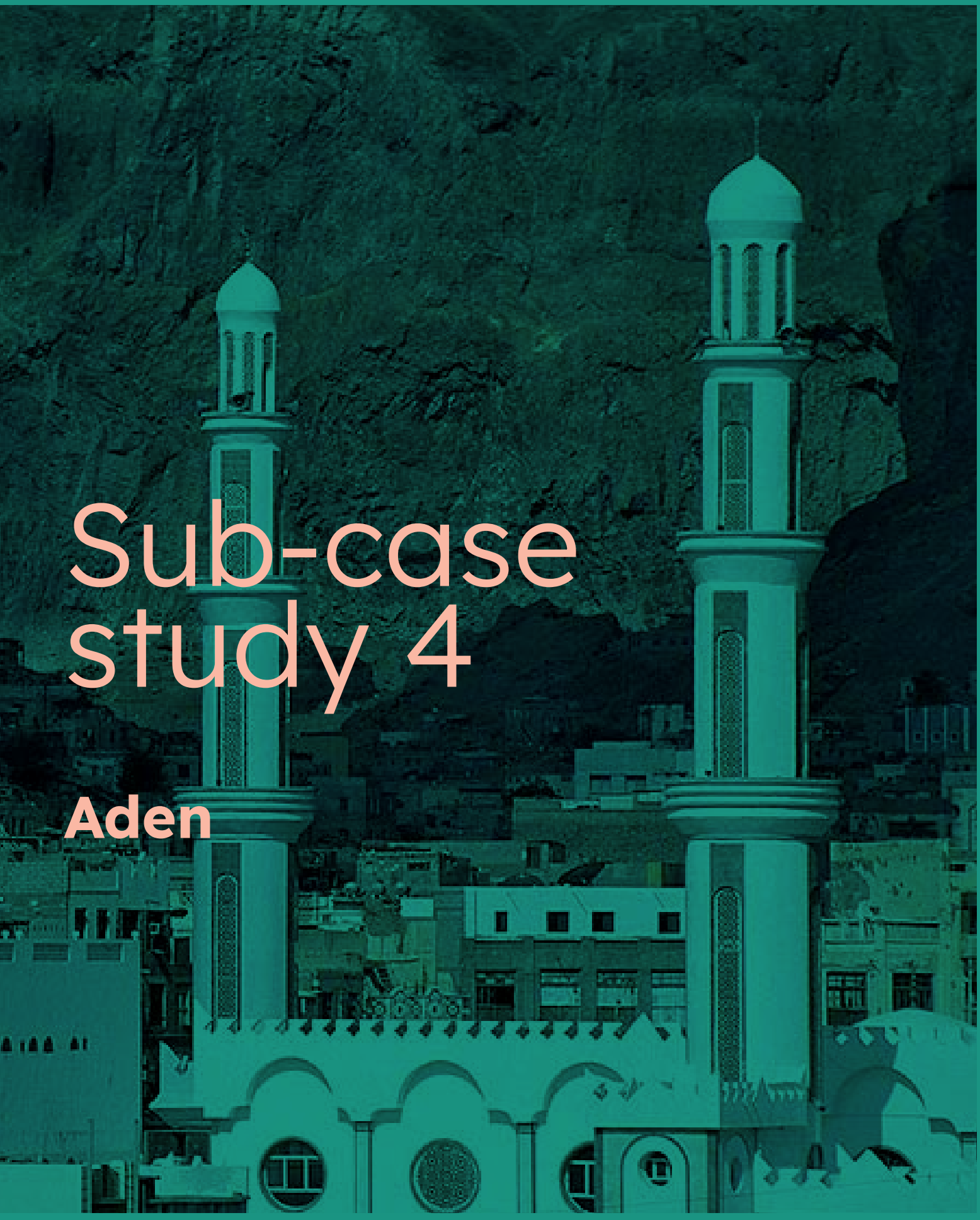


Fig.187: Zabid Timeline





Sub-case study 4

Aden

Aden is a major city and seaport in the Aden Governorate in southern Yemen. It possesses one of the largest natural harbors globally, with a deep and naturally protected port allowing the docking of massive oil tankers.

Its strategic location, just six kilometers from key maritime routes between the East and the West, has historically made the city a crucial hub in trade networks. For centuries, Aden served as the economic capital of Yemen, acting as the main passage for transcontinental trade between Europe, East Africa, the Arabian Peninsula, and East Asia.

The history of Aden shows that the city has undergone alternating periods of economic prosperity and decline and a continual process of political, economic, social and urban changes

1. IDENTIFICATION

Size of the overall city
This coastal town covers 760 km2 with a population of approximately 1,080,000 residents

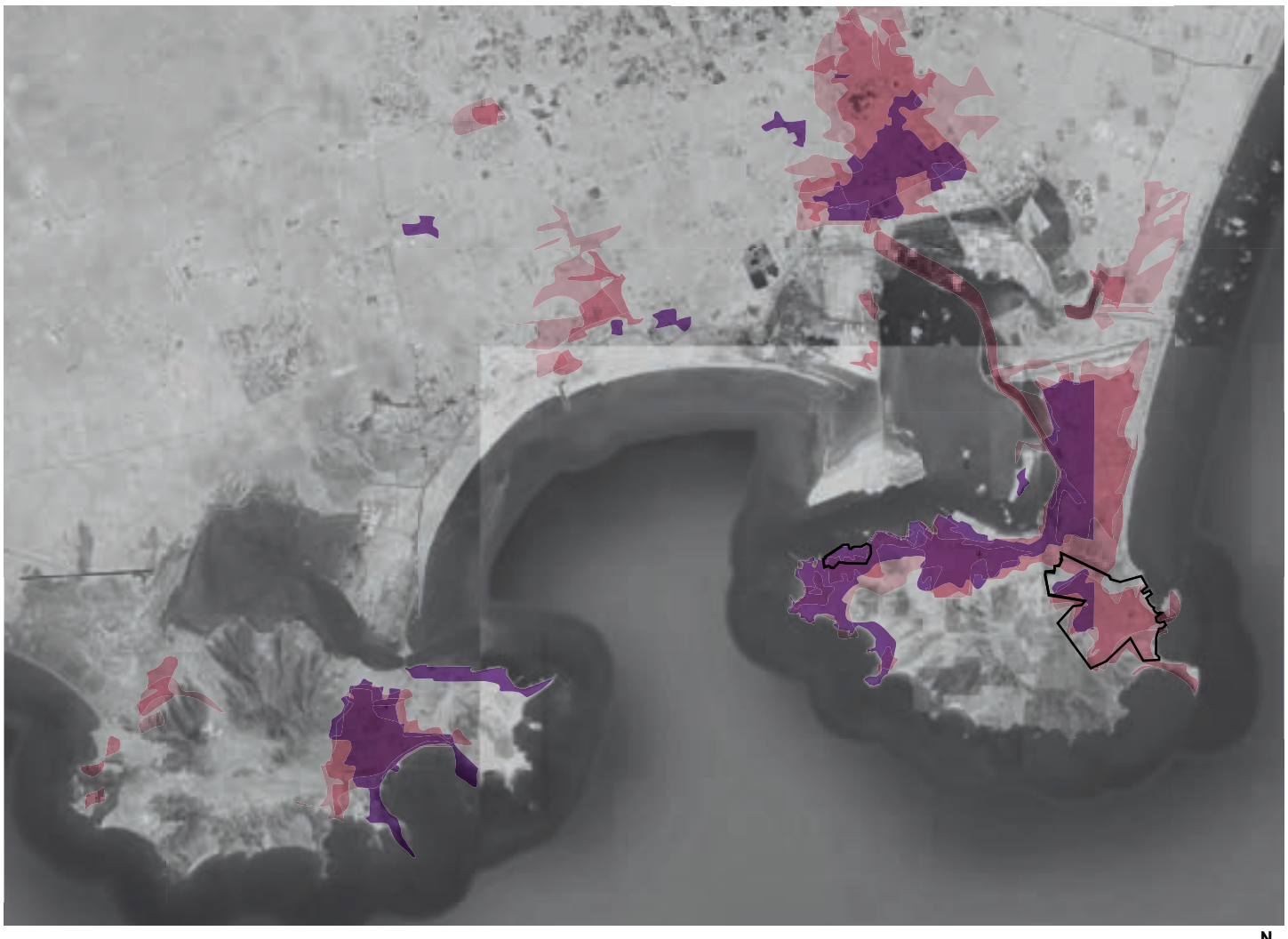


Fig.188: Project situation and urban evolution of the city of Aden

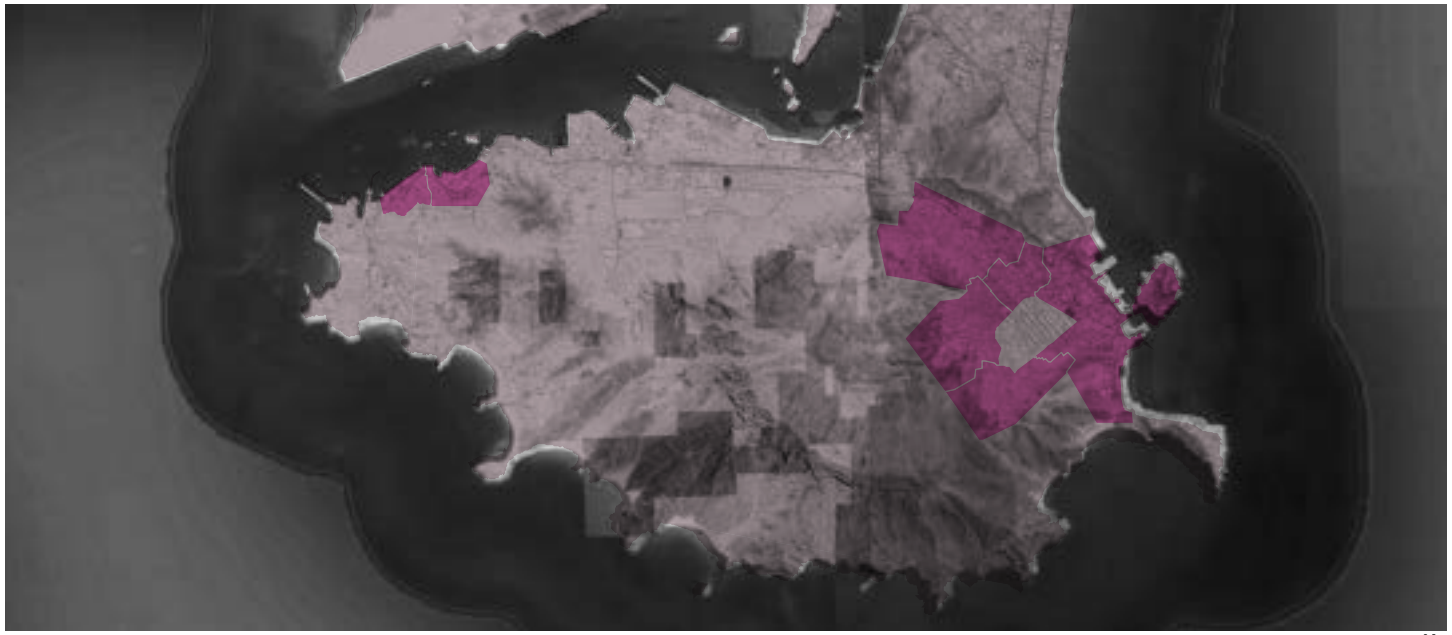


Fig.189: Project area in Aden

Size of the historic area
there are two historic centers: the Crater District which extends over an area of 0.6 ha and the Al-Tawahi District which covers about 1.1 ha.

Principal function of the city
Commercial capital of Yemen

Principal function of the historic area
Residential, commercial

Heritage status
Aden is not a UNESCO World Heritage Site

Demographic profile
Aden is the second most populous city of Yemen, with approximately 1.14 million residents. 72% of the population isyounger than 34 years-old.

Sociological and anthropological context
In the nineteenth century, Aden was a major center of trade between the East and West, and Crater became a hub for foreign and local companies, creating many job opportunities and attracting a diverse population. According to colonial-era reports, society in Aden was composed of approximately 50% Yemenis, with the remaining 50% consisting of Indians, Somalis, Europeans, Arabs, and Jews.

Situation and urban evolution
Aden, located in the southern part of Yemen, is a significant city and major seaport within the Aden governorate. Positioned approximately 170 km east of the Bab Al Mandeb strait, connecting the Gulf of Aden to the Red Sea, it faces Somalia across the Arabian Sea. Aden boasts one of the world's largest natural harbors, featuring a naturally deep and well-protected port capable of accommodating large oil tankers.

Its strategic significance lies in its proximity, merely six kilometers from the primary East-West shipping routes, historically establishing the city as a crucial hub in global trading networks. Throughout the ages, Aden has served as the economic capital of Yemen, acting as a vital conduit for commerce between Europe, East Africa, the Arabian Peninsula, and East Asia. Local narratives describe the city as "the eye of Yemen and the key to the Red Sea and the treasury of India."

Intervention areas
Central Crater District, public squares, water tank reservoirs, National Museum and Sultan's Palace, the market, facades carpentry and wooden balconies of historic houses.

2. Stakes

Diagnosis/Status
The deterioration of the facades in the old city of Crater in Aden. While some of these facades have undergone changes that alter their original features, others still preserve many of their original state. These facades are now threatened due to their poor condition and suffer from deterioration caused by



Fig.190: Type of intertion in Al-Tawahi district, Aden

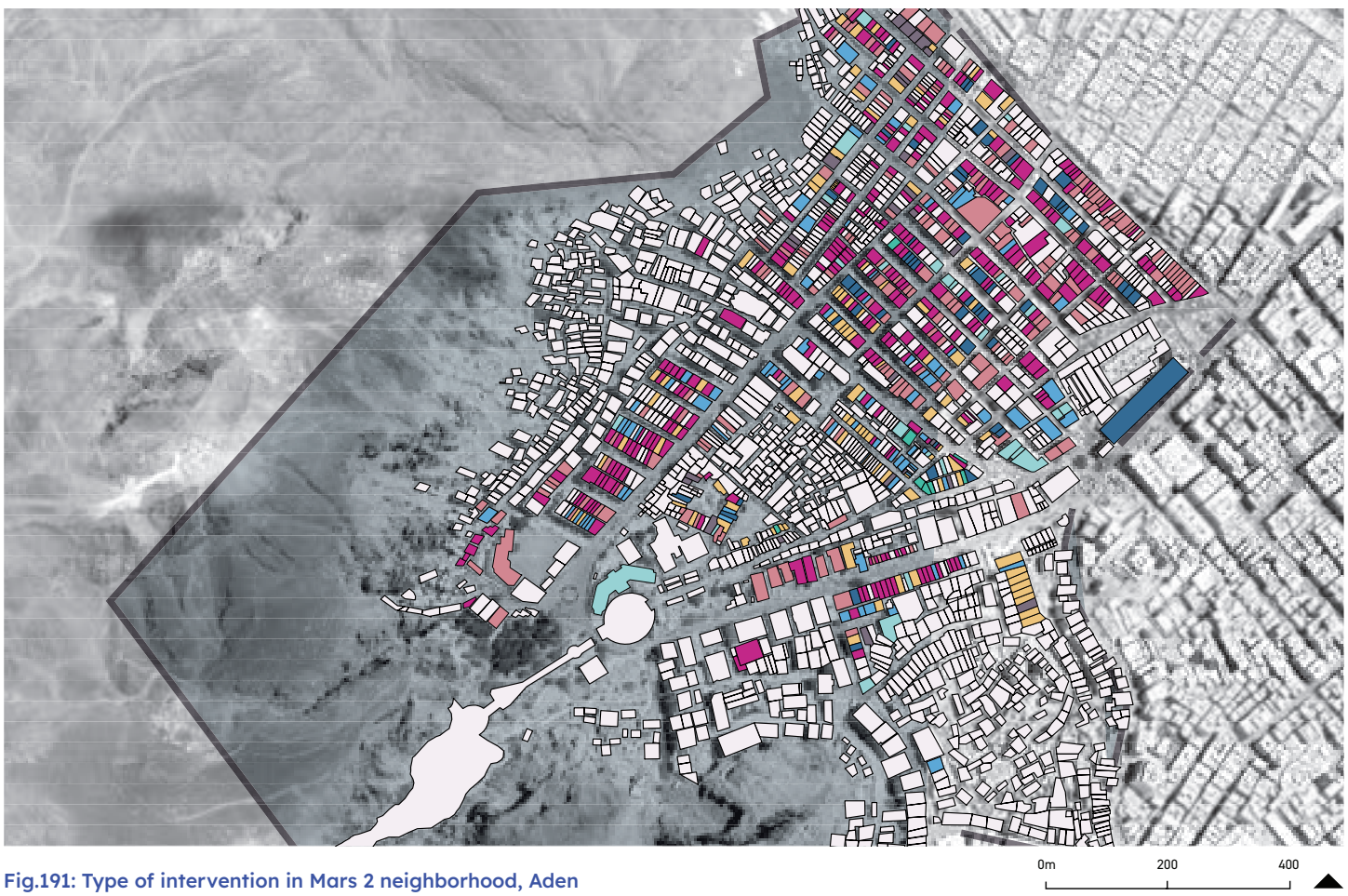


Fig.191: Type of intervention in Mars 2 neighborhood, Aden

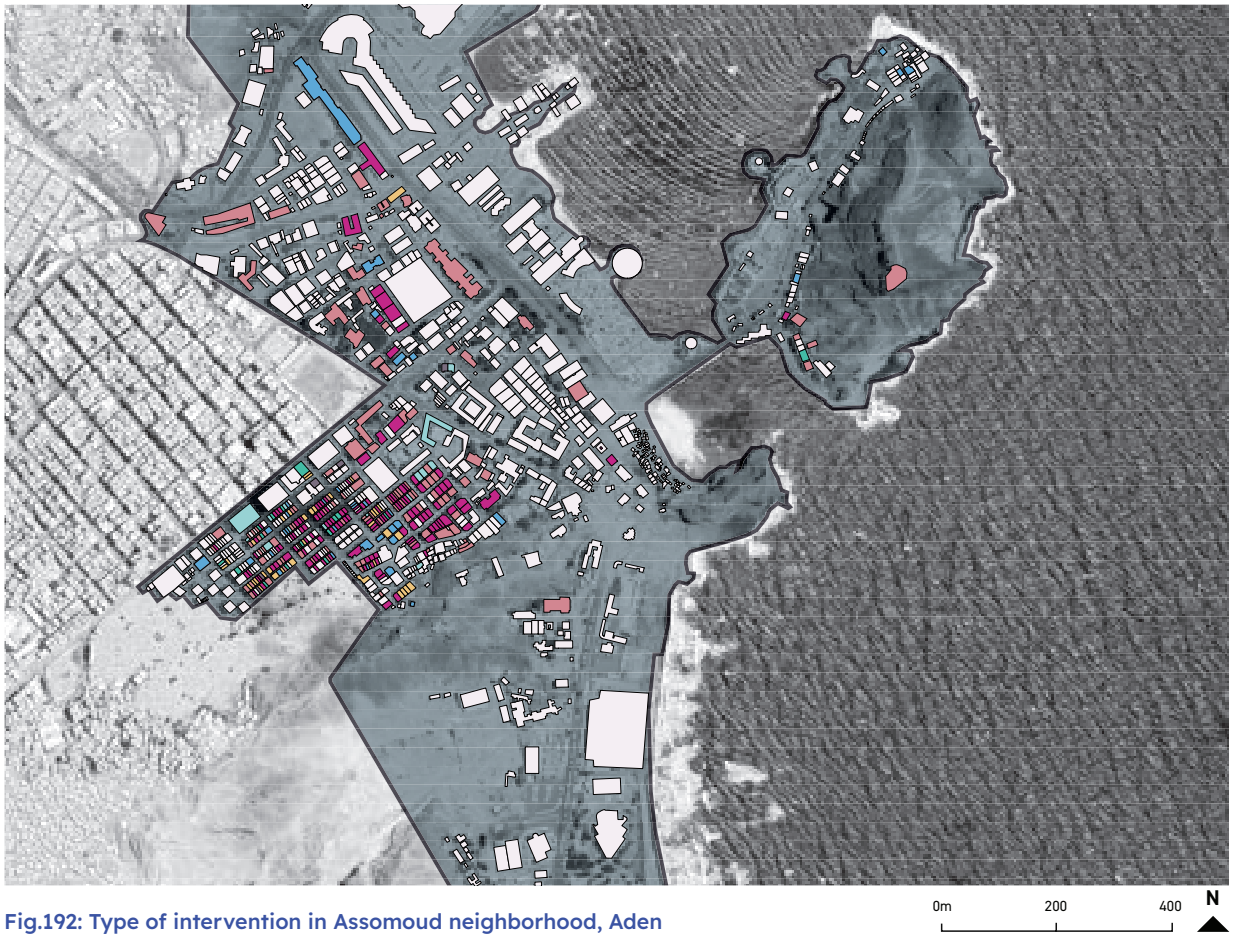


Fig.192: Type of intervention in Assomoud neighborhood, Aden

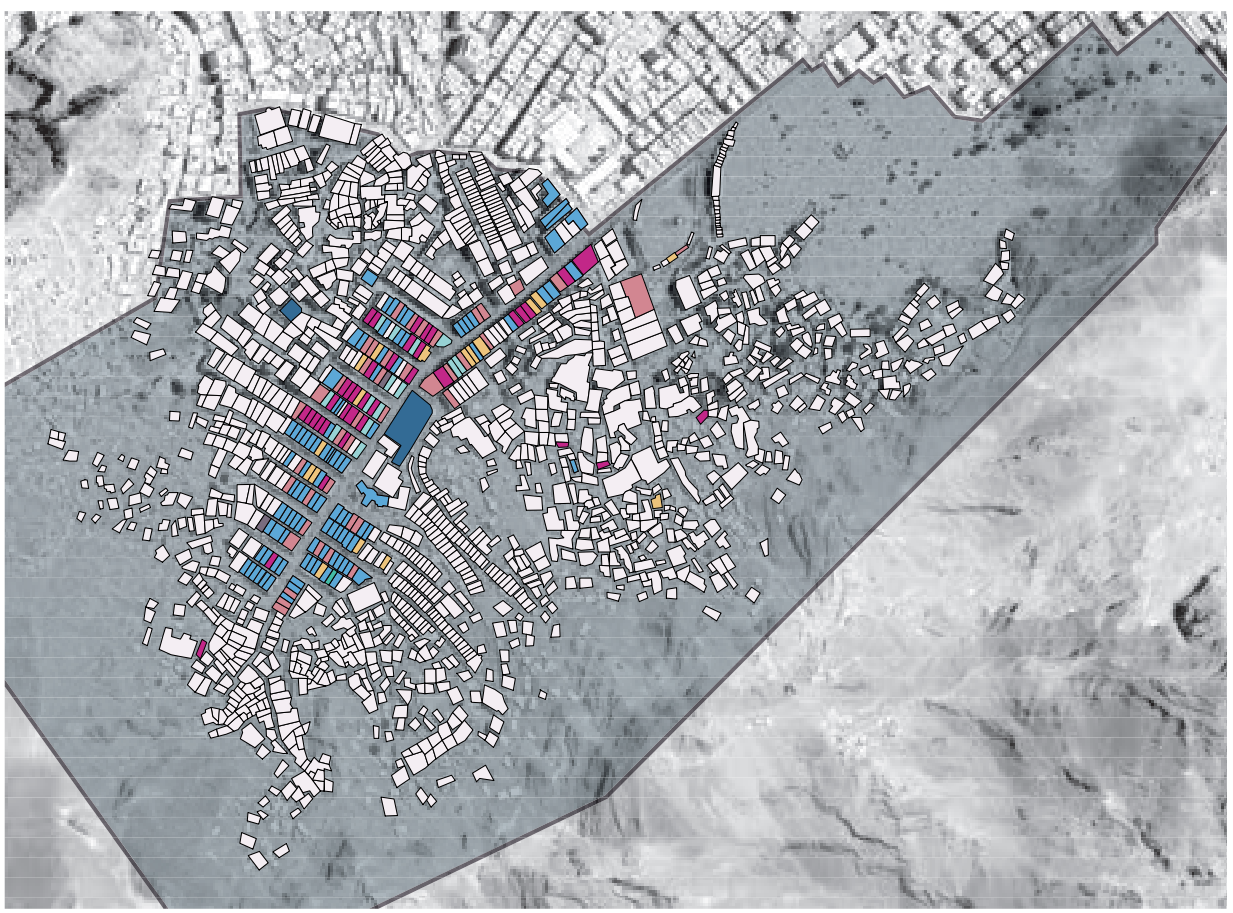


Fig.193: Type of intervention in Awal Mayou neighborhood, Aden

various factors, including weathering and aging, lack of maintenance, and exposure to natural disasters such as earthquakes and floods. They are also affected by wars, obliteration, and other reasons.

Additionally, the lack of information about traditional construction materials, methods, and techniques, which are often overlooked due to the preference for modern materials, poses a threat to the preservation of these authentic facades, leading to their erasure, distortion, and alteration.
Another aspect of the problem is the decline in the living conditions of the area's residents, given the current situation in the country. They face a scarcity of job opportunities and an influx of refugees from neighboring regions, adding societal pressure to the city. Whether in receiving displaced individuals or dealing with the scarcity of employment opportunities in the region, there is a need for comprehensive projects to improve living conditions and alleviate the impact of displacement on the community.

Challenges

Technical Challenges:
The inclusion of unskilled workers poses a significant risk to heritage monuments of high value, introducing a challenging dynamic that may compromise the site's intrinsic worth and services. Mitigating this risk necessitates a continuous campaign to enhance on-site personnel's comprehension of the site's values, coupled with consistent supervision and training.

Budgetary Considerations for Site Security:
Certain supplementary materials indispensable for safeguarding site security and stabilizing structural damage reduced the budget. Examples include the installation of scaffolding and wooden walkways (bridges) to alleviate pressure on specific areas and prevent further damage.

Social Challenges:
During the assessment phase, encountered challenges include the reluctance of some house owners to participate in the survey or grant access for a more in-depth examination of structural and rooftop defects. Complications also arise when multiple owners share a single building, complicating the investigative process. Additionally, the unfamiliarity of the owners with such activities instills doubt, leading to hesitancy in permitting interventions.

Environmental Challenges:
The initiation of training workshops during the holy month of Ramadan, scheduled for night shifts, poses environmental challenges. Site surveys, initiated post the Eid holiday, faced difficulty due to the heat, prompting surveyors to schedule activities in the early morning before noon and after the lunch break to navigate the challenging weather conditions.

3. Historic fabric and typology overview

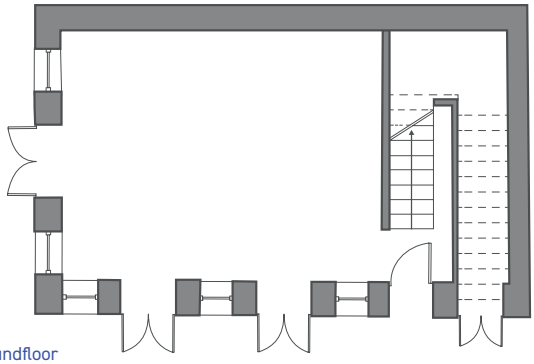
3.1. Main historic housing typology(ies) in project area:

Name: The colonial longitudinal buildings

Period: between 1838 - 1967

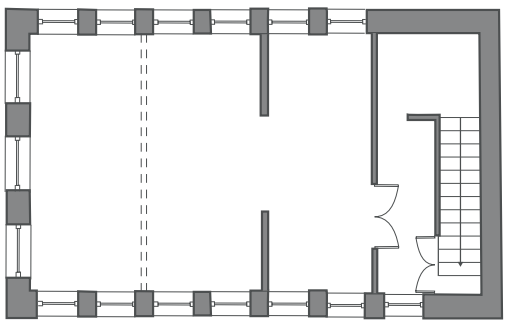
Occupants: 50% of Yemenis, the remaining percentage was distributed among other nationalities including Indians, Somalis, Europeans, Arabs and Jews.

Description
The colonial longitudinal buildings exhibit a characteristic layout, arranged in a back-to-back configuration with narrow alleys between them. On the opposing side, the main street serves as a dividing line, creating parallel blocks within the residential quarter. Each building typically comprises 2 to 4 stories, with the rooftop maintaining a consistent straight form, often adorned with tiles. Architectural diversity is a prominent feature, with

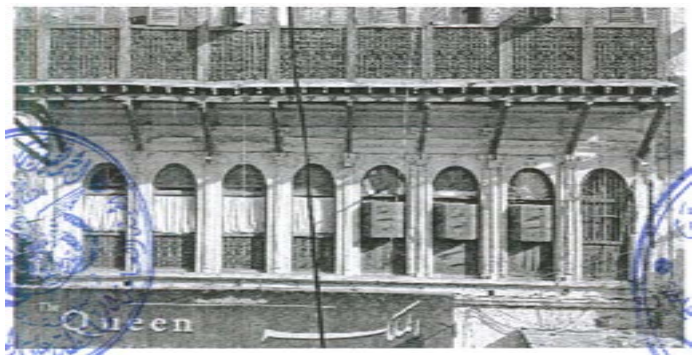


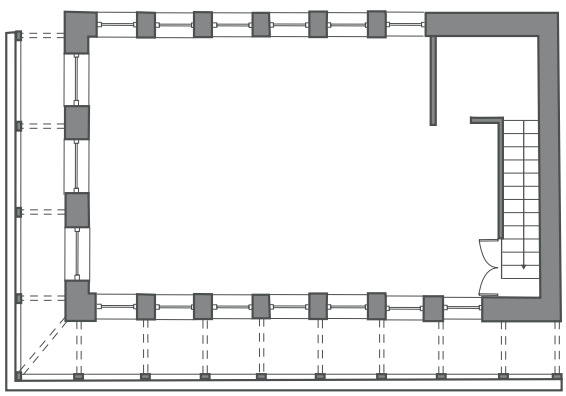
Groundfloor
(commercial use)



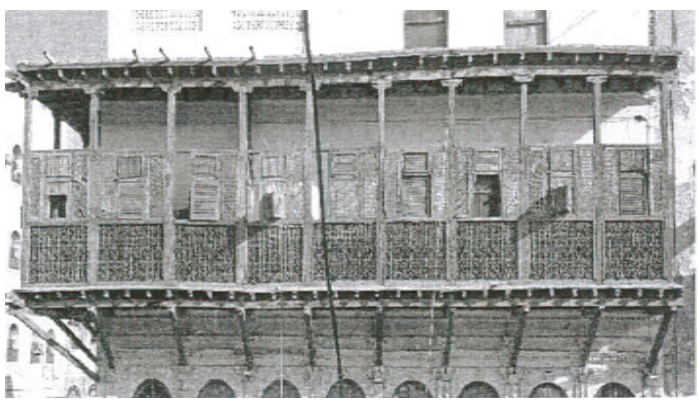


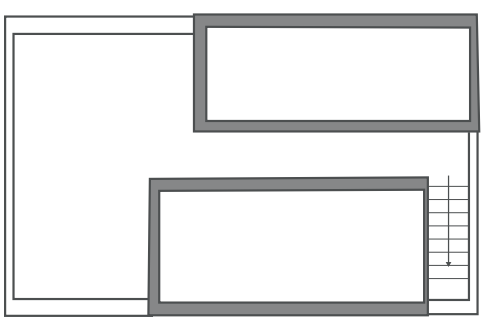
1st Floor
(residential use)





2nd Floor
(residential use)





Terrace
(storage)



0 2 4m

Fig.194: Typical layout of a residential building in Aden © The General Authority for the Preservation of Historic Cities

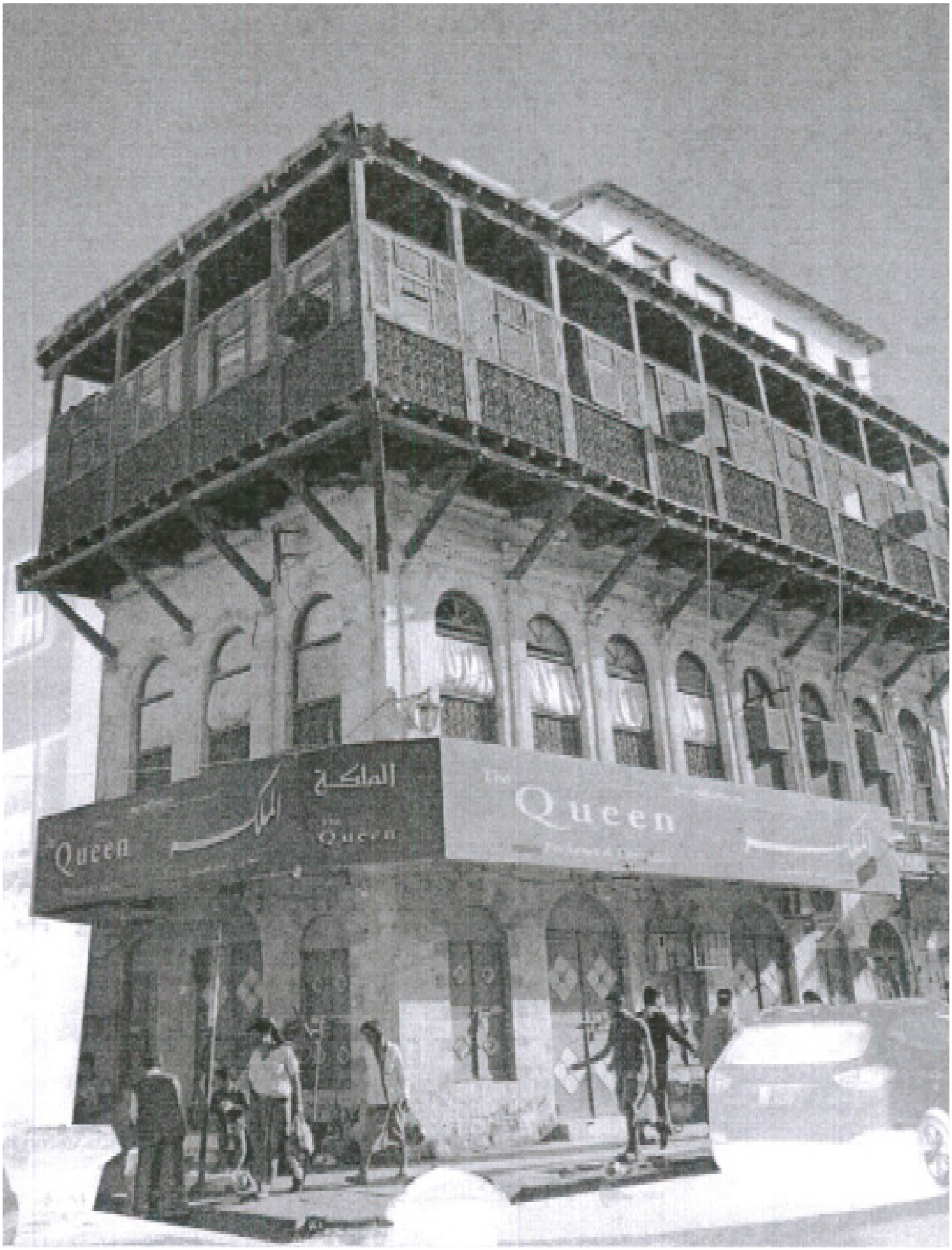


Fig.195: View of Tormoum house in Assomoud neighborhood, Aden © The General Authority for the Preservation of Historic Cities

buildings showcasing a blend of Colonial, Hindu, Indo-Islamic, and Arabian styles. This amalgamation shows the historical and architectural significance of these buildings.
Façades of the buildings feature minimal yet distinctive decorative elements, including wooden Mashrabiyas panels, rectangular windows with wooden shades, and Qamriah on certain floors, crowned with colored glass and wooden frames.
The facades also demonstrate their functional role in various spaces and social aspects, such as privacy, the living standards of owning families, environmental solutions, various architectural styles, and other observations, evidence, and indications of different periods.
The size of buildings varies in correspondence with the owner's financial status, with those situated at street corners often indicative of wealthier proprietors. Presently, many of these buildings are occupied either by a single family or house multiple tenants.

Space distribution
In the colonial longitudinal building, the ground floor is designated for commercial activities, while the upper floors (first and second) are for residential use. The fourth floor includes rooms intended for the use of the family's elder (the grandfather), commonly referred to as 'Al-Kubn.'

3.2. Condition of the housing units considered for rehabilitation :

Buildings in a poor preservation state due to the lack of maintenance and war-induced damage, compounded by adverse climatic factors like rain and torrential downpours.

3.3. Rehabilitation know-how, materials, and material sourcing

Local know-how was retained and revived thanks to:

- Using qualified expertise from other cities in various specializations to carry out restoration work with young people and train them.
- Targeting fresh graduates from technical institutes and related colleges.

Materials
The use of natural materials and manufactured materials produced locally.

3.4. Timeline

Refer to figure 190 for more details.

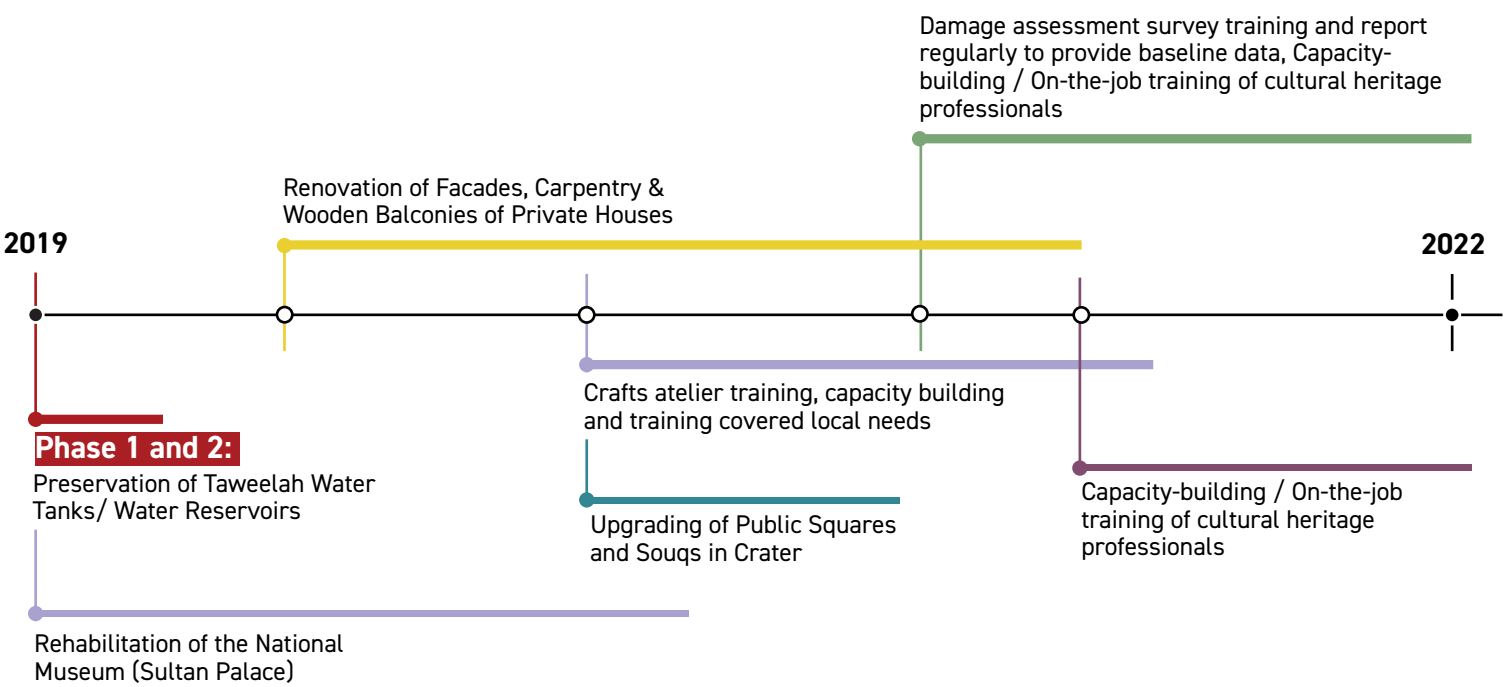
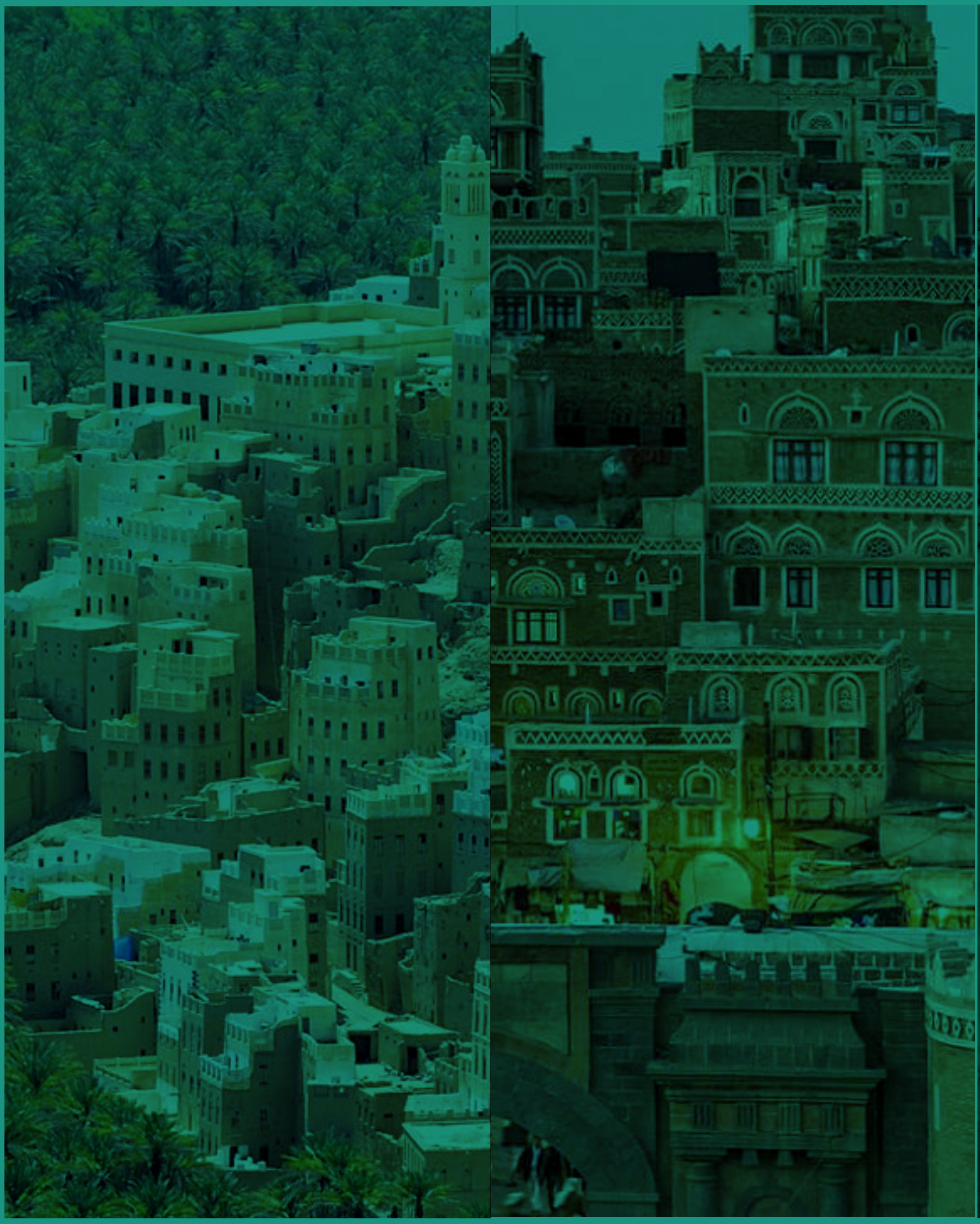
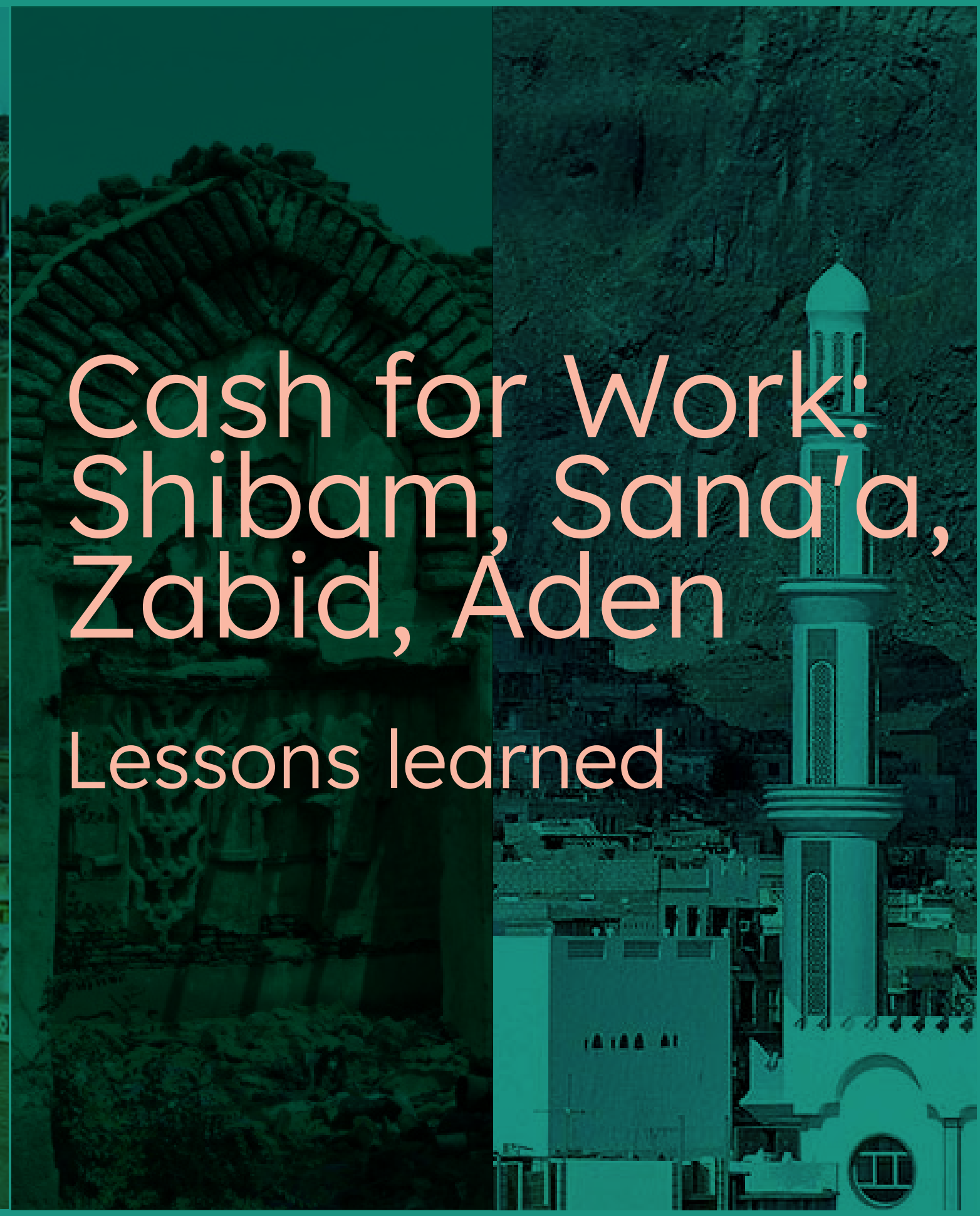


Fig.196: Aden, Timeline





Cash for Work: Shibam, Sana'a, Zabid, Aden

Lessons learned

5.1. RESULTS/ IMPACTS

Technical improvements on original construction techniques/materials

The original materials were improved by obtaining the same materials, the same efficiency, and the addition of improvements from the use of modern coatings for wood to combat termites (termites) and the technique of periodic spraying of wood after installation in the building , and all this contributed to increasing the durability of this wood.

Enhancement of the use of clay with nura (lime) in building walls helped to stop the spread of termite eggs. The use of available modern technologies helped improve performance and accelerate the pace of completion in all stages of the project, starting from documentation, studies preparation , and everything related to implementation.
As for techniques, the latest technologies were used in scaffolding and with personal protective equipment for workers, the use of vehicles to transport materials, and the use of some modern machines in cutting wood that did not exist, which contributed to the speed of completion.
Carbon footprints are very limited because of the compounds,

Affordability is very suitable with the nature of the business and technologies

Legislation changes
N/A

Programs post-rehabilitation

The program was designed to rescue the residential houses, that have been damaged or collapsed by the recent crisis, that have affected the local community who are still living in the city.

Economic impact

Employment
Direct employment opportunities via offering job opportunities mainly of the local city community and youth. As such: Creating direct job opportunities for skilled and unskilled workers in the construction crafts. Additionally, for the engineering and administrative staff to work on the project.
For Zabid Direct employment provided for 1284 beneficiaries (999 M– 285 F). total working days 79,083 (72,821 M- 6,262 F).
Indirect employment opportunities via; the contractors, logistics, waste collector and materials supplies. Mainly, the traditional materials suppliers enhance their business by demanding their services. Besides, the cultivation of traditional wood and those working in cutting and transporting it. Lastly, the owner's water supply was used in the project. For this category count was not perceived in this project.

Social impact

Gentrification mitigation
Some of the house owners put their houses up for sale, and some families that left the city want to return to their homes.

Education
Implementation of 29 capacity building and training in traditional crafts for local needs, involving 837 beneficiaries, of whom 496 were male and 339 females. Brochures for the cities have been produced to strengthen the ownership of local communities and private home owners by explaining the eligibility criteria and priority actions in each city. Especially, by giving priority to the youth of the society, providing them with the required skills to become an active participant in the project and offering them hands-on job opportunities.

5.2. CHALLENGES/ CRITIQUE

Financial constraints

Legislative and tenure constraints

Legislative challenges

N/A

Tenure challenges

In some cases, which we faced and in which there was a dispute over the possession and ownership of the land, it caused obstruction and delay in the implementation of the intervention to save the damaged building.



Fig.197: A woman enrolled in the Cash4Work program working onsite ©Unesco

ANNEX

a. Contact

Dr.Laila Haidar, Project Coordinator with the Social Fund for Development (SFD)- Yemen, under the Cultural Heritage Unit.

haidarlaila@outlook.com

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5H-13

IRAQ | Mosul

Reviving Mosul and Basra Old Cities

Mosul, Iraq



Fig.198: A general view of the Grand Mosque of al-Nuri during its reconstruction, in the old city of Mosul, Iraq, Jan. 23, 2020. ©Reuters Photo



INTRODUCTION

'Mosul' in Arabic means 'the linking point'. Mosul is the second largest city in Iraq and over its history largely developed on the western bank of the Tigris River. The succession of many empires and dynasties made the Old Mosul a historically diverse city with a heterogeneous ethnic, religious, linguistic, population and architecture that reflected this diversity.
The development of oil refineries and trade industries in Mosul led to a stronger economy in the area. However, continuous external and internal conflicts in the region since the 1980s and the occupation of the city itself under the Islamic State in Iraq and the Levant (ISIL; also called Islamic State in Iraq and Syria [ISIS]) from 2014-2017 caused immeasurable damage in the Old City, a strained economic position, and dire living conditions for Mosul's inhabitants. It is estimated that following the city's occupation, 5000 buildings in the Old City, including monuments and houses, were in a state of destruction or collapse.
The Old City of Mosul was inscribed into UNESCO World Heritage Designation under criteria (ii)(iv)(vi) in 2018. This serious situation in the city spurred the collaborative involvement of UN-Habitat and UNESCO, launching their flagship 'Revive the Spirit of Mosul' project and 'Initial Planning Framework for the Reconstruction of Mosul' in 2018 and a joint project in Mosul and Basra titled, 'Reviving Mosul and Basra Old Cities' in 2019. These projects follow numerous urban studies and framework strategies post 2017-liberation. 'Reviving Mosul and Basra Old Cities' seeks to address the depopulation, lack of opportunities, and loss of cultural heritage in the two historic urban areas. While Mosul and Basra face different challenges, with different recent histories, both cities have been left with significant damages from conflicts and lack of funding in the past decades. The UNESCO project so far has

engaged with these challenges through rehabilitating heritage houses, reconstructing lost infrastructure, creating community opportunities for training and employment, funding businesses, facilitating school and social center development, planning tourism infrastructure, as well as rehabilitating damaged and affected monuments. The project's holistic efforts since the launch of Phase 1 in 2019 have significantly benefited both cities, with Phase 3 due to begin in 2024. .

Main instigator
UNESCO, UN-Habitat Iraq

Historic Center
Old City of Mosul

Targeted beneficiaries
Owners of rehabilitated homes, SBAH, Sunni & Christian waqf, Ministry of Education

Project duration
Phase 1: 36 months, January 2019 - December 2022.
Phase 2: 36 months, January 2020 - December 2023.
Phase 3: 40 months, December 2023 - 2027

Project budget
Reviving the Spirit of Mosul: USD 105.5 million
Reviving Mosul and Basra Old Cities : USD 37.8 million (including budget allocated to Basra)

Progress status
Reviving the Spirit of Mosul: 36 months, April 2019 - December 2022
Reviving Mosul and Basra Old Cities : Project in progress. It was expected to be completed by December 2023. Housing rehabilitation stages completed in September-October 2023. A new phase was launched in end of 2023 until 2027.

1. IDENTIFICATION

Size of the overall city
180 km2

Size of the historic area
250 ha, 15000 houses

Main function of the city
Second largest city in Iraq, commercial center in region

Main function of the historic area
Residential and commercial

Heritage status
UNESCO World Heritage Designation under criteria (ii)(iv)(vi) in 2018.

Income level of dwellers in the historic city
Majority of families within project focus area are low income.

Demographic profile
Population exodus following 2014 ISIL/ISIS and the 2017 war resulted in more recent migration influx of rural migrants, IDP's from Niniveh, and Saleheddin and Anbar Governorates. Current population of the Old City is uncertain however the assumption is that it has returned to around the same level pre-exodus.

Land tenure
Mosul and Basra sites are of mixed ownership divided between private, public, religious endowments, etc. The rehabilitation project in Mosul largely focussed on privately owned houses. Original owners pre-ISIS occupation are returning to newly rehabilitated middle-sized houses while larger houses, often with international owners, are more difficult to re-occupy and determine ownership.

Housing role in the project
The 'Revive the Spirit of Mosul' UNESCO project, a catalyst for the joint initiative with Basra, was based on three pillars: Heritage, Cultural Life, and Education. The Heritage pillar was concerned with Heritage Houses, including rebuilding and rehousing. This was the main role of housing amongst the many other focus areas in the project.

Situation and urban evolution
The Old City of Mosul is located on the western bank

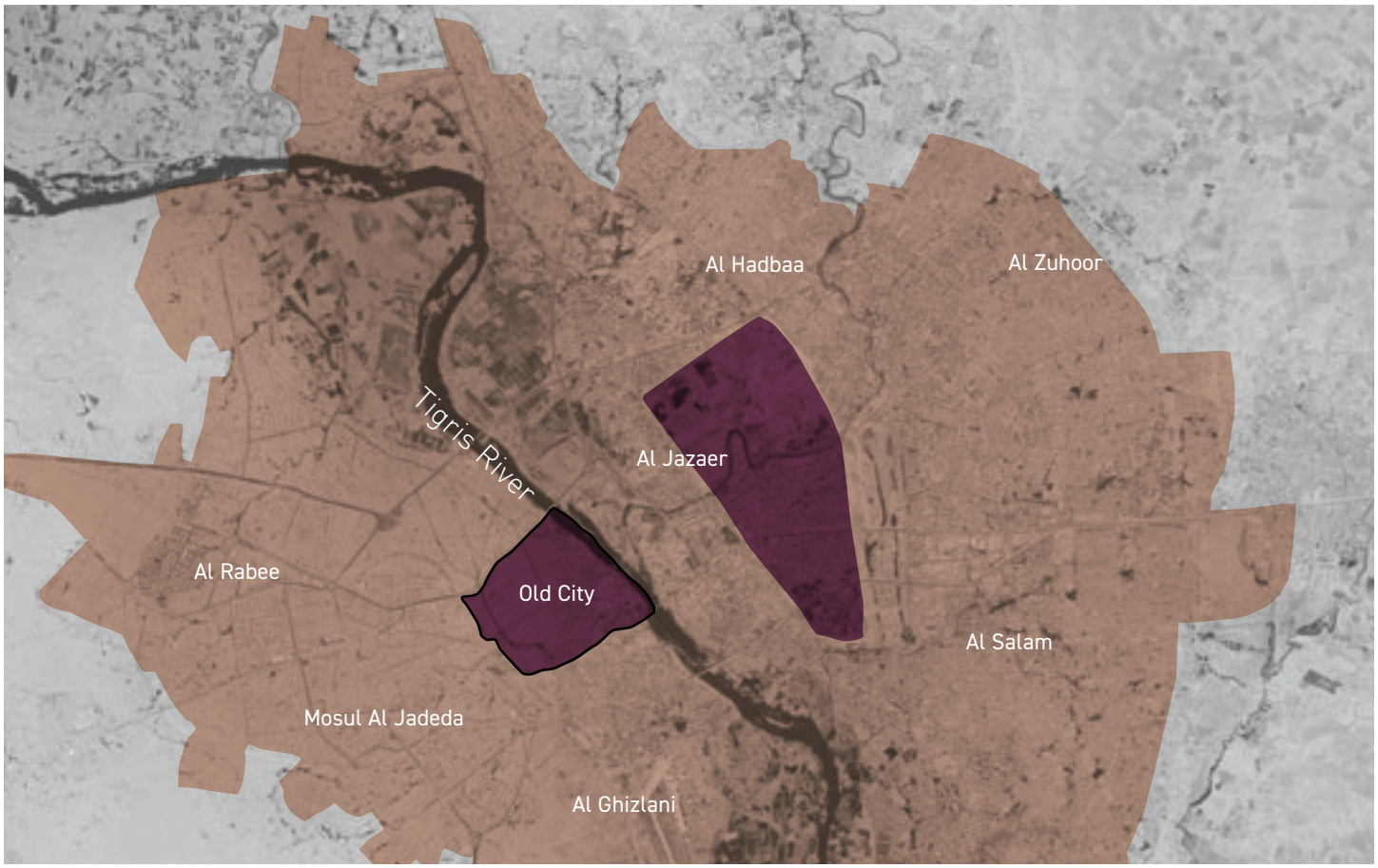


Fig.199: Situation and urban evolution of the Old City of Mosul within Greater Mosul

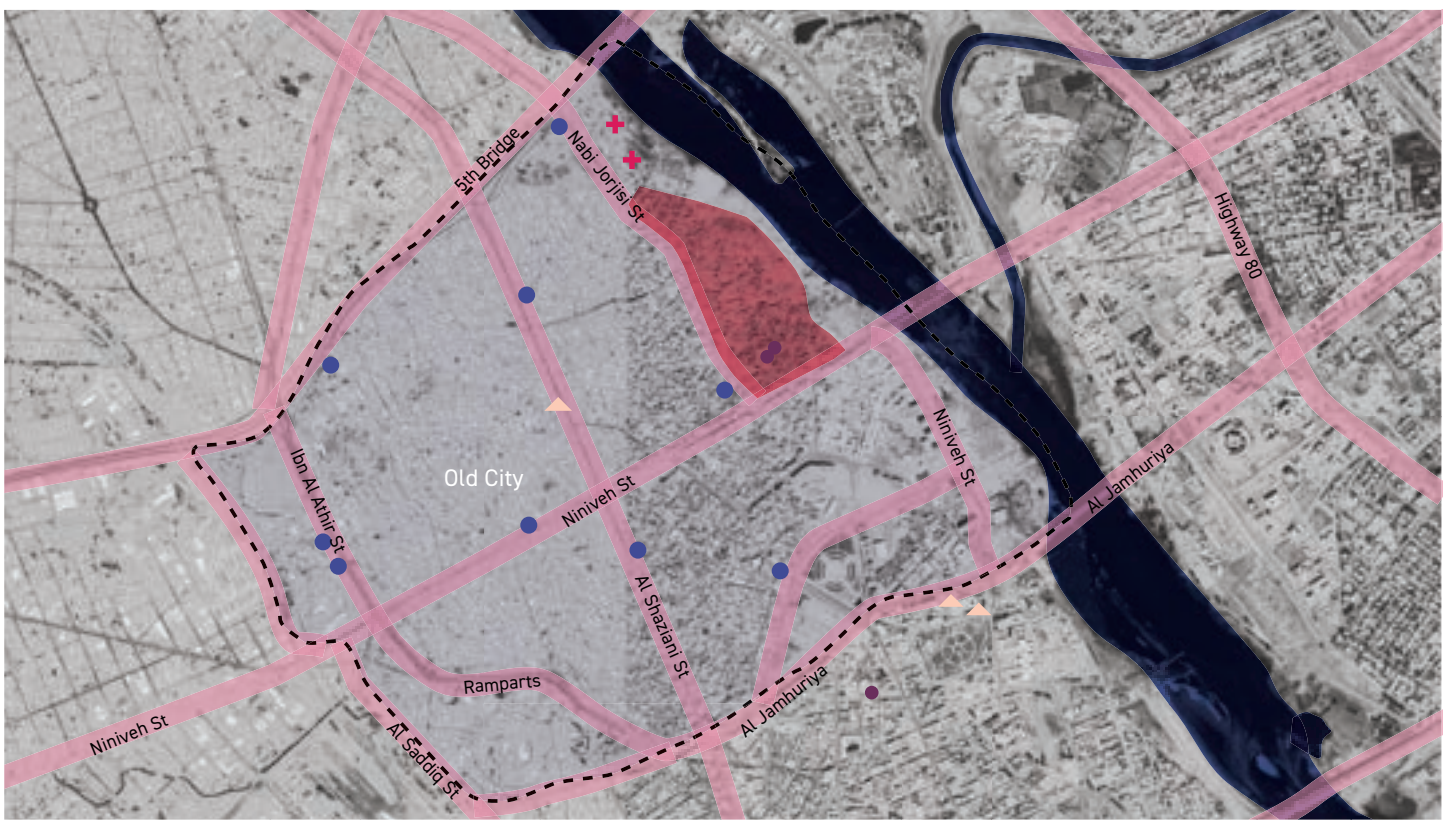


Fig.200: Localisation of the rehabilitation interventions in the Old City of Mosul

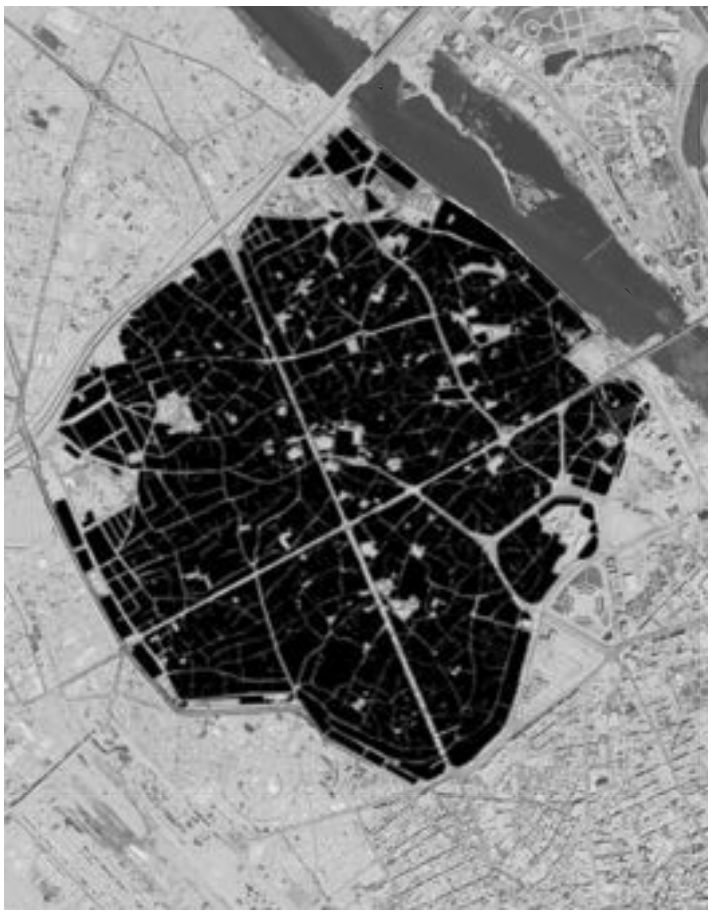


Fig.201: Built-up area of the Old City before the conflict - 2017 (UN-Habitat, adept from field survey by Studio Galli International, 2008)

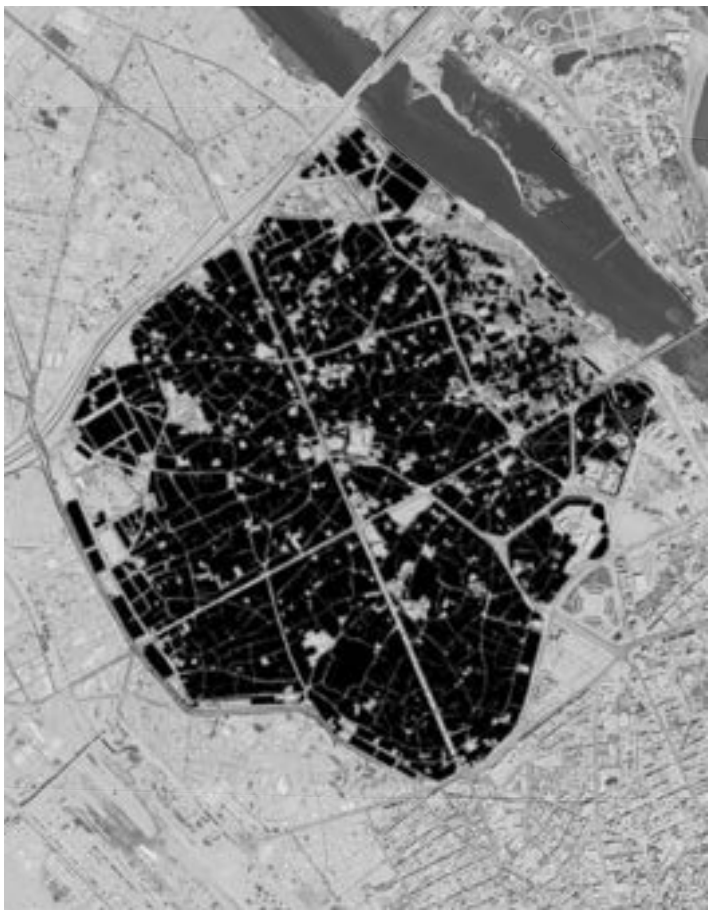


Fig.203: Built-up area of the Old City after the conflict - 2018 (UNOSAT/ UN-Habitat/UNESCO/ Iconem, 7cm drone imagery 2018)



Fig.202: Damage assessment of the Old City (UNOSAT/UN-Habitat/UNESCO/ Iconem, 7cm drone imagery 2018)International, 2008)

of the Tigris river. The Old City is surrounded by the neighborhoods of Al-Ghizlani, Mosul Al-Jadeda, Al-Rabee, Al-Hadbaa, Al-Jazaer, Al-Salam, and Al-Zuhur. From an aerial perspective, the shift in urban morphology is clear, with the dense, organic street network of the Old City contrasting the gridded rectangular newer areas. The Old City is demarcated and enclosed by a ring road where the former ramparts of the Old City were. The Al-Ghizlani neighborhood, closest to the Old City, has a slightly denser block network, with more street variation than the surrounding newer developments. Some of the streets in the Al-Ghizlani area appear to be part of an older street network shown in a map of the area from 1944.

Historically, Mosul was a separate settlement from the ancient Assyrian capital city of Niniveh on the eastern bank of the Tigris. However, the decline of Niniveh's power and Mosul's expansion led to Mosul encompassing Niniveh and becoming one of the most important cities on the crossroads between Syria, Anatolia, and Persia in around the 8th century. The architecture that we most associate with historical Mosul comes from the height of the city's powers while under the Zangid Dynasty in the 12th-13th centuries. During this period and subsequent dynasties, important schools of craftsmanship, chiefly metalwork, and miniature painting developed. These crafts were a major trade export from Mosul to nearby cities such as Aleppo and Cairo during this time. The region was attacked by the Mongol Empire in 1258 and lost many of its powers. The City of Mosul later came under the control of the Ottoman Empire from 1534 to 1918. Under the Ottomans, Mosul's positioning allowed it to become an important center of trade and commerce. The British occupied Mosul following World War I and in 1926 they delegated Mosul as a part of Iraq as opposed to part of neighboring Turkey.

2. STAKES

Diagnosis/Status

Under criteria (iii)(v)(vi) UNESCO World Heritage designation, the Old City of Mosul is of international importance. Criterion (iii) is designated due to its historic significance; being a city established in the 7th Century BCE with several significant civic periods including the Zangid Dynasty. Under criterion (v), the Old City displays unique architectural heritage with 'distinctive character' through the use of alabaster stone and complex urban morphology. Lastly, under criterion (vi), the history and architecture of Mosul exhibits the rich cultural exchanges that took place over history in the city. Mosul's architecture is an amalgamation of various distinct ethnic and regional styles adorned and framed with local craft characteristics and elements. This historical influence of international trade and commerce is visible in the remnants of the city's architecture and warrants heritage protections. In the state of destruction and ruin prior to intervention, Mosul's unique heritage was at severe risk of complete loss and the city was depleted of resources and population. UNESCO identified that 80% of the Old City of Mosul was destroyed during IS occupation.

Challenges

Some of the main challenges facing the 'Reviving Mosul and Basra Old Cities' project were:

- Finding adequate local contracting expertise;
- Knowledge of traditional crafts with traditional materials was not always available;
- The open nature of the site required working around people in the area.

According to the 2018 'Initial Planning Framework for the Reconstruction of Mosul', additional challenges that Mosul suffered included:

- the inability of the housing market to provide enough housing despite high demand;

- the threat to the city's cultural heritage due to prioritization of quick reconstruction over heritage conservation;
- difficulties with coordination between sectors and agencies in high-density areas;
- reduction in infrastructure connectivity, increasing inequality between formal and informal developments;
- structural problems in the investment sector, and lack of attention to pollution in the urban environment which affects the health of citizens and ecosystems.

Objectives

This project sought to revitalize Mosul through revising existing conservation legislation and facilitating it for future projects, physical rehabilitation of damaged and abandoned structures and infrastructure, and to bolster socio-economic and cultural development in the area through employment initiatives and community training. Specific objectives for Mosul were:

- Constructing and restoring 124 heritage houses in the Nabi Jirjis neighborhood, including 2 palatial houses and 7 historic residential houses in the Al Nouri Mosque Complex
- The reconstruction of El Ekhlaas School, a boys and girls primary school
- Upgrading neighborhood infrastructure and utilities
- Providing job opportunities and training for local communities
- Difficulties for the return of approximately 15,000 families,currently resident in camps, from Mosul District to their area of origin, with the most common obstacle to return being damage to their homes.
- Conservation of historic fabric and buildings
- Improving the urban environment of neighborhoods damaged by the blast
- Provide affordable housing and tenure security in rehabilitated vacant units in neighborhoods damaged by the blast
- Enhance the cultural life of neighborhoods



Fig.204: Courtyard view showing north and east iwan imagery 2018)International, 2008)

damaged by the blast
- Provide training, jobs and economic opportunities to construction and craft professionals during the duration of the implementation phase.
- Raising awareness on housing stock state, availability and affordability in Beirut.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Late Ottoman Courtyard Houses
Period : Late Ottoman (18th-20th century)
Occupants : Moslawis, international owners, public entities

Evolution of housing typologies
The Old City of Mosul is estimated to have been established after the fall of the Assyrian empire in the 7th century BCE on the opposite side of the Tigris river as ancient Niniveh.
The Zangid Dynasty in the 12th-13th centuries with the Mosul schools of craftsmanship contributed significantly to the materials and elaborate techniques used for architecture in the city. In 1534, Mosul was rebuilt under the Ottomans. In this rebuild, residential architecture, such as grand private houses as well as monuments were prominent and unique in vernacular. In this early Ottoman period, civic wealth allowed iterations of these large grand private houses to develop and reiterate over time, incorporating crafts and interior ornament. One of the main features that changes over time in Moslawi houses is the predominant materials used. Characteristically, Mosul's architecture (predominantly from the late Ottoman period 18th-19th centuries) features heavy use of stone and brick. This stone (local alabaster) became known as 'Mosul marble' and was ornately carved as ornamental frames for doors, windows, and arcades. Residential architecture from this period notably features sardib (cellars).

Description :
Mosul's long history as a cultural crossroads has led to its diverse architectural vernacular and urban morphology. Its monumental architecture and palaces feature elements of different styles such as Egyptian Fatimid, Christian Nestorian, and the 12th century Mosul School of craftsmanship. While the city's monuments such as the Al-Nouri mosque destroyed by ISIL/Daesh in June 2017 and historic palaces are addressed in the rehabilitation project, historic housing typologies in the city and the unique alleys and forms of the cityscape are a primary focus to revitalize the communities of the Old City.
One of the most characteristic housing typologies in the Old City of Mosul are the 19th century late-Ottoman era grand courtyard houses. These houses and other structures from this era make up the majority of the architectural monuments and heritage of the city. The grand courtyard houses are typically centered around multiple rectilinear courtyards and are two and a half to three storeys. Surrounding the larger courtyard are broad and lofty iwans with entrances to the lower galleries and rooms at the ground level.
Below the smaller interior courtyard is the characteristic vaulted sardib cellar.
The houses were largely made of alabaster stone and brick, however use of wood can be seen in certain elements such as the column capitals of the Bayt al-Tutunji, a private early 19th century Ottoman courtyard house located in the Old City. The cream white alabaster stone was ornately carved, ornamenting the iwans, doors, arcades, windows, and interior facades to an extremely high level of detail.
These houses, along with smaller residential dwellings and larger monuments, make up the tightly knit medieval urban fabric of the Old City of Mosul.

3.2. Condition of the historic housing units before rehabilitation

80% of the Old City of Mosul was destroyed during IS

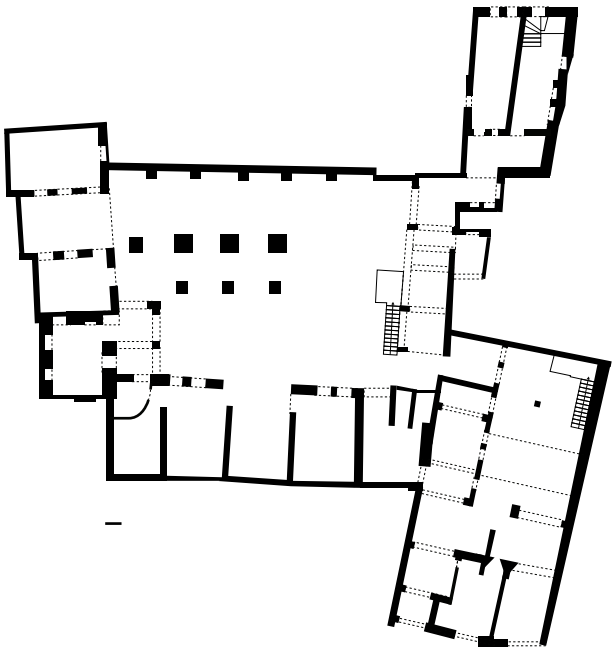


Fig.205: Typical Moslawi Courtyard House Ground Floor Plan

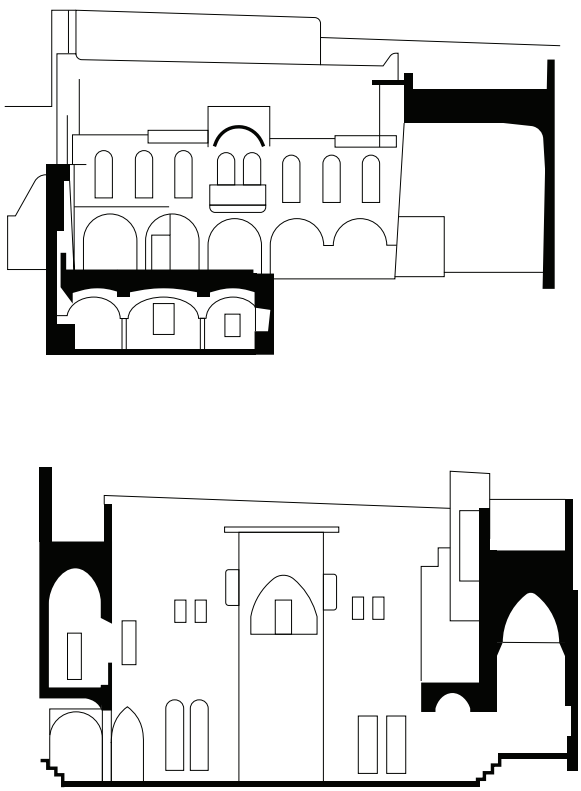


Fig.206: Traditional Mosul City House Sections



Fig.207: Exterior view of porch and qa'a. ©UNESCO/UN-Habitat



Fig.208: Interior view of cellar below south iwan, facing from west to east. ©UNESCO/UN-Habitat

occupation. Prior to rehabilitation, Moslawi houses were in a dire state with extensive structural damage and abandonment due to conflict. This destruction left large clearings and gaps in the historic urban fabric.

3.3. Rehabilitation know-how, materials, and material sourcing

Local contractors and craftsmen were the lead workers on the project. Where rehabilitation know-how was lost, training was provided to community members. UNESCO employed 12 alabaster craftsmen to train 54 workers on 124 house rehabilitation projects. The training gave them vocational skills and qualified them for employment. Some traditional crafts have required changes in materials where steel bars replace traditional cast-iron elements.

Regarding materials, masonry elements such as stone, brick, lime, gypsum, and alabaster, were sourced locally and nationally. Traditional, local plasters and mortars were used for Farshi brick and pavement tiling in Basra. Tropical teak and northern woods were imported for carpentry work. Granite cobblestones from Turkey were imported for use in street paving in Mosul.



Fig.209: Intervention chart ©UNESCO/UN-Habitat

4. MECHANISMS OF THE PROJECT

4.1. Process

- 'Revive the Spirit of Mosul' flagship launched in 2018
- 'Reviving Mosul and Basra Old Cities' launched in 2019

The project started with a careful documentation of the typology of the houses, the assessment of damage and degree of damages, heritage value, and ownership and vulnerably of the owners.
To define what type of intervention is suitable for a certain building, UNESCO categorized the 'quality' of its architecture, typology, historical significance, value, character, integrity and authenticity, uniqueness/ singularity, and relation to its context: In its zone of intervention, UNESCO classified the buildings in the Old Cities of Mosul and Basra according to the following criteria:

- High value cultural heritage building / iconic landmark
- Heritage building
- Traditional / Vernacular building
- Modified traditional building
- Modern early 20th century building
- Building rebuilt in traditional style
- Ordinary building of no heritage value

UNESCO applied the following steps in the implementation of its activities in Mosul:

- Feasibility study;
- Programming;
- Schematic design;
- Design development;
- Construction documentation;
- Bidding and negotiation;
- Selection of contractor;
- Construction administration;
- Handover and defect liability period management.

CRITERIA GUIDING INTERVENTIONS IN OLD MOSUL	ARCHITECTURAL/HISTORICAL VALUE			
	A HIGH (LISTED)	B MEDIUM (HISTORIC/ VERNACULAR)	C LOW (TRADITIONAL)	D NONE (MODERN)
DAMAGE LEVEL 4 DESTROYED	A4	B4	C4	D4
DAMAGE LEVEL 3 SEVERE	A3	B3	C3	D3
DAMAGE LEVEL 2 MAJOR	A2	B2	C2	D2
DAMAGE LEVEL 1 MINOR	A1	B1	C1	D1
DAMAGE LEVEL 0 NEGLIGIBLE	A0	B0	C0	D0

Fig.210: Matrix developed that merges damage assessment and heritage value. ©UNESCO/UN-Habitat

4.2. Partners

Experts
UNESCO architect rehabilitation team and construction managers, structural engineers, civil engineers, mechanical engineers, local architecture teams

Public stakeholders
European Union, International Organization for Migration (IOM), International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), University of Mosul, Iraqi Ministry of Culture and the SBAH (State Board of Antiquities and Heritage, a department of the Ministry of Culture), Iraqi Ministry of Labour and Social Affairs, Iraqi

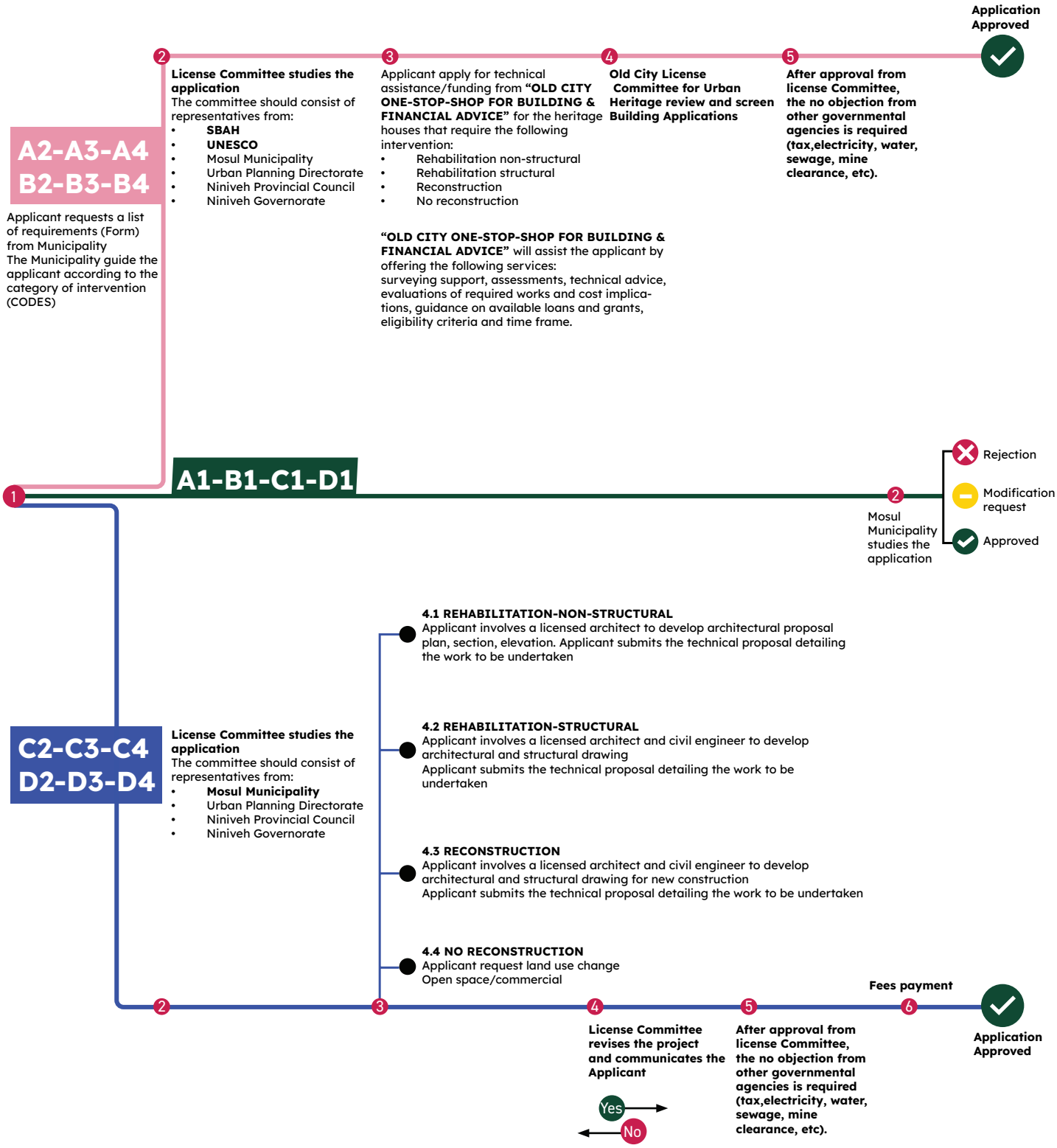


Fig.211: Selection process Three building permit trajectories A fast, standard, and heritage track for the reconstruction of residential buildings (Directorate of Urban Planning/UNESCO/UN-Habitat). [chart redrawn from figure in UN-Habitat Initial Planning Framework for the Reconstruction of Mosul document]

Ministry of Education, Governorate of Basra (Real Estate Department), Governorates of Nineveh and Basra, Ministry of Culture and SBAHs of Mosul and Basra, Municipalities of Mosul and Basra, Ministry of Labor and Social Affairs (MOLSA) and antennas in Mosul and Basra (DOLSA), UNHCR, Human Appeal, Norwegian Refugee Council (NRC).

Newly created institutional structures
The project didn't necessitatethe creation of any new institutional entities.



Fig.212: Before rehabilitation & restoration of the Suliman Al Sayegh Palatial House ©UNESCO/UN-Habitat



Fig.213: After rehabilitation & restoration of the Suliman Al Sayegh Palatial House ©UNESCO/UN-Habitat

4.3. Organization and selection

a. Organization
The project's organization is shown on the flowchart on the right (Fig. 206).

b. Selection process
The Old City of Mosul was inscribed under criteria (iii)(v)(vi) UNESCO World Heritage designation in the same year as the 'Revive the Spirit of Mosul' project's flagship launch. The two project sites, Mosul and Basra, were selected by UNESCO in partnership with the European Union due to many years of extensive damage through conflicts.

4.4. Tools

a. Implementation tools

Survey tools
A matrix was developed that merges the damage assessment and heritage value of the different buildings surveyed. Each value relates to a specific code and type of intervention (UNESCO/UN-Habitat).

Other survey tools consisted of:
- Site visits
- Meetings
- Interviews
- Documentary footage
- Consultation workshops

Stakeholder engagement program
The various projects surrounding Mosul's rehabilitation each included participatory and consultative processes with both community and stakeholders.

Community engagement
Users of the two palatial houses in Mosul were consulted during design and execution. For the rehabilitated residential houses, occupants were informed of project aims, rehabilitation process, and design goals.

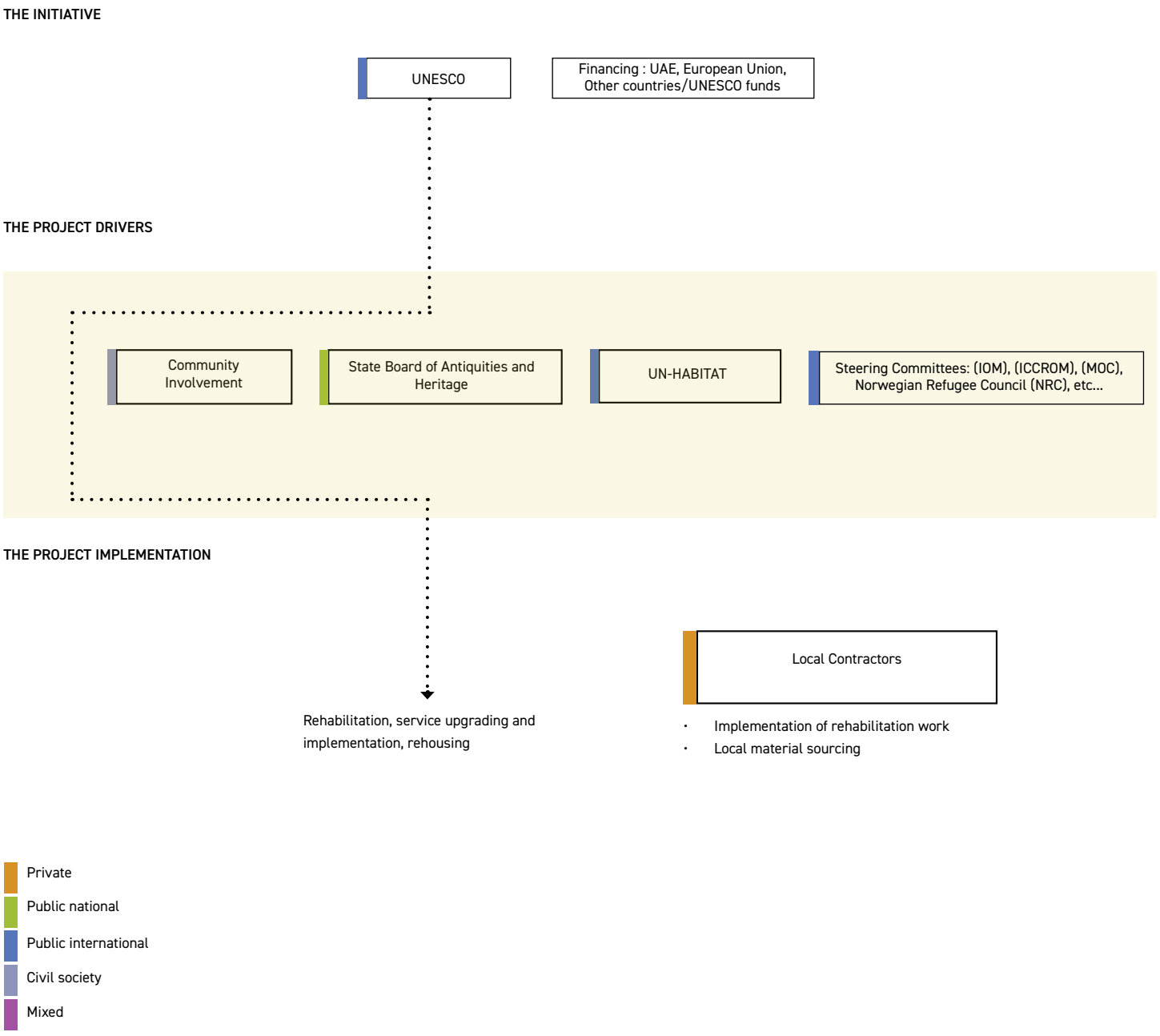


Fig.214: Organizational chart

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

In Mosul, private house owners are responsible for the management of their own homes. The two palatial houses were managed by the State Board of Antiquities and Heritage.

Laws and decrees
The Law 194/2020 was established to regulate the The Old City's cultural and archeologic heritage is protected under Iraqi Antiquities law. Moreover, the following specific series of laws and regulations were referred to during and subsequent to the project documentation phase:

- Roads and Buildings Law No. 44 of 1935
- Municipal Administration Law No. 165 of 1964
- Subdivision of residential lands Law No. 940 of 1987
- Antiquities Law no. 59 of 1936 and amendments No. 120 of 1974 and No. 164 of 1975 and 1976
- The General Authority of Antiquities and Heritage Law No. 45 of 2000
- Antiquities and Heritage Law No. 55 of 2002
- Urban Renewal Plan for Mosul Old Town of 2008

4.5. Financing

Total amount :

- Reviving the Spirit of Mosul: USD 105.5 million
- Reviving Mosul and Basra Old Cities : USD 37.8 million as of 2023 (including budget allocated to Basra)

Source : UAE, European Union, Other countries/ UNESCO funds

Proposed Implementation Period : 2019 - Dec 2023 (with possibility for maintenance) (both Reviving the Spirit of Mosul and Reviving Mosul and Basra Old Cities projects)
A new phase was launched end of 2023 until 2027.

Grant Recipient : UNESCO

Breakdown :

- Reviving the Spirit of Mosul:

UAE: USD 50.4 million;
EU: USD 38.5 million;
Other countries and UNESCO funds: USD 16.6 million.

- Reviving Mosul and Basra Old Cities :

European Union: USD 22.8 million (1st phase);
European Union: USD 15 million (2nd phase);
European Union: USD 9 million (3rd phase).

Financing sufficiency :
Financing was sufficient for the project's scope.

Maintenance financing :
Maintenance and sustainability financing is being discussed to facilitate future projects.

Rehousing financing :
Four houses were compensated through rental fees covered by UNESCO due to the fact that their properties were evacuated from construction work at the Ekhlaas school site. The rest of the rehousing was unfinanced and undertaken by owners themselves.

4.6 Timeline
Refer to figure 207 for more details.

5. LESSONS LEARNED

The project highlighted how approaching urban rehabilitation and recovery after destruction is best achieved through multidisciplinary integrated approaches. The project has exceeded numerous targets such as the number of rehabilitated houses, and so far the project is being received overwhelmingly positively. As seen in the Basra case study: Maintenance and project sustainability remain ongoing concerns and in Phase 3 the project seeks to address these through developing the relevant institutions. With the success of the project's initial phases, UNESCO's partnership with local authorities is improving to the benefit of the project.

In future, UNESCO wishes to approach two specific elements of the project differently:

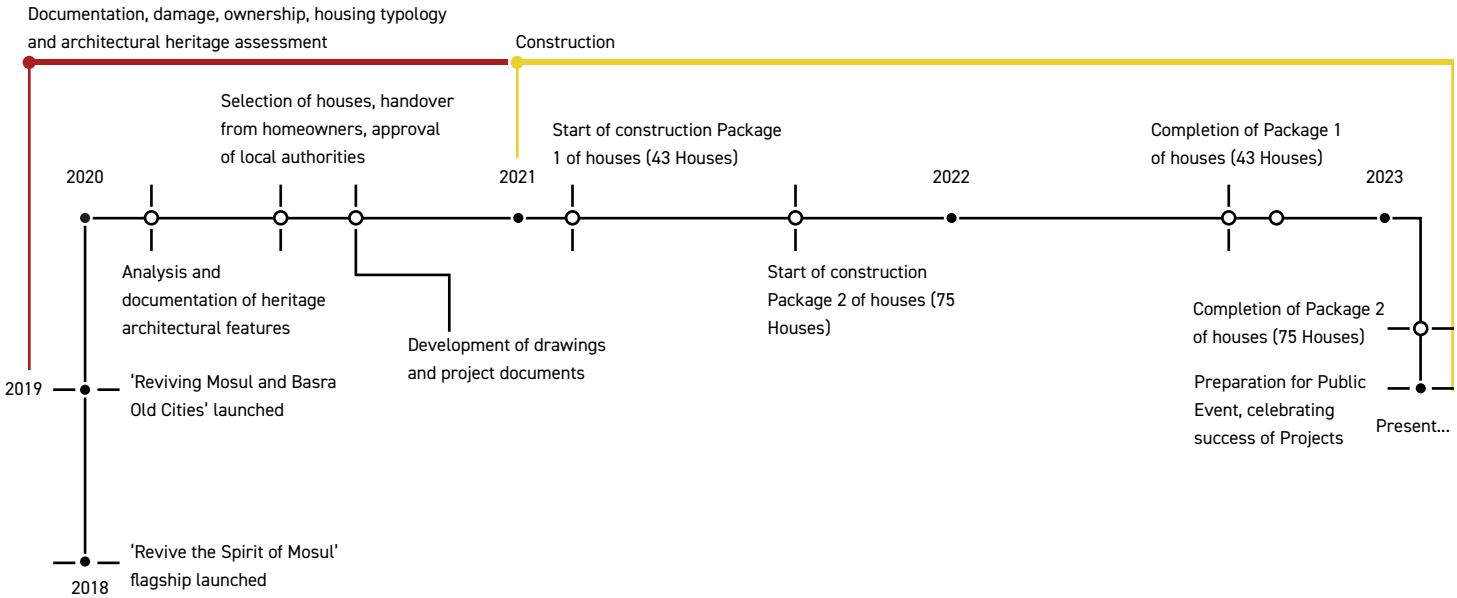


Fig.215: Timeline

1. To keep the design consultants of the interventions under contract during the execution phases to ensure continuity and absence of knowledge gaps;
2. To pay more attention at the project design stage to groundwater problems resulting in excessive dampness in the foundations and base of walls, capillary rise in masonry walls, efflorescence of salts and other associated problems.

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials

Modern technologies were introduced such as waterproofing membranes in place of traditional clay waterproofing and steel bars instead of cast iron for the sake of long term maintenance.

b. Legislation changes

The project didn't trigger any long-term legislative changes.

c. Programs post-rehabilitation

The rehabilitated houses were handed back to the original owners and families.
Two publicly owned palatial houses were handed back to the SBAH ready for adaptive reuse. One will be used as a museum dedicated to the built-heritage of Mosul, and the other as a venue for cultural events (small concerts, poetry readings, etc.).
Some houses were used as community centers by NGO's and other civic actors.

d. Economic impact

The project benefited the construction industry through contractor and sub-contractor employment, the cultural industry through EDP grants and Culture Life activities, and over 190 SME businesses received small grants through the project.

Employment:
The project created jobs and training opportunities for the community. In total, the Mosul and Basra projects provided more than 4600 jobs. More than 1500 of these jobs provided training to youth.

e. Social impact

Upgraded urban public infrastructures have improved living conditions in the neighborhood making the old city more attractive.

Capacity building:
Numerous efforts and objectives in the project to positively impact and engage female community members in the project.
According to UNESCO 'Revive the Spirit of Mosul' report:

- 30% of the Iraqi engineers employed by UNESCO are women
- 3,152 Local jobs created by as part of UNESCO's Initiative
- 1,315 people graduates from the TVET programme
- 50,000 People trained by UNESCO through cultural and heritage awareness campaigns

Gentrification:
After rehabilitation, houses in Mosul were returned to original owners and families. Since the project, property values in surrounding areas have significantly increased. The long term effects of the rehabilitation on gentrification in the Old City remain to be seen.

Education:
Opportunities for education and training through working on the project were provided throughout the project:

- 1,500 teachers, educators and parents trained in preventing Violent Extremism through Education (PVE), supporting 50,000 students
- 109 Classrooms rehabilitated by UNESCO in Nineveh province, including Mosul
- 20 Students from the Theatre Department in the Institute of Fine Arts in Mosul benefited from trainings at the Filmlab

f. Environmental impact

The project predominantly uses a city grid for energy. For the Ekhlass School and two of the Moslawi palatial houses a mix of solar and city grid was used. Environmental concerns for the project placed emphasis on local material procurement and traditional passive ventilation systems. No new AC systems were installed during the project, existing systems were maintained. The project does not have a water collection or recycling strategy, it uses city utilities. Rehabilitated houses have individual back-up water deposits on their roofs.

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints

The project financing was sufficient for initial phases. Discussions are in place to acquire funding for sustainability of Phase 3.

b. Legislative and tenure constraints

Project tenure largely was in favor of the rehabilitation project and where ownership of houses was clear or determined, it is reported that owners were in support of the project.







Fig.216: top left - 'Amidst the rubble', bottom left - ' Vocational training for young people', right - ' Revival of Cultural Life' - all images downloaded from UNESCO 'Revive the Spirit of Mosul' website property of UNESCO

ANNEX

a. Contact

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j.sorosh@unesco.org

b. Bibliography

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5H-14

IRAQ | Basra

Reviving Mosul and Basra Old Cities

Basra, Iraq



Fig.217: A residential street in Basra, Iraq ©Bilind T. Abdullah



INTRODUCTION

The City of Basra was relocated in the 15th century largely due to attacks and flooding, however its position has always been along the banks of the Shatt al-Arab river close to its head, the Persian Gulf. This strategic positioning allowed it to play vital roles in historic trade networks such as the Silk Route as well as in Indian Ocean networks spreading to Malaysia, India, and East Africa. Basra played a regional role as a stopping point for international goods channeled up the Euphrates River farther north to Baghdad, while also heavily profiting from the date trade export. In the 16th century, while under Ottoman rule, Basra regained its role as a center for trade, particularly for Portuguese, Dutch, English, French, and Omani mercantile groups. In the 19th and 20th centuries, Ottoman rule and later British Mandate heavily impacted the growth and prosperity of Basra, with a stagnation of economic productivity under the Ottomans followed by an intense period of infrastructural development and colonial 'modernisation' under the British.

The city's cultural and international importance as a southern gateway to the rest of Iraq remains despite continuous external and internal conflicts and periods of unrest in the region and the city itself since the 1990s. As a result of these unstable periods, Basra's public
infrastructure and services have been heavily dilapidated, resulting in economic disparities being significantly greater in the city than national averages. Consequently many 19th and 20th century historical residences and infrastructure that make up the 16th century city of Old Basrah have fallen into decay and abandonment, some structures falling to squatters.

In April 2019, UNESCO launched the 'Reviving Mosul and Basra Old Cities' project seeking to address the depopulation, lack of opportunities, and loss of cultural heritage in the two historic urban areas. While Mosul and Basra face different challenges, with different recent histories, both cities have been left with significant damages from conflicts and lack of funding in the past decades. The UNESCO project so far has engaged with these challenges through rehabilitating heritage houses, reconstructing lost

infrastructure, creating community opportunities for training and employment, funding businesses, facilitating school and social center development, planning tourism infrastructure, as well as rehabilitating damaged and affected monuments.

Main instigator
UN-Habitat, Iraq

Historic Neighborhood/ Historic Center:
Basra al-Qadima (Old Basra)

Targeted beneficiaries
- The State Board of Antiquities and Heritage (SBAH) public entities given the use of 3 palatial houses
- Residents and tenant families of 8 rehabilitated houses

Project duration
Reviving Mosul and Basra Old Cities : 36 months, January 2020 untill December 2023.
A new phase was launched in end of 2023 until 2027.
The Basra component of the project was completed in September 2023.

Project budget
Reviving Mosul and Basra Old Cities : USD 37.8 million (including budget allocated to Basra)

Progress status
Project in progress. It was expected to be completed by December 2023. Housing rehabilitation stages completed in September-October 2023.
Ongoing : Ekhlass School and Culture Life stages.

1. IDENTIFICATION

Size of the overall city
The Governorate of Basra has an area of 19,070 km² and was home to over 2.9 million people in 2018, with 1.4 million living in urban Basra in an area of 181 km². The population of Basra is expected to exceed the 4 million mark in 2024.

Size of the historic area
1.1 km², with approximately 94,785 inhabitants.

Main function of the city
Main port of Iraq, agriculturally productive, oil economy.

Main function of the historic area
Residential, heritage.

Heritage status
In the Old City of Basra, 11 characteristic “Shanasheel” heritage houses are being rehabilitated and the historical Al-Ashar Canal along which they are located is being repaired.

Income level of dwellers in the historic city
Before rehabilitation, low-income residents in historic structures in Basra faced poor living conditions, lacking basic amenities.

Demographic profile
Traditional families of Basra, with a growing rate of population. Also, the large movements of population in response to political and religious strife over the past two decades, which have not been adequately reflected in official statistics.

Land tenure
The Old City of Basra is of mixed ownership, with properties belonging to both public and private owners, some of which are also of Awqaf ownership (religious non-transferable property for public good). The rehabilitation project so far has only dealt with publicly owned houses.

Housing role in the project
Housing was one of the main focus areas of the project, especially considering that a key rehabilitation focus, heritage Shanasheel houses, were being used as a temporary social housing solution.

Situation and urban evolution
The city of Basra was administratively divided into two boroughs. The first is Al-Basra in the present location of old Basra, and Al-Ashar consisting of houses of

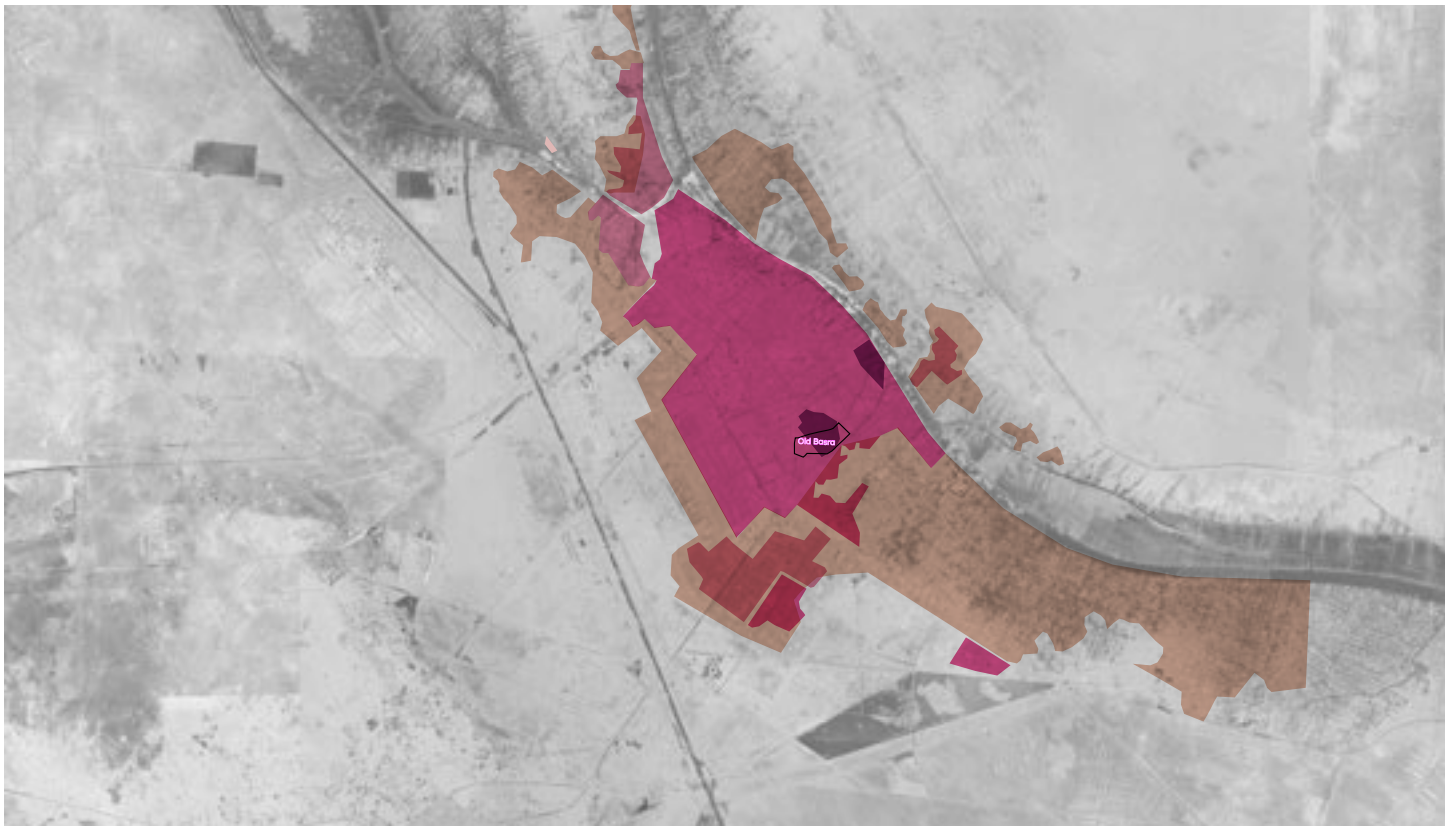


Fig.218: Old Basra situation and urban evolution of the city of Basra



Fig.219: BASRA Intervention area

peasants built of reeds and mud, a few shops, the Ali shrine, and a small berth for ships. Over time, the two boroughs grew and merged, replacing the agricultural lands with dwellings. In the early 20th century, the city of Basra was comprised of sixteen residential neighbourhoods.

2. STAKES

Diagnosis/Status
Basra al-Qadima, or Old Basra, is a 16th century historic city district located around 5 km west of the Shatt al-Arab river within the larger modern city of Basra. Destruction due to conflict and lack of funding, as well as poor infrastructure have caused heritage buildings and the character of the Old City to fall into decay and abandonment. Abandoned houses in the area had turned into social housing with many being demolished to make way for infrastructure projects. While heritage areas have come under private-sector interest due to their optimal location, heritage structures have been of less focus.

Challenges
The project faced a large number of challenges associated with infrastructure, legal framework, housing conditions, and social revitalization. The legal framework surrounding urban heritage conservation under Basra's Urban Planning Directorate and Municipality was not sufficient at the time of the project to prevent built heritage destruction or to facilitate a conservation plan. Major structural damages were common including roofing issues and loss of traditional materials and know-how. Infrastructure such as utilities and road networks needed replacing. Additionally, the absence of waste management constituted a major issue in the city. Another significant challenge was the lack of local knowledge on traditional crafts and material restoration.

Objectives
The project adheres to the objectives of the 2016 New Urban Agenda, the Sustainable Development Goals (SDGs) and those of the EU-funded Local Area Development Programme (LADP II). These objectives in summary focus on revising existing conservation legislation and facilitating it for future projects of rehabilitation of damaged and abandoned structures and infrastructure, as well as bolstering socio-economic and cultural development through employment initiatives and community training. In addition, the project specifically aims to address the affordable housing crisis in the area by identifying options for tenants in privately owned buildings and recipients of social housing support, particularly those residing in Shanasheel houses. The goal is to replace decayed historic houses used for social housing. Key measures include conducting a baseline survey for government-owned properties, providing construction loans for vertical infill extensions, applying for rental grants during rehabilitation, building new social housing units on available land, and offering financial compensation or relocation options based on criteria, lottery, or a first-come-first-serve basis. The plan emphasizes maintaining fairness and avoiding unfair relocations.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

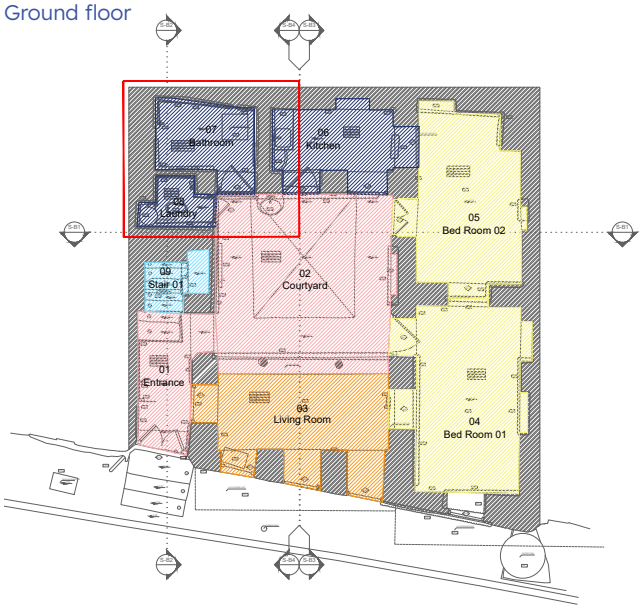
3.1. Main historic housing typology(ies) in the project area:

Name : Shanasheel house typology
Period : Ottoman and English Mandate
Occupants : Historically wealthy merchant families

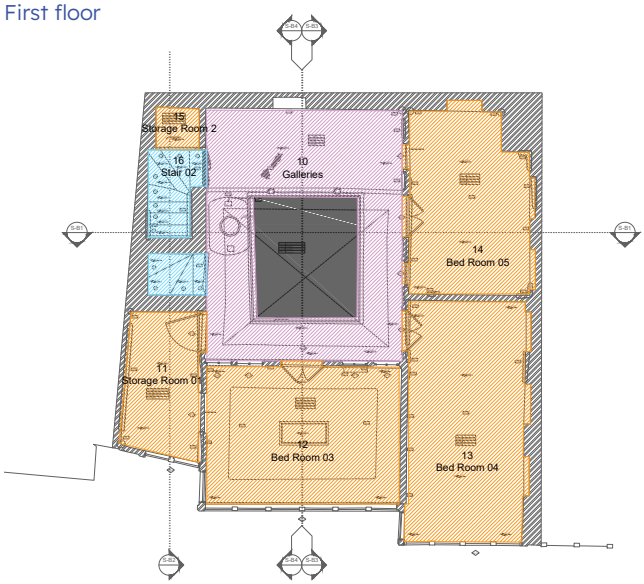
Evolution of housing typologies :
Early islamic period (638 CE): Basra was first founded in approximately 14 AH (638 CE) as a military encampment. The original city was an agglomeration of seven hamlets (Dasaker). At this time, Basra, predominantly consisted of marsh reed houses. After a fire between 16 AH and 17 AH, the city was rebuilt out of sundried adobe clay bricks.

Abbasid and Mongol periods (7th ce-15th ce): Due to multiple plagues, attacks on the city, and fresh

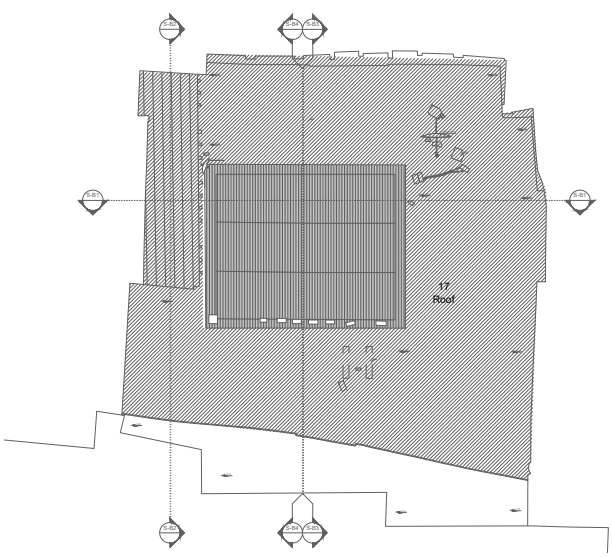
Ground floor



First floor

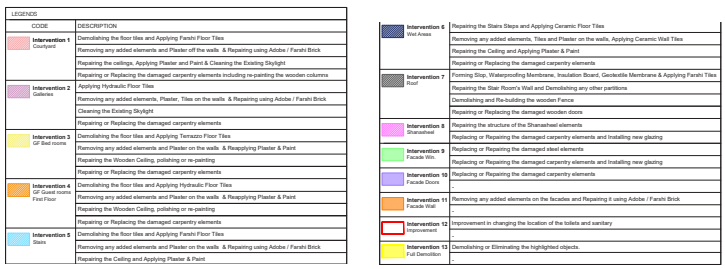


Roof floor



Elevation





LEGENDS

CODE	DESCRIPTION
Intervention 1 Courtyard	Demolishing the floor tiles and Applying Farshi Floor Tiles
	Removing any added elements and Plaster off the walls & Repairing using Adobe / Farshi Brick
	Repairing the ceilings, Applying Plaster and Paint & Cleaning the Existing Skylight
	Repairing or Replacing the damaged carpentry elements including re-painting the wooden columns
Intervention 2 Galleries	Applying Hydraulic Floor Tiles
	Removing any added elements, Plaster, Tiles on the walls & Repairing using Adobe / Farshi Brick
	Cleaning the Existing Skylight
	Repairing or Replacing the damaged carpentry elements
Intervention 3 GF Bed rooms	Demolishing the floor tiles and Applying Terrazzo Floor Tiles
	Removing any added elements and Plaster on the walls & Reapplying Plaster & Paint
	Repairing the Wooden Ceiling, polishing or re-painting
	Repairing or Replacing the damaged carpentry elements
Intervention 4 GF Guest rooms First Floor	Demolishing the floor tiles and Applying Hydraulic Floor Tiles
	Removing any added elements and Plaster on the walls & Reapplying Plaster & Paint
	Repairing the Wooden Ceiling, polishing or re-painting
	Repairing or Replacing the damaged carpentry elements
Intervention 5 Stairs	Demolishing the floor tiles and Applying Farshi Floor Tiles
	Removing any added elements and Plaster on the walls & Repairing using Adobe / Farshi Brick
	Repairing the Ceiling and Applying Plaster & Paint

Intervention 6 Wet Areas	Repairing the Stairs Steps and Applying Ceramic Floor Tiles
	Removing any added elements, Tiles and Plaster on the walls, Applying Ceramic Wall Tiles
	Repairing the Ceiling and Applying Plaster & Paint
	Repairing or Replacing the damaged carpentry elements
Intervention 7 Roof	Forming Slop, Waterproofing Membrane, Insulation Board, Geotextile Membrane & Applying Farshi Tiles
	Repairing the Stair Room's Wall and Demolishing any other partitions
	Demolishing and Re-building the wooden Fence
	Repairing or Replacing the damaged wooden doors
Intervention 8 Shanasheel	Repairing the structure of the Shanasheel elements
	Replacing or Repairing the damaged carpentry elements and Installing new glazing
Intervention 9 Facade Win.	Replacing or Repairing the damaged steel elements
	Replacing or Repairing the damaged carpentry elements and Installing new glazing
Intervention 10 Facade Doors	Replacing or Repairing the damaged carpentry elements
	-
Intervention 11 Facade Wall	Removing any added elements on the facades and Repairing it using Adobe / Farshi Brick
	-
Intervention 12 Improvement	Improvement in changing the location of the toilets and sanitary
	-
Intervention 13 Full Demolition	Demolishing or Eliminating the highlighted objects.
	-



Fig.220: Drawings of a Shanasheel House rehabilitated in Old Basra

Fig.221: 3D renderings of a Shanasheel House rehabilitated in Old Basra

water shortages, the city was relocated 5 km west of the Shatt al-Arab river in 1495 CE, around 25 km east of its original location. Before its relocation, the city was described by the historian Ibn Battuta as being composed of three distinct quarters.
The rebuilt city of Basra was an agglomeration of the al-Basra borough, where the current Old City of Basra is located today, and the al-Ashar borough along the riverbank. Structures in al-Basra consisted of more adobe brick than in al-Ashar which was poorer and still largely built from reeds. There were a larger number of quarters than in the original 7th century city, divided by professions, religions, languages and a variety of other social factors. It is possible that an adobe city wall and castle fortification were built sometime in this early period around the early to mid 16th century, however accounts vary and it is not known how long the city walls remained standing.

Early Ottoman period (1546-1918): Ths period saw the gradual expansion of the city and the joining of al-Basra and al-Ashar. New neighborhoods developed over the next few centuries along the city's creeks and canals. The most affluent of these neighborhoods featured larger Shanasheel houses, a unique typology to the area with characteristic highly ornate wooden mashrabiyas projecting above the streets. Over the course of the Ottoman period, much of the architectural character that we associate with historic Basra today was developed.

British Mandate (20th century): The British Mandate saw an emphasis on masonry architecture with a more rigid symmetric lines than that of the local vernacular. Cement, concrete, and iron were used during this period, combining colonial clock towers and symmetrical halls with the existing vernacular. Iron beams for floors used in conjunction with small brick vaults (jack-archers) replace wooden joists, however the introduction of concrete and cement mortars comes later. In general, traditional mortars are used.
The century brought rapid change to the city through significant infrastructural developments, administrative structures, and the industrial developments characteristic of a British colonial era port city. Many of the buildings from this period have been demolished due to modern infrastructure projects.

Description :
The Shanasheel house is one of the most characteristic building typologies of the Old City of Basra. The origins of the word, Shanasheel, are debated, however theories commonly mention royal seating and controlling sunlight, both features of the mashrabiya. These houses were typically owned and inhabited by affluent Basrawi families and emerged as a popular style during the late Ottoman period. The Shanasheel house is a relatively large, often 2-story, rectilinear, courtyard typology of baked mud brick with extensive use of timber on interiors, upper floors, and highly ornate wooden mashrabiya balconies projecting from the upper facade of the house. The house is centered around the Hosh (inner courtyard), a lowered rectilinear clearing, often highly decorated or with select planting. The courtyard provides passive ventilation to surrounding rooms as is typical of other courtyard typologies. The interior spaces are a surrounding network of ornamented rooms and circulation loggia, with the study room, private bathing facilities, and guest room typical of the lifestyle associated with wealthy Basrawi families at the time. The ground floor facade is much less ostentatious than the shanasheel floor, with detailed wooden friezes, latticework, and colorful elements being reserved to the upper level facades and interiors. Shanasheel houses are highly variable. The common elements of the shanasheel (mashrabiya balcony), Al-Hosh, and the modest ground floor facade have slight adaptations and are varied based on owners, time period, and property size. The most adaptable and noticeable element is the shanasheel balcony, which can be broadly categorised into five typologies.

The enclosed shanasheel
As is evident from the name, the balcony of this typology is enclosed, however it is highly ornamented with specific wooden detailing elements. This shanasheel has a wooden rectangular enclosure, permeable through small dotted openings in the lower

panels, below colourful stained glass windows. The enclosure is framed with thin multifoil arched wooden dividing mullions atop which sits protruding wooden dentils.

Veranda and balcony shanasheel
In this typology, the shanasheel spans the entire length of the upper floor. Unlike the previous typology, here the balcony is open to the air and its arched framing is typically less heavily ornamented. Lower wooden or iron panels remain to be punctuated with air ventilation and above the entire structure is a simple wooden framing balcony wall for the roof. These houses can often be found immediately flanking the river or canals.

Zig-zag shanasheel (saw-shaped)
The upper floor shanasheel in the 'zig-zag' typology projects onto the street at angles designed to catch winds and remain in optimal shade. The balcony is cantilevered over the regular ground floor line, in various shapes and angles depending on the house. At times, when the interior of the room is trapeze-shaped, the zigzag shanasheel is used to "correct" that and obtain a more rectangular room.

Mixed shanasheel with balcony
This typology is fairly similar to the Al-Shamsiya, however it has been adapted for more recent times. The wooden awning is much smaller than in the Al-Shamsiya and only covers the top window portions

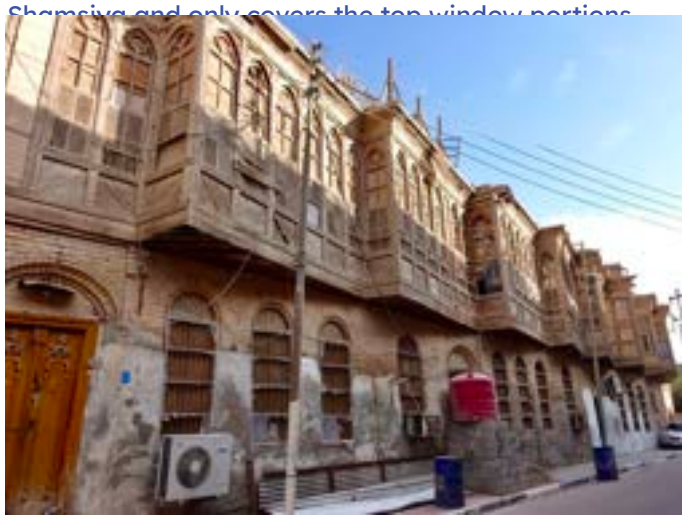


Fig.224: A row of four houses with Zig Zag Shanasheel ©UN-Habitat



Fig.225: A building with mixed Shanasheel ©UN-Habitat

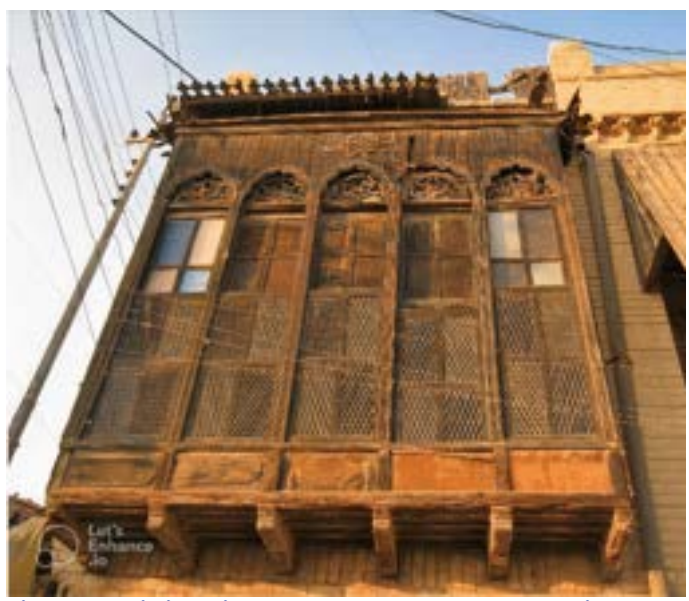


Fig.222: A building with enclosed Shanasheel ©UN-Habitat



Fig.223: A building with vernada and balcony Shanasheel ©UN-Habitat

of the enclosed shanasheel. Often these houses have blended modern and traditional materials through the use of steel beams and glass.

Spacial distribution :
In the 19th century, the traditional house had a ground floor used for services (storage, stables, kitchen etc…), while the first floor was used as a living space (bedrooms and living rooms), the courtyards and terraces serving as spaces for household chores, food processing and family and entertaining guests. The toilet, which used use to be in an outhouse, was integrated in the dwelling, usually near the services and kitchen area.

3.2. Condition of the historic housing units before rehabilitation

At the onset of the project, many of the shanasheel houses were in various states of deterioration. Occupants of the structures did not have the monetary means to repair or maintain these historic houses nor did they recieve financial support to that end, leading to the steady accumulation of damages. Common negative conditions included roof and facade structural exposure, cheap building material substitutions, salt aggression to masonry, heavy weathering, and partial demolitions. On the urban scale, Old Basra suffered from crowding by new structures, poor basic services and utilities, poor sanitation, lack of greenspace in neighborhoods, poor security, and makeshift temporary building supports.

3.3. Rehabilitation know-how, materials, and material sourcing

Local contractors and craftsmen were the lead workers on the project. Where rehabilitation know-how was lacking, training was provided to community members. Fifty Basrawi youth were trained in traditional shanasheel carpentry techniques. Some traditional crafts have required changes in materials where steel bars replaced traditional cast-iron elements. Materials such as stone, brick, lime, gypsum, and alabaster were sourced locally and nationally. Traditional, local plasters and mortars were used for Farshi brick and pavement tiling. Tropical teak and northern woods were imported for carpentry work. Hydraulic tiles from Turkey were used for the interior paving in the wealthy houses such as the three Basrawi palatial houses.

4. MECHANISMS OF THE PROJECT

4.1. Process

The project consisted of different phases, which were conducted as follows:

Phase 1A:
Conservation and rehabilitation of three palatial houses: Sheikh Abdal-Salam Al-Manasir (The House of Poets), Abdulatil Al-Mandil House (Artists Union), and the Shek Kazal House (Arts and Culture Palace):

- Authorizations and permits
- Tendering and contracting of conservation project
- Architectural surveys and assessments
- Conservation/Rehabilitation project
- Tendering and contracting of works
- Execution of conservation works

Phase 1B:
Conservation and rehabilitation of eight Shanasheel Houses On Mahalat Basha Street:

- Authorizations and permits
- Tendering and contracting of conservation project
- Architectural surveys and assessments
- Conservation/Rehabilitation project
- Tendering and contracting of works
- Execution of conservation works

Phase 2A:
Cleaning of Al-Ashar Canal and Adjacent areas:

- Tendering and Contracting of clean-up works
- Authorizations and permits
- Dredging of canal
- Clean-up of canal and adjacent areas
- Maintenance and awareness raising

- Awareness raising on urban environmental issues

Phase 2B:
Conservation and rehabilitation of the Al-Ashar Canal:
- Tendering and contracting of project
- Documentation and surveys
- Participatory planning and preliminary proposals
- Consultations and authorizations
- Design development (final design)
- Tendering and contracting of works (tranches 1 and 2)
- Execution of works (tranche 1). Substantial Completion: 25.12.2022
- Execution of works (tranche 2). Substantial Completion: 15.08.2023

4.2. Partners

Experts
UNESCO, team of international architects specialized in rehabilitation and conservation, local team of architects and structural, civil, and mechanical engineers.

Public stakeholders
Iraqi Ministry of Culture and the SBAH (State Board of Antiquities and Heritage, a department of the MOC), Ministry of Labor and Social Affairs (MOLSA), Iraqi Ministry of Education, Governorate of Basra (Real Estate Department), Governorates of Nineveh and Basra, Municipaly of Basra, Ministry of Labor and Social Affairs' antenna in Basra (DOLSA).

Newly created institutional structures
Basra Heritage Steering Committee, comprising of officials from the Governorate.

4.3. Organization and selection

a. Organization
The project's organization is shown on the follwing flowchart (Fig.218).

b. Selection process
The project's selection process is shown on the flowchart on the next page (Fig.219).

4.4. Tools

a. Selection criteria
The flow chart in figure 230 shows the necessary steps to obtain a building license, but remains largely theoretical as the SBAH and Municipality of Basra do not have the technical capacity to evaluate interventions on heritage buildings.

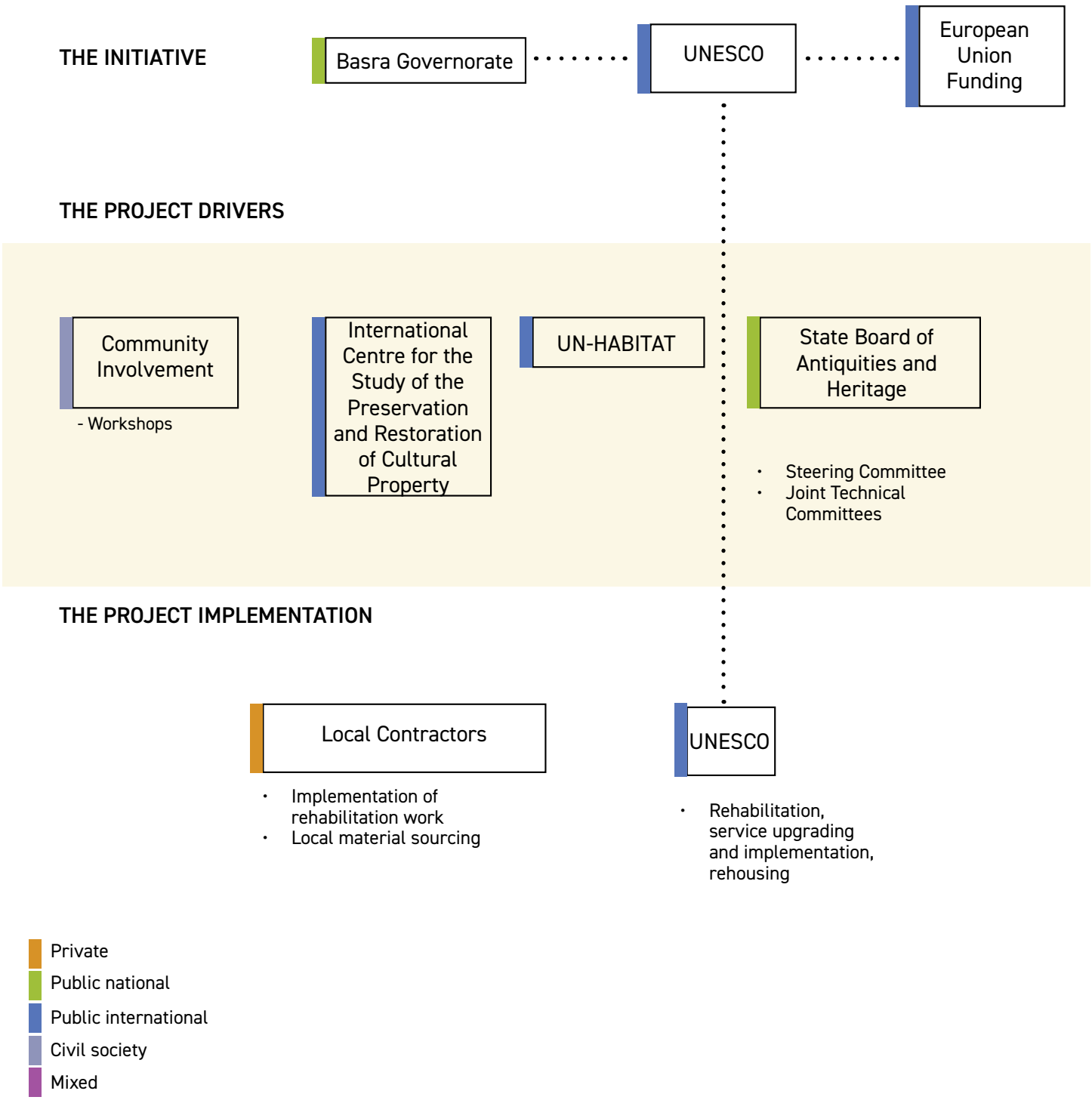
In practice, the 3 palatial houses the project rehabilitated were selected by the authorities – the SBAH and the Governorate. The 8 houses on Mahalat Al Basha street were suggested, after consultation with stakeholders and tenants, to the Joint Technical Committee which approved the choice.

All the buildings selected belonged to the Government (Governorate) and hence did not have to obtain a building license; although the projects were reviewed and approved by the SBAH.

b. Implementation tools
Survey tools
- Site visits
- Meetings
- Interviews
- Documentary footage
- Consultation workshops

Stakeholder engagement program
In an effort to better understand the underlying issues that threaten the preservation of the historical structures in the intervention area and how would they affect the design and implementation of any future rehabilitation and development programme, the team conducted numerous site visits, one-to-one meetings with local counterparts, interviews with inhabitants of Old Basra (many of which were filmed for documentary purposes) and intensive consultation

Fig.226: Organizational Diagram



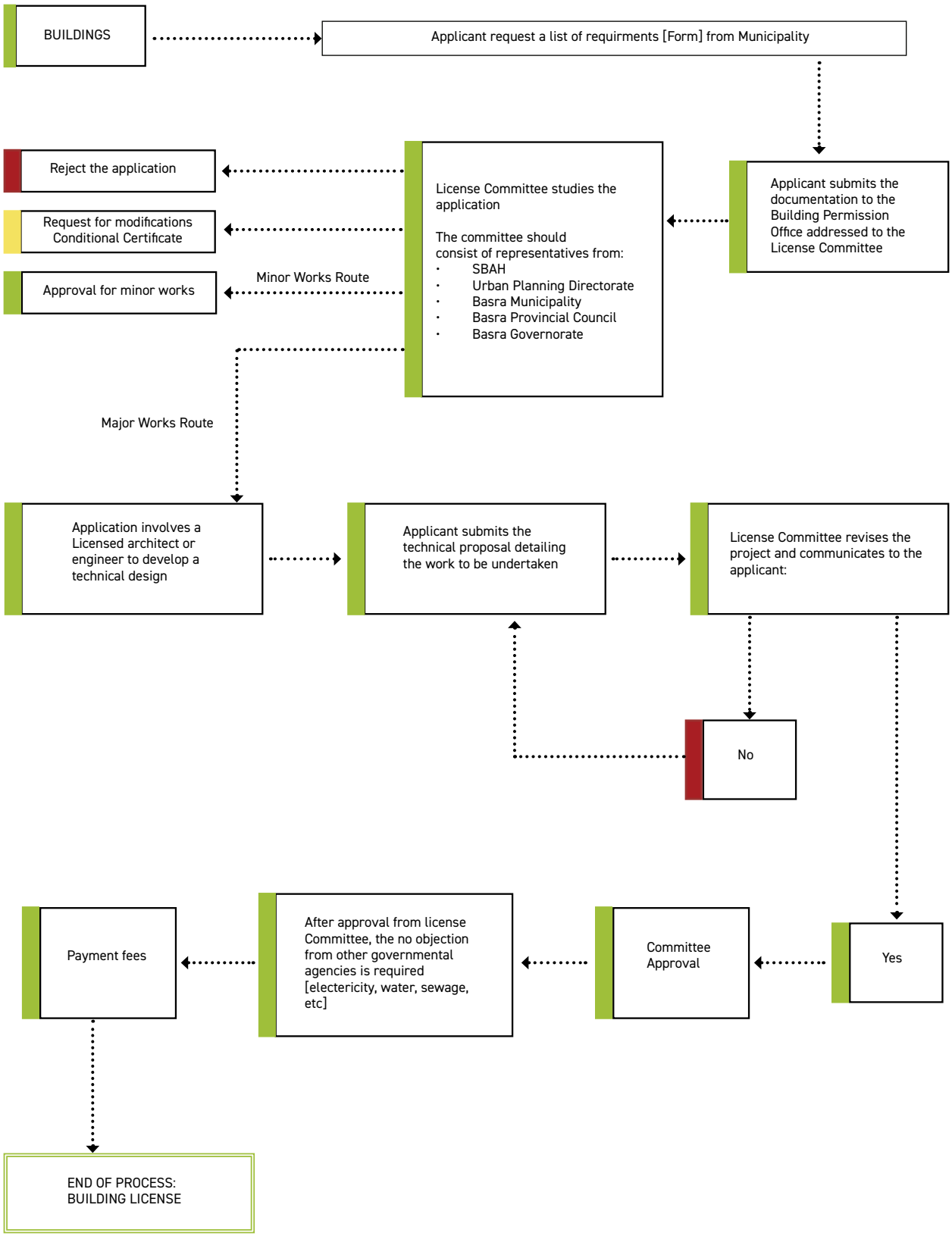


Fig.227: Selection Process

workshops attended by government counterparts and members of the civil society.

Community engagement
There were numerous participatory and consultative initiatives put in place during the Basra project. Users of the three palatial houses in Basra were consulted during design and execution. For the eight residential houses, occupants were informed of project aims, rehabilitation process, and design goals. Participatory workshops involved Al-Ashar canal area community members in the planning process. This participatory group is still active regarding ongoing maintenance of canal area.

c. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):
The governorate just recently created a Joint Coordination and Monitoring Center (JCMC) at the beginning of 2024 that will act as a government focal point for coordinating initiatives and investments, including those in the areas of urban recovery and safeguard of heritage.

Laws and decrees
The primary legislation and regulations concerning the protection of cultural heritage in the intervention area are:

- Antiquities and Heritage Law No. 55 of 2002;
- The General Authority of Antiquities and Heritage Law No. 45 of 2000;
- Investment Law No. 13 of 2006;
- Ministry of Tourism and Antiquities Law No.113 of 2012;
- MOP Law No. 19 of 2009;
- Ministry of Environment Law No. 37 of 2008;
- Protection and Improvement of Environment Law No. 27 of 2009;
- Bylaws concerning natural reserves,subject to Law No. 2 of 2014;
- Related governmental decrees and directives;
- Delegation of the National Committee of Archaeological Heritage (draft bill).

Environmental and social tools
Environmental and social tools include empowering the Municipality of Basra and increasing civil society's involvement in local planning. Additionally, there is a requirement in the project for capacity building and training programs aimed at involving the local community and boosting their participation in city-building efforts.

4.5. Financing

Total amount : USD 37.8 million as of 2023 (including budget allocated to Mosul)

Source : European Union

Proposed Implementation Period : 2019-2024

Grant Recipient : UNESCO

Breakdown :
European Union: USD 22.8 million (1st phase);
European Union: USD 15 million (2nd phase);
The funding covered:

- Conservation and rehabilitation work on heritage houses.
- Improvement of public spaces and infrastructure related to the houses.
- Technical and Vocational Education and Training (TVET) and graduates job apprenticeship program.
- EDF (Enterprise Development Funds) to SMEs contributing to arts, culture and heritage, or urban reconstruction implemented by project partner IOM.
- Social Cohesion events and Culture Life activities.
- Project implementation and management costs.
- A third phase launched in december of 2023 was also funded by the European Union: USD 9 million.

Financing sufficiency :
Financing was sufficient for the project's scope.

Maintenance financing :
Maintenance and sustainability financing is not included but is being discussed for future phases of the projects.

Rehousing financing :
Temporary housing for residents affected by the project was organized by the Ninewa government in cooperation with UNESCO. Eight Basrawi households were rehoused during the six month rehabilitation duration, fully funded through project financing.

4.6 Timeline
Refer to figure 220 for more details regarding the conservation and rehabilitation of 3 palatial houses.

5. LESSONS LEARNED

Initially, the context specificity of Basra was not anticipated as the city was added onto the existing project methodology for Mosul. Basra brought its own specific challenges such as multiple ownership and tenancies. The project has so far brought positive changes to the city through the creation of jobs, exceeding rehabilitation targets, and the overall recovery of the historical city. Maintenance and project sustainability remain ongoing concerns and in the third phase, the project seeks to address these through developing the relevant institutions. With the success of the project's initial phases, UNESCO's partnership with local authorities is improving to the benefit of the project.

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials
Modern technologies were introduced such as waterproofing membranes in place of traditional clay waterproofing for the sake of long-term maintenance. Where unavoidable, steel bars were used instead of cast iron due to unavailability and the cost of cast iron.

b. Legislation changes
The only document having to do with Basra's urban and architectural heritage is the document produced in 2018 by UN Habitat called Old Basra Conservation and Development Plan (Local Area Development Programme). Its exact legal status is hazy, as so often in such cases. The authorities refer to it – as does UNESCO – but there has been no official legislation or decree giving it force of law.

What the Reviving Mosul and Basra Old Cities project has done has achieved with the support of the SBAH of Basra, is a new inventory of protected properties (167 buildings) subjected to Iraqi Heritage Law.

It is true, though, that the UNESCO intervention has led local Authorities to voice the need for a comprehensive Conservation and Development Plan for the Old City, as well as the idea of transforming the

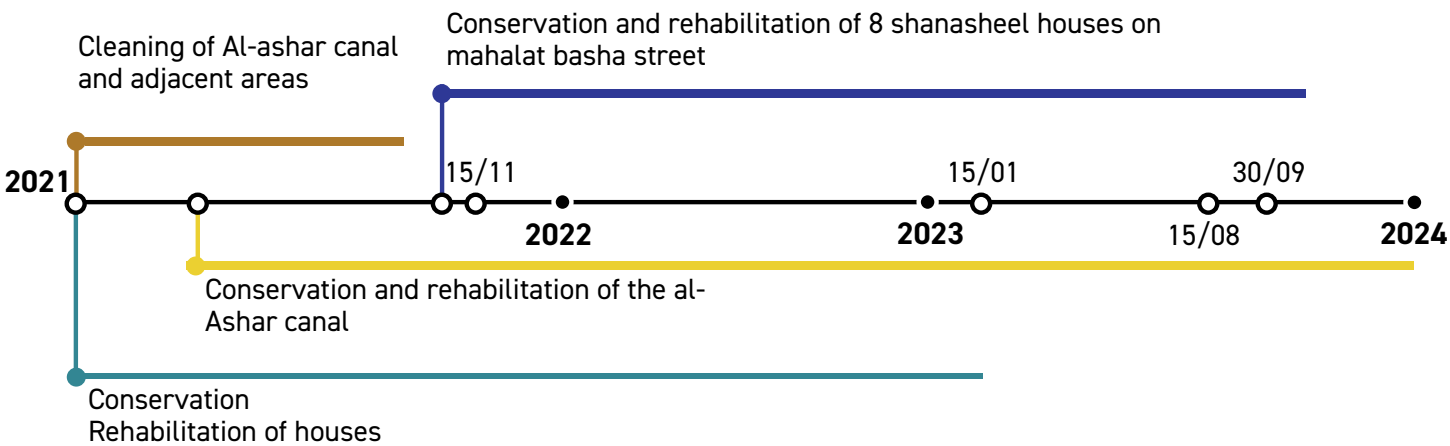


Fig.228: Timeline

Al-Ashar Canal area of the Old City into a cultural hub.

To sum up, the project has seeded the idea of developing a Conservation Plan to protect and promote Basra's urban and architectural heritage, but this study has not been done and no legislation has been adopted to that effect.

c. Programs post-rehabilitation

Post-rehabilitation, houses that had undergone rehabilitation processes returned to their original occupants. Public entities took hold of the three palatial houses for cultural adaptive reuse, and legal tenants reoccupied the remaining eight houses.
since then, the tenants of the 8 houses, as well as the tenants of the other heritage properties belonging to the Basra Governorate (47 houses and buildings) have received an eviction order. At the moment they are waiting to receive compensation in land before moving out of these houses.
Houses that were squatted have not yet been included in this rehabilitation process.

d. Economic impact

The project benefited the construction industry through contractor and sub-contractor employment, as well a sthe cultural industry through EDP grants and Culture Life activities. Moreover, at least 190 SME businesses received small grants through the project.

Employment

In total, the Mosul and Basra projects provided more than 4600 jobs. More than 1500 of these jobs provided training to youth.

e. Social impact

Numerous efforts were deployed to positively impact and engage female community members in the project.

Gentrification mitigation

An increase in real estate value for the Old City of Basra has been observed since the project implementation. Former tenants of the rehabilitated houses have largely returned to their homes. However, given the increase in property values and prices in the area, it is possible that this could lead to gentrification in future.

Education

Opportunities for education and training were provided throughout the project.

Environmental

Environmental concerns for the project placed emphasis on local material procurement and traditional passive ventilation systems. No new AC units were installed during the project, and existing sustainable systems were maintained.

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints

Most tenants were unwilling or unable to afford the costs of maintenance work or emergency repairs. As of today, rents are so low that they would not be able to cover any percentage of a cost recovery or cross-subsidy scheme.

b. Legislative challenges

No major legislative challenges have been encountered during the project.

c. Tenure challenges

Given that some of the rehabilitated houses were government-owned, tenants were concerned that once the project was completed they would be forced to leave their homes, causing initial suspicion of the project. It was clear since the beginning that poor tenants and destitute squatters living in heritage houses most certainly risk an eviction order. In the best of cases, they would be compensated with land elsewhere, but would have to bear the brunt of relocation costs, mobility hurdles and loss of livelihoods.

Indeed, the tenants of the 8 rehabilitated houses, along with all the other tenants of Governorate-owned heritage houses – 47 houses in total - received eviction notices when the rehabilitation works were completed. There has been social pushback against this measure, naturally, and the Governorate has promised to compensate the tenants with land. As things stand (May 2024), the tenants are resisting leaving the houses until they have effectively received compensation from the Government.

d. Construction challenges

The important rehabilitation/construction challenges facing built heritage in Basra are:

- Lack of artisans skilled in the use of traditional materials.
- Lack of architects and engineers with experience in traditional building techniques.
- Lack of institutional and technical capacity of the Basra SBAH.
- Dearth and cost of the expensive tropical woods traditionally used in Shanasheel carpentry which leads to the use of inferior grade woods.

Phase III of the project aims to address the first three of these challenges by focusing on capacity building and institutional development.

ANNEX

a. Contact

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5I-15

LEBANON | BERYT

Beirut Housing Rehabilitation and Cultural and Creative Industries Recovery

Beirut, Lebanon



Fig.229: View of building in Mar Mikhael, Beirut.



INTRODUCTION

Following the Port of Beirut explosion on 4 August 2020, the “BERYT” or “Beirut Housing Rehabilitation and Cultural and Creative Industries Recovery” project was launched. It is led by UN-Habitat and funded by the World Bank-administered Lebanon Financing Facility (LFF), a Multi-Donor Trust Fund established in response to the explosion. BERYT’s first component brings urban recovery measures to severely damaged residential buildings of heritage value to allow the return of affected households while also providing below-market rate rental options to vulnerable populations. The project’s second component, implemented by UNESCO, provides grants to practitioners and entities in the cultural and creative industry (CCI) in the areas heavily affected by the explosion, in several historic residential neighbourhoods.

Main instigator
UN-Habitat Lebanon Country Programme

Historic neighborhood/ Historic center:
Historic neighbourhood (eastern edge of the old city center)

Targeted beneficiaries
- 65 residential units
- 80 Cultural Creative Industries practitioners
- 60 Cultural Creative Industries entities

Project duration
39 months (February 2022 until June 2025)

Project budget
USD 12.75 million

Progress status
• Rehabilitation works have commenced in the first 2 buildings.6 buildings have been awarded to contractors, pending mobilization, following a competitive procurement process.
• 5 buildings are undergoing the bidding process.
• 5 buildings are in the design development phase.

1. IDENTIFICATION

Size of the overall city
110.6 km2 , 1,263,332 inhabitants

Size of the historic area
The BERYT project area falls within a 5 km radius of the Port of Beirut explosion site.

Principal function of the city
Capital, chief port and airport, major economic hub, cultural centre, and political capital of Lebanon.

Principal function of the historic area
Residential, hub for cultural and creative industries, major schools and hospitals.

Heritage status
18 residential buildings of heritage value to be rehabilitated through the BERYT project, none of them is UNESCO listed, and none of them is listed as national heritage.

Income level of dwellers in the historic city
Mixed income dwellers but the majority are low-to-middle-income Lebanese families (affected however by the protracted socio-economic and financial crisis).

Demographic profile
Initially aging population but gentrification has brought in a large number of new small families and young professionals.

Land tenure
Approximately 50 per cent occupied by tenants, – 50 per cent occupied by owners.

Housing role in the project
Housing plays a core role in the project given that it is the dominant land use in the selected area of intervention. The target neighbourhoods, however, are distinct from the surrounding areas for being the most severely affected zones by the explosion, hence displacing a large number of people from their homes. Additionally, due to long standing challenges which were exacerbated by the explosion, the residents in the targeted neighbourhoods have faced various housing and property issues related to inheritance, lack of tenure security, multiple ownership, etc. These issues often affect vulnerable residents the most, such as the elderly and female headed households.

Situation and urban evolution
The site of the BERYT project is composed of several historic residential neighbourhoods (Achrafieh, Saifi, Medawar and Rmeil), all located immediately adjacent to the Beirut Port and its industrial facilities and administrative buildings (Fig. 230).

Evolution of housing typologies
The housing stock in the area of the BERYT project and surroundings is composed of mid-rise residential buildings that were erected from the mid-1840s till 1950s, just like the Rmeil case study. Hence, the evolution of the housing typology – which transformed from the Ottoman single-storey courtyard house with liwans occupied by one family, to multistorey collective housing – is not repeated here (please refer to the Rmeil case study for more details). It should be noted however that the evolution of the Ottoman house was by no means linear and homogeneous; the neighbourhoods where BERYT is implemented showcase the incredible diversity of transformation and hybridization that occurred through time, erasing certain heritage characteristics at times while integrating novel technologies, construction methods and cultures. The residential buildings of the BERYT project are a testimony of the rich history and cosmopolitanism of the city of Beirut.

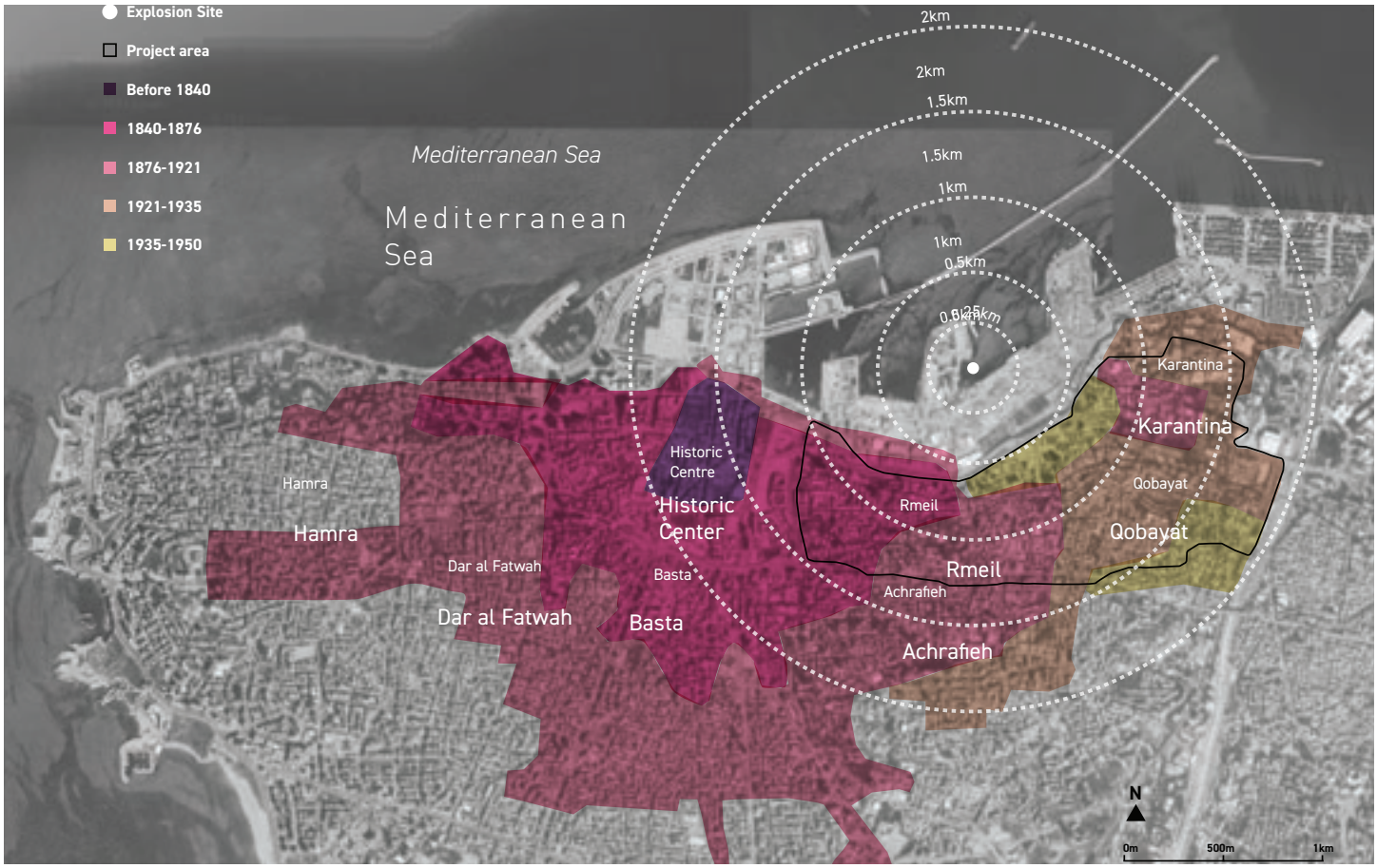


Fig.230: BERYT situation and urban evolution of the city of Beirut

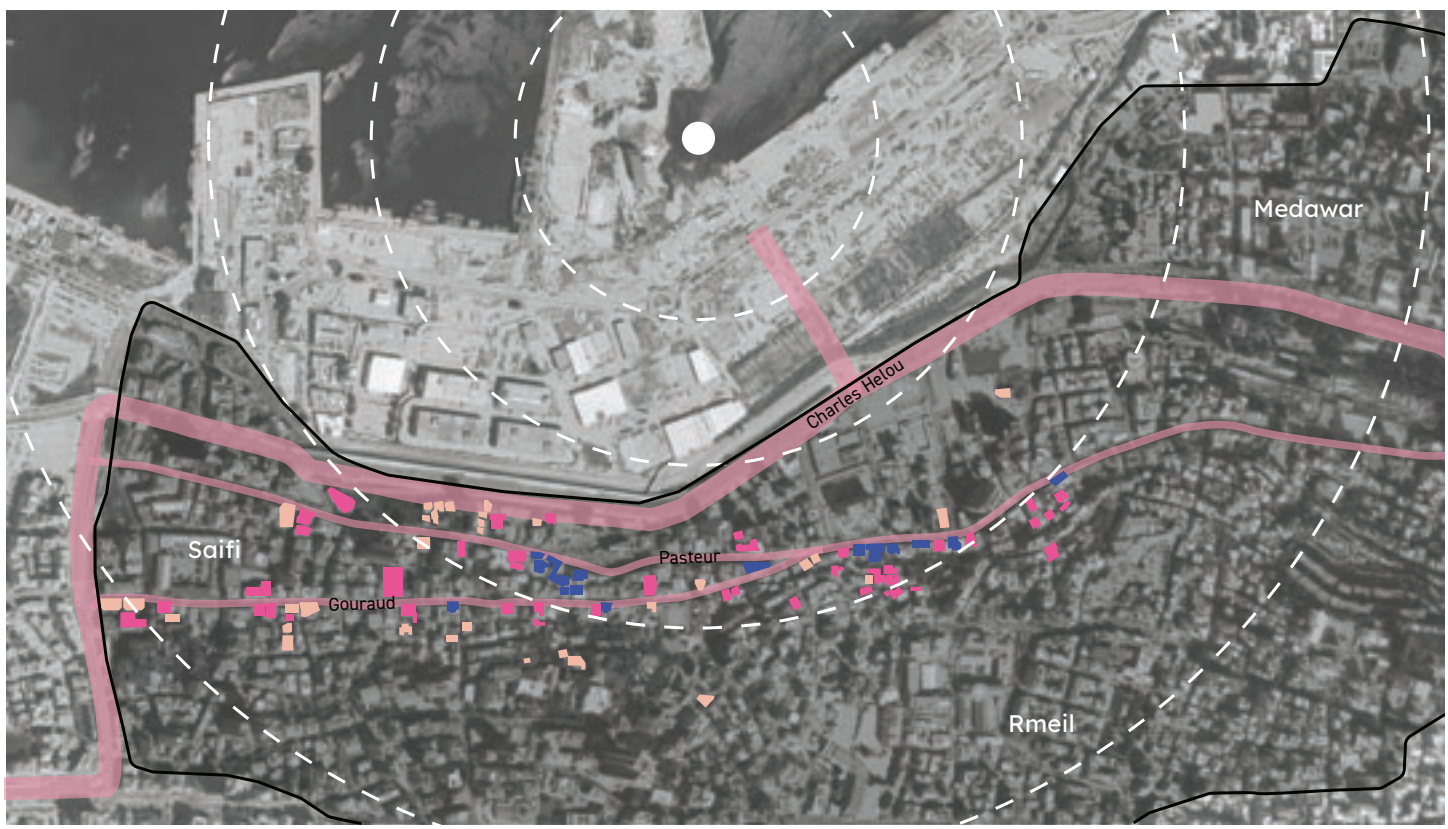


Fig.231: BERYT intervention area



Fig.232: Localisation of the rehabilitation interventions



Fig.233: Images of elected buildings which are part of the first batch of the BERYT project © UN Habitat

2. STAKES

Diagnosis/Status
Historic Beirut residential neighbourhoods, featuring buildings of heritage value constructed between 1840 and 1975, were severely affected by the Port of Beirut explosion on August 4, 2020. Beirut has long been renowned for its rich history spanning over 5000 years. However, presently, the city's iconic historical houses are primarily concentrated within the pericentral quarters, formerly part of the historical core or intra-muros city. Achrafieh, Saifi, Medawar, and Rmeil are among these quarters and are the areas considered under the project. Their character relies particularly on the remains of these heritage buildings, which have long suffered from systemic challenges, inadequate policies, and survived a 15-year civil war and the subsequent urban development surge since 1990.

Challenges
Like many historic neighbourhoods in rapidly developing cities, the neighbourhoods of the BERYT project face challenges related to urbanization, aging infrastructure, and heritage preservation amid modernization pressures. Balancing the need for development with the preservation of their historical identity is an ongoing concern.

New challenges arose after the explosion and its ensuing damages: how to bring back displaced residents, improve the quality of life both financially and socially, and maintain and provide access to inclusive public green spaces, all while preserving the historical value of the neighbourhoods?
Mixed ownership of buildings in the neighbourhoods of the project presents huge complexities for rehabilitation efforts in addition to other housing, land, and property rights-related challenges that were exacerbated by the effects of the explosion.

Objectives
• Conservation of historic fabric and buildings of heritage value
• Improvement of the urban environment of neighbourhoods damaged by the explosion
• Provision of affordable housing and tenure security in rehabilitated vacant units in neighbourhoods damaged by the explosion
• Preservation of the social, cultural and heritage fabric and identity of the affected neighbourhoods.
• Enhancement of the cultural life of neighbourhoods damaged by the explosion
• Provision of training, jobs and economic opportunities to construction and craft professionals during the project implementation phase
• Raising awareness on the state of housing, available stock, availability and affordability in Beirut

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Central hall house or triple-arch house
Period : Mid-19th century
Occupants : Wealthy upper class, mix of tenants and owners
Evolution :
Traditional heritage buildings in the BERYT project area date back to the 19th century. When discussing traditional heritage in Beirut, the "Central Hall House" or "triple arch house" is typically referenced. These houses, known for their distinct architectural style, became prominent during the 19th century. However, it's important to note that before this period, the houses built outside the traditional city walls, just like in the BERYT project area, displayed a wide variety of architectural styles and typologies. These diverse structures still exist, although they are often difficult to discern due to their integration into later constructions.

Traditionally these houses were typically constructed from sandstone and lime plaster with wooden structural elements. Later, in the 1920s, concrete was

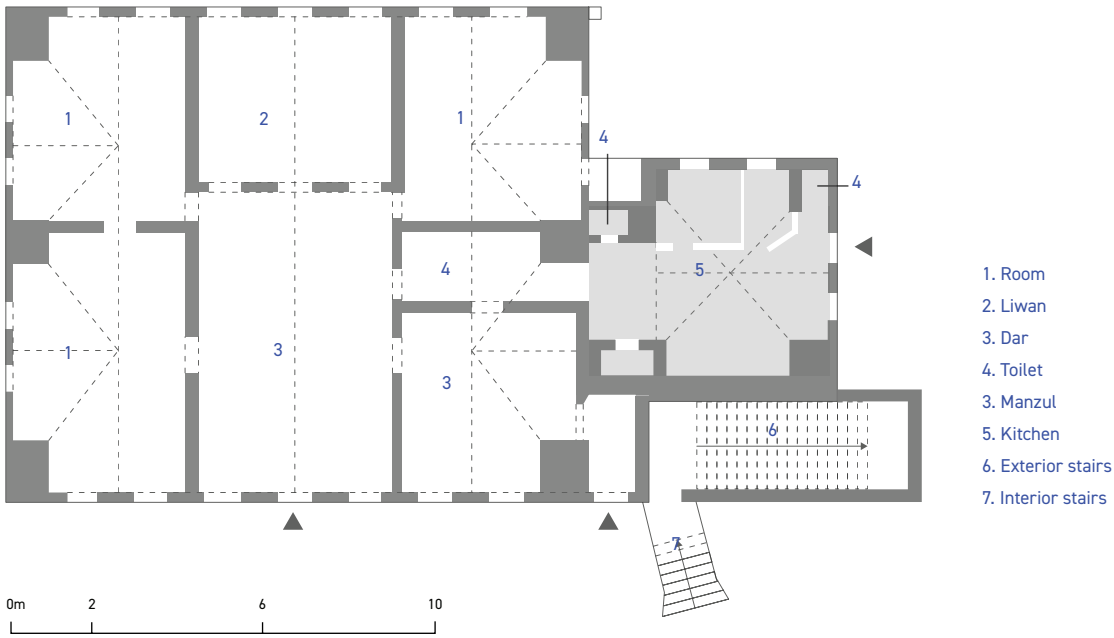


Fig.234: Rmeil Bayt Saadah (Zakak el-Blat): ground floor plan of an early central-hall house that was erected during the 1850s. Built entirely in vault construction, it features a central courtyard with triple access, a kitchen annex, and a liwan, which is a long narrow-fronted hall or vaulted portal that is often open to the outside. An exterior stair led to the second story which was added later on.

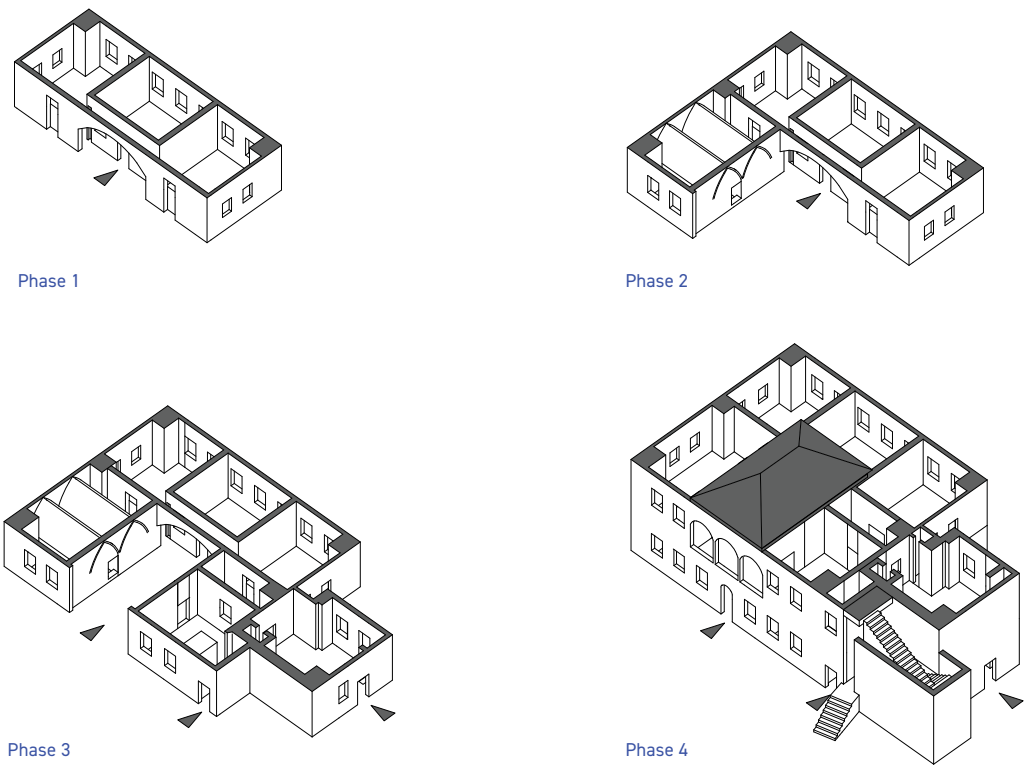


Fig.235: Evolution of the hall house or triple arch house © The Beirut Heritage Initiative

introduced and began to be used primarily for slab elements.

Description :
The typology of the central hall house is typically characterized by a symmetrical floor plan featuring a large, covered central hall (called al- al-dār) that functions as the main distribution space of the house. The hall is surrounded by rooms on three sides with the fourth side featuring large arched openings. The triple-arched facades of this central hall house is typically oriented to the north looking towards the sea.

Spatial distribution :
As described above, the archetype consists of several rooms symmetrically arranged on three sides of al-dār which is oriented to the north. The triple-arched windows open onto a narrow balcony. The lateral rooms do not communicate with each other but with this hall, which serves as a living room and distribution space. The room located at the back of this hall is characteristic of this Beirut typology with double exposure. It is the liwan, usually built in a protruding manner to increase light and ventilation. Another spatial characteristic is the integration of external spaces such as toilets and kitchens, along with the introduction of new rooms like dining rooms, bathrooms, and a sitting room for visitors who were not intended to enter the heart of the home.
The Bayt Saadeh, built in 1850 demonstrates the spatial configuration of the hall house (Fig. 227-228). While not located within the BERYT project area, the typology demonstrated in the figures is similar to that of the buildings considered under the project.

3.2. Condition of the historic housing units before rehabilitation

The cadastres of Achrafieh, Saifi, Medawar and Rmeil were severely affected by the Beirut Port explosion.

According to the “Buildings Final Structural Assessment Report” by the Order of Engineers and Architects (OEA) following the explosion, 92 heritage buildings were at mid-to-high risk of collapse or further damage. One year after the explosion, most buildings with non-structural damages were rehabilitated. Buildings requiring structural rehabilitation, specifically





Fig.236: State of residential buildings in the BERYT project neighborhoods © UN Habitat

those of high heritage value, were at this stage still partially or totally unrehabilitated.

For the BERYT project, more than180 residential buildings of heritage value were surveyed. The surveys found that they suffered medium to severe structural damage from the impact of the explosion. Buildings that were constructed between 1900 and 1940 were more affected than others, as they were mainly built using sandstone with the complete absence of lateral bracing systems that can withstand lateral forces such as earthquakes, strong winds, or other disasters.

Following the explosion, numerous sandstone walls collapsed, especially those containing triple arches. Moreover, the structural integrity of these buildings was further compromised by the lack of interlinked construction at their corners, exacerbating their susceptibility to the explosion. The wooden beams and openings suffered extensive damage, rendering many beyond repair or entirely absent. Additionally, the windowpanes were completely shattered. The inner vaults and wooden pitched roofs of certain structures also incurred damage from the explosion, aggravated by years of prior neglect and lack of maintenance, necessitating either levelling or partial to total reconstruction. Most buildings suffered from a long-standing lack of maintenance, meaning they were already in a deteriorated state prior to the explosion.

3.3. Rehabilitation know-how, materials, and material sourcing

Local know-how is being retained and revived thanks to:

a. Workshops and trainings held by UN-Habitat and project architect restorers on rehabilitation and preservation of heritage buildings. The workshops were attended by UN-Habitat and members from local authorities (municipality engineers, Directorate General of Antiquities staff, etc.)

b. An on-site construction school, which was set up in a heritage building to train labourers and site workers on heritage building construction and preservation using the identical initial materials and techniques such as slaked lime, traditional carpentry and pitched roofs, and other. These activities were implemented by the Institut Européen de Coopération et de Développement(IECD) in Lebanon and certifications were awarded to participants, both female and male.

The materials included :

- Sandstone scarcely found in Lebanon, so almost half the quantity is locally sourced, and the rest is bought from neighbouring countries
- Lime plaster partially locally sourced (new production arising from the post-explosion demand), the remaining required quantities are imported mainly from France.
- Limestone tiles found in local stone factories
- Marble imported and sold in Lebanon
- Qotrani wood imported from Turkey (some is also salvaged from sites themselves)
- Terrazzo tiles locally produced
- Cement locally produced
- Ceramic tiles found in the local market
- Wrought iron imported from England
- Stamped and coloured glass imported from France
- Terracotta locally found or imported from France
- Red brick roof tiles traditionally made in Marseille and imported from France or Spain
- Tiles repurposed from old buildings
- Bituminous membrane, polyurethane, cementitious liquid products for waterproofing, supplied by specialized providers from Lebanon

4. MECHANISMS OF THE PROJECT

4.1. Process

The project consists of two main components: housing recovery and emergency support for cultural creative industries (CCIs).

Component 1: Housing recovery

- Residential housing rehabilitation of buildings of heritage value severely damaged by the PoB explosion.
- Technical assistance for rental support for beneficiaries of housing rehabilitation, with a view to achieve sustainable rental agreements, as well as capacity development to renters for them to advocate for renter rights and minimize eviction risk. This sub-component tackles housing, land and property legal disputes, promoting affordable rental agreements and securing long-term

contracts, rental caps, etc.

- Once the eligible houses are selected, the process then goes through the following steps:
  - An initial contact with beneficiaries
  - Compilation of supporting documents
  - Legal review/clearance
  - Socio-economic and legal survey (outreach to tenants)
  - Initial consent and no objection form
  - Development of design and tender documents
  - Procurement and selection of contractor
  - Signature of Deed of Commitments document with owners
  - Mobilization and initiation of works
  - Monitoring and quality control

Component 2: Emergency Support for CCI Recovery

Following the explosion, there was a sharp decline in cultural productions due to physical and financial damages incurred by the CCI industry. This resulted in the loss of livelihood of cultural actors. Through more than 55% of 200 mapped CCIs permanently or temporarily closed, there was a significant exodus of cultural actors from the sector and from the affected neighbourhoods. Urgent emergency support was identified as an essential need in order to sustain the livelihoods of the remaining cultural actors and recover the vibrancy and cultural identity of affected neighbourhoods.

The objective of this component, implemented by UNESCO, is to provide grants to affected cultural entities, practitioners and groups of practitioners operating in targeted CCIs for the development of cultural productions. This component will finance,

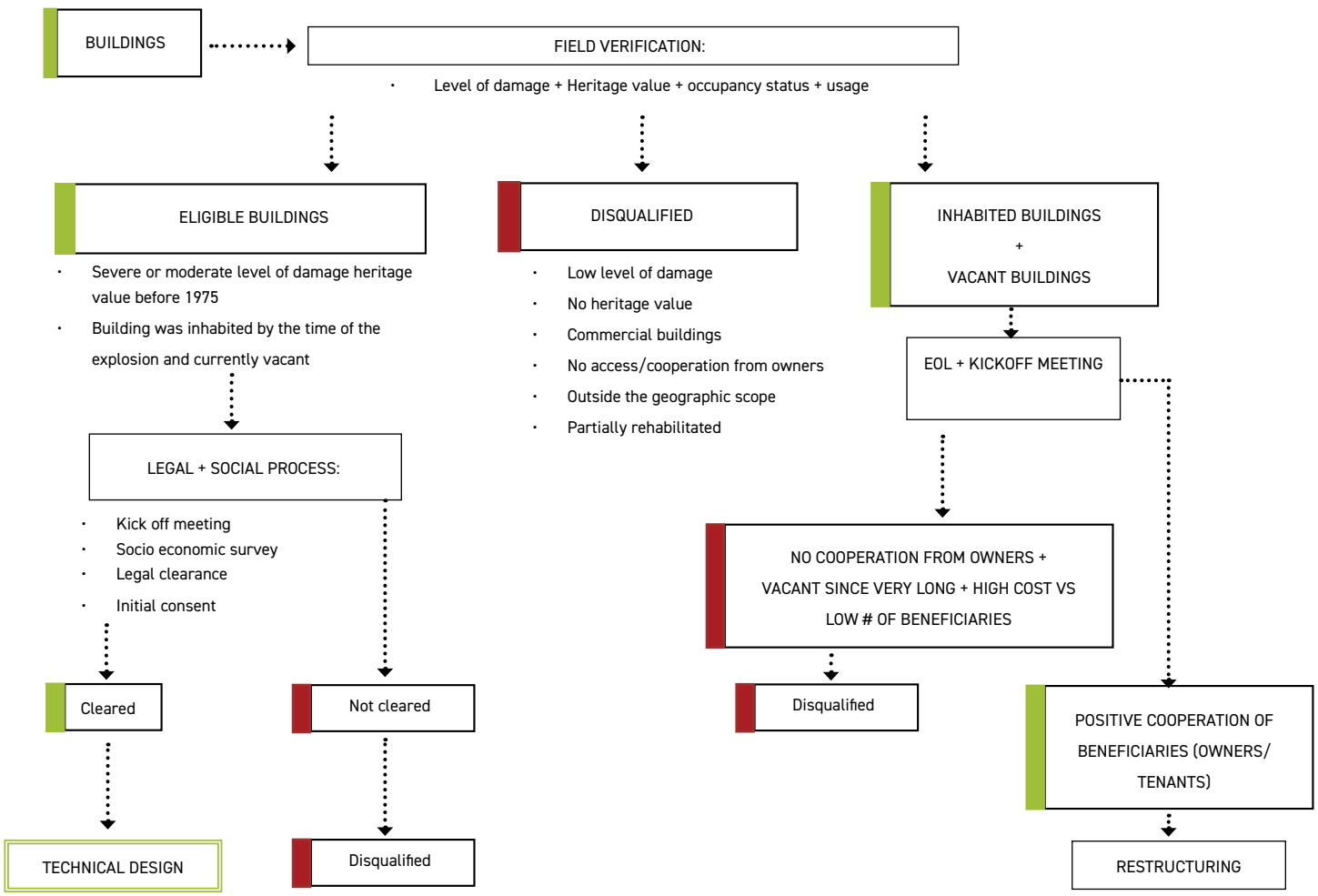


Fig.237: Process to select the houses to rehabilitate

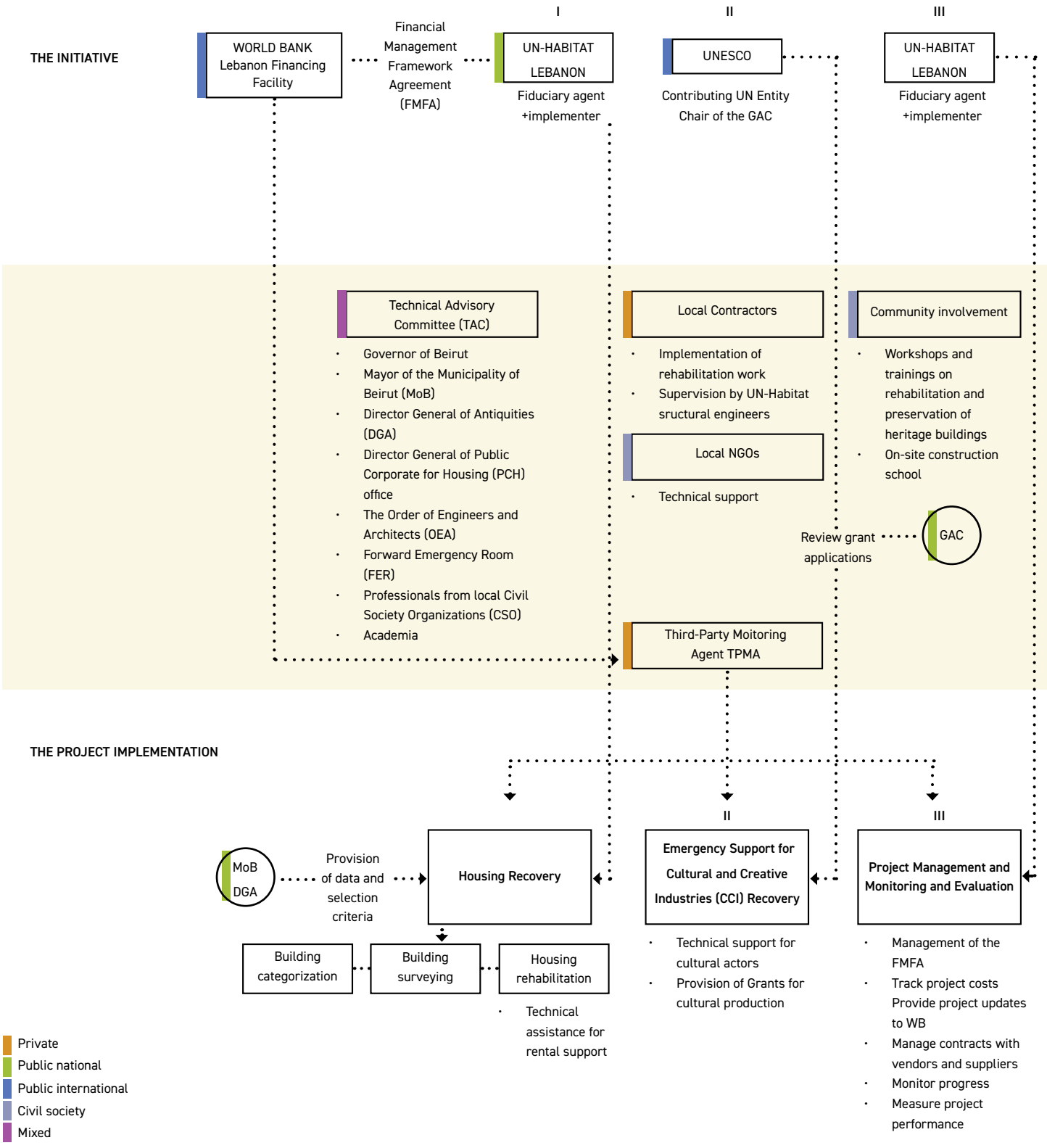


Fig.238: Organizational chart



Fig.239: Flyer for grievance mechanism © UN Habitat

and technically support the rollout of cultural productions in neighbourhoods affected by the Port of Beirut explosion. At least 65 cultural entities and 85 cultural practitioners will receive grants to develop their cultural productions. The following indicative CCIs will be targeted: i) performing arts; ii) visual arts and crafts; iii) intangible cultural heritage; iv) audio-visual and interactive media; v) heritage and tourism activities; and vi) literature and press.

By providing emergency support to the CCI sector, the character of the area as a creative district can be supported and livelihoods of cultural workers sustained. Moreover, CCIs and intangible cultural heritage are particularly important for recovery due to their power in rebuilding the social fabric as well as for effectively fostering and maintaining cultural diversity, intercultural dialogue, and social cohesion. Through this component, the project will provide grants to cultural entities and practitioners operating in targeted cultural domains for the development of cultural productions. The development of cultural productions will: i) support the revitalization of cultural life in a city that is recognized as a regional cultural hub across the Mediterranean; ii) sustain the livelihoods of cultural practitioners; and iii) enhance social inclusion of vulnerable groups and individuals related to targeted cultural domains.

4.2. Partners

Experts
Architects, architect restorers and heritage experts, structural engineers, Environmental and Social Safeguards (ESS) experts, legal team, beneficiary outreach team, Social Development Expert, Housing Expert*

Public stakeholders
Governor of Beirut, Municipality of Beirut (MoB), Directorate General of Antiquities (DGA), local civil society organizations (CSOs), the Forward Emergency Room (FER, Lebanese Army), the Public Corporation for Housing (PCH), Order of Engineers and Architects (OEA)*

Newly created institutional structures
A Technical Advisory Committee (TAC) was established upon invitation by UN-Habitat and \ provides strategic advice on project implementation. The TAC is chaired by UN-Habitat, which also serves as its secretariat, and comprises UNESCO (implementors of component 2 of the project, key government actors: Governor of Beirut, Mayor of Beirut, Director General of Antiquities, Director General of the PCH, the OEA, FER, as well as professionals from local CSOs, and academia. In a fragile institutional context, the establishment of the TAC helps ensure project transparency and promotes ownership.

4.3. Organization and selection

a. Organization
The project's organization is shown on the flowchart on figure number 238.

a. Selection process
UN-Habitat identified a long list of eligible buildings according to the set project criteria: severely damaged, of heritage value, within a 5km radius of the explosion, inhabited by socioeconomically vulnerable people. Building selection criteria in more detail included:

- Geographic scope. Buildings should be within 5km of the explosion, with a possible emphasis on the Medawar and Rmeil districts due to the high concentration of blast-damaged buildings and because of the least support for residential recovery, according to an assessment conducted by UN-Habitat.
- Level of damage. The project prioritizes assistance to severely damaged buildings and then potentially moderately damaged.
- Apartment occupancy. As part of the building assessment phase before implementation,

a field survey for an occupancy assessment was conducted by UN-Habitat. The building is considered eligible to benefit from rehabilitation works under the BERYT project in the following cases:

- In the case the targeted building is vacant as a result of the explosion.
- In case the building is not completely vacant, but occupants express a voluntary intent to relocate temporarily at their expense during rehabilitation.
- In the case the targeted building has been vacant since before the explosion, the building is considered with the condition to ensure that all rehabilitated housing units will be occupied partly by owners or by low-to-middle income new tenants at below market rental rates.

- Heritage value. Although the DGA and UNESCO have already developed cultural heritage classifications, the project considers non-official classifications of buildings of heritage value considering the eras of construction as a reference. The eras of construction considered under the project are as follow:
  - Era 1: Late Ottoman Heritage (1850-1919)
  - Era 2: Colonial Eclectic Heritage (1920-1935)
  - Era 3: Early Modernist (1936-1955)
  - Era 4: Late Modernist (1956-1975)

4.4. Tools

a. Implementation tools
Survey tools
N/A

Stakeholder engagement program
As described in the project's Stakeholder Engagement Plan (SEP), UN-Habitat has identified several methods of communication according to the project phase, to keep stakeholders well informed. This includes a Grievance Mechanism where they can share their feedback and concerns. Information is shared and available through multiple channels: UN-Habitat's official website, social media via Facebook, X, Instagram and LinkedIn, in addition to WhatsApp and e-mail. A Technical Advisory Committee (TAC) was also established to engage key relevant governmental institutions and other important stakeholders in the provision of technical and strategic level advice (see above). The SEP also mentions specific actions to engage and address the needs and concerns of beneficiaries and local communities including vulnerable and marginalized groups identified by UN-Habitat (additional details provided in next section).

A project field office was established in the affected area enabling stakeholders and beneficiaries to submit inquiries or share feedback in person.

Community engagement
Community engagement is ensured during all project phases through a range of efforts as listed below:

- Stakeholder engagement meetings: organized on a regular basis to provide project updates and disseminate information pertaining to the Grievance Mechanism. The meetings include inhabitants from the target areas, NGO members, civil society, students, local businesses etc.
- In-person one- on- one meetings with direct beneficiaries, including landlords and tenants (during inception, planning, design and implementation phases).
- Surveys of commercial units which are operational and located in buildings that are under project consideration. This is to understand the nature of their commercial activity, how they were impacted by the explosion and to inform them about the project.
- Unstructured interviews with surrounding communities and businesses to inform them about the project and understand their concerns with respect to potential environmental and social risks associated with the project.

UN-Habitat endeavours to ensure that the needs and concerns of the most marginalized stakeholders are addressed. Of particular importance is to ensure

that tenants are able to return to their homes after the rehabilitation process, with increased access and conditions as before the explosion (namely rent value). A legal consent form has been prepared with owners to protect the latter rights, accompanied by extensive legal review and consultation.

Cultural activation
Planned cultural activation of the neighbourhood through the second component of the project "Emergency Support for CCI Recovery" from the very start of the project, in parallel to housing rehabilitation.

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

This tools serves as a channel by which beneficiaries and stakeholders can voice feedback, inquiries, requests of complaints raised or faced by them. The project has an online complaints section where people can send feedback, inquiries, requests of complaints related to any issue pertaining to the project via several channels (email, website in both Arabic and English, Whatsapp account).
For stakeholders who do not use information technology (IT), complaint boxes will be placed at various locations at the project sites, including locations easily accessible to the disabled, elderly and women.

Owner's commitment deed
As part of the project's efforts to increase the tenure security of households affected by the Beirut Port explosion, continuous consultations with potential beneficiaries continue to be held to review and fully grasp the situation on the ground and the different types of tensions and challenges faced by tenants and landlords.

The legal review and assessment informed the drafting of an owner's commitment document, which will act as a pivotal tool in solidifying tenancy rights and guaranteeing the provision of affordable rental accommodation within Beirut's housing market.

The commitment document's main objectives are:
- To guarantee clarity and consensus on project

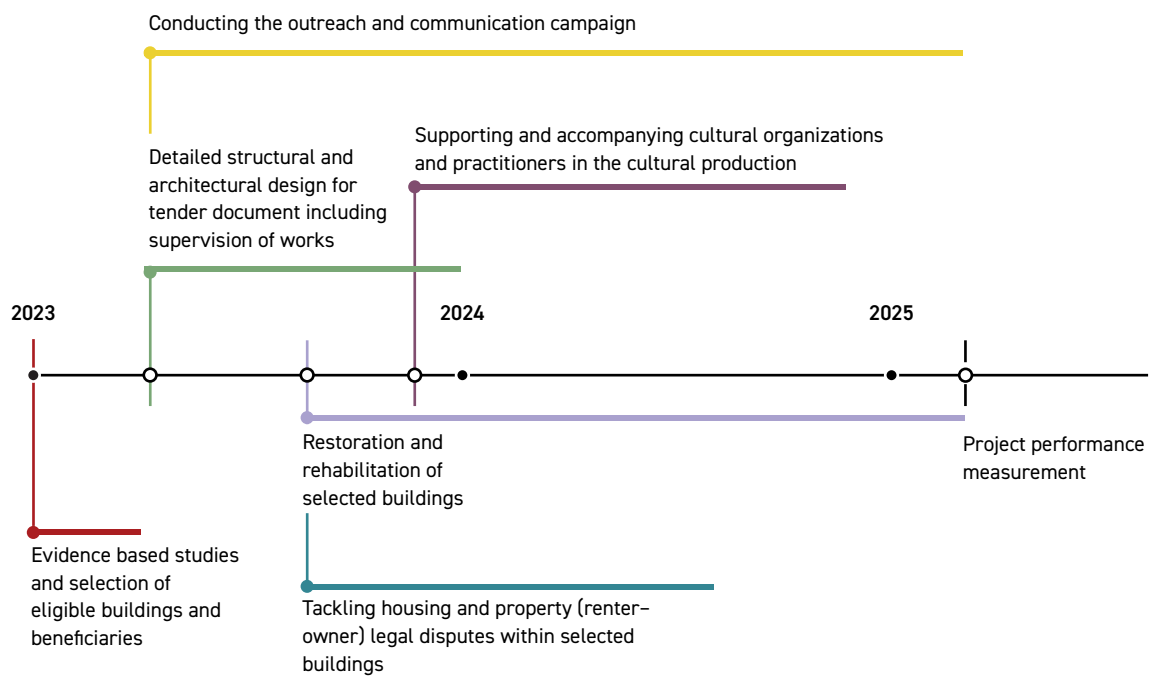


Fig.240: Timeline

objectives and interventions among all parties.
- To safeguard heritage by ensuring that property owners refrain from demolishing, altering, undertaking any construction that may impact structural integrity, or modifying the specifications or external appearance of the building post-rehabilitation for a period of nine (9) years.
- To facilitate the safe return of owners and tenants to their residences within three (3) months of handover, thereby contributing to the continued recovery of the city.
- To ensure tenancy security for a period of three (3) years post-rehabilitation and handover, particularly for tenants bound by contracts/ agreements under the old rent law.
- To ensure the provision of affordable housing options for middle –to-low-income families for three years post-project handover, with rental rates less than half of the prevailing market prices.

Beneficiaries will be required to sign this document before the initiation of rehabilitation works on site.

Laws and decrees
Law 194/2020 was established to regulate the protection and support to the reconstruction of the areas affected by the Port of Beirut explosion. The Lebanese Parliament approved Law 194/2020 as the only framework for the post-disaster recovery. The law was mandated with the specific aims to (1) protect severely affected neighbourhoods, and (2) support the recovery and reconstruction of all affected areas.
The law introduced several measures designed to protect buildings and residents in blast-affected areas. Thus, Article 3 of the law prohibits all kinds of property transfers on all real estate parcels located in severely affected neighbourhoods for two years after the date of publication of the law, effectively until 22 October 2022.

Article 5 of the law also introduced protection for residents by extending all rental contracts (commercial and residential) for a year, irrespective of whether the building had been damaged by the explosion or not.

Environmental and social tools
The reconstruction/rehabilitation process follows the World Bank's Environmental and Social Framework (ESF), as described in the project's Environmental and Social Management Framework (ESMF), Labour Management Procedures (LMP), Environmental and Social Commitment Plan (ESCP), and Stakeholders Engagement Plan (SEP) which have been prepared by UN-Habitat and cleared and disclosed on the project's and the World Bank's webpages. In addition, in parallel to the design process, subproject-specific Environmental and Social Management Plans (ESMPs) are prepared and disclosed, including a description of the required mitigation, monitoring, documentation and reporting, and institutional setup and capacity-building measures. They stress that the contractor(s) should hire an ESS/Occupational Health and Safety (OHS) expert(s) who would follow up on the implementation of the various plans, including reporting and record-keeping activities and regular training of the workforce. ESMPs are invariably included as binding plans in the tender documents of the contractor(s) as well as in their agreements with UN-Habitat.

4.5. Financing

Total amount : USD 12,75 million

Source : The Lebanon Financing Facility (LFF) a multi-donor trust fund administered by the World Bank

Proposed Implementation Period : 33 months (February 2022–June 2025)

Grant Recipient : UN-Habitat Lebanon Country Program

Breakdown :
Component 1: Housing Recovery (US$ 8,113,720)
Component 2: Emergency Support for Cultural and Creative Industries Recovery (US$1,927,091)
Component 3: Project Management and Monitoring and Evaluation (US$2,709,189)

Financing sufficiency :
Due to the increase in prices (almost 30% worldwide) of construction materials and shipping fares, the first tender process informed us that the initial budget is no longer valid. This presented a significant challenge. The originally estimated costs for the rehabilitation of buildings varied from the actual costs received through the competitive bidding process. Where the average cost rose from 250,000$ to 400,000$ per building. This increase was mainly due to the supply chain issues, the lack of products in the local market thus the need to import from abroad, and lastly the drastic increase in international freight and shipment costs due to regional conflicts.

Maintenance financing :
No

Rehousing financing :
The project did not include rehousing financing within its scope.

4.6 Timeline

Refer to Figure 240 for more details.

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials
Heritage buildings were not originally designed to withstand seismic threats, as their design can only accommodate vertical loads and not lateral loads. Given that Beirut is susceptible to potential earthquakes, the project focuses on strengthening the buildings' resilience to seismic activity while preserving their heritage character and value. The project also restores the heritage value of the buildings by dismantling previous interventions that compromised it (e.g., replacing cement mortar with natural hydraulic lime, which is better suited for buildings made of sandstone walls).

b. Legislation changes
The project is not expected to trigger any long-term legislative changes beyond some facilitation of permit processes presented by the municipality after the explosion. However, the project engages relevant stakeholders in an open dialogue concerning housing legislation, especially rental, using findings from the extensive legal review of cases to initiate discussions that could influence future housing legislative reforms. The project also engages relevant stakeholders like the Public Corporation for Housing (PCH) in the development of a Below Market Rate rental strategy for vulnerable tenants in vacant rehabilitated buildings. This is a policy dialogue that can be further explored beyond the project.

c. Programs post-rehabilitation
The rehabilitation will preserve the initial function of the residential buildings and increase access to Below Market Rate (BMR) rental units.

Economic impact
The main direct economic impact of the project is reflected in the provision of employment opportunities during and after the project's implementation:

During the project:
The project privileges local contractors, workers, craftsmen and consultants. No exact numbers can be provided this early in the project, which is currently being implemented yet. On the other hand, the project provides training to local architects and engineers, reinvigorating old crafts that have become obsolete by rehabilitating buildings using original materials and building techniques.

Post project:
The project is projected to contribute significantly to the ongoing urban recovery of Beirut city, directly contributing to urban renewal. It is expected that this will attract new socio-economic activity in a historic and popular area. The cultural activation of the neighbourhood, thanks to the funding programme targeting 140 entities and practitioners in the CCIs, will also contribute to the revitalization of the art scene, resulting in the retention of cultural actors and the creation of a culture hub in the targeted neighbourhoods.

d. Social impact

Gentrification mitigation
The project aims to counter negative gentrification by requiring building owners to sign a commitment document. This deed ensures clarity and consensus on project objectives, protects heritage by preventing property sales, demolitions, or alterations for a set period post-rehabilitation, and facilitates the safe return of owners and tenants within three months of handover. It also guarantees tenancy security for a set period for tenants under old rent laws and provides affordable housing for middle-to-low-income families at rates less than half the market price for a set period after handover.

Education
The BERYT project has and will continue to contribute to raising awareness through community workshops on the types of heritage buildings in Beirut, and the importance of preserving them. The project has also raised awareness on housing, land, and property issues specifically affecting heritage buildings in Beirut and that contribute to their neglect, low maintenance and loss of heritage assets in addition to exacerbated housing and tenure security issues.

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints

Some project targets needed to be revised due to:
- Significantly higher than expected rehabilitation cost per unit due to inflation and supply chain challenges (i.e., original vs current rehabilitation estimates: US$250k vs US$400k);
- Some unrealistic assumptions at project appraisal

b. Eligibility Challenges

Limited number of eligible buildings due to:
- Complex eligibility criteria (residential buildings in neighbourhoods affected by PoB explosion; heritage value; hosted socio-economically vulnerable HHs; currently vacant; inhabited during blast);
- C lot of buildings have already been rehabilitated since project appraisal either privately or by other donors; and
- Many of the buildings that have not been rehabilitated after the explosion have been vacant since before the explosion. The owners of these buildings are not interested in rehabilitating them, hoping instead to sell the properties in the future.

c. Legal challenges

Multiple ownership, tenure issues, and other complexities related to housing land and property rights.

d. Tenure challenges

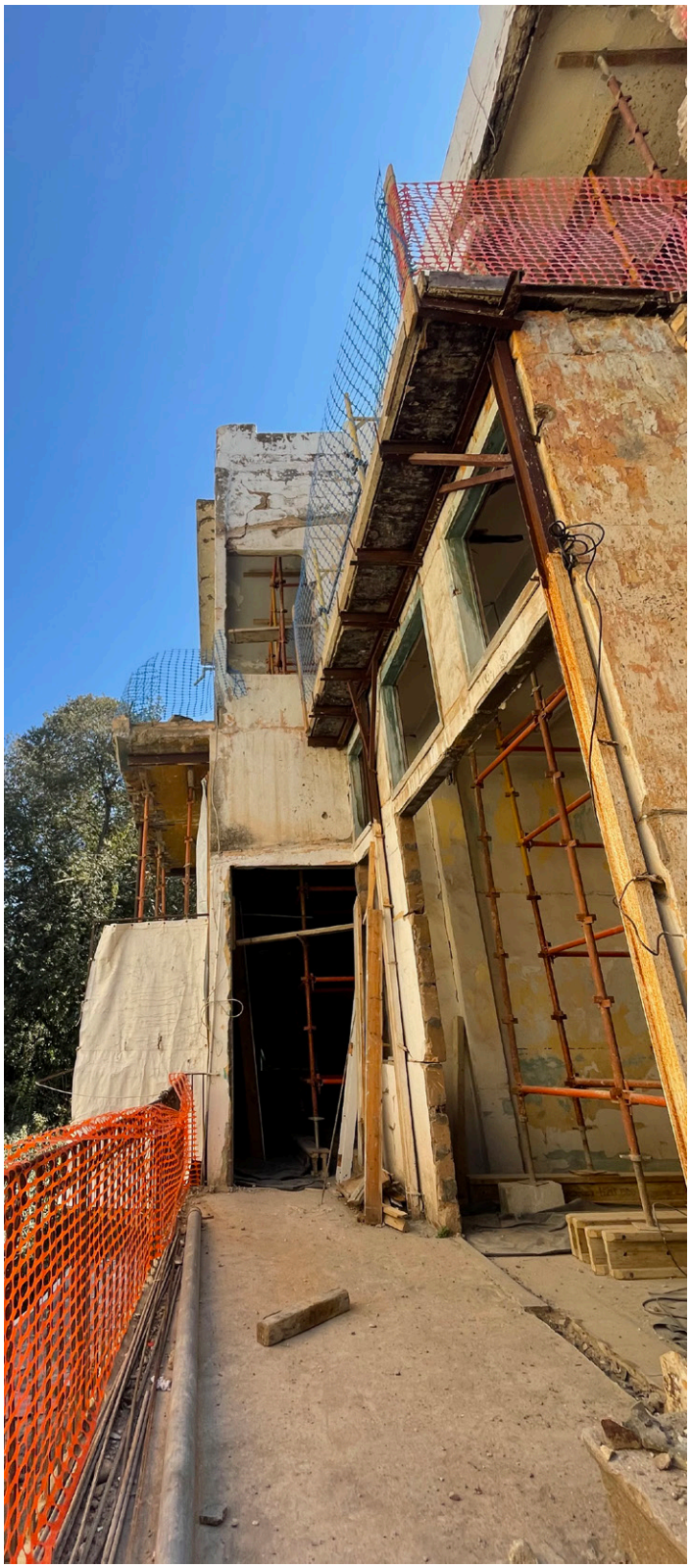
In some cases, private land tenure works against the project. Owner and tenant disputes about tenure agreements are difficult to mediate, and the multiplicity of owners makes obtaining the majority consent required by law to conclude contracts difficult. All of these challenges serve as delaying factors to the project timeline due to the need for the process to be very specific and detailed to safeguard everyone's rights.

e. Construction challenges

- Delayed site possession and site clearance by beneficiaries.
- Site related challenges due to the dense urban context, the need to preserve the public domain, street blockages for operations, and the resulting traffic blockages, rerouting, and environmental issues, which the project is actively mitigating and monitoring during implementation.
- The non-existence of heritage construction materials in the local market that could lead to delays in construction if there are delays in importation.
- The international increase in construction material costs that has affected project targets.
- The slow response of local authorities and non-existence of as built plans (especially in infrastructure) that has caused implementation delays.
- The unavailability of skilled labour focused on heritage rehabilitation.

- The absence of large-scale production of natural hydraulic lime in Lebanon, with only one artisanal production site that cannot meet the demand

This project will establish a crucial foundation for future housing recovery strategies and policies for Beirut, particularly in light of the complex Housing, Land, and Property (HLP) issues faced. The case studies, legal processes, human experiences, and various challenges documented during this project will provide invaluable insights and serve as a guide for a broader, more comprehensive approach in the future.



ANNEX

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5I-16

LEBANON | Rmeil cluster

The Rmeil Cluster Build Back Better

Rmeil, Lebanon



Fig.241: View of Sursock palace north façade after the blast © The Beirut Heritage Initiative



INTRODUCTION

The Port of Beirut (PoB) explosion on 4 August 2020 damaged some of the oldest neighbourhoods of Beirut, including the Rmeil cluster, a historic residential area in Beirut built in the French mandate period dating back to the 1930's. The Rmeil cluster had been an underprivileged and disregarded neighbourhood long before the devastating explosion. The area's challenging access, and its proximity to a planned and later cancelled infrastructure project made it a less privileged, disregarded part of the neighbourhood.

The area boasted a large 4000 sqm garden and orchard which was derelict and overgrown but had the potential to increase the neighbourhood's quality of life and attractiveness and absorb the city's need for quality green spaces.

The project successfully rehabilitated 11 heritage buildings in the Rmeil area and brought back their respective families all while improving the structural integrity of the buildings, to help them withstand future disasters. The project also intervened on the open spaces within the cluster buildings to create inclusive public spaces for the residents of Rmeil and the city of Beirut as a whole.

Main instigator
UN-Habitat Lebanon Country Programme

Historic Neighborhood
Rmeil cluster (Eastern edge of the Old City center)

Targeted beneficiaries

- 25 households
- 11 residential buildings rehabilitated: 9 rehabilitated and 2 propped

Project duration
2021-2022

Project budget
USD 1.4 million

Progress status
Completed

1. IDENTIFICATION

Size of the overall city
Population: 1,263,332 inhabitants
Surface: 110.6 km²

Size of the historic area
The Rmeil cluster is approximately 11,000 m², with approximately 75 - 90 inhabitants.

Principal function of the city
Capital, chief port and airport, major economic hub, cultural centre, and political capital of Lebanon.

Principal function of the historic area
Residential, Hub for cultural and creative industries, with major schools & hospitals.

Heritage status
None of the 11 residential buildings of heritage value are listed as National Heritage.

Income level of dwellers in the historic city
Mixed income dwellers but the majority are low-to-middle-income Lebanese families (affected however by the protracted socio-economic and financial crisis).

Demographic profile
Initially, the maim demographic group is an aging population but gentrification has brought in a large number of new small families and young professionals.

Land tenure
Mixed ownership, expropriation, pending expropriation, informal occupation.

Housing role in the project
The housing sector was the most severely impacted sector by the PoB explosion, with vulnerable populations being the most affected.

Situation and urban evolution
The Rmeil cluster is located in close proximity to the Port of Beirut explosion on 4 August 2020; about 700m away from the explosion origin. This cluster had already suffered from severe neglect and deterioration before the explosion due to its unique urban history and the infrastructure plans (Fouad Boutros Highway) that left it in a legal void.

Evolution of housing typologies
The buildings in the Rmeil cluster exhibit different typologies, sometimes varying even within the same building (e.g., each floor was built in a different era). Most of the buildings within the Rmeil cluster were first built between the 1930s and the 1960s.

2. STAKES

Diagnosis/Status

Historic Beirut residential neighbourhoods, featuring buildings of heritage value constructed between 1840 and 1975, were severely affected by the Port of Beirut explosion on August 4, 2020. Beirut has long been renowned for its rich history spanning over 5000 years. However, presently, the city's iconic historical houses are primarily concentrated within the pericentral quarters, formerly part of the historical core or intra-muros city. Achrafieh, Saifi, Medawar, and Rmeil are among these quarters and are the areas considered under the project. Their character relies particularly on the remains of these heritage buildings, which have long suffered from systemic challenges, inadequate policies, and survived a 15-year civil war and the subsequent urban development surge since 1990.

The damage caused by the explosion is estimated

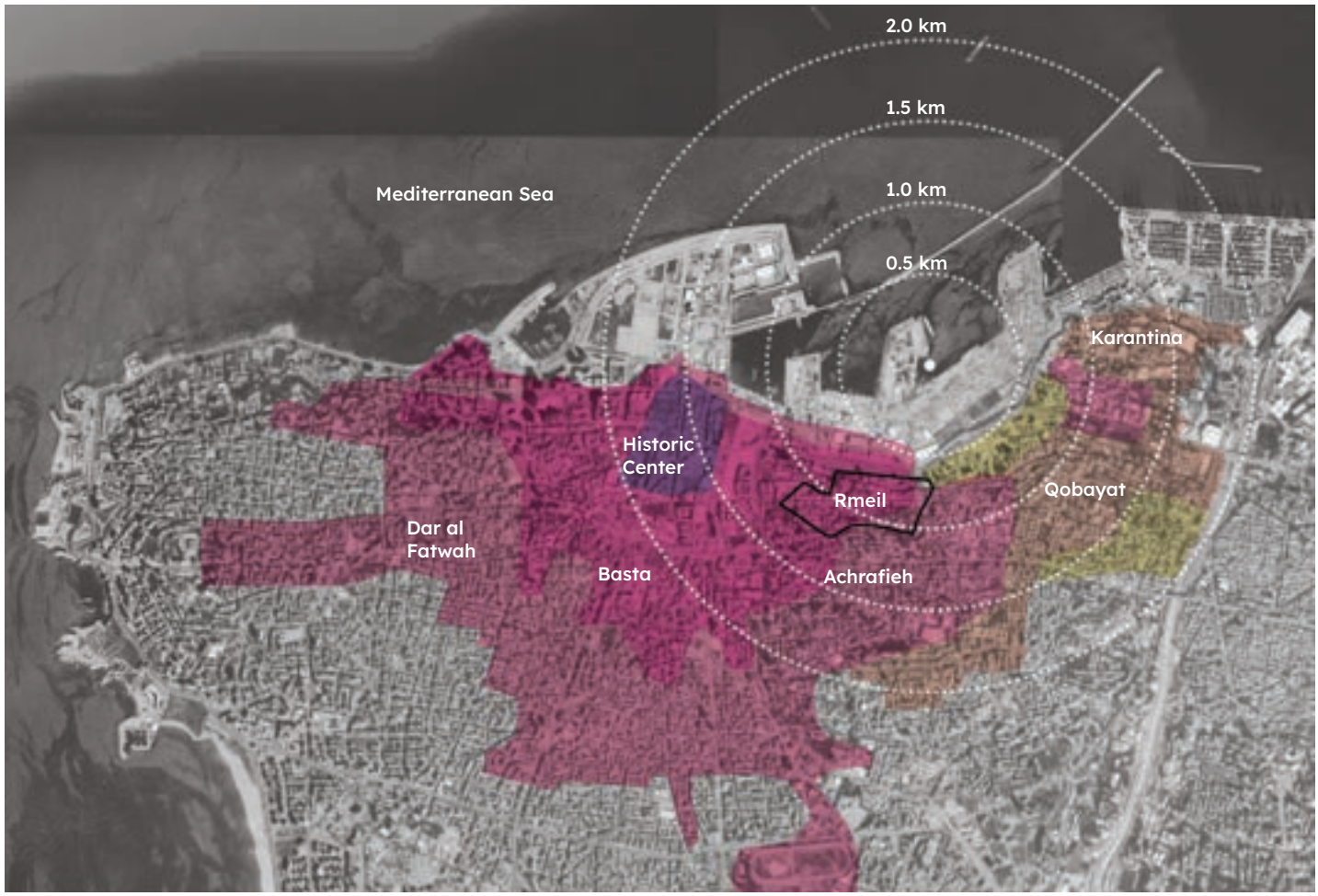


Fig.243: Project situation and urban evolution of the Rmeil cluster



Fig.242: Rmeil intervention area

to be between US$ 1.9-2.3 billion, affecting around 351,000 residents of Beirut. The port and surrounding areas' housing were hit the hardest, forcing residents to seek shelter with friends and family. Low-income housing units suffered the most damage, with approximately 64% of these units having sustained some form of damage. The losses in the housing sector are estimated between US$ 1.0-1.2 billion and particularly reflect the high proportion of renters in the Beirut population. With an estimated monthly rental of damaged housing averaged at US$ 1,475.48, the net loss of rental income by landlords for the first 36 months after the explosion is estimated at US$ 544.3 million, while the temporary rental of housing by displaced owners is projected at US$ 173.3 million for the same period.

Challenges
The particular and complicated legal, ownership and occupational status of the buildings within the Rmeil cluster were the most challenging aspect of the project. This in addition to the site's topography which made it very challenging to access and easily perform construction activities.

Objectives
- Restoration and strengthening of eleven multistorey buildings of heritage value following the Build Back Better(BBB) approach through multiple innovative and forward-thinking techniques, while safeguarding housing, land and property rights of tenants;
- Development of the the skills of over a hundred men and women to take part in the rehabilitation works through cash for work activities;
- Rehabilitation of key public spaces affected by the PoB explosion;
- Installation of two handwashing stations to mitigate COVID-19 community transmission.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Central hall house or triple arch house
Period : Mid-19th century
Occupants : Wealthy upper class, mix of tenants and owners.

Description :
The original central hall house is either an incrementally built multi-level dwelling composed of vaulted ground floors, or a single-floor house with rooms arranged in L or U shape layouts around a courtyard or a forecourt.
The house core is usually composed of one room opening onto a courtyard through a wide arch forming a porch (iwan or liwan), in combination with a lateral room (murabbaa) on either side. The house expanded overtime to accommodate evolving needs and family size. Since the 19th when concrete was introduced the typology mutated and gave way to a diverse range of hybrid buildings.
A key feature of the central hall plan was the ability to stack nearly identical floors, each serving as independent units. By the 1860s, separate households occupied or rented these floors. By the early 20th century, this concept evolved into fully developed multi-story apartment buildings.

Spacial distribution :
The archetype consists of several rooms symmetrically arranged on three sides of al-dār which is oriented to the north. The triple-arched windows open onto a narrow balcony. The lateral rooms do not communicate with each other but with this hall, which serves as a living room and distribution space. The room located at the back of this hall is characteristic of this Beirut typology with double exposure. It is the

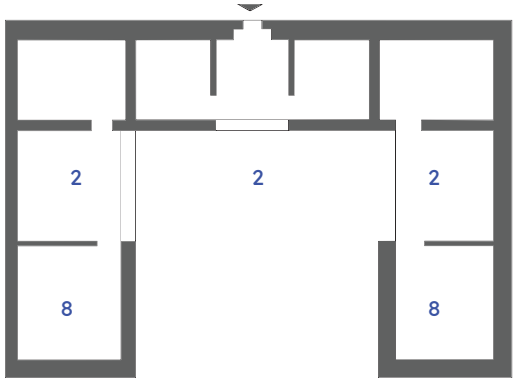


Fig.244: Typical plan of an 18th century Ottoman house Beirut, centered around a courtyard flanked by three liwans.

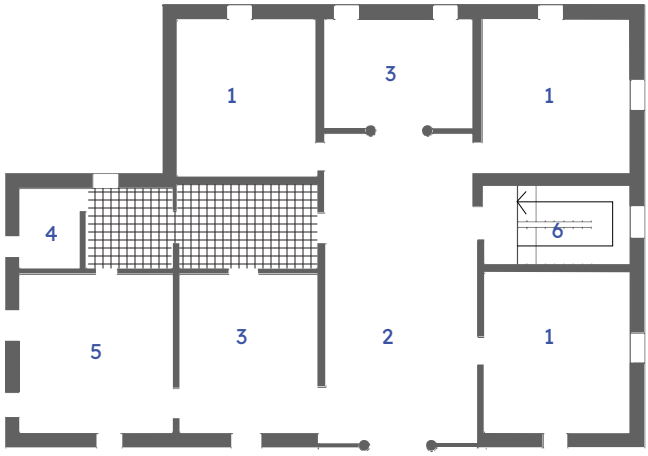


Fig.245: Typical plan of a 19th century Ottoman house Beirut, the courtyard became a hall.

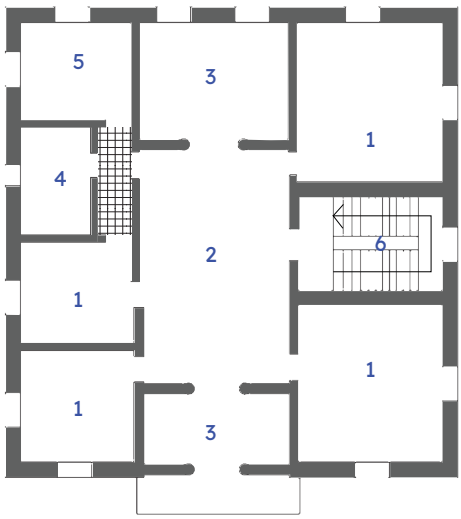


Fig.246: Typical floor plan of a house during the French Mandate (1918-1930)

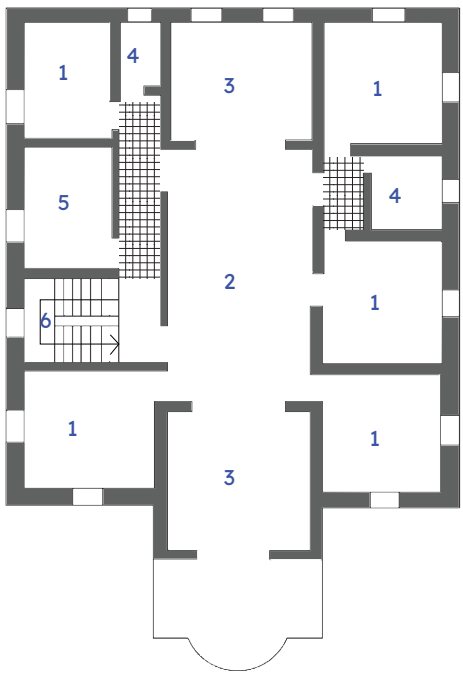


Fig.247: Typical Floor plan of a house during the French Mandate (1930-1943)

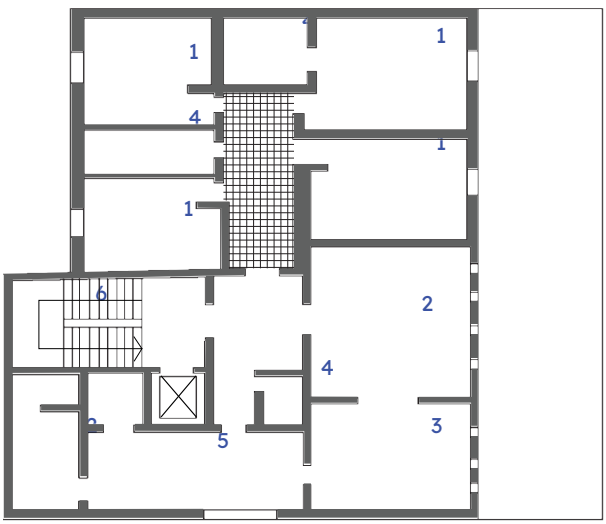
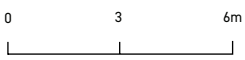


Fig.248: Typical floor plan of a house in the post independence era

1. Room
2. Liwan
3. Dar
4. Toilet
5. Kitchen
6. Interior Stairs
7. Exterior Stairs
8. Murabbaa



liwan, usually built in a protruding manner to increase light and ventilation. Another spatial characteristic is the integration of external spaces such as toilets and kitchens, along with the introduction of new rooms like dining rooms, bathrooms, and a sitting room for visitors who were not intended to enter the heart of the home. Bayt Saadeh, built in 1850, demonstrates the spatial configuration of the hall house. While not located within the Rmeil Cluster project area, the typology demonstrated in the figures is similar to that of the buildings considered under the project.

3.2. Condition of the historic housing units before rehabilitation

The main destruction affected buildings that were constructed between 1930 and 1960 as they were mainly built using sand stone with a mix of concrete at later stages. A lot of these walls were either completely demolished or on the verge of collapsing, which caused a safety hazard to the general public from the street. The force of the PoB explosion on 4 August 2020 caused deformities to the buildings. Cracks, broken or detached treads, and deformed iron railings are the consequence of debris falling from above. The wooden beams and wooden openings are for the most part either irreparably damaged or completely missing, and the glass of the window panes is entirely shattered. The inner vaults and wooden pitched roofs of some of the buildings have also suffered from the explosion and the weathering, and would need to be levelled or partially or totally reconstructed. Additionally, the ironwork was damaged or corroded and requires repair or reinstatement.

The buildings in the Rmeil cluster have different typologies. Typologies sometimes differ even in the same buildings (i.e each floor was built in a different era. Houses at advanced levels of damage are today vacant as they were assessed to be unsafe to live in. All buildings suffered from long standing lack of maintenance so they were in a very deteriorated state even before the blast.

3.3. Types of damage

- In-plane damage;
- Out-of-plane failure mechanisms;
- Hybrid in-plane and out-of-plane deformation;
- Failure of trusses, displacement, twist, cracks,





Fig.249: State of residential buildings in the Rmeil project neighborhoods after the blast © UN Habitat

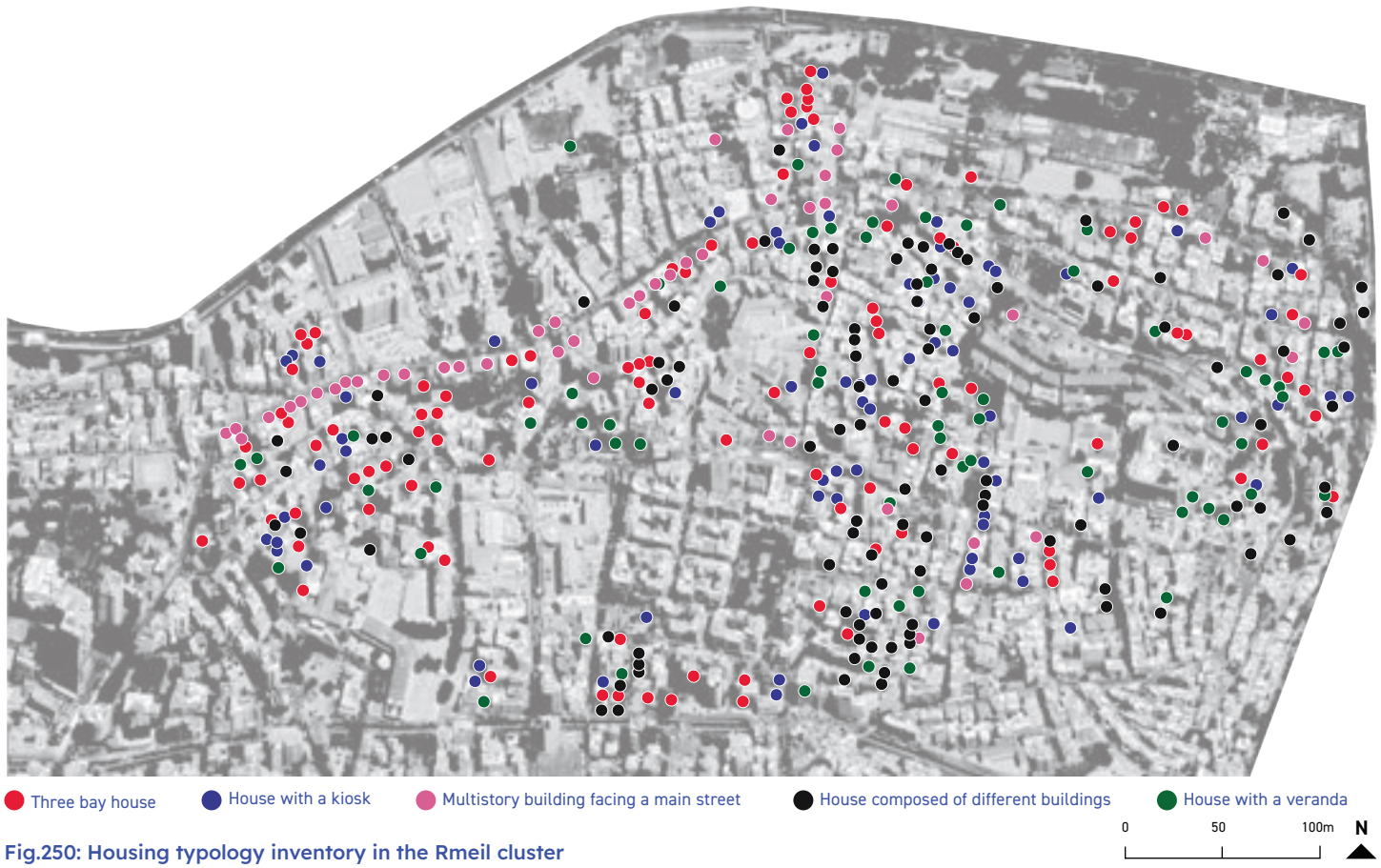


Fig.250: Housing typology inventory in the Rmeil cluster



Fig.251: Emergency measures: stabilization of a house in Rmeil © UN Habitat

missing parts, and defective joints;
- Steel rebars embedded in carbonated concrete corrode in the presence of water and oxygen;
- Detached plaster;
- Deteriorated gutters;
- Modern waterproofing membrane above stone eaves blocks capillary rise inside stone gutters.

3.4. Rehabilitation know-how, materials, and material sourcing

The rehabilitation process was conducted under the supervision of a local architect restorer.
The materials used were as follows :

- Sandstone scarcely found in Lebanon, so almost half the quantity is locally sourced, and the rest is bought from neighbouring countries
- Lime plaster locally sourced (new production arising from the post-explosion demand)
- Limestone tiles found in local stone factories
- Marble imported and sold in Lebanon
- Qotrani wood imported from Turkey (some is also salvaged from sites themselves)
- Terrazzo tiles locally produced
- Cement locally produced
- Ceramic tiles found in the local market
- Wrought iron imported from England
- Stamped and coloured glass imported from France
- Terracotta locally found and/or imported from France
- Red brick roof tiles traditionally made in Marseille and imported from France or Spain
- Tiles repurposed from old buildings
- Bituminous membrane, polyurethane, cementitious liquid products for waterproofing, supplied by specialized providers from Lebanon

4. MECHANISMS OF THE PROJECT

4.1. Process

The project was implemented through the following phases :
1. Community outreach
2. Planning
3. Cleaning and clearing the site
4. Preliminary Design
5. Permit acquisition
6. Detailed design and development of BOQs
7. Cash for Work and training of workers
8. Mobilization
9. Implementation
10. Handover

4.2. Partners

Experts
Local heritage experts, senior architects and engineers, young architects and engineers. Expertise in restoration, structural retrofitting, architecture, mechanical and electrical, urban planning/design, landscape and infrastructure and some expertise in participatory design methods.



Fig.252: The pillars of the Build Back Better approach for Rmeil.

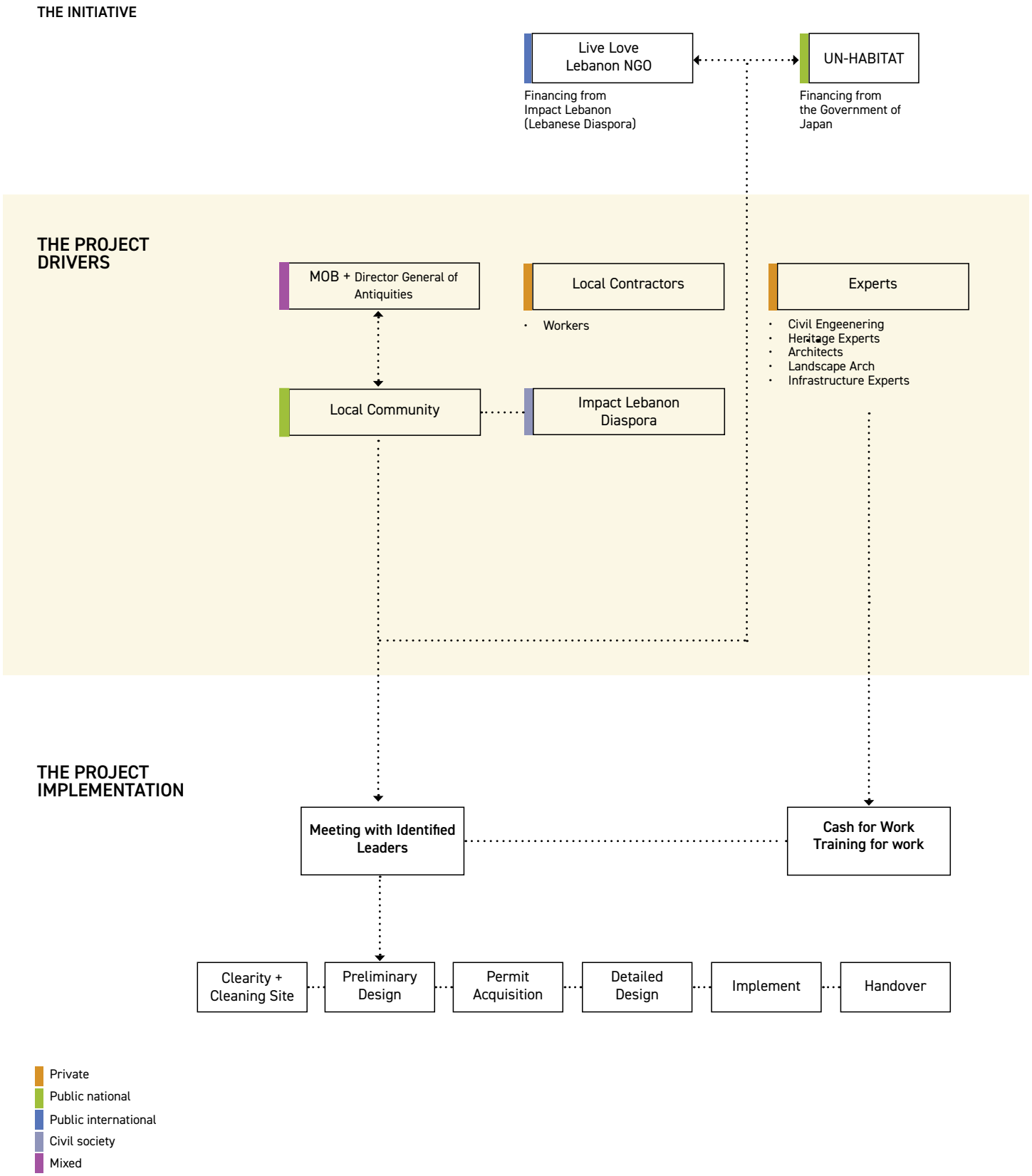


Fig.253: Organizational chart



Fig.254: Selected sites for rehabilitation with the status of each building current occupancy and occupancy @ UN Habitat


Unit: 2F-1
Unit: 1F-1
Unit: GF-1
Re_712


492
1838


Unit: GF-1
Re_692/B


Unit: GF-1
Re_1838


Unit: 3F-2
Unit: 2F-1
Unit: 1F-2
Unit: GF-1
Re_716


11.8 %
26.5 %
11.8 %
2.9 %
2.9 %
2.9 %
14.7 %
26.5 %


OLD RENT
FULL REHAB + HOUSING POLICY
FULL REHAB + HOUSING POLICY
CORE & SHELL REHAB
+ PPP FOR SOCIAL IMPACT
PENDING OWNERSHIP & LEGAL STATUS
[ex. Pending Expropriation]
RENTED
INFORMAL
CONFLICT RESOLUTION
+ PPP + HOUSING POLICY
OCCUPIED BY OWNER
FULL REHAB
+ CONFLICT RESOLUTION
VACANT
CORE & SHELL REHAB
+ PPP FOR SOCIAL IMPACT



Fig.255: Photos taken before and after the intervention

Public stakeholders
Municipality of Beirut, Directorate General of Antiquities.

Newly created institutional structures
No new organizational structures were created through this project.

4.3. Organization and selection

a. Organization
The project's organization is shown on the flowchart (Fig. 246).

b. Selection process
Refer to figure 247 for more details.

4.4. Tools

a. Implementation tools

Stakeholder engagement
Stakeholder engagement was conducted through the:

- Identification of local communities directly affected by the project in the Rmeil Cluster.
- Identification of the problems and needs of the community.
- Communication with the community during and after assessment of the damages, and during implementation.
- Preservation of local community by negotiating legal aspects and matters with the Beirut Municipality and other stakeholders

- Active inclusion of extended community, academic and professional expertise.
- The establishment of a neighbourhood committee.

Community engagement

- Planned workshops and training on rehabilitation and preservation of heritage buildings, the workshops are attended by UN-Habitat project team, members from local authorities (municipality engineers, directorate general of antiquities staff etc);
- Consultations with residents at every phase of the project.
- Neighbourhood committee: To ensure project ownership and sustainability beyond the rehabilitation phase, a neighborhood committee was established. This committee comprises various building owners and residents from the cluster. Its purpose is to facilitate ongoing collaboration, address concerns, and ensure that the community remains actively involved in the maintenance and future development of the area.

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

Laws and decrees

Law 194/2020 was established to regulate the protection and support to the reconstruction of the areas affected by the Port of Beirut explosion. The Lebanese parliament approved Law 194/2020 as the only framework for the post-disaster recovery. The law was mandated with the specific aims to (1) protect severely affected neighbourhoods, and (2) support the recovery and reconstruction of all affected areas.
The Law introduced several measures designed to protect buildings and residents in blast- areas affected by the PoB explosion. Thus, Article 3 of the law prohibits all kinds of property transfers on all real estate parcels located in severely affected neighbourhoods for two years after the date of publication of the Law, effectively until 22 October 2022.
Article 5 of the law also introduced protection for residents by extending all rental contracts (commercial and residential) for a year, irrespective of whether the apartment of building had been damaged by the explosion or not.

Environmental and social tools

- Survey of existing trees around the site and in the orchard.
- Maintenance and pruning of existing trees
- Planting of additional trees that are local and native
- All landscape materials (hardscape and softscape) are locally sourced and sustainable

Owner's commitment

As part of the project's efforts to increase the tenure security of households affected by the Beirut Port explosion, continuous consultations with potential beneficiaries continue to be held to review and fully grasp the situation on the ground and the different types of tensions and challenges faced by tenants and landlords.
The legal review and assessment informed the drafting of an owner's commitment document which will act as a pivotal tool in solidifying tenancy rights and guaranteeing the provision of affordable rental accommodation within Beirut's housing market.
The commitment document's main objectives are:
To guarantee clarity and consensus on project objectives and interventions among all parties
To safeguard heritage by ensuring that property owners refrain from demolishing, altering, undertaking any construction that may impact structural integrity, or modifying the specifications or external appearance of the building post-rehabilitation for a period of nine years.

To facilitate the safe return of owners and tenants to their residences within three months of handover, thereby contributing to the broad recovery of the city.
To ensure tenancy security for a period of three years post-rehabilitation and handover, particularly for tenants bound by contracts/agreements under the old rent law.
To ensure the provision of affordable housing options for middle to low-income families for three years post-

project handover, with rental rates less than half of the prevailing market prices.
Beneficiaries will be required to sign this document before the initiation of rehabilitation works on site.

4.5. Financing

Total amount : USD 1.4 million

Source :
Diaspora crowdfunding USD 400,000 seed funding (local organization Live Love Lebanon) + UN-Habitat (Embassy of Japan).

Proposed implementation period : 2021-2022

Grant recipient : UN-Habitat Country Programme Lebanon

Breakdown :
- Live Love Lebanon with funding from Impact Lebanon: USD 400,000.
- UN-Habitat with funding from the Embassy of Japan: USD 1,000,000.

Financing sufficiency :
Due to the increase in prices (almost 30% worldwide) of construction materials and shipment fares, the initial budgeting was no longer relevant and needed to be revised.

Maintenance financing :
No maitenance financing was considered within the scope of the project.

Rehousing financing :
Residents had already left their damaged houses and found other living arrangements before the project was kicked off.

4.6 Timeline
Refer to Fig. 249 for more details.

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials
Some of the technical improvements included seismic retrofitting and removal of added cement mortar and replacing it with lime plaster.

b. Legislation changes
No long-term changes occurred beyond some facilitation of permit processes allocated by the Government post-explosion.

c. Programs post-rehabilitation
All eleven residential buildings comprising of twenty five housing units kept their original residential function.

d. Economic impact
Employment

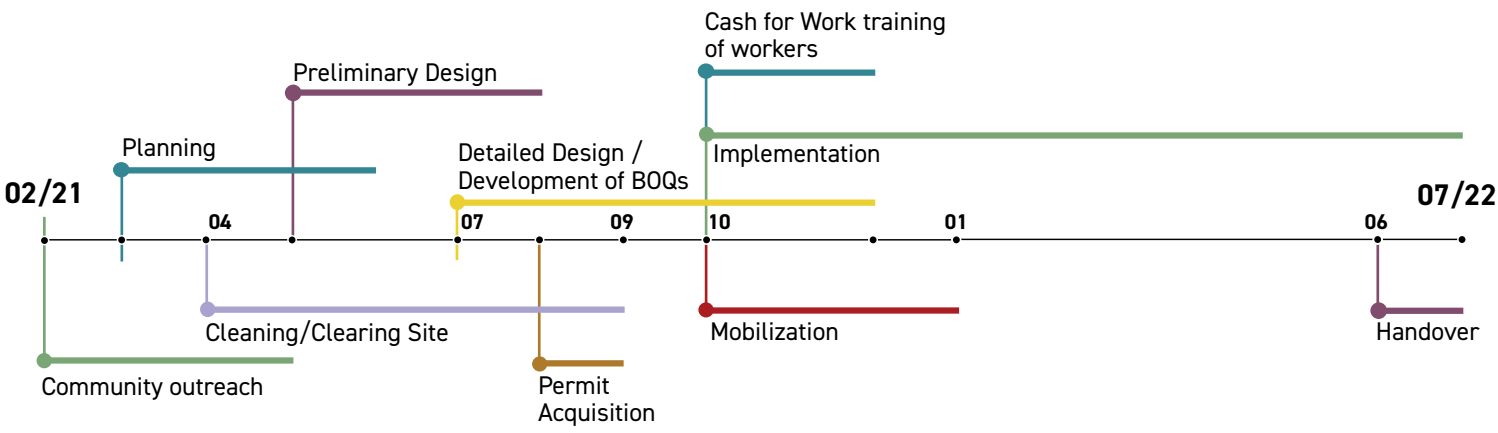


Fig.256: Timeline

During the project:
- Heritage and restoration experts joined forces and conducted training and consultancy to everyone implementing rehabilitation of heritage buildings;
- Since the project created a large demand for hydraulic lime, a local mortar maker was incentivized to produce the natural hydraulic lime in Lebanon for the project and it was being tested as the project was going;
- 100 daily workers worked on the project for 1 year and a half, align with 20 young architects and engineers.

Post project:
- Neighborhood improvement attracted new businesses;
- Other rehabilitation were encouraged to follow good practices;
- This project served as a pilot project for the Build Back Better project;
- The project helped inform the conceptualization of the BERYT project creation of a culture hub in the neighborhood.

e. Social impact

Education

The project contributed to raising awareness on the types of heritage available in Beirut city, and the importance of preserving them.

5.2. CHALLENGES/ CRITIQUE

a. Financial constraints

Financial limitations imposed a reconsideration of project targets groups/beneficiaries.

b. Legislative and tenure constraints

The expropriation process of buildings leaves them in a context of legal vacuum.
In some cases private land tenure played against the project, for example in the case of multiple owners, or in the case of disputes between tenants and owners.

c. Construction challenges

The construction phase of the project faced many challenges:
- Covid 19;
- Weather;
- Site was challenging (slopes with limited access points and very narrow pedestrian streets);
- Non existence of heritage construction materials in the local market;
- International increase in construction material cost
- Slow response of local authorities and non-existence of as built plans (especially in infrastructure);
- Lack of local know-how for natural/traditional materials;
- Unavailability of skilled labor focused on heritage rehabilitation;
- Natural hydraulic lime was no longer being produced in Lebanon (in only one place but in an artisanal production that couldn't meet the demand).

ANNEX

a. Contact

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b. Bibliography

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Fig.257: Rmeil 722. © The Beirut Heritage Initiative.

5J-17

PALESTINE | Hebron Old City

Hebron Old City Rehabilitation
Hebron, Palestine



Fig.258: Abandoned pottery factory, old jewish quarters of Hebron © Galina Mushinsky



INTRODUCTION

Traces of the Old Town of Hebron or Al-Khalil in the West Bank Palestine date back to the 1st century BCE. However, historians estimate that the city predates these findings. The Old City has an approximate area of 20.6 ha within the larger city of Hebron. The Old City is built in a valley whose bordering hill hosts the Ibrahimi Mosque and the Cave of the Patriarchs (the burial site of the Prophet Abraham/Ibrahim and his family), making it one of the holiest cities for the three Abrahamic religions. Historically, the town was divided into nine ethnically and religiously distinct quarters from the Mamluk era, in addition to occupational subdivisions. These quarters are architecturally still evident today, given the relatively well-preserved street network and urban fabric of the Old City throughout its many eras.

Situated in the West Bank, Hebron or Al Khalil city was controlled by Jordan from 1948 to 1967. After the June 1967 6-Day War, Israeli state-backed groups illegally built settlements in the occupied West Bank, in East Jerusalem, and in the Gaza Strip. One of the first, an illegal settlement called the Etzion Bloc, is now populated by 40,000 israeli settlers. The resulting pressures of Israeli military occupation in the West Bank, affirming and facilitating illegal settler presence and growth, caused a steady exodus of Palestinian residents from the Old City of Hebron into surrounding suburbs over the following decades. This situation got exacerbated with the construction of two additional illegal Israeli settlements, Avraham Avinu, and Beit Romano, directly within the Old City in the 1980s. The more residents the Old City lost, the more it deteriorated, with many buildings demolished, in a state of collapse, or squatted in, sometimes due to settlers. This rapid abandonment of the Old City led to the formation of the Hebron Rehabilitation Committee (HRC) in 1996 to bring more Palestinians back.

The site of the Old City falls under the Israeli controlled zone, and according to an ICOMOS report, 6,000 residents left the town due to orders to close 512 shops on top of other restrictions. The rate of de-population increased further following the second intifada in 2000. However, due to efforts by the HRC, the population of the Old City increased from 7,044 in 2000 to 10,565 in 2009 and again to 11,954 in 2014. Today, Hebron is the only city in the West Bank to have Israeli settlements inside the city: Avraham Avinu, and Beit Romano. These two settlements line the edges of the Old City while settler groups seeking to displace residents also squat in inhabited homes within the Old City, resulting in frequent hostile exchanges between surrounding settlers and Palestinian residents. Over the course of the HRC's rehabilitation project, the committee has so far benefited 2254 households in the Old City and aided in its steady repopulation.

Main instigator
The Hebron Rehabilitation Committee

Historic Center
Old City of Hebron

Targeted beneficiaries
2254 households in the Old City

Project duration
1996 - 2045 (according to Master Plan)

Project budget
Total budget to date: USD 37,617,949

Progress status
In progress

1. IDENTIFICATION

Overall city area
74.1 km²

Historic city area
0.206 km²

Main function of the city
Economic, historic

Main function of the historic center
Economic, historic

Heritage status
Hebron Al-Khalil was inscribed into the UNESCO World Heritage Danger List and held criteria (ii)(iv)(vi) UNESCO World Heritage designation since 2017.

Income level of dwellers in the historic city
Generally lower economic class

Demographic profile
The HRC has a GIS demographic database of the Old Town of Hebron including information regarding gender, age, education, profession, place of work, marital status, etc.

Land tenure
80% Private, 20% public.

Housing role in the project
The rehabilitation targeted main residential buildings with their annexed commerces.

Situation and urban evolution
The Old City of Hebron as we know it today is the result of gradual growth, conquests, rebuilding, and change. The oldest surviving structures in the Old City are the Ibrahimi Mosque and the Cave of the Patriarchs. The walls that survived around these structures date to Herod's period (1st ce BCE), and were expanded and altered during Byzantine times, the Abbasids, the Crusades, and the Mamluks. Much of the urban morphology of the Old City that survives today is from the Abbasid, the Ayyubid, and the Mamluk eras, with notable damage to the city in the period of Crusader rule in the 12th century. Following these damages, the city was largely rebuilt under the Ayyubid sultan Saladin in the later 12th century before falling to the Mamluks in 1250.

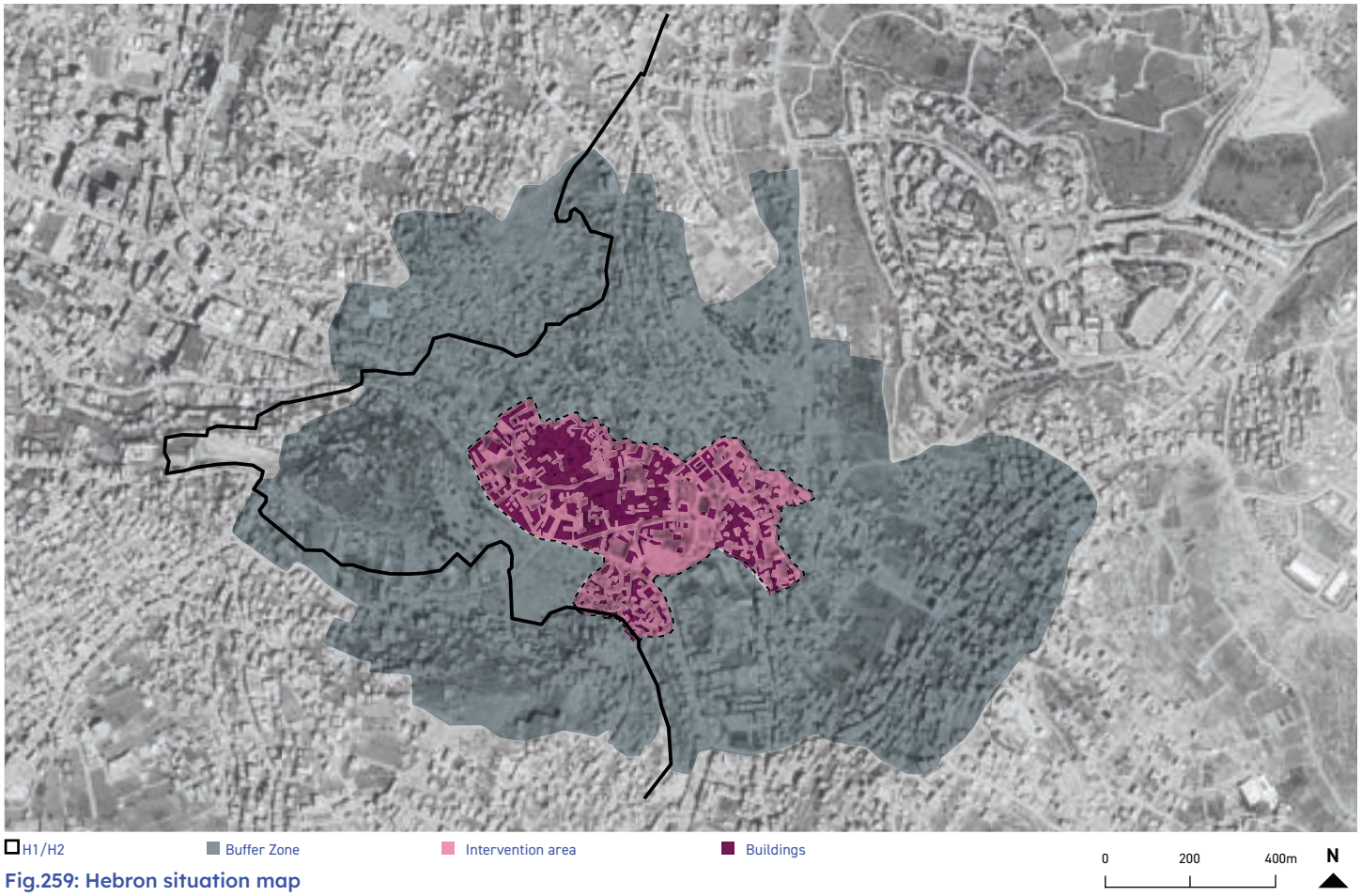


Fig.259: Hebron situation map

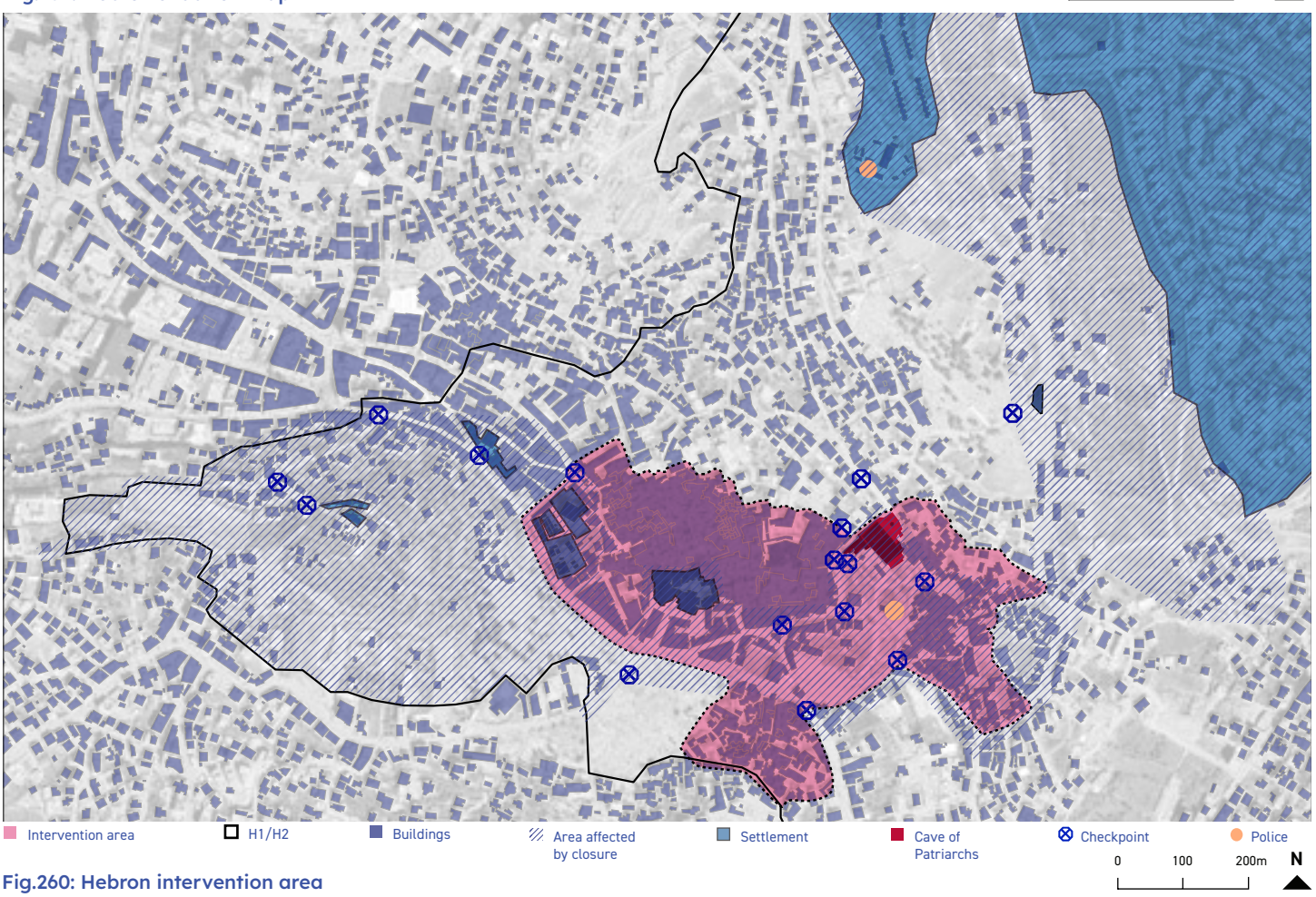


Fig.260: Hebron intervention area

Mamluk period (750 CE-1516 CE) : During the Mamluk period, the city was divided into three areas between arterial market streets and nine hara (quarters). The hara hosted groups of ahwash (groupings of attached housing units to form complexes) positioned around dead-end alleyways. Most of these residential units had two or three floors.

Ottoman period (1516-1917) : In this period, the town knew further expansion, and existing Mamluk ahwash structures saw the addition of upper floors. Much of the Mamluk era street grid seems to have survived during this era.

British and Jordanian period (1918-1967) : Palestine became occupied by the British in October 1918 and mandated in 1920 through a conference of the Allies focused on dividing the defeated Ottoman empire lands. On May 14, 1948 the state of Israel was declared, capturing 78% of historic Palestine. The remaining 22% was divided into the West Bank and the Gaza Strip. Located in the West Bank, Hebron had a population of approximately 20,000 Palestinians in 1944 and was under the control of Jordan from 1948-1967.

Israeli occupation (1967-present) : Since 1967, Israel's occupation has expanded into the West Bank and the Gaza Strip. In 1993, the Oslo Declaration of Principles was signed, returning 22% of lands back to the Palestinian Authority, while still remaining under military occupation and security control with frequent raids.

In 1996, the Hebron Rehabilitation Committee (HRC) was formed to restore and preserve the Old City of Hebron and bring more Palestinians back. In 1997 the Hebron Protocol was agreed and the larger city of Hebron was split into two zones of control: H1 and H2. H1 is under the control of the Palestinian Authority, while H2 is under the control of the Israeli military with limited administrative control of Palestinian residents. Within the H2 zone, Palestinian movement is extremely restricted. Hebron Al-Khalil, the Mamluk era city lies within H2.

2. STAKES

Diagnosis/Status

Under criteria (ii)(iv)(vi) UNESCO World Heritage designation and the World Heritage in Danger list, HRC's rehabilitation project of the Old City of Hebron is an international concern. The Old City suffered from structural and infrastructural deterioration and depopulation. Its future, in an unstable military occupied environment, remains uncertain. Abandoned houses were subject to squatting and further damages from lack of maintenance or partial demolition. Authoritarian pressures on the neighborhood population had caused the complete ghettoization and isolation of the Old City from the rest of Hebron leading to its popular description as the "city of ghosts".

Violations of international law and the UNESCO designation have been continuously perpetrated by occupying forces throughout the rehabilitation project. These violations have mainly been through the expansion of illegal settlements in occupied Palestinian territory and damages and unsanctioned alterations to heritage areas. Given these conditions, the Hebron Old City Rehabilitation Project is not only concerned with the vital preservation of world heritage in the Old City, but also in improving the contemporary living conditions, services, and housing quality of Palestinian residents in Hebron Al-Khalil.

Challenges

From the onset of the rehabilitation project in 1996, the HRC has encountered many challenges. The unique socio-political and architectural situation of Hebron caused a need to develop new site specific regulations and management systems and organizing structures. Internationally sourced training regarding historical conservation and restoration practices had to be administered to the rehabilitation team due to lack of local expertise in the subject. It is worth noting that the training of these experts led to a national interest in the field of heritage preservation which became a subject of study in national Palestinian universities.

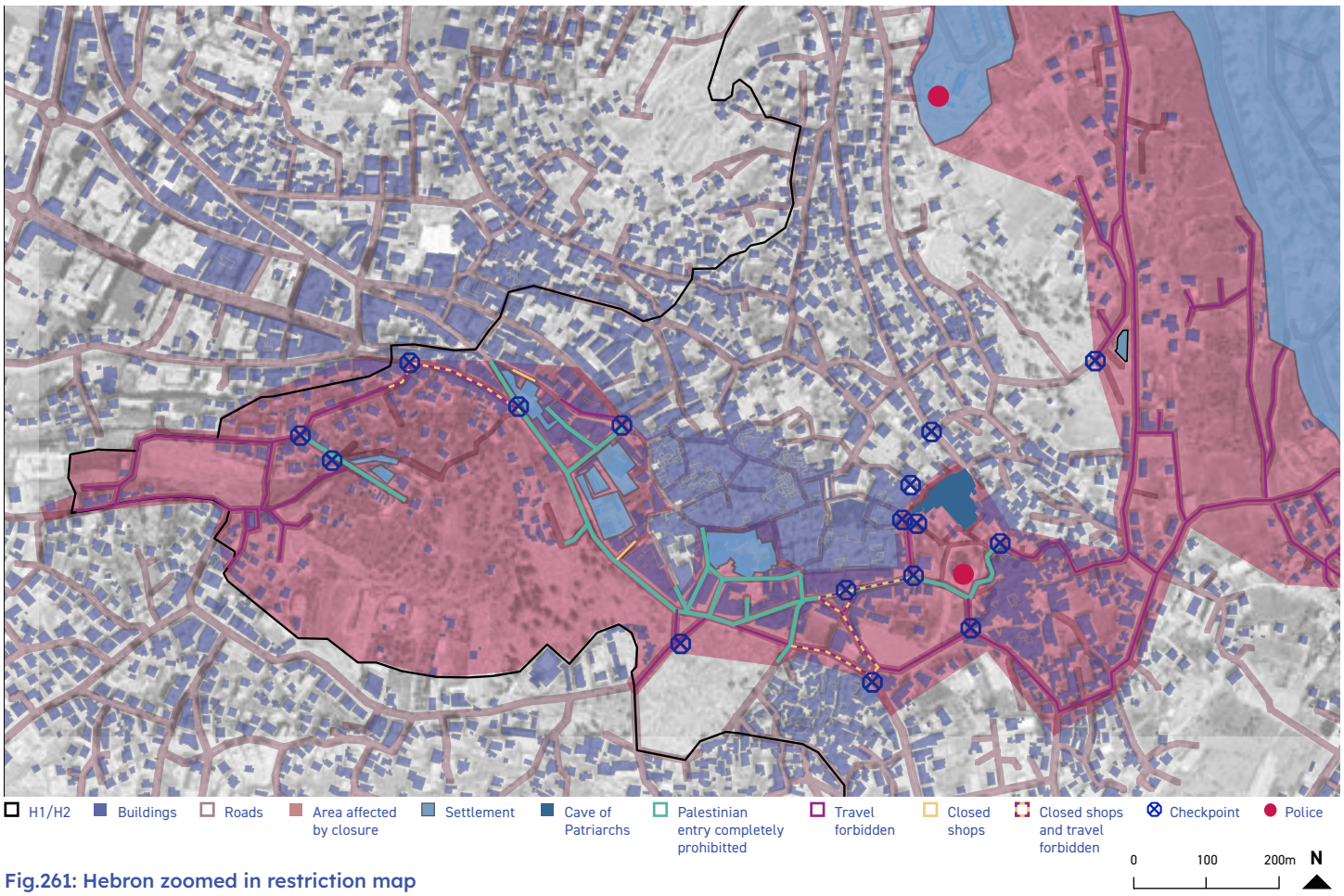


Fig.261: Hebron zoomed in restriction map

Another challenge to the project was the subject of financing, causing the project team to look for many different sources of funding. The Old City of Hebron also had, at the time of intervention, a unique ownership model, with families inhabiting single rooms within shared single courtyard houses. This caused the team to create a new system of acquiring rights and access to the properties as tenants during restoration while organizing the eventual return of the owners upon project completion.

Perhaps the most significant challenge of the HRC project was the intensity of Israeli occupation obstacles such as road closures and settlement outposts. The project was forced to work within an environment of these systematic violations and find ways to overcome them. Some of these included strategically restoring and reoccupying buildings immediately proximate to and surrounding settlement outposts as a priority to mitigate their illegal expansion and using traditional transportation methods to access rehabilitation areas in instances and places where transportation by car was prohibited. Throughout the project, a legal unit was put in place to monitor and document illegal violations by occupying forces, as a means of raising community awareness.

Objectives

The overall objectives of the Hebron Old City Rehabilitation Project are the vital architectural preservation and restoration of the world heritage of the Old City of Hebron site, and the improvement of the living conditions and housing quality of Palestinian residents in Hebron Al-Khalil in order to increase retention and encourage repopulation.

More detailed objectives as staited by the HRC include:

- Preservating the cultural heritage by safeguarding the entire urban fabric and the essential elements of the old buildings.
- Revitalizing the Old City through the restoration of historic buildings, the reuse of abandoned structures, the rehabilitation of infrastructure, and the reinforcement of the residents' connection to the Old City.
- Providing necessary services, technical and healthcare assistance, and job opportunities for local residents, as well as linking the Old City with the larger City of Hebron.
- Promoting commercial and economic activity, increasing local and international tourism, and



Fig.262: Military checkpoints set up by the Israeli occupation inside the city of Hebron Al Khalil © Diana Khwaelid, https://unsplash.com/

boosting local trade.

- Resisting Israeli colonial settlements within the Old City by encircling them with Palestinian houses to hinder their urban continuity and prevent their horizontal expansion.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Courtyard Houses

Period : Abbasid, Mamluk, and Ottoman

Occupants : Local Palestinians from the community of Hebron Al-Khalil and the Hebron governorate, some Israeli illegal settlement outposts.

Description :
There are a variety of housing typologies found in Hebron Al-Khalil. The variation in these typologies can be attributed to the well preserved urban fabric of the town and its gradual sedimentation over the course of various historical periods. One style that can be found is the multiple houses (hoshs) attached in a tight, connected form which accounts for 37% of the Old City. This style is the oldest, and is linked to historically war prone periods with strong communities living in close proximity for protection. Another typology represents a shift from this compactness, moving to house groupings of three to five units, often oriented around a courtyard. 38% of the Old City comprises this typology. The next typology of buildings is slightly more spaced out than the previous groupings. Structures are more independent, while still being close together and somewhat attached. This accounts for 10% of the Old City. The final typology of individual houses or 'palaces', the most affluent structures on site, makes up 15% of the Old City.

3.2. Condition of the historic housing units before rehabilitation

Before rehabilitation, many of the buildings in the Old City were vacant and entire neighborhoods were abandoned. Buildings were largely in various states of collapse and damage. Common conditions found prior to intervention were water leakage issues, moisture, and resulting plant and weed growth within and from walls leading to further decay. Utilities and services

such as water, electricity, and sewage were also unavailable in much of the Old City, and overall basic infrastructure, such as roads and public lighting, was in bad condition. Generally the lack of maintenance and care for much of the Old City, as well as damages by the occupying authorities, left it in an inhospitable state.

3.3. Rehabilitation know-how, materials, and material sourcing

Much of the stone used for the original structures was local limestone, lime and pottery. While the project required internationally sourced training regarding restoration and preservation practices, it also incorporated significant local crafts and traditional construction methods. Local craftsmen were employed, using local products during the rehabilitation. Approximately 70% of the materials used during rehabilitation were sourced locally in collaboration with local factories. It is also worth noting that the project focused on rehabilitating craftsmen's workshops and creating new ones in order to bolster local craftsmenship in the area.

3.4. Rehabilitation stages

A typical house rehabilitation consisted of adding new rooms to accomodate different, smaller families rather than the large, extended families who occupied such dwellings historically.

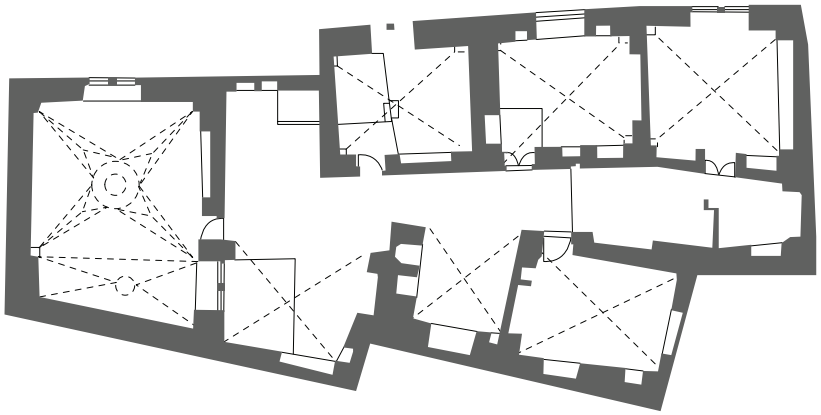
4. MECHANISMS OF THE PROJECT

4.1. Process

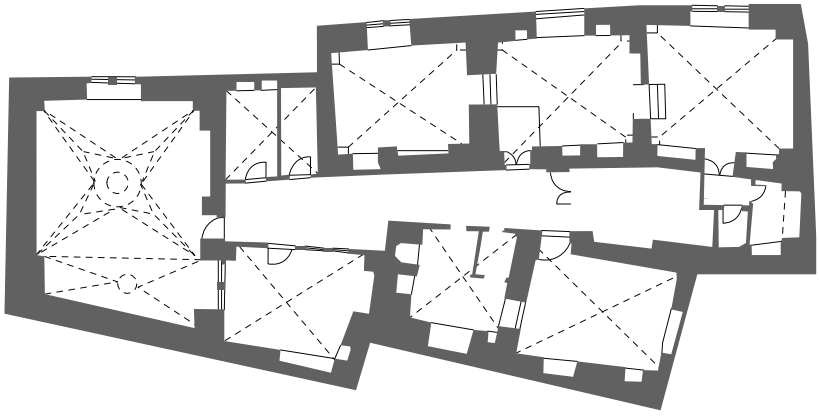
The rehabilitation process is described in the graph below (Fig. 259).



Fig.263: Residential buildings in Hebron Al Khalil before and after rehabilitation



Hosh house plan before restoration



Hosh house plan after restoration

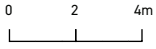
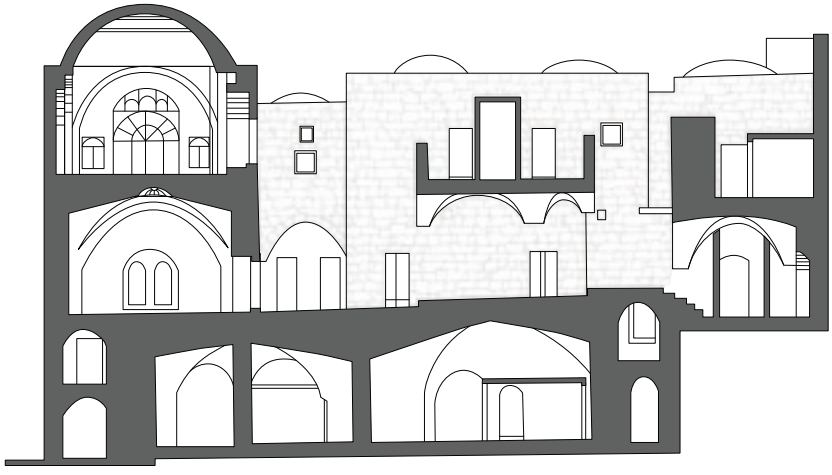


Fig.264: Documentation of a typical Hosh includes before and after plans. New rooms are added to the first floor in order to accommodate different, smaller families rather than the large, extended families who historically occupied such dwellings.



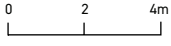


Fig.265: Typical Hosh house section

4.2. Partners

Hebron Rehabilitation Committee, UNESCO, local universities, Hebron/Al-Khalil Municipality, Palestinian Ministry of Tourism and antiquities

Experts
At the start of the project in 1996, the local rehabilitation team predominantly were sent abroad (many to Italy) to gather expertise on restoration methods. International specialists were also brought in to train staff. This was the inception of building a team of local experts. On site today the team consists of local contractors and local craftsmen, with some national and international experts on certain subject areas.

Public stakeholders
Local Palestinians from the community of Hebron Al-Khalil and the Hebron governorate, NGO's, public institutions, and the private sector

Newly created institutional structures
The Hebron Rehabilitation Committee itself was created from this project.

4.3. Organization and selection

a. Organization
The project's organization is shown on the flowchart (Fig. 260).

b. Selection process
The site was of global historic importance and key local identity and was selected for rehabilitation by local interests until its inscription into the UNESCO World Heritage List under criteria (ii)(iv)(vi) and the World Heritage in Danger list in 2017.

4.4. Tools

a. Implementation tools
Survey tools
A survey form sample is shown on figure 262.

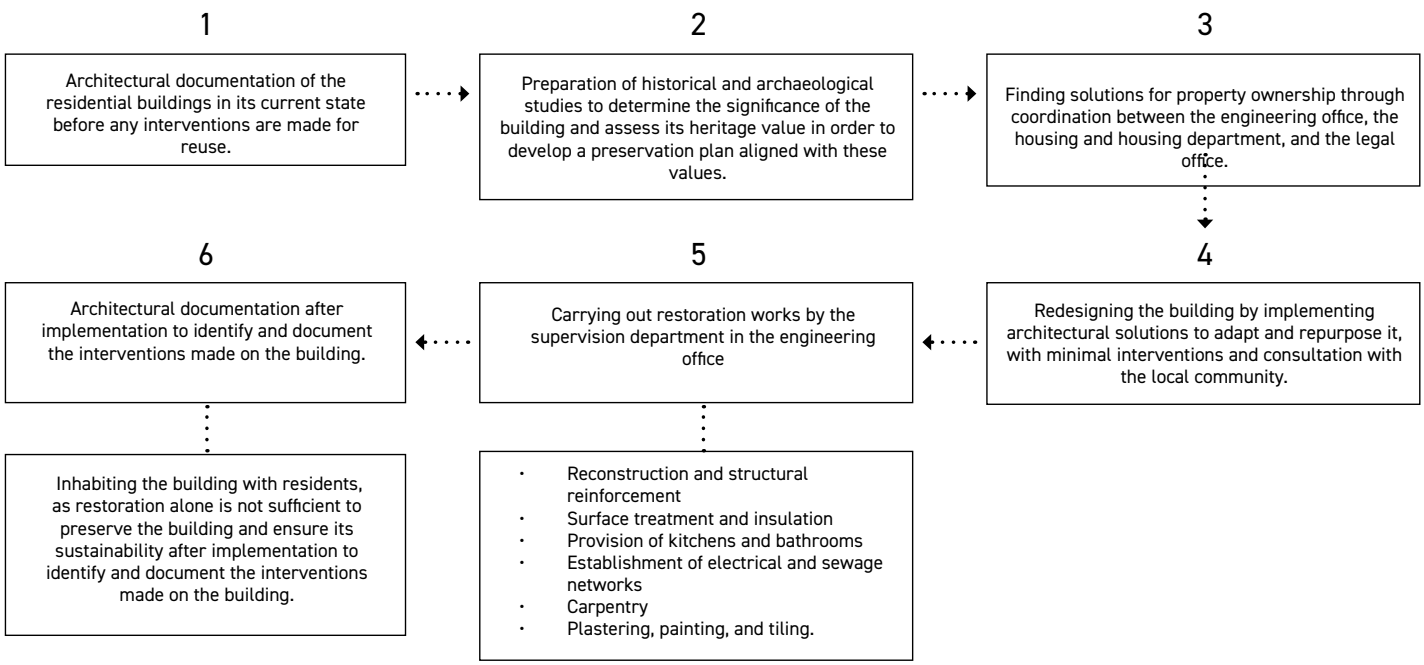


Fig.266: Process of house rehabilitation in Hebron Al Khalil

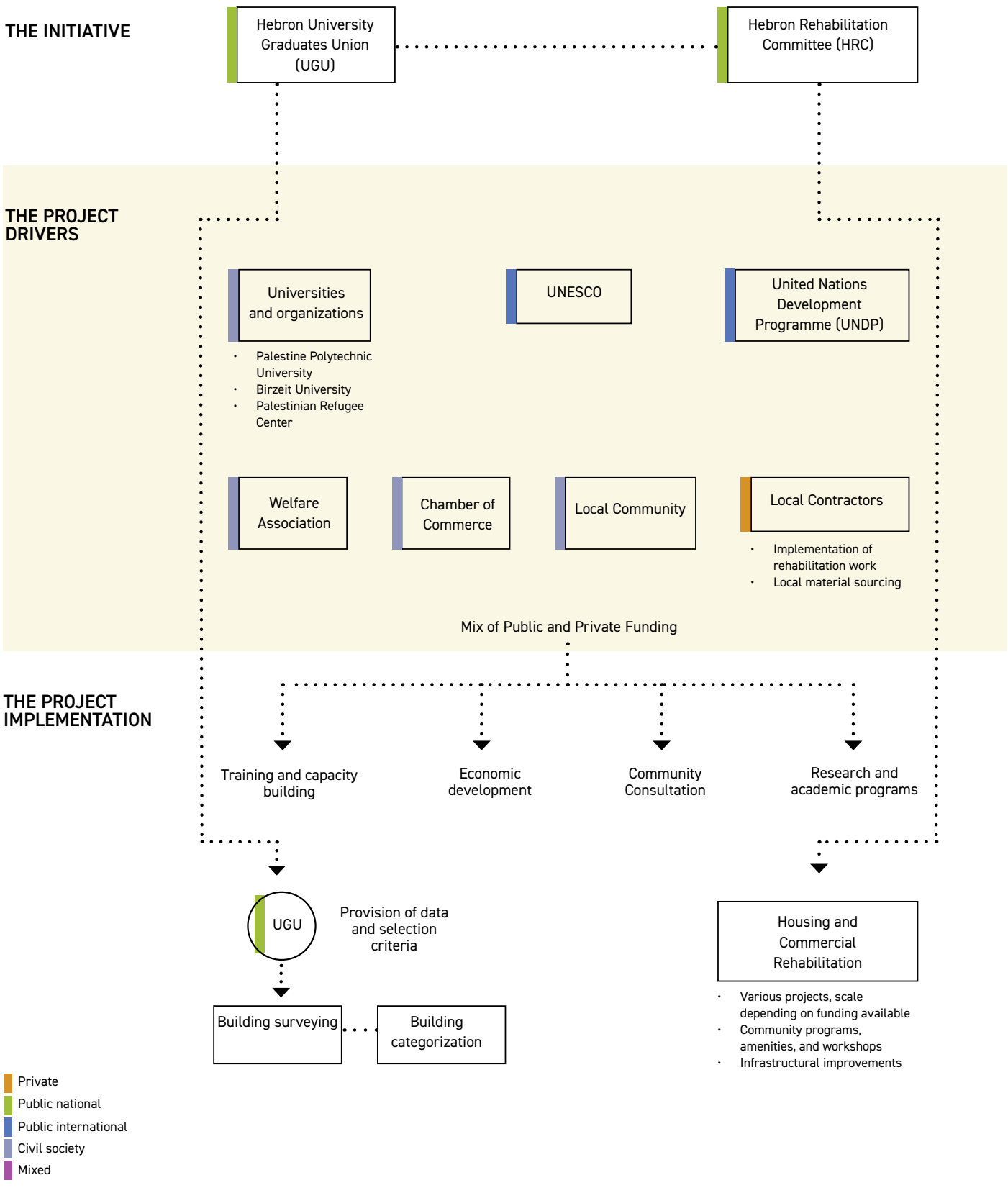


Fig.267: Orgnizational diagram

382



Fig.268: View of a street in Hebron Al Khalil © Radikale Venstre,

Stakeholder engagement program
Stakeholders were involved throughout the process in developmental decision making roles regarding the rehabilitation process. They have also been involved in the consultation process to find the essential needs of the Old City in relation to the wider city of Hebron. Stakeholders and partners such as the Palestine Polytechnic University, Birzeit University, the Palestinian Refugee Center, and United Nations Development Programme (UNDP) were also involved on various aspects of the restoration and rehabilitation process.

Community engagement
The Hebron Rehabilitation Committee was birthed from the wants and demands of the local community. Therefore the project involved the local community throughout the project in many different capacities. For consultation and communication, a local committee was formed from community members to represent the interests of the Old City's residents. This committee was involved as one of three committees in developing the comprehensive preservation plan and guidelines for the project. Out of this committee there is another committee representing youth and adolescents. As described, the labor force and craftsmen involved are also from the local community.

b. Management tools pre and post occupancy (bylaws, zoning masterplans, conservation management plan, committees, laws, regulations, etc.):

Laws and decrees
Plans and regulations for the project were prepared in collaboration with local community institutions with the inception of HRC. The policies and laws in place for the project come from this comprehensive plan developed with the local community as there was no applicable precedent at the time.

Conservation masterplan
Maps of Achievements since 1996 and since 2023

4.5. Financing

Total amount : 37,617,949 USD

Source :
At the start of the project in 1996, the Palestinian Authority was a primary funder of the project. The financing covered the restoration of buildings and rehabilitation of various infrastructure. It also covered aspects of the project's longevity including training and awareness programs and running maintenance expenses. Constant fundraising and seeking new financial sources has been vital to the project's continuity. At the onset of new projects within the overall rehabilitation plan, the HRC submits proposals to local and international organizations to receive additional grants.

Appendix No. (1):

Survey Form for Buildings and Residents in the WHP

Historical Buildings Registration Form:

Registration No:_____

A. General Information:

Building No:_____ **Parcel No**:_____

Block No: _____

Neighborhood:_____

B. Information on Construction:

Building type:

( ) Hosh within complicated fabric
( ) Hosh within simple fabric
( ) Strip buildings
( ) Single building

Current Usage

Condition: ( ) Total, ( ) Partial, ( ) Abandoned

Types: ( ) Residential, ( ) Industrial, ( ) Commercial, ( ) Agricultural, Vocational, ( ) Religious, ( ) Cultural, ( ) Entertainment, ( ) Store, ( ) Cattle Raising, ( ) Service, others_____

Original usage: The same as current ( ), Other:_____

C: Recent additions

Orientation: ( ) Horizontal, ( ) Vertical
Types: ( ) Full floor, ( ) Double story, ( ) Room, ( ) Rooms, ( ) Open yard cover, Other:_____
Building materials for additions: ( ) Stone, ( ) Cement, ( ) Brick, ( ) Metal, ( ) Asbestos, Other:_____

Fig.269: Survey form

Proposed Implementation Period :
1996-ongoing (27 years)

Grant Recipient :
Hebron Rehabilitation Committee

Financing sufficiency :
The number of buildings restored at each phase of the project was adapted to the funds available. Therefore, financing has proved so far to be sufficient for the steady progress of the rehabilitation program.

Maintenance financing :
The project integrated a post-occupancy budget for running maintenance expenses.

Rehousing financing :
The HRC provided free temporary housing for those affected during rehabilitation.

4.6 Timeline

Refer to figure 263 for more details.

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials

b. Legislation changes

c. Success indicators
The methodology developed over the course of this rehabilitation project is one that can be studied by similar initiatives. The HRC project approached site-specific challenges such as multiple ownerships within a single property with constantly adaptation on a case-by-case basis. The project's success was widely acclaimed and was awarded the UN-Habitat Global Award in 2013, the Yasser Arafat Achievement Award in 2008, and the Aga Khan Award in 1998. Its major success indicator was the notable repopulation of the Old City over the course of the project. After a steep decline in population groing from 10,000 inhabitants in 1950 to 400 inhabitants in 1996, the population returned to 11,954 inhabitants in 2014 after restoring 2,500 apartments. It is an example of sustainable historic urban rehabilitation and continues to improve the quality of life for residents of the area.

d. Programs post-rehabilitation
Post-rehabilitation, most buildings remained residential and those vacant have been rehabilitated

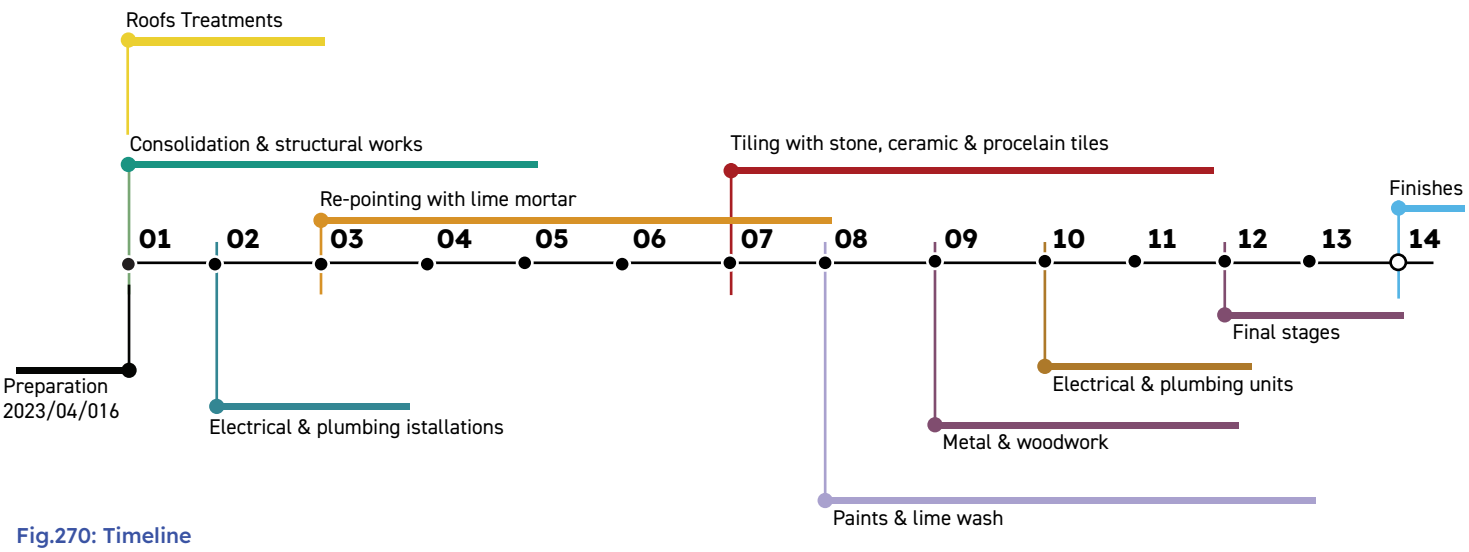


Fig.270: Timeline

and reused as schools, clinics, cultural centers, governmental facilities, or touristic businesses.

e. Economic impact

Several commercial shops were rehabilitated in an effort to encourage businesses to return to the area. Part of the motivation from revitalizing commerces was to bolster a tourism industry in the old city. Commercial areas in the city have encouraged private investment as well. With more business venues spurred by the rehabilitation efforts, other forms of commercial activity in the old city such as cafes and libraries have been developed.

f. Social impact

The extensive effort to improve the quality of life for residents through economic revitalization had a significant social impact. In addition to improvements to housing, infrastructure and employment, the project created a number of social programs and support systems for community members, such as free health insurance for the elderly. It also brought forms of community spaces to the Old City that were previously lacking such as cafés and libraries. The project established five health care clinics in the Old City and has so far restored twelve schools. There were also a number of initiatives put in place specifically focussed on providing training and job opportunities for women locally.

Perception shift

A commonly used name for Hebron Al-Khalil before the HRC project was the “city of ghosts”. The large number of abandoned and frequently damaged



Fig.271: Cave of the Patriarchs, Hebron Al-Khalil.© Dan Rosenstein, https://interfaithsustain.com/

houses as well as the poor public infrastructure led to a negative perception of the area. Post-rehabilitation, this perception has shifted significantly. Through infrastructure upgrading, housing rehabilitation, business revitalization, and service improvement, the project increased the overall social well-being, hence shifting the perception of locals and outsiders alike on the Old City of Hebron Al-Khalil. The project results also increased the demand from home owners to restore their houses. Additionally, efforts to shift tourists perception of the Old City were deployed through bolstering tourist infrastructure and amenities.

Education
The project restored existing schools in addition to creating two new schools through the adaptive reuse of abandoned buildings. It also created a comprehensive program to raise awareness on cultural heritage, environmental sustainability and community organizing and empowerment.

g. Environmental Impact

The HRC project was heavily conscious of environmental impact throughout the rehabilitation. The restoration of old buildings reused materials from the original structures and traditional techniques as much as possible, including passive heating and cooling systems. No new structures were built during the project that did not already exist in some form on site. The project used a mixed energy system of power grid and solar. Transportation systems for the project within the Old City also used solar energy and in some cases carriages. Additionally, plantations in public spaces and courtyards were improved and increased. In future, the project also plans to rehabilitate old water cisterns.

5.2. CHALLENGES/CRITIQUE

a. Financial constraints

Number of buildings restored at a given time and other project parameters were adjusted according to funding availability.

b. Legislative challenges

The most significant legislative and tenure challenges concerned the reccuring occupation violations in the area, causing mobility restrictions and construction delays. Additionally, the abandoned nature of many of the buildings and their fragmented ownership caused the need to develop new approaches to the rehabilitation process.

ANNEX

a. Contact

Emad Hamdan: Director Hebron Rehabilitation Committee : hamdan_imad@yahoo.com

b. Bibliography

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Fig.272: @ Hebron Rehabilitation Committee

5J-18

PALESTINE | Dar al-Consul

Rehabilitation and adaptive reuse Of Dar al-Consul

Jerusalem, Palestine



Fig.273: View of Dar Al-Consul Interior© https://almanassa.ps



INTRODUCTION

The Dar al-Consul complex (DAC) is a housing complex situated in the Muslim Quarter of the Old City in East Jerusalem. The 2,400 sqm complex comprises 6 buildings, which consists of a total of 36 residential units and 5 community courtyards. According to the UN-Habitat report “End-term project evaluation of the rehabilitation of Dar Al-Consul into a residential and civic.”, the 1,200 sqm ground floor contained a number of archaeologically significant artifacts including an olive press, ancient oven, horse stable, tombs, and historical water channels. The complex is owned by the Custody of the Holy Land, an order belonging to the Franciscan Church. The site is positioned between two holy sites, one Muslim and one Christian; Haram Al-Sharif and the Church of the Holy Sepulchre.

Main instigator
UN-Habitat, The Custody of the Holy Land-Custodia Di Terra Santa (CTS)

Historic Neighborhood
Old City of Jerusalem.

Targeted beneficiaries
Palestinian residents of the Old City of Jerusalem, local and international tourists.

Project duration
2013-2027

Project budget
EUR 6.3 million

Progress status
Rehabilitation - Complete;
Operation - Work in Progress.

1. IDENTIFICATION

Size of the overall city
Surface: 344 km²
Population: 451,584 inhabitants

Size of the historic area
Surface: 0.95 km²
Population: 34,140 inhabitants

Main function of the city
Economic, historic, religious.

Main function of the historic area
Economic, historic, religious.

Heritage status
The Old City of Jerusalem and its walls have maintained UNESCO World Heritage Status since 1981, meeting the criteria (ii), (iii), and (vi). Since 1982, Old Jerusalem has been enlisted as Wold Heritage in Danger.
The Dar al-Consul site itself is not a World Heritage Site, rather the entire Old City of Jerusalem and its walls.

Income level of dwellers in the historic city
At the time of intervention, residents of DAC were predominantly low to medium income. Many residents relied upon social aid systems and found that moving to DAC eased their financial strain.

Demographic profile
The demographics of Jerusalem have historically been in constant flux and vary depending on city quarters.

The city is relatively cosmopolitan, with a diverse range of religious and ethnic groups. Primarily the large Palestinian Christians, Muslims and Armenians population; in addition to a post 1967 Jewish settlers population. The most populated quarters of the Old City of Jerusalem are the Muslim and Christian quarters, however, these quarters are not solely inhabited by these religious groups.

Land tenure
The Dar al-Consul complex is owned by the Custody of the Holy Land, an order belonging to the Franciscan Church.

Housing role in the project
The project involved the rehabilitation and renovation of existing housing in the complex and a debris filled and unused ground floor, as well as adding the program of a cultural center.

Situation and urban evolution
The site of the current Old City of Jerusalem has been the site of many destroyed and rebuilt historical cities and contesting dynasties dating back to approximately 1000 BCE. Human settlement in the area however has been traced to the late Chalcolithic Period (Copper Age) and Early Bronze Age (c. 3000 BCE).

A large portion of the urban morphology seen in the Old City of Jerusalem today, including the layout of the current city walls, are remnants of the Roman era city of ‘Aelia Capitolina’ founded in 135 CE.

The Church of the Holy Sepulchre (which sits near the modern project site of Dar al-Consul complex), was destroyed and rebuilt many times throughout history but was first built under Constantine I (the Great) in the 4th century. This Church as well as many other structures in the city were destroyed during the Persian invasion in 614 CE.

Much of the city was repaired and rebuilt under the Umayyads in the late 7th and early 8th century. Most notably during this time, the Dome of the Rock was built by the fifth Umayyad caliph, Abd al-Malik ibn Marwan in 688–691 CE.

Under the Fatimids in the 11th century, the city walls were rebuilt, decreasing the size of Jerusalem, and not encompassing southern areas of the city formerly within city walls such as Mount Zion and some neighborhoods south of the Dome of the Rock.

Over the next two centuries, Jerusalem was

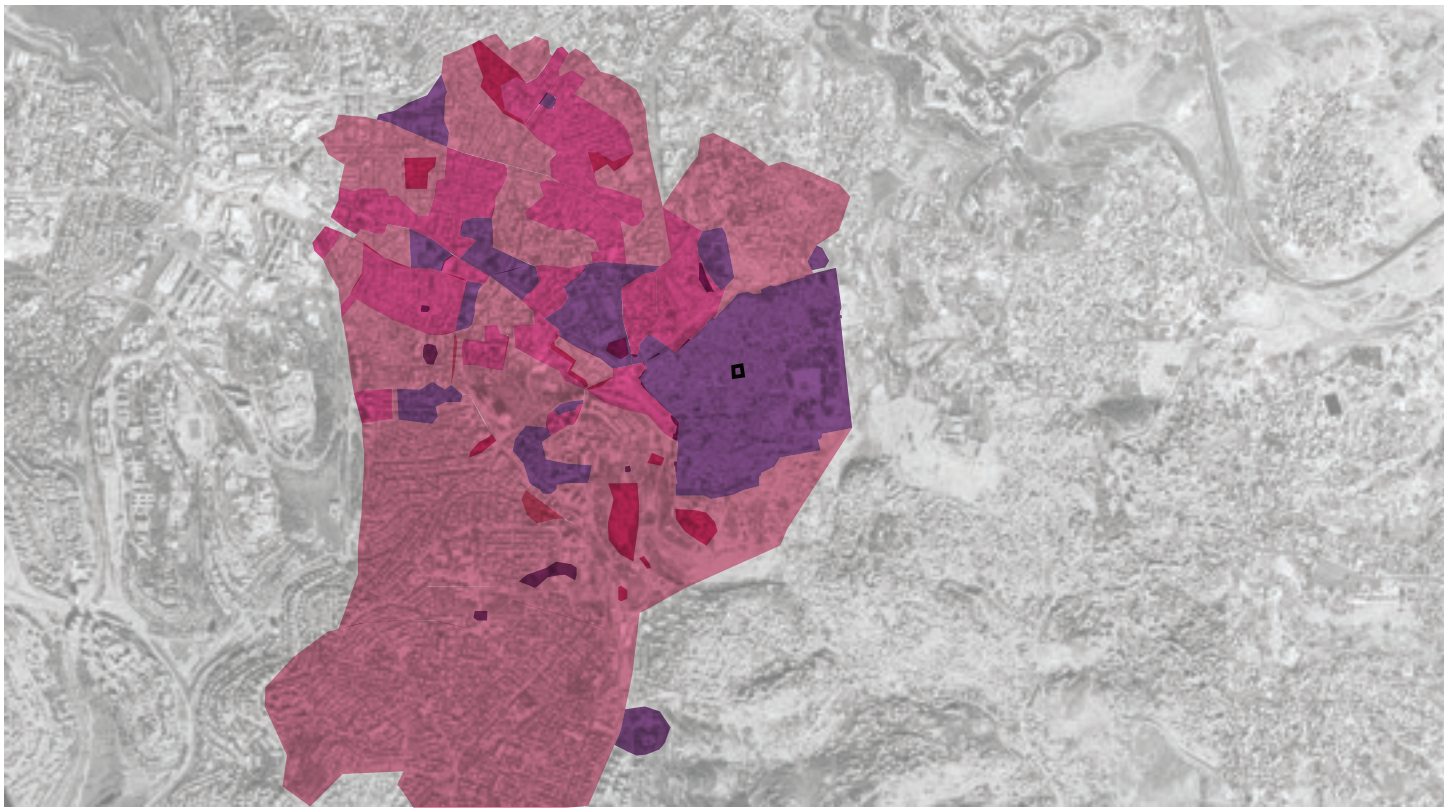


Fig.274: Jerusalem situation and urban evolution

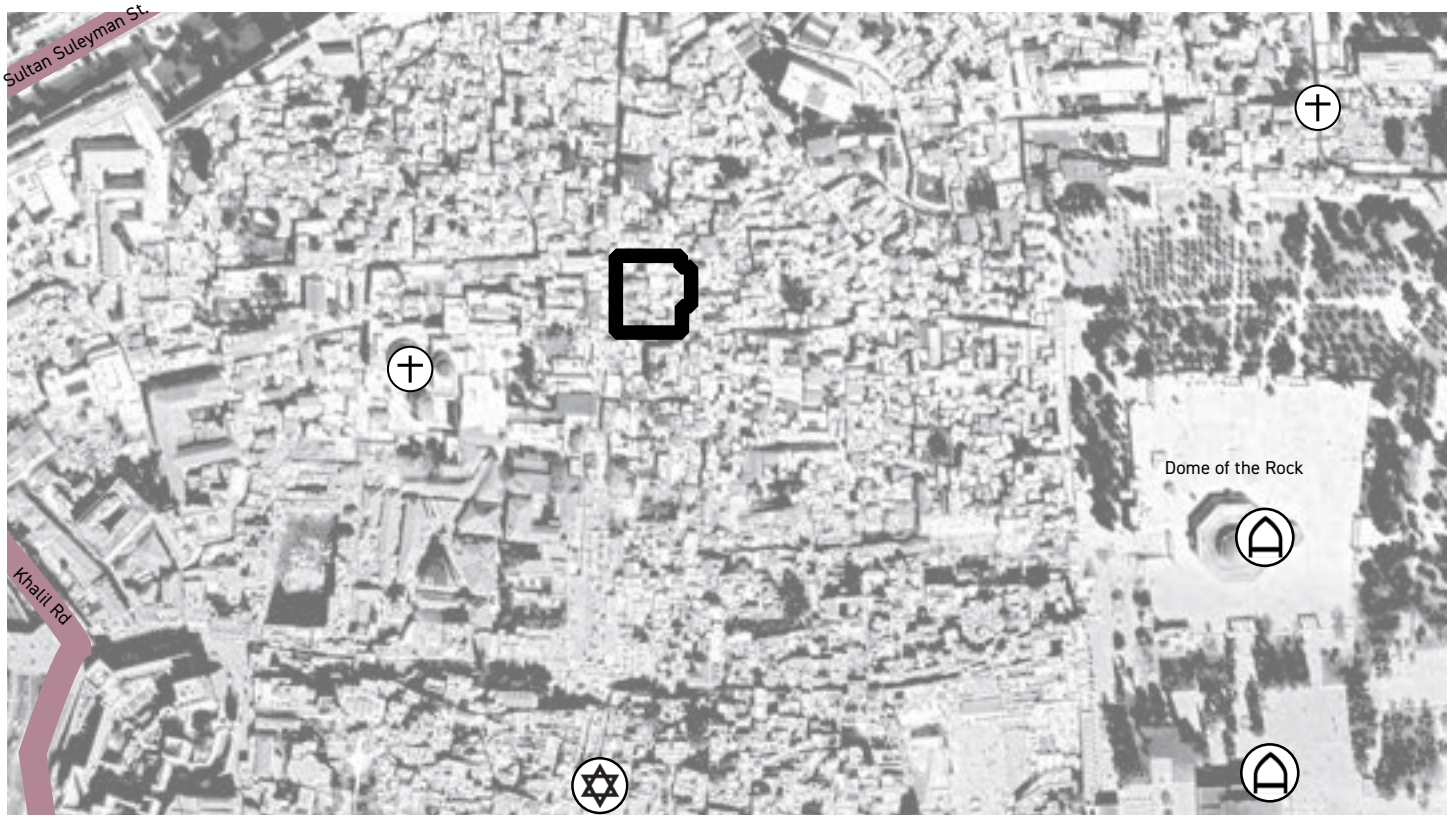


Fig.275: DAC zoomed localization

conquered and reconquered by various dynasties and exchanged hands many times. In each of these iterations of the city of Jerusalem, key structures such as religious buildings were repurposed for the ruling power at that time's interests and religious inclinations.

The First Crusaders had slaughtered and banned both Muslims and Jews from living in the city while under their reign from 1099.
The siege of Jerusalem by the Ayyubids in 1187 marked the end of the Crusaders rule. The Moroccan quarter was formed following Salahaddin liberation of the city and settled by the North African families, but was later destroyed in 1967 by the Israeli army and renamed and resettled by the de facto authorities.

The city fell to the Mamluks in 1247. It is during this time that we start to see the quarters of the contemporary Old City. The remaining Christians in the city at this time were largely Greek Orthodox and of other Eastern Christian sects. They, along with the Roman Catholic Franciscans in the 14th century, would begin shaping the Armenian and Christian quarters of the city.

The city was conquered by the Ottomans under sultan Selim I in 1516. During this Ottoman period in Palestine (1516-1917), new walls were built to surround the city, which remain today, and significant urban development such as religious institutions and the construction of other structures was undertaken. Given the strong and well established presence of the various religious and ethnic communities, as well as important sites in the city, Jerusalem's governance was continuously engaged with international administrative powers. From these powers and interests, consulates were established in Jerusalem to represent various groups, specifically non-Muslim groups that were minorities under Ottoman rule.

It is from these consuls that we see the Dar al-Consul complex (DAC) established as the Prussian Consul in the mid 19th century. The complex began as a single large building in the same site of the Muslim Quarter purchased by the Prussian Consulate, acting as a center for German interests in the Old City of Jerusalem. A second building was also rented by the consulate at the time, acting as a hospice. In 1882 the Latin Patriarchate gained ownership of the building. Upper floors of the building remained programmed for Prussian interests making it an important site in the Old City of Jerusalem. In later years, additional buildings were added to the site, turning it into a larger complex connected to historically significant sites such as the 2nd century Khan az-Zait Market.

The British conquered Jerusalem in December 1917 under Edmund Allenby. Palestine was fully occupied by the British in October 1918 on the backs of key historical agreements and proclamations such as: the Hussein-McMahon correspondence letters exchanged in 1915–1916 negotiating an independent Arab state in exchange for Arab support against the Ottomans; the contradicting 1916 Sykes-Picot Agreement marking Palestine as an internationalized British, French, and Russian protection area, and the 1917 Balfour Declaration that favored and expressed British support for 'the establishment in Palestine of a national home for the Jewish people'. The British Mandate for Palestine lasted from 1920-1948 with Jerusalem as its capital.

Under the British Mandate, urban planning and development was highly restricted within the Old City and immediate surroundings within the valley.
On May 14, 1948 the state of Israel was declared, capturing 78% of historic Palestine. The remaining 22% is divided into the Gaza Strip and the West Bank, including East Jerusalem and the the Old City. From 1967-1993, Israel's occupation expanded into the West Bank and the Gaza Strip as well as annexing East Jerusalem. The occupation in 1967, caused the expulsion of approximately 23,000 Palestinians from East Jerusalem.

The period from 1994 to present days saw Palestinians live under military occupation and heavy security control with frequent raids, while having limited control in shrinking urban areas within the West Bank and the Gaza Strip.

2. STAKES

2.1. Diagnosis/Status

In East Jerusalem, Palestinian movement and housing is extremely restricted. The Palestinians in East Jerusalem and Israel were given blue IDs. These residents have permanent residency but not citizenship, allowing relatively more freedom of movement within Israel and the West Bank, but still subject to various restrictions. Approximately 6,257 of the 'blue cards' that permitted the remaining Palestinians to live in the city were confiscated by 1998, and as a result, many were forced to leave the city. Since 1967, Israeli De Facto illegal settlements have rapidly developed and spread into East Jerusalem. The presence and growth of these settlements puts immense pressure on Palestinians living in East Jerusalem, as do the discriminatory policies imposed upon them. From 1967-2001 approximately only 3,000 building permits were issued to Palestinians, a major factor in the poor quality of housing and services of Palestinian homes in East Jerusalem stagnating growth and redevelopment. From 1987-2001 approximately 284 of these Palestinian homes in East Jerusalem have been demolished with many more given threatening notice of demolition.

Housing conditions for many residents of the Old City were found to be economically unsustainable adding to the daily uncertainty of living under military occupation. Structurally, building foundations in the Old City are vulnerable to various excavation and tunneling projects thus drawing statements from UNESCO to cease unsanctioned projects in the area. Hence, the maintenance and rehabilitation of the Old City of Jerusalem as a designated World Heritage in Danger is of the utmost importance and urgency.

2.2. Challenges

There were a number of issues that the site faced at the time of intervention. The rehabilitation team noted significant structural concerns after the initial project assessment, causing a change of the project timeline. Along with these structural flaws, the rehabilitation team uncovered a number of archaeologically significant findings on the ground floor of DAC as well as ancient 'war-related paraphernalia', which refers to items and equipments that are associated with or used in the context of warfare. The constraints associated with operating under the israeli occupation also negatively affected the project's timeline. These delays were enhanced during COVID-19. Lastly, there were financial challenges faced during the project due to exchange rate losses, resulting in a need for budget increase.

2.3. Objectives

The project aimed to enhance the quality of life for Palestinian families in the Old City of Jerusalem by providing housing and creating a public space that strengthened cultural and civic identity. It sought to improve the urban environment through public services and residential development. The UN-Habitat Project Evaluation Report outlined key objectives, including assessing project performance at various levels, evaluating its relevance, efficiency, effectiveness, sustainability, impact, and coherence. The assessment also considered project management modalities, partnerships, resources, and their impact on effectiveness. Additionally, the evaluation examined the integration and impact of cross-cutting issues such as gender equality, youth, and human rights. The ultimate goal was to identify lessons learned and provide strategic, programmatic, and management recommendations for promoting sustainable spatial planning in the Old City of Jerusalem and the Palestinian territory.

Additionally, this project is linked to the UN-Habitat Strategic Plan 2020-2023. The areas of focus of this initiative are: 'spatial inequality and poverty, shared prosperity, climate action and urban environment, and crisis prevention and response'. The DAC project aligns with these criteria given the spatial inequality challenge of housing in the Old City of Jerusalem. The project also is linked to the United Nation's New Urban Agenda (NUA) whose criteria of social,

economic, and environmental sustainability in urban environments is addressed in multiple instances in the project's objectives and implementation.

3. HISTORIC FABRIC AND TYPOLOGY OVERVIEW

3.1. Main historic housing typology(ies) in the project area:

Name : Dar al-Consul
Period : 19th century
Occupants : Palestinian families, members of the Franciscan church

Evolution of housing typologies
The traditional Palestinian house with a courtyard was the most popular type of housing until the 20th century. These houses were multistory structures, with upper floors having their own courtyards or terraces. The courtyard served as a central element, around which all the rooms were organized. The houses were designed to provide protection and privacy from the outside, with windows and doors facing the courtyard for ventilation and lighting.

However, with social and economic transformations, including the fragmentation of extended family properties and the trend towards nuclear families, alterations in housing typologies occurred. Modern materials and construction techniques were introduced, and the role of the courtyard in housing design started to change. Large houses with internal courtyards became less common, and the concept of private open spaces shifted. Some proposals for improving housing in large houses with interior courtyards were suggested, such as renovation and conversion for public use or reorganization for multiple families.

Description of Dar al-Consul :
The DAC structure is predominantly composed of thick rectilinear stone masonry walls and pillars. Structures within the complex are on different elevation levels, some of which rest on a joined basement level. From an aerial view, the complex is indistinguishable from the surrounding urban fabric of the Old City of Jerusalem. The buildings are densely packed around five courtyards and range between one to three stories tall with flat roofs. Window and door openings are predominantly rectilinear and finished with wood and glass.

The majority of residential units in the complex are occupied by four or more people comprising 42% of the total units. 38% of the units are occupied by two or three people, and the final 15% are single person units. All 36 units are fully occupied. Occupants are near equal distribution of men and women and are largely elderly.

3.2. Condition of the historic housing units before rehabilitation

The houses had various issues such as open sewage with rats, hazardous electrical wiring, falling apart kitchens, and lack of space. Some houses were in dangerous conditions, with weak foundations and structural problems, and at risk of collapse. Most houses were not energy or water-efficient.. The living conditions were poor, with problems related to water and sewerage systems, electric fixtures, tiling, and kitchens.

3.3. Rehabilitation know-how, materials, and material sourcing

Materials used during the project were general rehabilitation and confinement materials appropriate for the local stone masonry. These materials were mainly sourced locally. However, certain materials were unavailable locally such as humidity-absorbed injection material which were outsourced from Italy.

Construction rehabilitation expertise for the project was sourced both locally and internationally with a majority of the international material expertise coming from Italy. The project began with 17 local



Fig.276: Geometrical survey of the basement in 2014 (left) and the floor plan (right), with a relevant increase in area and excavations depth ©Fillipo Casarin, "The dar al consul complex in jerusalem: improving the living conditions and the structural capacity," 2020, 10.

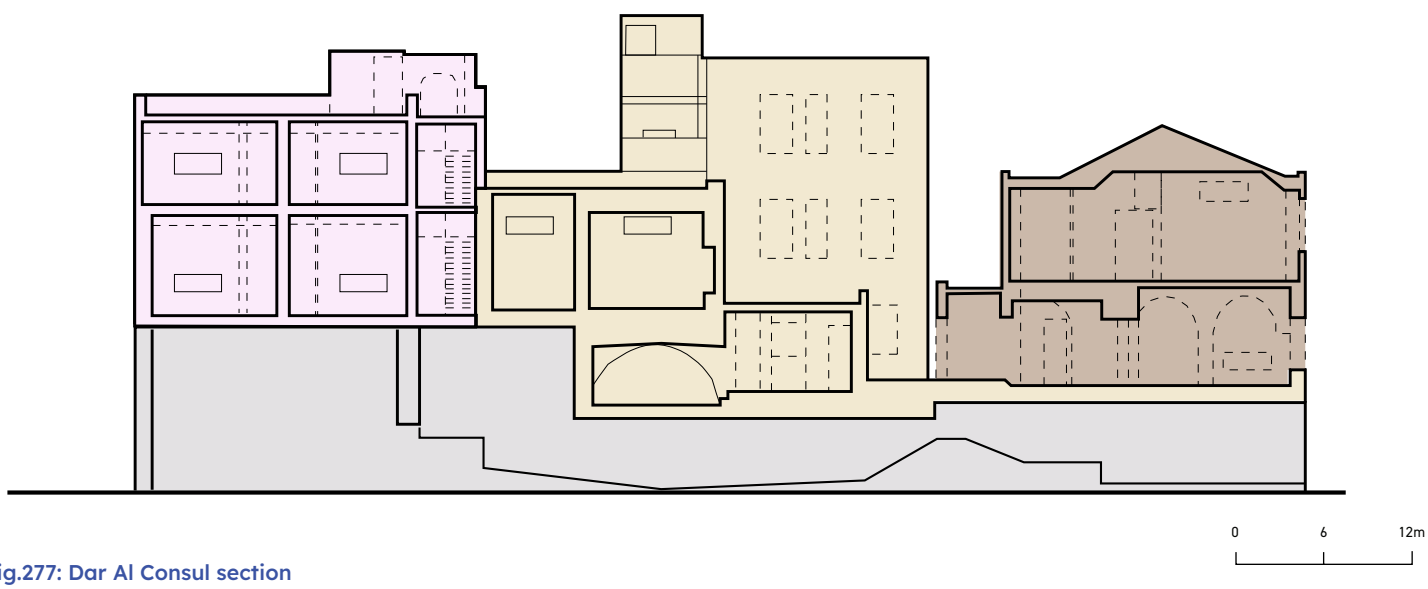
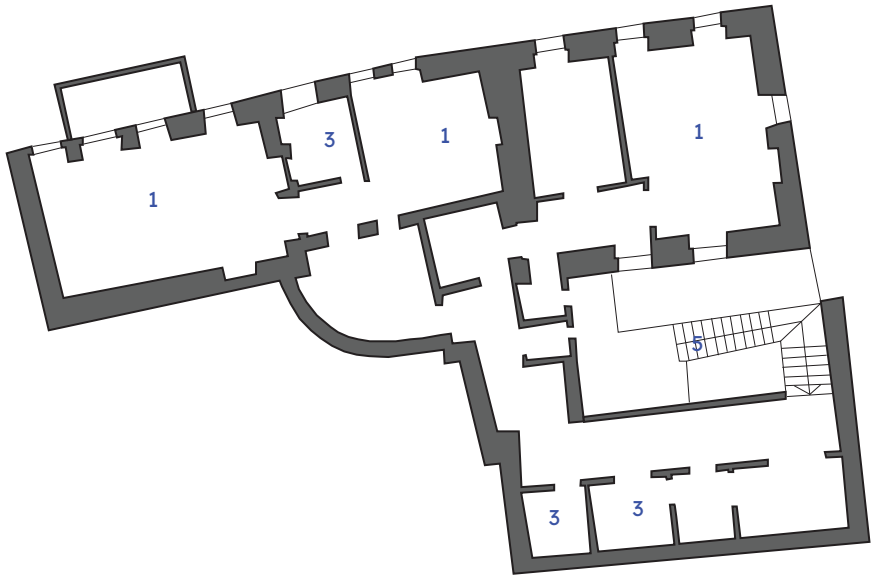


Fig.277: Dar Al Consul section



Groundfloor



1st floor

1. Room
2. Living area
3. Toilet
4. Kitchen
5. Interior Stairs
6. Exterior Stairs

0 2 4m

Fig.278: Typical layout of a traditional courtyard house in Jerusalem

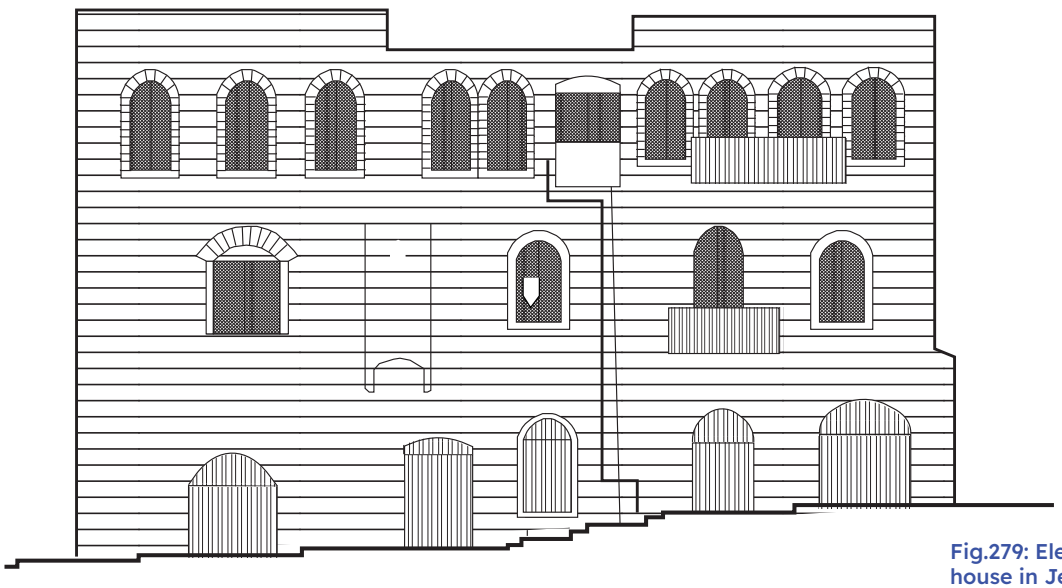


Fig.279: Elevation of a traditional courtyard house in Jerusalem

laborers contracted through the CTS. The project then continued with local contractors and internationally trained local contractors.

After phase III of the project's completion,approximately 50% of the direct project management, 25% of the architects involved, and 25% of the skilled laborers continued to work at the Dar Al-Consul Complex, even though the project was formally closed.

4. MECHANISMS OF THE PROJECT'S BUSINESS DEVELOPMENT APPROACH

4.1. Process

The project carried out in four main phases, which are explained in the following:

Phase I: Exploring opportunities

- Market research collection summary report
- Development program and Design summary
- Final report on the functional program
- Business aspects of Organization summary
- Institutional and management summary
- Business vision summary
- Product design summary
- Identity plan vision
- Operational plan and organizational structure report
- The financial model
- Communication panles summary report
- Hospitality plan report
- Installation slide deck for Charrette
- Business vision Summary
- Market research and economic analysis

Phase II and III: Consolidation

- DAC enterprise environmental factor
- DAC business model and branding strategy report DAC Tourism model report
- DAC Initial functional program report
- DAC report strategic business review
- SD-DAC branding & marketing strategy



Fig.280: Rehabilitation of DAC© https://www.rstruct.com/daralconsul/

- DAC commercial products report in
- Fundraising & Sustainability strategy report
- Dar Al-Consul training and capacity building vision
- Survey and needs assessment of potential beneficiaries
- Risk assessment and management report
- Interior design

Phase IV: Rehabilitation
- Maintenance and ground floor rehabilitation for Cultural Centre

4.2. Partners

Experts
Technical team: Architects and management
Field team: multi-skilled laborers

Public stakeholders
Property ownership and facilitator with the De Facto authorities, Custody of the Holy Land (opperational decision making), Al-Quds University, the European Union and UN-Habitat.

Newly created institutional structures
A new legislative structure was created to allow for the creation of the Community and Educational Center.

4.3. Organization and selection

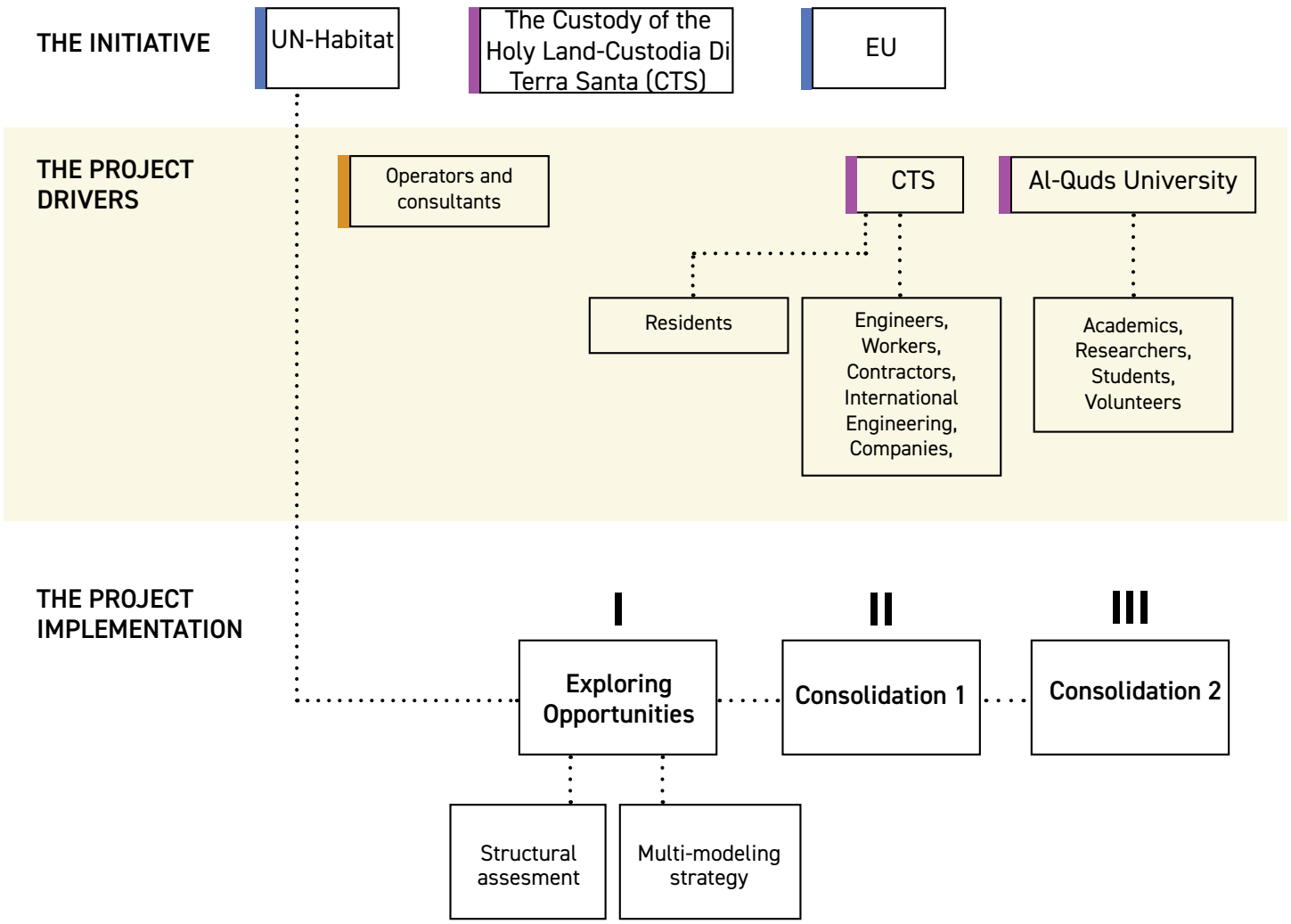
a. Organization
The project's organization is shown on the follwing flowchart (Fig. 275).

b. Selection process
The Dar al-Consul complex was selected for this project as it presented a promising opoorunity to serve the local communities' needs while meeting the UN-Habitat's Sustainable Development Goals. It addressed social sustainability through its focus on improving the quality of life for marginalized Palestinian communities living in the Old City through housing rehabilitation and providing public services. It also engaged the community through new innovative programming such as the planned community and education center. Additionally, the project's potential for economic sustainability, was translated through providing labor jobs during the project for members of the local community, as well as creating working opportunities following the project's completion in the community and education center. The use of environmentally sustainable rehabilitation and construction methods addressed the final environmental sustainability criteria.

4.4. Tools

a. Implementation tools
Survey tools
A structural assessment was conducted to further analyze the structural integrity of walls and on site materials, as well as functioning mechanisms within the building. This process involved the use of flat jack tests, material laboratory tests, magnetometric surveys, ultrasonic tests, as well as other testing methods. Results from this assessment were analyzed allowing the rehabilitation to develop a multi-modelling strategy for the entire complex. Detailed 3D digital models of the complex were created with analysis of structurally and seismically vulnerable zones shown.

Stakeholder engagement
The engagement was conducted in a participatory manner, involving all stakeholders and target groups. To this end, it utilized various tools and methods, including surveys, interviews, focus group discussions, field visits, and consultation processes. In addition, the project aimed to ensure inclusive and meaningful cooperation, capacity development, and knowledge transfer throughout the implementation process. Students from the al-Quds University actively participated in surveys, visited the designated area, and interacted with the community, thereby enhancing their connection to the project and raising awareness among their families and friends. Internationally experienced engineering companies and local contractors were engaged, facilitating the transfer of knowledge in areas such as structural confinement and



Private
Public national
Public international
Civil society
Mixed

Fig.281: Organizational chart

architectural conservation.

Community engagement
The local population was engaged in assessing the needs and reception of the project. Community feedback and engagement opportunities were provided throughout the rehabilitation.

An external evaluation report was conducted using the following participatory tools:

- Mini phone survey with beneficiaries of the restored houses, AQU students and youth
- Semi-structured interviews with stakeholders
- In-depth interview with UN-Habitat, and partners
- Online and in-person focus group discussion (FGD) with beneficiaries of the restored houses, others with students and youth engaged.
- Field visit to the location was done twice and reviewing pre-post status was done, through reviewing photos, videos and documentation.
- Triangulation of sources of information was also done for the assessment.

Cultural activation
The Rehabilitation of Dar Al Consul Project plays a significant role in cultural activation. The project's aim is to enhance the Palestinian cultural and civic identity by activating the Dar Al Consul (DAC) complex and opening it to the public. By revealing the layers of history in Jerusalem and illustrating the Palestinian narrative and existence in the city, the project contributes to the preservation and promotion of Palestinian cultural identity. The project also introduces Palestinian culture to visitors and tourists, further enhancing the understanding and appreciation of the Palestinian identity.

The cultural activation goal of the project is achieved through various activities and initiatives. The DAC complex serves as a cultural environment for interaction, providing a venue for both genders to interact and mature. The project targets senior citizens living in the complex and engages them in key operations, fostering a sense of community and preserving cultural heritage. Additionally, the project offers services and activities through a community center, creating a space for people in the Old City to come together and participate in cultural events.

b. Management tools pre and post occupancy (Bylaws, Zoning masterplans, Conservation Management Plan, Committees, Laws, Regulations, etc.):

The project utilized various tools for monitoring and reporting, including internal assessments, discussions with partners, and transparent monitoring tools. These tools enabled the project management team to efficiently monitor progress, address challenges, and ensure the accomplishment of project activities. However, it was noted that there was a shortfall in monitoring results and enabling full operationalization due to understaffing and unexpected increased work.

Post-occupancy, the project aimed to activate different parts of the building through community engagement and learning, with a focus on tourism revival. The project also emphasized the importance of continuous awareness, supervision, and involvement of the local community to preserve and protect the building. Additionally, the project involved the use of smart electronic systems for control and utilized green-building techniques, such as eco-friendly sewerage systems and smart lighting.

Laws and decrees
De facto authorities rules and regulations.

Environmental and social tools
The project adopted energy-efficient, environmentally sound, and eco-friendly rehabilitation principles. This included the implementation of a sewerage system, utilization of cistern rainwater for the fire-fighting system, and the use of smart electrical systems and sensors to save energy. Also, the project aimed to apply green building models in the renovation of new houses and courtyards. This indicates a focus on sustainable and environmentally friendly construction practices.

The project targeted senior citizens living in the complex and aimed to engage them in key project

operations. The project also focused on empowering marginalized groups such as women and youth by offering services and activities specifically designed for them.

4.5. Financing

Total amount : EUR 6.3 million

Source : European Union and Custody of the Holy Land

Proposed Implementation Period : 2014-2027

Grant Recipient : Engineering Office of the Custody of the Holy Land

Breakdown :
The project was 60% publicly funded through the European Union, with the private CTS also funding almost 40% through contribution. This financing covered Rehabilitation phases I, II, and III as well as a few months of operations for the community center. Ongoing operations are predominantly financed by the European Union.

Financing sufficiency :
One of the main financial challenges during the project was caused by exchange rate losses, resulting in a need for budget increase. The project required an increased budget, even with the property owner CTS contributing an initial 5% and then 40% for added control to the project. Direct beneficiaries did not contribute to the financing of the project. Unforeseen restrictions and requirements set during the project by the De Facto Antiquities Department also caused a need to increase the budget due to the schedule delay.

Maintenance financing :
There was no maintenance financing included in the initial project budget. There is a plan described in the UN-Habitat report to facilitate a community management body for long term programmatic and financial maintenance and sustainability; as



Fig.282: Dar al Consul Inauguration event© https://www.custodia.org

spearheaded by UN-Habitat, the European Union and Custody of the Holy Land.

Rehousing financing :
Rehousing was financed by the property owners as their contribution to the rehabilitation of their properties.

4.6. Timeline

Refer to figure 277 for more details.

5. LESSONS LEARNED

5.1. RESULTS/ IMPACTS

a. Technical improvements on original construction techniques/materials
Technological analysis and classification systems were heavily used in this rehabilitation project for research before intervention. Traditional materials were used as much as possible, with modern materials only being used when necessary.

b. Legislation changes
No legislation changes were needed for the rehabilitation.

c. Programs post-rehabilitation
Before Rehabilitation: residential, archaeological
After Rehabilitation: residential, civic cultural

The residential units remain residential in programming after rehabilitation. The next phase of the project from 2022-2027 to rehabilitate the ground floor will change the programming of this part of the complex to become the community and educational center. The ground floor will also include a touristic interest to exhibit the archaeological artifacts found there during the project.

d. Economic impact

The project contributed to the economic development by creating job opportunities for youth in the DAC complex. The attraction of visitors and tourists to the complex also has the potential to revive surrounding businesses. The project provided capacity building, including training and incubation, especially for youth, empowering marginalized groups and promoting

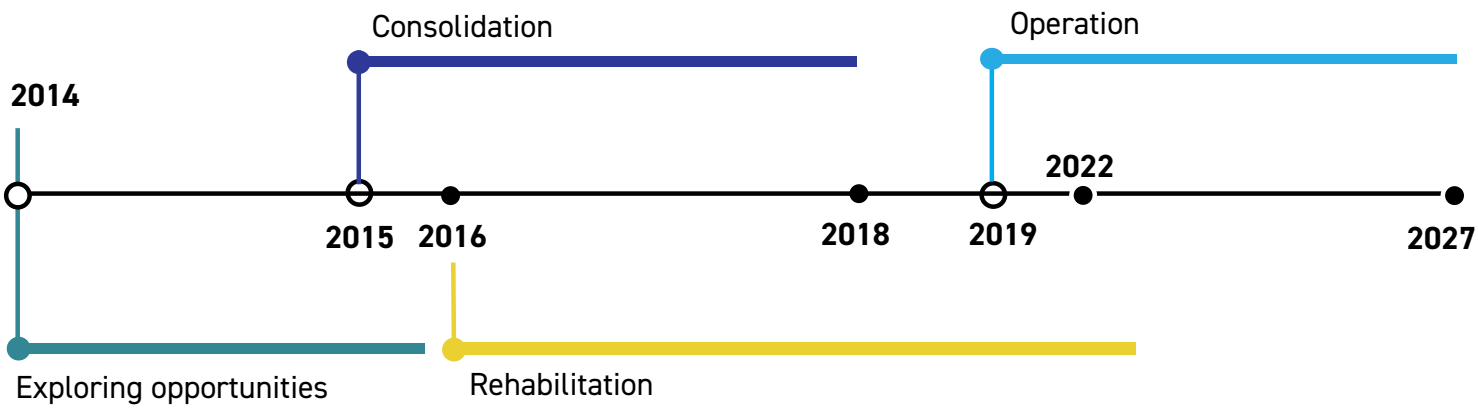


Fig.283: Timeline

entrepreneurship. The DAC complex offered an opportunity to sell Palestinian products, supporting local artisans and entrepreneurs.

Job Creation
Employment created during the 9 year project:
- 17 skilled laborers.
- 6 architects
- 3 long-term Individual electrical, mechanical and structural consultants

Local old city businesses were the source of many of the rehabilitation tools used including debris moving vehicles.

e. Social impact

An assessment of the project's success and reception was made alongside its implementation and immediately following it. The first part of the project, rehabilitating the residential units of the DAC has positively impacted the lives of residents and their families socially and economically as was the initial objective of the project. It is estimated that the completion of the community and educational center will have a wider positive impact on the surrounding community once completed.

Perception shift
Like many historical city centers, the perception of those living in the Old City of Jerusalem today was fairly negative, associated with being backwards, poor, and generally undesirable compared to living in the newer city quarters. According to the UN-Habitat report, following rehabilitation the perception towards some of the housing in the Old City changed and brought about new expectations of what housing in the area could be. It was noted that another housing complex close to
Musa Affandi Complex, which was rehabilitated in parallel to Dar Al-Consul was recently leased and to follow a complementary operational vision as provided by the Dar Al-Consul project management team

Gentrification mitigation
Gentrification potential will be witnessed upon closure of the ongoing operational phase of the project.

Education
Local skilled laborers were trained during the project by international contractors from the Italian team specializing in certain rehabilitation processes and materials.
Efforts to educate the community on maintaining and managing the future of the rehabilitation are underway in the 2022-2027 phase.

With the new community and educational center, three educational outlets for community members are planned:
- Education and Professional Innovation Center (EPIC)
- Tourism, IT and Media Center (TIMe)
- Culinary and Food Experience (CAFÉ)

Environmental impact
Given the dense, urban location of the project, there was no direct impact towards ecologically significant areas or ecosystems. Efforts were made during the rehabilitation to adhere to environmental sustainability principles such as the attempt to install solar panels (rejected by de facto authorities), landscaping in the courtyards, and the reuse of ancient cisterns for gray-water.

5.2. CHALLENGES/ CRITIQUE

a. Financial constrains
There was no maintenance financing included in the initial project's rehabilitation budget. But in the current Operational aspect of the project, a comprehensive Maintenance Plan is information to facilitate a community management body for long-term programmatic and financial maintenance and sustainability; as spearheaded by UN-Habitat, the European Union, and Custody of the Holy Land.

b. Legislative challenges
Some of the legislative constraints of the project were working without any national Palestinian jurisdiction and therefore meeting 'De Facto authorities" property regulations. The tenure constraint came from the fact that the property was completely owned by the CTS.

c. Tenure challenges
Weak communication between the tenants and the site

owners contributed to a lack of adequate consultation regarding the renovation work and dissatisfaction with the renovation process which constituted the main challenges in this area. These challenges affected the tenants' understanding of the timeline and progress of the project, as well as their involvement in decision-making. Some tenants expressed dissatisfaction with the lack of communication and updates regarding the progress of the renovation work. They felt uninformed about the timeline and faced difficulties in obtaining information from the project team.

d. Construction challenges

- Structural issues: The project encountered unexpected structural issues, such as weak foundations and the discovery of additional rooms, layers, and spaces during the renovation work. These issues increased the workload on the construction team and required additional time and resources to address.
- Limited Transfer of Raw Materials: The narrow alleys and entrances in the Old City of Jerusalem posed challenges in transferring raw materials and structures to the construction site, leading to delays and logistical difficulties.
- Delays and Barriers: The project faced delays and barriers due to the restricted regulations and registration processes imposed by the de-facto authorities in East Jerusalem. These delays were inherent to restoration projects in the area and required additional time for completion.
- COVID-19 Impact: The COVID-19 pandemic caused further delays and disruptions to the project, resulting in lockdowns and closures. The project had to present scenarios for extension to the European Union and replan and budget accordingly to address these challenges.
- Unexpected Cracks and Leaks: One of the houses experienced cracks and leaks after the renovation, requiring multiple renovations to address the issue Structural solutions were needed to resolve this problem.

These construction challenges highlight the complexities and difficulties faced in implementing restoration projects in the Old City of Jerusalem, including the need for flexibility, efficient management, and effective communication with stakeholders.

ANNEX

a. Contact

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Fig.284: DAC rehabilitation work© https://www.rstruct.com/daralconsul/

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Fig.285: The Dome of the Rock mosque (right) and the Qibli mosque in the Aqsa compound, Al Qods Palestine. ©Flickr: Ray in Manila

06
Learning fom the Case Studies

Although we recognize that each context requires specific guidelines and approaches, we believe that there are core principles and lessons that can be applied across various contexts, provided that certain conditions (such as expertise, financing, strong administrative backing, and bylaws) are met.

The challenges and recommendations in this section are derived not only from the analysis of the best practice case studies but also from the outcomes of four workshops conducted during the conference held in Marrakesh in December 2024.

The primary objective of these workshops was to collaboratively outline challenges and develop best practice guidelines for housing rehabilitation in historic urban settlements in the Arab Region. This was achieved by leveraging the participants' diverse experiences in their respective fields, practices, academia, and management positions, as well as the case studies presented during the conference.

Each workshop convened 15 participants, including experts and institutional stakeholders from various disciplines.

A designated moderator facilitated each workshop, guiding participants through a series of brief exercises to be completed in small groups of five. Subsequently, participants shared the results of these exercises with the entire group, leading to discussions about each group's findings. The outcomes were then summarized by each group on sticky notes and displayed on the wall, categorized under the relevant exercise number and its associated question.

The complete transcripts of these workshop results can be found in the annex B of this report.

6A

Conservation Management Plan and Housing Rehabilitation

A Holistic Approach to Conservation Management Plans and Housing Rehabilitation: Bridging the Gap from Concept to Realization

In the dynamic landscapes of the Historic Centers scattered across the MENA region, the utilization of Conservation Management Plans (CMPs) remains a rarity in the arsenal of heritage preservation strategies. Often, the trajectory of rehabilitation efforts is solely dictated by urban masterplans, overlooking the nuanced needs of historic preservation. However, CMPs emerge as beacons of hope, offering a comprehensive framework that delves into the intricate tapestry of urban and architectural conservation, steering all enhancement endeavors within Historic Centers towards a unified vision. Amidst the various challenges inherent in the housing rehabilitation process within these ancient enclaves, where interventions often barely scratch the surface or are relegated to mere cosmetic upgrades, the CMP approach stands as a beacon of promise. Its holistic nature ensures seamless integration into broader heritage preservation blueprints and policies, safeguarding the essence of these storied locales for generations to come.

CMPs for Historic Centers encapsulate an interdisciplinary approach to rehabilitation, meticulously addressing architectural, landscape, infrastructure, governance, social, and economic dimensions of each site. Through a structured series of phases, these plans orchestrate a symphony of preservation:

- Documenting and classifying heritage assets.
- Assessing significance and heritage value through meticulous analysis.
- Disseminating findings among stakeholders and igniting public awareness.
- Developing a diagnostic spotlighting prevailing issues.
- Proposing rehabilitation solutions with a meticulously outlined hierarchy and timeline for interventions.
- Crafting financing, management, maintenance, and evaluation plans to sustain the legacy.

Embarking on this journey of preservation, several noteworthy case studies such as the Hebron Old City Rehabilitation Project and the Al-Darb Al-Ahmar housing rehabilitation project stand as testament to the transformative power of CMP implementation. Yet, amidst these triumphs lie persistent hurdles, from the arduous quest for historical data to the uphill battle for political support and funding.

To navigate these challenges and ensure the effective development and implementation of CMPs, a set of guiding principles is indispensable:

1. CMP Development Goals:
- Encompassing governance, financing, awareness, and technical dimensions to foster a holistic approach.
- Viewing housing as an interconnected ensemble within Historic Centers, rather than isolated entities.
- Cultivating resilient strategies adaptable to the evolving landscape of preservation.
- Enforce the use of traditional materials and building techniques.
- Integrate sustainability goals in water management, energy use and waste recycling.

2. Rehabilitation Strategies:
- Harmonizing CMPs with existing zoning and masterplans for seamless integration.
- Preserving intangible cultural legacies alongside tangible heritage.
- Proposing pragmatic restoration strategies and proactive maintenance plans.
- Embedding CMP conclusions into urban guidelines or bylaws for lasting impact.

2. Governance:
- Pioneering governance models tailored to implementation needs, potentially through dedicated rehabilitation agencies.
- Forging collaborative partnerships between public and private entities to leverage resources and expertise.

3. Financing:
- Integrating robust financial frameworks tailored to the unique challenges of housing rehabilitation.
- Exploring innovative financing mechanisms, spanning public-private partnerships, to fuel sustainable initiatives.

4. Stakeholder Involvement and Awareness:
- Orchestrating awareness campaigns elucidating the symbiotic relationship between monuments and residential areas.

- Fostering stakeholder engagement throughout the rehabilitation journey, underpinned by transparency and community participation.

5. CMP Implementation:

- Cultivating local expertise through targeted training initiatives and academic collaborations.
- Garnering political endorsement and establishing mechanisms for accountability and transparency.
- Sustaining open lines of communication with stakeholders to foster a shared sense of ownership and commitment.

By embracing these recommendations, CMPs evolve into powerful instruments for heritage preservation, heralding a new era of sustainable housing rehabilitation in the labyrinthine corridors of Historic Centers across the MENA region.

Fig.286: Medina of Fez. © Aziza Chaouni.



6B
Community Participation

Citizen Participation in Housing Rehabilitation Projects in Historic Settlements

Given the predominantly private ownership status of houses in Historic Centers, the engagement of residents is paramount in any rehabilitation endeavors. Even in instances where the lead institution acquires housing properties, involving neighbors, future users, buyers, and renters remains essential. Such involvement fosters a deeper understanding of local needs, cultivates a sense of pride and ownership, and raises awareness regarding the preservation of both tangible and intangible aspects of housing in Historic Centers.

Currently, citizen participation in housing projects is often difficult in the Arab region due to the lack of trust in top down approaches, the informality of occupation of many houses, which makes tenants unlikely to take part in formal dialogues and exchanges, absentee landlords, and the lack of interest of homeowners and landlords in their property located in historic centers, which they perceive as backward and of little value.

Outlined below are guidelines that delineate best practices for encouraging and integrating citizen participation in rehabilitation projects within Historic Centers:

1. Establish a Safe and Inclusive Environment:
- Create opportunities for the community to engage and exchange ideas about the project.
- Organize initial presentation meetings with community leaders and associations to elucidate project goals and benefits for the local population.

2. Raise Awareness:
- Utilize cultural events and social media platforms to disseminate information about the project and its significance.

3. Ensure Inclusivity:
- Include a diverse range of stakeholders, including minority groups and those typically overlooked, such as women, youth, children, migrants, and temporary workers.
- Conduct separate workshops tailored to different age groups and genders to facilitate meaningful participation.

4. Employ Varied Approaches:
- Utilize diverse methods to encourage participation, adapting strategies to suit the needs and preferences of different user groups.

5. Facilitate Dialogue:
- Foster dialogue between institutions, experts, and user groups through thematic workshops focused on specific aspects of the project.

6. Facilitate On-Site Collaborative Workshops:
- Lead collaborative workshops in situ to ensure maximum participation and engagement.
- Provide refreshments, such as food and drinks, to create a welcoming atmosphere and encourage participation.

7. Address Knowledge Gaps:
- Recognize the varying levels of expertise among different user groups regarding traditional rehabilitation techniques.
- Provide relevant training sessions tailored to the specific needs of each group to enhance their understanding and capacity.

By adhering to these guidelines, housing rehabilitation projects in Historic Centers can effectively harness the collective wisdom and engagement of the local community, fostering a sense of ownership and stewardship towards preserving the heritage and vitality of these urban spaces.

Fig.287: Participatory session, al-Darb al-Ahmar project in islamic Cairo. © D. Shehayeb, 2006.



6C
Creative Financing

Creative Financing Strategies for Housing Rehabilitation Projects in Historic Centers

Due to the intricate ownership status and limited financial returns—except for houses of exceptional heritage value repurposed as guesthouses, restaurants, or museums—housing in Historic Centers presents a formidable challenge for financing in conservation projects. Often relegated to the bottom of the priority list, unless deemed exceptional, the reality is that the majority of houses in historic centers possess medium to low heritage significance as individual buildings. However, it is the collective urban and social fabric they contribute to that holds immense significance, warranting preservation efforts.

A paradigm shift is imperative: housing must be recognized as pivotal to the long-term sustainability of Historic Settlements and therefore deserving of subsidy. This financial support must be complemented by training, regulations, and supervision programs to ensure homeowners or renters adequately maintain their properties.

The following recommendations outline creative financing models for housing in Historic Settlements:

1. Diversify Funding Sources:
- Advocate for involvement from international organizations, local governmental institutions, cooperatives, sponsorships, the private sector, and public-private partnerships (PPPs).

2. Offer Varied Financing Mechanisms:
- Introduce a range of financing options including loans, grants, micro-credits, crowdfunding, and 1-to-1 matching subsidies. Tailor loans and grants to different timeframes and income levels.

3. Incentivize Investment in Homes:
- Implement programs offering low-interest rate loans, tax exemptions, and matching contributions to encourage house owners to invest in their properties.

4. Address Abandoned Properties:
- Design financing models specific to abandoned houses, such as renovating and renting the property until costs are recovered, with conditions including rent control and property maintenance requirements.

5. Engage Corporate Social Responsibility (CSR):
- Encourage CSR programs to fund housing rehabilitation initiatives.

6. Foster Housing Cooperatives:
- Promote the formation of housing cooperatives to enhance loan solvency and enable bulk purchasing of materials to reduce costs.

7. Raise Awareness and Participation:
- Develop awareness campaigns to encourage homeowners and renters to co-finance the rehabilitation of their homes.

8. Subsidize Expensive Materials:
- Prioritize subsidizing the most costly materials to incentivize participation and self-initiated rehabilitation efforts.

9. Allow In-Kind Contributions:
- Permit participants to contribute in-kind to housing rehabilitation efforts.

10. Include Relocation Costs:
- Incorporate relocation costs for dwellers into the project's business plan.

11. Facilitate Property Purchase:
- Subsidize the purchase of homes by investors or social housing agencies willing to rehabilitate properties while retaining a portion of the original tenants.

12. Consider Post-Occupancy and Displacement Risks:
- Ensure financing models account for post-occupancy scenarios and mitigate the risks of population displacement.

By implementing these strategies, housing rehabilitation projects in Historic Centers can secure the necessary financial support and community engagement to preserve these invaluable cultural treasures for future generations.

Fig.288: A young man from the local community participates in the rehabilitation of a historical building in Basrah
© UNESCO / Essam Al-Sudani



6D

Land Tenure Policy and Sustainable Governance

Land Tenure Policy and Bylaws: Overcoming Complexities for Housing Rehabilitation in Historic Settlements

Complex land tenure issues pose significant challenges to housing rehabilitation projects across the Arab region's Historic Centers. Properties often have multiple owners who may not agree on rehabilitation plans, while absentee ownership or lack of official paperwork further hinder progress. Informal housing occupation adds another layer of complexity. Developing and implementing new land tenure policies is essential to facilitate property access for rehabilitation efforts. However, policy alone, as a top-down approach, must be complemented by awareness campaigns highlighting the importance of housing rehabilitation and engaging citizens early to mitigate potential unrest and discontent among residents. The following recommendations outline policy measures to streamline housing rehabilitation projects in Historic Centers:

1. Establish Legal Ownership:
- Help to legalize ownership to enable rehabilitation efforts.

2. Introduce a Leasehold System:
- Implement a leasehold system to restore and utilize housing sites over a long-term period.

3. Facilitate Ownership Assembly:
- Establish an NGO or association to consolidate fragmented ownership, possibly through financial incentives such as a one-year rent payment, similar to the case in Esna, Egypt.

4. Finance Restoration in Exchange for Usage:
- Offer restoration financing in exchange for property usage within a defined timeframe.

5. Consolidate Ownership Titles:
- Enforce the consolidation of titles from multiple owners into a single title, designating a sole representative.

6. Enact Compulsory Purchase Laws:
- Introduce bylaws allowing for compulsory purchase of housing for public benefit.

7. Address Abandoned Properties:
- Implement bylaws allowing for automatic purchase of abandoned or hazardous houses, if owners are unwilling to rehabilitate them.

8. Modify Zoning Regulations:
- Amend zoning regulations to allow for adaptive reuse, enabling rehabilitation efforts.

9. Utilize Ruins for Public Spaces:
- Amend zoning to permit temporary or permanent use of ruins as public spaces, enhancing housing amenities.

10. Rent Control Measures:
- Introduce bylaws to control rent in low-income neighborhoods, preventing renter expulsion post-rehabilitation.

11. Implement Rent-to-Own Schemes:
- Establish rent-to-own schemes aligning occupiers' interests with Conservation Management Plan objectives.

12. New Legal Status:
- Grant a new legal status to Historic Centers to expedite land tenure policy implementation or change as needed.

13. Address Squatter Rights:
- Legalize squatter status by providing rental agreements in exchange for relocation during rehabilitation and renting safe, restored houses thereafter.

By implementing these policy recommendations, barriers to housing rehabilitation in Historic Centers can be effectively lifted, fostering sustainable preservation efforts and community well-being.

Sustainable Governance for Housing Rehabilitation Projects in Historic Centers

Establishing a robust governance framework at the outset of a housing rehabilitation project within a Historic Center is pivotal to its success. The majority of the case studies analyzed have set up from the get go governing bodies, mostly governmental aside from the case of the ASMT in Tunis, with different level of autonomy, to run and monitor the housing rehabilitation projects. It is the lack of a robust governance structure, or in the reverse, it is the multiplicity of stakeholders governing the project, which often leave Conservation Management Plans on the shelve or lead to punctual interventions lacking coherence, quality and longevity.

While each context may require a tailored governance approach, the following recommendations offer universally applicable principles:

1. Establish Dedicated Governmental Entities:
- Create a governmental entity specifically tasked with overseeing the restoration of the Historic Center or managing the housing rehabilitation project. This entity could be housed within the municipality, the Ministry of Culture, or operate independently. Examples include ADER in Fez or the ASMT in Tunis.

2. Develop Physical Support Infrastructure:
- Establish a physical office comprising architects, craftsmen, and social workers to provide comprehensive assistance throughout the rehabilitation process, mirroring the setup of the ASMT in Tunis.

3. Foster Craftsmanship Networks:
- Create a network of skilled craftsmen and craftswomen to support both private and public housing rehabilitation initiatives, ensuring access to expertise and resources.
- Offer training programs for craft related to building rehabilitation.

4. Establish Citizen-Decision Maker Committees:
- Create committees comprising citizens and decision-makers to oversee the maintenance of rehabilitated houses, fostering community engagement and ownership in the preservation efforts.

5. Integrate Evaluation and Transparency Mechanisms:
- Embed mechanisms for evaluation, monitoring, and transparency within the governance model to ensure accountability and effectiveness throughout the project lifecycle.

6. Ensure Continuity Beyond Occupancy:
- Guarantee that the governance structure of the project extends beyond the initial rehabilitation phase, with provisions in place for ongoing maintenance and management of the rehabilitated properties to sustain long-term viability.

7. Recognition and Reward:
- Institute annual awards with monetary prizes for well-maintained houses, as seen in Hebron Old City and the Medina of Asilah.

8. Municipal Responsibility:
- Enforce bylaws assigning responsibility to municipal or designated structures for post-occupancy compliance checks, maintenance of public infrastructure, and amenities in Historic Centers.

By implementing these governance recommendations, housing rehabilitation projects in Historic Centers can benefit from streamlined coordination, enhanced citizen involvement, and sustained impact, ultimately contributing to the preservation and revitalization of these culturally significant urban areas.

6E
Resilience and Reconstruction in Post-Crisis Contexts

Resilience and Reconstruction of Housing in Historic Settlements in Post-Crisis Contexts

Housing in historic settlements faces numerous challenges in the wake of natural disasters, economic downturns, or conflicts, often necessitating extensive reconstruction efforts, including the costly re-establishment of infrastructure such as sewage, electricity, and roads. Lack of governance, competent rehabilitation expertise, access to materials, basic needs for staff (housing, sanitation, electricity etc..), original plans and documentation of houses, are some of the challenges facing housing rehabilitation and reconstruction in historic settlements. At last, in the case of complete destruction, the decision to rebuild identical to the past or propose new typologies of housing or new programs remains up for debate.

Therefore, the process of reconstructing and rehabilitating housing in historic centers following such crises demands a comprehensive and multifaceted approach. Here are key strategies to consider:

1. Documentation and Assessment:
- Begin by meticulously documenting the extent of damage or destruction to heritage structures.
- Conduct detailed assessments to evaluate both the structural integrity and historical significance of each building.

2. Prioritization:
- Give priority to the rehabilitation of structures with the highest cultural and historical value.
- Focus on restoring critical infrastructure such as community centers, schools, and healthcare facilities.

3. Adaptive Reuse:
- Explore opportunities for adaptive reuse of damaged buildings, re-purposing them to meet modern needs while preserving their historical elements.
- Consider converting heritage buildings into cultural centers, museums, or tourism destinations.

4. Architectural Conservation:
- Engage skilled architects and conservators to ensure that reconstruction efforts respect the original design and materials.
- Employ traditional construction techniques and materials wherever possible to maintain authenticity.

5. Community Involvement:
- Involve local communities in decision-making processes to ensure their needs and perspectives are incorporated.
- Encourage grassroots initiatives for heritage preservation and economic revitalization.

6. Sustainable Reconstruction:
- Implement eco-friendly and sustainable construction practices to minimize environmental impact.
- Integrate energy-efficient technologies and renewable energy sources into reconstruction projects.

7. Funding and Partnerships:
- Seek financial support from government agencies, international organizations, and private donors.
- Forge partnerships with NGOs, heritage preservation groups, and academic institutions to leverage resources and expertise.

8. Legal and Regulatory Support:
- Advocate for supportive legislation and regulations that facilitate heritage reconstruction.
- Streamline permitting processes to expedite reconstruction efforts.

9. Capacity Building:
- Provide training to local craftsmen and artisans in traditional construction techniques.
- Develop a skilled workforce capable of supporting ongoing rehabilitation endeavors.

10. Risk Mitigation:
- Implement disaster risk reduction measures to safeguard heritage sites from future disasters.
- Develop emergency response plans and enhance building codes to mitigate risks

11. Public Awareness and Tourism:
- Promote the restored historic center as a cultural and heritage destination to attract visitors.
- Encourage responsible tourism practices to generate revenue for ongoing maintenance and preservation efforts.

12. Long-Term Sustainability:
- Develop a comprehensive preservation and maintenance plan to ensure the continued resilience of the historic center.

- Establish a heritage management authority or trust to oversee the management and conservation of heritage assets.

These strategies, coupled with a steadfast commitment to preserving cultural identity and fostering community resilience, can contribute to the successful reconstruction and rehabilitation of heritage in historic centers following natural disasters or conflict.

Fig.289: Medina of Azzemour, Flickr, © Aziza Chaouni.



07 Conclusion: Guidelines for Action!

Learnir the Case

Land Tenure Policy and Sustainable Governance

1. Establish Legal Ownership
2. Introduce a Leasehold System
3. Facilitate Ownership Assembly
4. Finance Restoration in Exchange for Usage
5. Consolidate Ownership Titles
6. Enact Compulsory Purchase Laws
7. Address Abandoned Properties
8. Modify Zoning Regulations
9. Utilize Ruins for Public Spaces
10. Rent Control Measures
11. Implement Rent-to-Own Schemes
12. New Legal Status
13. Address Squatter Rights

Community Participation

1. Establish a Safe and Inclusive Environment
2. Raise Awareness
3. Ensure Inclusivity
4. Employ Varied Approaches
5. Facilitate Dialogue
6. Facilitate On-Site Collaborative Workshops
7. Address Knowledge Gaps

Conser Manag Plan and Rehabil

1. Establish holistic CMP Develop-ment Goals
2. Determin rated re litation St
4. Integrating robust financial frameworks
5. Orches aware campa
7. Cultivate local expertise
8. Gather p endorse

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2. hine integ- rehabi- Strategies
3. Set adapted governance models
5. estrate reness paigns
6. Foster stakeholder engagement
8. r political rsement
9. Sustain communication with stakeholders

Creative Financing

1. Diversify Funding Sources
2. Offer Varied Financing Mechanisms
3. Incentivize Investment in Homes
4. Address Abandoned Properties
5. Engage Corporate Social Responsibility (CSR)
6. Foster Housing Cooperatives
7. Raise Awareness and participation
8. Subsidize Expensive Materials
9. Allow In-Kind Contributions
10. Include Relocation Costs
11. Facilitate Property Purchase
12. Consider Post-Occupancy and Displacement Risk

Resilience and Reconstruction in Post-Crisis Contexts

1. Documentation and Assessment
2. Adopt a Prioritization Strategy
3. Facilitate Ownership Assembly
4. Assist in Architectural Conservation
5. Enable Community Involvement
6. Encourage Sustainable Reconstruction
7. Funding and Partnerships
8. Provide legal and Regulatory Support
9. Foster Capacity Building
10. Establish Risk Mitigation
11. Promote Public Awareness and Tourism
12. Aim for Long Term Sustainability

The intrinsic heritage significance of Historic Settlements in the Arab region, many of them inscribed in the UNESCO World Heritage list, is the integrity of their urban fabric, which is composed principally of housing. Therefore, preserving housing in Historic Centers is the cornerstone to sustaining the integrity of the urban fabric while keeping local populations onsite, populations who breath life and authenticity into these Centers, preventing them from becoming mummified museums for tourists. Housing preservation is not without challenges, begging for new approaches to Conservation Management Plan development and implementation, land tenure policy, financing structures and governance models.

Changes in lifestyle requiring major adjustment of traditional housing layouts and lack of attractiveness of the historic center due to their difficulty of access, lack of amenities and aging infrastructure, are other challenges halting rehabilitation efforts.
The careful analysis of 17 best practice case studies compounded with the recommendations of experts resulting from thematic workshops, resulted in a set of guidelines that can hopefully be of use to professionals working on the rehabilitation of housing in Historic Settlements in the Arab region.

It is important to note that each case studies excels in certain categories for instance the Yemen project in citizen collaboration involvement and training, the Muharraq project in adaptive reuse strategies and insertion of contemporary interventions, and the Hafsia District project in financing and governance models. No project is successful in all categories. Therefore there is a need to develop a pilot project, who will not only serve as a blueprint for other projects in the Arab region but its development can be used as a training opportunity.

Beyond the suggested guidelines, there is a unanimous call from all experts attending the conference for the following next actions from the Islamic Development Bank, UN-Habitat and UNESCO:

1. The dissemination of the results of this report via website, presentations to institutions and schools and its publishing and distribution.
2. The creation of a network of experts, starting with the 43 experts who took part in the conference, with experience in housing rehabilitation and/ or reconstruction in historic settlements in the Arab region.
3. The financing of at least two pilot projects in the Arab region, ideally following some of the recommendations below regarding the choice of site:

- a historic settlement with significant architectural and urban features.
- a historic settlement with a housing stock at risk or under threat.
- a historic settlement with a housing restoration project in place.
- a historic settlement with an already established CMP with a housing rehabilitation component.
- a historic settlement with an already established governance structure handling rehabilitation projects.
- A historic settlement which is listed nationally or internationally and is therefore protected.
- A historic settlement with an accessible housing stock
- A historic settlement with owners' associations in place or easily created/ united.
- A historic settlement with an active civil society.
- A historic settlement in an arid zone with earth architecture, another one in a more temperate region.

Some site suggestions:

1. Kasbah of Taourirt, which was one of the case studies, and still has phase 2 of its well-developed CMP, completed by CERKAS and the Getty Institute, to be achieved.
2. The Old town of Salallah, which has already a well-developed CMP by Archiam Center, and only has one restored house completed so far.
3. The old port city of Al Quseir in southern Egypt, as the houses in the old souq are quite unique: mainly built with mud, corals, and wood, they reflect both Mamluk and Ottoman architecture.
4. Medina of Fez Andalous bank houses. There is an opportunity for a series of infill new multi-family houses on parcels in ruins, where houses had collapses.

Urban Historic Settlements which are located in conflict zones or in countries that are economically and politically unstable were avoided, even though they are the one in more dire need for pilot projects.

The creation of a committee of experts to establish the methodology and goals in addition to monitoring the project to ensure compliance with best practice standards is recommended.



Fig.291: Kasbah of Taourirt, Morocco. Flickr, © Farhan Al Obaidi. Accessed September 4th 2023.



Fig.290: Restored house in Al Quseir, Egypt. © Farhan Al Obaidi.

08 Dissemination tools

8A
REGIONAL CONFERENCE

The Regional Conference took place during 13-15 Dec. 2023 in Marrakesh with 43 experts presenting and/ or representing 18 case studies from 10 countries in the Arab Region, to exchange on best practices and define new guidelines for the safeguarding of historic housing.

In addition to the presentations, a series of site visits and workshops were scheduled to gain better exposure to the Marrakesh case study as an example, and to foster a positive environment for constructive discussions.

This conference was a collaborative effort hosted by UN-Habitat, in partnership with the Islamic Development Bank (IsDB), UNESCO, the Ministry of National Planning, Urban Development, Housing, and City Policy, as well as the Union for the Mediterranean and The Arab Regional Centre for World Heritage. Their goal was to develop innovative guidelines for safeguarding and revitalizing housing in historic settlements across the Arab region.

During the conference, representatives from various sectors, including national and local authorities, international entities, civil society, private sector, and academia, exchanged international experience, good practices, and expert insights. The outcome of their collaboration is a strategic roadmap that charts the course for housing rehabilitation in historic urban settlements across the Arab Region.

This strategic blueprint goes beyond mere discussions and promises a transformative impact on the preservation and revitalization of historic settlements. The collective wisdom and varied perspectives brought to the table by the group of experts ensure that this roadmap is a valuable resource for the future.

Fig.292: Conference poster

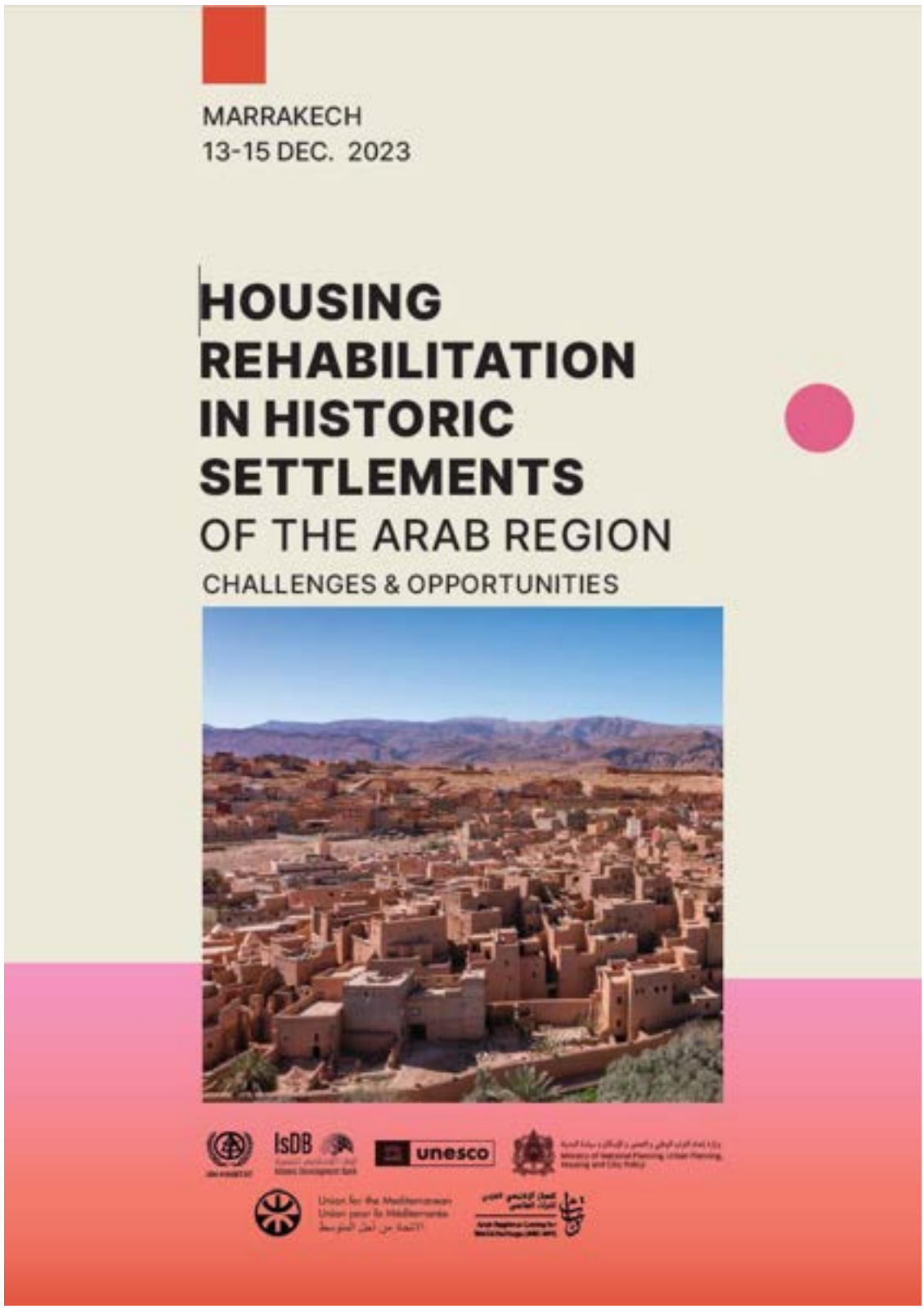


Fig.293: Conference schedule - day 1 and 2

Regional conference Marrakech

13-15 Dec. 2023
Palm Plaza Hotel



A. Conference goals
The goal of the conference is twofold:
1) to foster knowledge exchange between experts, decision-makers and practitioners involved in housing rehabilitation in historic urban centers across the Arab Region by sharing expertise on principles, practical and creative means, and policy options.
2) to identify and disseminate best practice guidelines for the development and implementation of housing rehabilitation in urban historic centers.

B. Conference draft schedule

DAY 1
SITE VISIT

10:00 - 13:00
Visit of rehabilitation projects in the Medina of Marrakesh led by Kensoussi Jaafar of Al Mounia Association.

13:00-15:00
Lunch in the Medina

15:00- 18:00
Visit of case studies of housing rehabilitation in the Medina of Marrakesh led by Kensoussi Jaafar of Al Mounia Association.

DAY 2
CONFERENCE

> Plenary session 1

10:00 - 10:05
Introduction
Introduction, Abdellatif Bouazza, UN-Habitat Head of country office, Rabat, Morocco

10:05 - 10:35
Welcome addresses
> H.E Mrs. Fatima Ezzahra El Mansouri the Moroccan Minister of National Planning, Urbanism, City Policy and Habitat (5 min.)

> Mrs. Nathalie Fustier, Resident Coordinator of the United Nations in Morocco (5 min.)

> Mrs. Rania Hedeya Regional Representative (O.I.C.), Regional Office for the Arab States UN-Habitat (5 min)

> Mr. Idrissa Dia, Director Economic and Social Infrastructure Department at the Islamic Development Bank (5 min.)

> Mr. Eric Falt, Regional Director of UNESCO Office for the Maghreb (5 min.)

> Sheikh Ebrahim Al Khalifa, Acting Director of the ARC-WH (5 min.)

10:35 - 10:45
Broadcasting of institutional films
Ksour & Kasbahs Program and the Pearl Road in Bahrain

10:45 - 11:00
Introduction to the conference
Associate Professor Aziza Chaouni, University of Toronto / Principal Aziza Chaouni Projects, Fez, Morocco

> 18 Case studies

11:00 - 12:45
Part 1

The Sultanate of Oman:
Salalah: Professor Soumyen Bandyopadhyay, Director of ARCHIAM Professor, University of Liverpool (15 min.)
Nizwa: Ali Al Mahrouqi, Director of the Department of Archaeological Surveys and Excavation at the Ministry of Heritage and Tourism, Sultanate of Oman (15 min.)

43 experts will co-define new guidelines to protect and revive housing in historic settlements of the Arab region

Morocco:
Fez: Naima Lahbil Tagemouati, International consultant in cultural heritage (10 min.)
Marrakesh: Mohammed Akhana, ALOMRANE Group (10 min.)
Taourirt: Barka Bouazza, Director of the National Program for the Enhancement of Ksour & Kasbahs, Ministry of National Planning, Housing and Urban Policy (10 min.)

Palestine:
Hebron: Emad Hamdan, Director of the Hebron Rehabilitation Committee (20 minutes)
Dar El Consul complex in Jerusalem: Amjad Kanaan Taweel, Project manager UN-Habitat Jerusalem (15 min.)

KSA:
El Balad: Lucio Frigo, Director Materia Inc. & Lina Binladin, Architect at the Ministry of Culture, KSA (15 min.)

Q&A (10 min.)

13:00 - 14:00
Lunch

14:00 - 15:35
Part 2
Bahrain:
Muharraq: Noura El Sayed, Project lead architect, Authority for Culture & Antiquities Conservation Department (20 min.)
Egypt:
Al-Darb al-Ahmar Housing Rehabilitation Programme + Esna: Kareem Ibrahim, CEO of Takween (30 min.)
Tunisia:
Hafsia District: Faika Bejaoui, Member of the 'Association de Sauvegarde de la Médina de Tunis' (20 min.)
Ouakalas: Souleifa Aouididi, Director of the 'Association de Sauvegarde de la Médina de Tunis' (15 min.)

Q&A (10 min.)

15:35 - 15:50
Coffee Break

15:50 - 17:30
Iraq:
Revive the Spirit of Mosul: Junaid Soroosh, Chief of Culture Program UNESCO Iraq Office (15 minutes)
Basra: Fabrice Van Teslaar, senior architecture advisor UNESCO Consultant (15 min.)

Yemen:
Cash for Work (Zabid, Shibam, Sanaa, Adan): Laila Haidar, Coordinator of the Cash for Work project at the Social Development Fund HQ (30 min.)

Lebanon:
BERYT + Build Back Better - The Rmeil Cluster: Sarah Saad Project officer, Urban and Housing Policy Coordinator at UN-Habitat Lebanon (30 min)

Q&A (20 min)



Fig.294: Conference schedule - day 3



DAY 3
CONFERENCE

9:00 - 10:30
> Workshop 1

Conservation Management Plan and housing rehabilitation: from inception to implementation

> Group 1 (15 people):
Moderator: Aziza Chaouni, lead consultant ACP + Associate Professor University of Toronto
Rapporteur: Imane Benkirane, ENA Rabat

> Group 2 (15 people):
Moderator:Abdellatif Bouazza, UN-Habitat Head of Country office
Rapporteur: Fabrice Van Teslaar, senior architect advisor UNESCO Consultant (15 minutes)

> Group 3 (15 people):
Moderator: Karim Hendili, Head of Culture Programme UNESCO Regional Office for the Maghreb
Rapporteur: Javier Ors-Ausin, Program director World Monuments Fund

> Group 4 (15 people):
Moderator: Wael Al Ashhab, Head of UN-Habitat Iraq
Rapporteur: Soumyen Bandyopadhyay Director of ARCHIAM + Professor at the University of Liverpool

10:30 - 10:45
Coffee break

10:45 - 12:15
> Workshop 2

Citizen participation and creative financing in housing rehabilitation projects in historic centers

> Group 1 (15 people):
Moderator: Aziza Chaouni, lead consultant ACP + Associate Professor University of Toronto
Rapporteur: Alaa Habashi, chair of the Department of Architecture in Menoufia University

> Group 2 (15 people):
Moderator:Abdellatif Bouazza, UN-Habitat Head of Country office
Rapporteur: Kareem Ibrahim, CEO of Takween

> Group 3 (15 people):
Moderator: Karim Hendili, Head of Culture Programme UNESCO Regional Office for the Maghreb
Rapporteur: Alex Toshkov, Université Euro Méditerranéenne de Fès

> Group 4 (15 people):
Moderator: Wael Al Ashhab, Head of UN-Habitat Iraq
Rapporteur: Noura El Sayed, Project lead architect, Authority for Culture & Antiquities Conservation Department

12:15 - 13:15

Lunch

13:15 - 14:45
> Workshop 3

Land tenure policy and sustainable governance in housing rehabilitation projects in historic centers

> Group 1 (15 people):
Moderator: Aziza Chaouni, lead consultant ACP + Associate Professor University of Toronto
Rapporteur: Turki Gazzaz, Teacher at the King Abdulaziz University

> Group 2 (15 people):
Moderator: Abdellatif Bouazza, UN-Habitat Head of Country office
Rapporteur: Javier Ors-Ausin, Program director World Monuments Fund

> Group 3 (15 people):
Moderator: Karim Hendili, Head of Culture Programme UNESCO Regional Office for the Maghreb
Rapporteur:Alex Toshkov, Université Euro Méditerranéenne de Fès

> Group 4 (15 people):
Moderator: Wael Al Ashhab, Head of UN-Habitat Iraq
Rapporteur: Imane Benkirane, Professor National School of Architecture of Rabat (ENA).

14:45 - 16:15
> Workshop 4

Resilience and reconstruction of housing in historic centers in post-crisis contexts

> Group 1 (15 people):
Moderator: Aziza Chaouni, lead consultant ACP + Associate Professor University of Toronto
Rapporteur: Ana Soave, Programme Management Officer at UN-Habitat

> Group 2 (15 people):
Moderator: Abdellatif Bouazza, UN-Habitat Head of Country office
Rapporteur: Sarah Saad Project officer, Urban and Housing Policy Coordinator at UN-Habitat Lebanon

> Group 3 (15 people):
Moderator: Karim Hendili, Head of Culture Programme UNESCO Regional Office for the Maghreb
Rapporteur: Nabil Ali Munassar, UNESCO Yemen

> Group 4 (15 people):
Moderator: Wael Al Ashhab, Head of UN-Habitat Iraq
Rapporteur: Mohammed El Khatib, Consultant for the urban regeneration of Historic Cairo (Urban Development Fund)

16:15 - 16:30
Coffee break

16:30- 18:10
> Plenary session 2
Conclusions from the 3 sessions

Moderator: Aziza Chaouni, lead consultant ACP + Associate Professor University of Toronto

- Round table rapporteurs workshop 1 (20 minutes)

- Round table rapporteurs workshop 2 (20 minutes)

- Round table rapporteurs workshop 3 (20 minutes)

- Round table rapporteurs workshop 4 (20 minutes)

Q&A session
(15 minutes)

Closing remarks
(5 minutes)


HOUSING
REHABILITATION
IN HISTORIC
SETTLEMENTS OF
THE ARAB
REGIONAL CONFERENCE
HOUSING
REHABILITATION
IN HISTORIC








HOUSING
REHABILITATION
IN HISTORIC
SETTLEMENTS




REHABILITATION
IN HISTORIC
SETTLEMENTS OF
THE ARAB
REGION
إعادة تأهيل المساكن في
المدن التاريخية في المنطقة
العربية
CHALLENGES & OPPORTUNITIES
التحديات والفرص
HOUSING
REHABILITATION
IN HISTORIC
SETTLEMENTS
OF THE ARAB REGION


HOUSING
REHABILITATION
IN HISTORIC
SETTLEMENTS
OF THE ARAB REGION

8B
WEBSITE

The website has been an essential tool to disseminate and promote not only the conference, but the regional conference, but the project as a whole. Aimed at professionals and the general public alike, it outlives the conference by serving as a database for the conference materials, the report, and the contacts of the different experts.



01

Build Back Better - The Rmeil Cluster

Localisation: Rmeil, Lebanon
Program: Rehabilitation of approximately 11,000sqm of damaged urban area
Client + Partners: Municipality of Beirut, Directorate General of Antiquities, UN-Habitat Country Programme Lebanon, Live Love Lebanon with funding from impact Lebanon, Embassy of Japan
Team: UN-Habitat Country Programme Lebanon
Status: Completed 2022
Click here to learn more (coming soon)

02

Beirut Housing Rehabilitation and Cultural and Creative Industries Recovery - BERYT

Localisation: Beryt, Beirut, Lebanon
Program: Rehabilitation of 3km radius from the Beirut Port explosion site
Client + Partners: Governor of Beirut, Municipality of Beirut, Directorate General of Antiquities, UN-Habitat Country Programme Lebanon, the Forward Emergency Room



Fig.295: Screenshot from the website https://www.hrhusar.com/



8C
STUDENT COMPETITION

As a means to integrate academic actors and spark the students' interest in heritage, the competition aimed to investigate the housing stock of a given historic center from the participant's choosing and propose an innovative rehabilitation of a house.

The students were asked to follow the following steps:

Step 1: select a house in need of restoration located in a historic urban center within your city or country (restricted to the mena region).

Step 2: document its architecture and surroundings, including its current/ potential future users.

Step 3: investigate the reasons for its derelict state.

Step 4: propose innovative ways to revive it and encourage residents to stay in it/ return to live in it.

Step 5: submit your design and ideas by filling out this form + email it to us before november 16th 2023!

Top prize: a trip to attend the un-habitat conference in morocco on december 13-14-15, 2023!
Second prize: 500 us$
Third prize: 300 us$

Fig.296: Competition poster



Fig.297: Winning entry



5/7

PLANS OF THE PROPOSED HOUSE

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SECTIONS AND ELEVATIONS OF THE HOUSE IN ITS CURRENT CONDITION





09
Appendices

Appendix A
QUESTIONNAIRE SAMPLE

QUESTIONNAIRE KSA
EL BALAD
Filled by Lucio Frigo

Subject	Question	Answer
Introduction	Name, current position, current institution	KSA - Jeddah Historic District Lucio Frigo Chief Development Officer Jeddah Historic District / Ministry of Culture Tunisia - Medina Design and Regeneration Laboratory Lucio Frigo Chief Executive Officer MATERIA Real Estate
	Education (degrees), training, expertise	Education - BA Economics and Finance, Bocconi University, Milan (IT) - MA in Cultural Studies, Goldsmiths College, University College London, London (UK) - MA in Contemporary Music Composition, Goldsmiths College, University College London, London (UK) Education Programmes Sponsored - Harvard GSD, *Atlas for the Tunis Medina*, 2023 - University of Italian Swiss (USI), *Building Realities (Affordable Housing)* workshop with Francis Kéré, Mozambique, 2018 - University of Italian Swiss (USI), *Building Realities (Community Centre)* workshop with Francis Kéré, Mozambique, 2016
	Total years of experience in the heritage preservation field	- 20 years in real estate development and urban regeneration - 10 years in heritage preservation field
	Papers, publications or website showcasing past and current experience	- *Atlas for the Medina*, the Tunis Medina as a Metaphor for Regeneration, Lars Muller Publishers, 2025 - *Jeddah Al Balad, a Gateway*, insert into Brownbook Magazine, 2023 - *The Cultural Landscape of the Farasan Island*, Rizzoli, 2025 - *Souffles-Anfas: Publishing as a Collective Project*, (and its influence on the built environment), Cambridge Architectural Journal, Scroope 31, Lucio Frigo, 2023 https://www.arct.cam.ac.uk/file/scroope31architecturalmagazinesaroundtheworld - *Hassan Fathy, Architect of Tradition*, Mille World Magazine, Lucio Frigo, 2018 https://www.milleworld.com/hassan-fathy-architect-tradition/ - *Dubai Reimagined, Deira in Dubai | Observations of an Urban Framework*, Lucio Frigo, 2017 https://materiainc.com/content/uploads/2015/12/LF-Pages-from-Charrette-Book-May-28-Final-Version-FOR-WEB.pdf
	How do people feel about living in a historic center in your country? Is there a stigma attached to it?	Historical centers have been gradually abandoned in the second half of the XX Century in both Jeddah and Tunis as families started looking for the 'comfort' provided by imported modern dwelling forms such as the European villas and apartment blocks accessible via cars and protected by walls. Parallels between Jeddah and Tunis can be built although a key difference is that whereas in Al Balad (Jeddah Historic District) empty housing stock was reabsorbed by the demand of people coming from abroad looking for cheap accommodation and pedestrian lifestyle (insofar car ownership was/is not attainable among others). In Tunis the immigration onto the Medina came from the rest of the country - thousands of families moved from the inland rural communities and occupied the old bourgeois houses via a collective form of inhabitation known as Oukela (with all problems that implied). In Tunis there is no strong stigma where instead the Medina community is known to be very cohesive and having strong identity; new generations especially are seen as being very proud about their Medina. In Al Balad there used to be a stigma

		- And more Tunis Medina Research and design has been completed on the five properties that formed the subject for the Harvard GSD year long project. Among these the following two have the highest potential for a prompt rehabilitation: - Dar Ennaifer (to showcase, following the students design, how an old large house can be converted into a community/cultural centre for the local community) - Dar Fatma (to showcase, following the students design, how two houses can be converted into a series of apartments centred around common kitchen, leisure and hosting facilities)
	Nature of the projects (Research, masterplan, rehabilitation, other…)	Jeddah Historic District (Public Funded full Regeneration of a 2.5 sq.km of city centre) The above projects are pilot projects part of the Regeneration Plan for 2.5 sq.km of the old city including the 1 sq km protected by UNESCO (core area and buffer zones) and adjacent areas to be protected and regenerated in order to complement the offering of the old city and establish a thriving corniche park and neighborhood. Tunis Medina (Research, Design, Rehabilitation) The project organised by Harvard and MATERIA is built around 2 Design Labs under the leadership of Prof. Gareth Doherty (Director MA in Landscape Architecture and Associate Professor of Landscape Architecture) and Prof. Francesca Benedetto (Design Critic in Landscape Architecture) collaborating together to imagine new ways to regenerate the Medina in Tunis, specifically looking: a) the public realm, and b) selected buildings that are under the control of the Tunis Municipality. Out of the 5 projects designed by the students, Dar Ennaifer has been chosen to be the subject of an actual rehabilitation to bring forward the creation of a community/cultural centre for the youth of the Medina.
	Client name	Jeddah Historic District Ministry of Culture, Jeddah Historic District Tunis Medina MATERIA Holdings
	Partners names	Jeddah Historic District Allies & Morrison, Buro Happold, School of Traditional Arts Tunis Medina Harvard Graduate School of Design (Harvard GSD), Ecole Nationale d'Architecture et Urbanisme (ENAU), Association de Safeguard de la Medina (ASM), Tunisian Ministry of Culture (Department for the Preservation of the Medina)
	Project key phases and their timeline (describe the project phases and their timeline in months)	Jeddah Historic District 2018-2022 Phase I (Assessment, Masterplan, Entity establishment, pilot project, rehabilitation of lagoon park, construction of first two museums, rehabilitation of public realm in various areas, creation of popular events and art festivals in the area) 2023-2026 Phase II (restoration of hundreds of old houses in the nominated core area, completion of new harbour and marina construction, full rehabilitation of infrastructure in the area, servicing of lands in north and south communities (new communities), and more) 2027-2030 Phase III (completion of full restoration of all heritage houses, completion of north community, and full rehabilitation of corniche and mangrove park, rehabilitation of many areas outside of the buffer zones being part of the 2.5 sq.km jurisdiction) Tunis Medina 2022: research phase and establishment of agreement between Harvard GSD and

Appendix B
WORKSHOPS RESULTS SAMPLE

WORKSHOP 1: Conservation Management Plan and housing rehabilitation: from inception to implementation

Room 1			
	GROUPE 1	**GROUPE 2**	
Q1 : Define briefly the possible goals for a CMP involving housing rehabilitation in historic centers of the Arab region (What should it aim to achieve?)	*To ensure sustainable reuse of built heritage	*الحفاظ على تاريخ و ذاكرة المدن الصيانة و الحفاظ على الموروث المادي و اللا مادي للمدن	*Preservir material a
	*Ensure new development is consistent with the heritage	*المساهمة في تنشيط الاقتصاد والسياحة *الحفاظ على المدن العتيقة و تنظيم و ضبط CMP	*Contribu
	*Full ensure integration and participation of stakeholders	*المحافظة على التراث المعماري و العمل على تكيفه مع محيطه العمراني المطور و تثمينه و إعادة توظيفه و التاكيد على إبقاء السكان روح المدينة و ذاكرتها	*Preservir developed emphasizi of the city
	*Preserving ancient cities and organizing and controlling CMP	*محافظة و تثمين تراث	*Preservir
Q2 : Define the phases of such a CMP.	*Data collection to proper storage	*Documentation,survey, analysis, classification *Public participation *Interventions *Governance	*Diagnosi framewor
	*Data analysis to identify challenges opportunities/heritage value	*التوثيق ، الدراسة ، التحليل ، التصنيف *المشاركة العامة *التدخل *الحكامة	*Sensitiza inventory programm
	*Intervention management plan	*التشخيص *التوثيق *التصنيف *الإطار التعاقدي *التدخل *التشخيص اليومي *تحسيس الساكنين من أجل ... الموجود (القاعدة)	*Diagnosi buildings structure. beneficiar
	*Action to a financial plan	*جرد للمباني و تصنيفها من أجل برمجة التخطيط *التشخيص (التوثيق -العقار....) *تصنيف المباني (اجراء خبرة ....) *القيام بالتركيبة المالية *تحديد الشركاء +مع إشراك الأسر المستفيدة	*Discussi residents
	*Ensure Governance	مراحل الخطة : *التشخيص ، جمع المعطيات ، خلق قاعدة معلومات ، المعاينة الميدانية *تصنيف المباني حسب حالتها الإنشائية و قيمتها المعمارية و التاريخية *تشريك السكان المعنيين و تحسيسهم *إعداد برامج التدخل مع التركيبة المالية	*Docume
	*Evaluation	* التوثيق *طريقة التدخل والمعالجة *مناقشة خطة التدخل مع جميع الجهات المقيمة والمجتمع والساكنة	
Q3 : Are there disadvantages to a CMP, which can be viewed as a top-down approach?	*A fixed rigid CPM not flexible	*من المستحسن اشراك المستخدمين في المشاريع للمحافظة عليها بعد انجاز ها	*It is reco them afte
		*تجنب مشاركة المستفيدين *الانفصال عن الواقع وعدم القابلية للتطبيق *الحلول الافتراضية الغير مقبولة من الساكنة المحلية تتعرض للمقاومة من الجهات الفاعلة	*Avoiding *Detachm *Hypothe population
	*Possibilities of human error selection projects	في كل الاحوال يجب ان يشترك جميع الجهات والمعنيين في خطة الحفظ	*In all cas the conse
		*سلبيات القرارات الفوقية بدون اشراك المعنيين بالامر ستكون النتيجة عدم تبني للمشروع رغم اهميته واجابته وهذا ينعكس حتما على ديموميته واستدامته	*Disadvar Without t that the p response, sustainabi

EXERCICE 1 : What is a CMP?		
GROUPE 2	**GROUPE 3**	**SUMMARY**
erving the history and memory of cities, preserving the ial and immaterial properties of cities	*Sense of ownership	*Foster a sense of ownership
ributing to revitalizing the economy and tourism	*Community led (dwellers) process	*Community driven process
erving the architectural heritage, working to adapt it to its oped urban surroundings, valuing it and reusing it, and asizing that the residents preserve the spirit and memory city. erving and valuing heritage	*Restore and protect the housing urban fabric typology and land subdivision *Enable the residents por housing opportunities *Keep the multiple livable fonction roles of the historic center	*Challenge lack of flexibility to adapt and change
nosis, documenting the classification of the contractual work, intervention, daily diagnosis	*Infrastructure and patology analysis	*Involving all stakeholders
itization of residents to update the existing (base), tory of buildings and their classification for planning amming.	*Public consultation	*Heritage:tangible,intangible
nosis (documentation of the property....) Classification of ngs (conducting experience....) Conducting a financial ure. Identifying partners with the involvement of iciary families.	*Historic assessment and research site analysis	*CMP should be flexible
ussing the intervention plan with all residents, society, and nts umenting the method of intervention and treatment.	*The stages of the plan are diagnosis, data collection, creation of an information base, field inspection, classification of buildings according to their structural condition, architectural value, historical housing partnership...and sensitivity to the preparation of intervention programs with a financial structure.	*Financial plan action plan
ecommended to involve users in projects to maintain after they are completed		*Documentation diagnosis types of intervention
ding the participation of beneficiaries. chment from reality and inapplicability. othetical solutions that are not accepted by the local ation are exposed to resistance from the actors.		*Challenge to create a top down approach
cases, all parties and stakeholders must participate in nservation plan	*Unflexibility to manage change	*Preserving shape and function and demographic
dvantages of overhead decisions: ut the involvement of those concerned, the result will be he project will not be adopted despite its importance and nse, and this will inevitably reflect on its permanence and nability.		

Q4 : Cite a project that has developed a successful CMP among the case studies presented yesterday.	*Lebanon project	*مشروع فلسطين الخليل *مشروع الدرب الاحمر *مشروع اليمن *تجربة نموذجية بالنسبة لعرض الذي خص القصور والقصبات تجربة مشروع الخليل بفلسطين *عرض القصور والقصبات بالمغرب *التجربة الفلسطينية هي التجربة التي اراها حققت الاهداف رغم المشاكل السياسية *تجربة الرحيل ببيروت *تجربة بالروضة *تجربة الدرب الاحمر بالقاهره *من خلال تجارب الامس تم عرض 18 تجربة في الحفاظ على التراث وكل خطة ومشروع له مميزات وعناصر نجاح *تجربة اعادة اعمار الخليل *تجربة مشروع الوكائل بتونس *تجربة الدرب الاحمر بالقاهرة	*Pales *Al-Da *Yeme *An ex palace *View *The P despit *The e the ex *Throu preser has ad *The experi of the
Room 1			
	GROUPE 1	**GROUPE 2**	
Q1 : What are the issues that CMP teams face when developing content for a historic site that includes housing?	*Access to stakeholder Data *Allowing access to data *The legal status of ownership *Time vs urban economic development	*التمويل و التواصل مع الجهات المعنية *للجهات الرسمية... تحاول فرضها *الوعي المجتمعي	*Prese the hu
Q2 : Discuss the issues of architectural significance of housing versus monuments and public buildings: how does one rehabilitated houses of no great heritage significance?	*Revival of urban heritage	*يتم التعامل مع البيوت وفق النسيج العمراني و المجتمعي للمدينة *المحافضة على الموروث المعماري مرتبط بالمحافظة على العنصر البشري و السكان الأصليين *يتم تعامل مع البيوت وفقا نسيج العمراني للمدينة	*Hous fabric
Q3 : In which situations is a CMP most suited? What are the conditions that make a CMP possible as a planning solution for heritage?	*Aligned with the master plan *Part of high vision *Proper communication	*المتابعة واستدامة المشاريع *إشراك الجهات المعنية و المجتمع و الساكنة في إعداد خطة المحافظة فريق	*Follo *Involv prepar *Multi *Capa
Room 1			
	GROUPE 1	**GROUPE 2**	
Q1 : How does one go from a CMP document to its implementation in a historic center in the Arab Region?	*Capacity buildings /Qualifications *Endorsement to approval from top decision-makers *Governance /Responsibilities distributions	*وضع آلية للتنفيذ *وضع إتفاقية شراكة *كيف يمكن الانتقال من الخطة إلى التنفيذ *نقل الخطة إلى الجهات المشاركة *لجنة للإدارة و التنفيذ المخططات المالية *برامج تنفيذية في إطار زماني	*Estab *Draw *How *Trans *Mana *Finan *Execu *Track
Q2 : What are the problems architects/planners/heritage specialists/clients face when trying to implement a CMP that involves interventions on housing located in a historic center?	*Accessibility *Varios occupancy status	*إشكال التمويل *إشكال انخراط الأسر *مشاكل التنفيذ *الوعي، مسألة الثقة *الوضع السياسي *التنسيق مع الإدارة *الوضع المالي	*Finan *The p *Imple *Coor *Politi *Finan *The b
Q3 : In which situations does CMP implementation work (i.e., what are the administrative and governance structures needed to ensure a smooth implementation?)	*Decentralize the decision-making *Integrated process	*خطة مرنة *خطة تشاركية *خطة إلتزام الشركاء *الرصد والمتابعة التشاركية للعمل *في أي حالات تعمل الخطة التنفيذية (الهيكل الإداري و الحكومة) *المرونة	*Flexib *Partic *Partn *Partic *In wh structu

alestine Hebron Project, l-Darb Al-Ahmar Project, emen Project n exemplary experience for the presentation of palaces and laces, the experience of the Hebron project in Palestine iew palaces and kasbahs in Morocco he Palestinian experience is one that I see achieved its goals spite the political problems he experience of leaving in Beirut, the experience in Rawda, e experience of the Red Trail in Cairo hrough yesterday's experiences, 18 experiences were esented in preserving heritage, and each plan and project s advantages and elements of success he experience of the reconstruction of Hebron, the perience of the Al-Wakael project in Tunisia, the experience the Red Trail in Cairo	UNESCO MOSOL Egypt Alazhar Park	*Palestine, *Beirut, *Alazhar park, *Mosul UNESCO project
EXERCICE 2 : CMP development challenges		
GROUPE 2	**GROUPE 3**	**SUMMARY**
reserving the architectural heritage is linked to preserving e human element and indigenous people	*Tension between formalized framework and local reality *Focus on social infrastructure that serves and supports housing	*Time may be too short *Living cultural landscape rather than a monument *Access to data and stakeholders
louses are dealt with according to the urban and societal bric of the city	*Need for public leadership to implement a CMP (political will) *Lack of political will and funding to implement CMPS	*Challenge :involving the community for the longevity of projects (CMP) *Resilient plan with suitable solutions
ollow-up and sustainability of projects nvolving concerned parties, society, and residents in eparing the governorate plan Multidisciplinary team Capacity building *Raising awareness	*Public leadership importance for establishing and implementing a CMP *Recognize contribution and value of urban fabric composed of housing in old city centers	*Tension between a formal system and the reality on the ground *Disadvantage: all parties included specially in implementing *The social significance of houses beyond its arch. significance
EXERCICE 3 : CMP implementation challenges		
GROUPE 2	**GROUPE 3**	**SUMMARY**
stablish a mechanism for implementation Drawing up a partnership agreement low to move from plan to implementation ransferring the plan to the participating parties	Involve local authorities from the very beginning for them to truly understand and champion the implementation	Political support
Management and implementation committee inancial charts xecutive programs within a time frame racking	Lack of trust in public authorities creates issues for accessibility and info gathering	Public authorities involved in the process Capacity building during the process
inancing problems he problem of family involvement mplementation problems *Awareness, issue of trust oordination with administration olitical situation inancial situation The balance between intervention vs expectation of users	Invest in capacity building and training initiatives as a component of CMP Mechanism to use public money on private properties	Intervention vs expectations Feedback loop to address problems during implementation
lexible plan articipatory plan artners commitment plan articipatory Monitory and follow-up working on n what cases does an executive plan work (administrative ructure and government)?*Flexibility	Fragmented and legally difficult to prove personal rights Establish a public entity in charge wy autonom	Questions about ownership (who is incharge of a house?) Create follow-up committees to address issues

Q4 : Discuss solutions/tools needed to tackle the challenges you found.	*Feedback process *Monitoring to control evaluation *Adoption to best practices to lessons learned	*تصور مشترك *السياسة المشتركة المنخرطة تستدعي إحترام إلتزامات المتدخلين *the vision *the participatory approach *governance	*Sha *An thos *Spe
Room 1			**EXERCICE**
	GROUPE 1	**GROUPE 2**	
Q1 : Are there any specific aspects/goals of a CMP that should be stressed more when dealing with housing rehabilitation in historic centers? [consider contexts with little funding and subject to a crisis]	*Stakeholder engagement *Integrity *Stakeholders inclusivity	*تحديد الأولويات *خطة عمل للتدخل العاجل نظرا للخطر الوشيك على المارة (الواجهات المتداعية) *المحافضة على الأصالة عند التدخل	*Def *An dang *Ma
Q2 : Are there good strategies to address the challenges one might face while developing a CMP dealing with housing rehabilitation in historic centers?	*Feedback process evaluation *SWOT Analysis	لجنة يقظةمن اجل التتبع اليومي من أجل ضمان نجاح الخطة و إزالة العراقيل	*A c succ
Q3 : Conclusion points: Are CMPs useful/realistic in developing world contexts? In contexts of crisis or reconstruction?	*Yes if is risk management plan is embedded (Palestine is the hope)		*Ens own

*Shared perception *An engaged joint policy requires respect for the obligations of those involved *Special solutions to meet challenges	Establish a regeneration-focused entity with an autonomous budget that includes local authorities (IE…on the board, etc)	how to use public funds on private property? Lack of trust in public agencies Investing in capacity building from the beginning +Holistic + inclusive approach
ICE 4 : Co-developing guidelines for CMP suited to housing in historic centers		
GROUPE 2	**GROUPE 3**	**SUMMARY**
*Define the priorities *An action plan for urgent intervention regarding the imminent danger to passers-by (dilapidated facades) *Maintaining authenticity when I intervene	*Integrate and include the needs of contemporary dwellers in the architectural guidelines *Ensure social/affordable housing ...is...of any cmp	Stakeholder engagement from the beginning of the project Create risk management plans
*A committee is responsible for daily monitoring to ensure the success of the plan and remove obstacles	*Developed architectural guidelines that are easy to use and built on actual case studies *Establish local teams within agencies ....case of funding/ fund-raising and trust-building with local communities	Feedback loop evaluation process Daily follow-up by a designated committee Set priorities for financial plan
*Ensure financial incentives and mechanisms are available to owners but also occupiers	*Protect and create mechanisms for non-owner occupiers to remain integral ...of local communities (while ...optimal mix)	Integrate dwellers in the process Ensuring enough affordable housing Promote financial incentives

WORKSHOP 2: Citizen participation and creative financing in housing rehabilitation projects in historic centers

ROOM 1	GROUPE 1	
Q1 : Describe strategies that designers and decision-makers can employ to involve residents (renters or owners) and citizens in the design process of housing rehabilitation projects and to insure equity and diversity.	*Stakeholders engagement, taking into consideration: the local community and gender balance young generation *Unskilled labors *Linguistic tangible / intangible	
Q2 : What are the advantages of involving citizens living in a historic center or residents themselves in the rehabilitation process of housing in historic centers?	*Contribute to the success of the projects *Raise satisfaction *Contribute to sustaining the heritage	*Simplifying th
Q3: What conditions facilitate the integration of collaborative and consultation processes in the rehabilitation of housing in historic centers?	*Government approval *Facilitation *Stakeholders awareness *The capability of a professional team to communicate advocacy and some problems	كان معيات الفاعلة و
Q4 : Can a consultation process be fair? Can all voices be integrated and heard?	*It depends and debatable but consultancy should take into consideration overcoming the different barriers and provide different incentives to attract wider participation	طاءهم الفرصة ل إلى حلول
SUMMARY	*Involve all sectors of the community *Provide all possible government support *Citizen-led organisations *Anthorities schools youth *Incentive loans	*Government *Reduce barrie *Allow stakeho *Create and pr *Full consultat

ROOM 1	GROUPE 1	
Q1 : Describe different financing models for housing rehabilitation in historic centers in the Arab region, suitable for countries with varying GDPs. Specify the type of houses rehabilitated in each model (for residential use, for other revenue-generating programs such as hotels, for cultural programming).	*Housing grants incentives *Revenue generality shared responsibility *As well as cultural programs to spread knowledge *Indirect financial support *Different packages *Long-run project to support the other programs,funds,continues	
Q2 : Discuss the advantages of each financing model.	*Dwellers, private *Raising the sense of responsibilities *The commitment toward preserving *Revenue-generating programs will the infrastructure to contribute to orange economy to city sustainability	ستهدفة
Q3: Describe the disadvantages of each financing model.	*Slower process, conditions affect the decision ..of to benefices,eligible, social *Affect the duration	
: Describe methods to encourage the private sector to invest in houses located in historic cente	*Packages, initiatives, incentives, low rates, soft interest rate *Specify the social responsibility to invest in heritage	
SUMMARY	*Model involving international Govt, private, cooperative, finance *Combination of grant , loans *support in kind, incentives *Owner stakeholders to contribute to shared costs *Diff packages made available,short, long term *Specific finds eg sustainabinity package	*Commitment *Large-scale d funding

ROOM 1	GROUPE 1	EXERCICE 3 : Co-developing
Q1 : What are the best practice guidelines for including citizen and resident participation in the rehabilitation process of housing in historic centers?	*Capacity building of local communities in Yemen and Egypt -->Part of the process	*Establishing a people *Inclus among the resi extensive awar *Supporting th supervisors thr specialists in ir engineers, and *Plan *Most o collide with rea *Management estate problem
Q2 : What are the best practice guidelines for innovative financing in the rehabilitation process of housing in historic centers?	*To provide various financial packages to enable flexible adoption and to match wider benefits *Ensuring conditions for…..	*Creating finar ...matches for f *A partnership sectors accordi *Establishing f qualification pr
SUMMARY	*Provide the best brands to vulnerable groups *Awareness *Capacity building *EST partnership of private, public sector *Exhibitions to enhance awareness	*Capacity build participation ir facilitation allo *Flexible packa making *React

EXERCICE 1 : Citizen Participation		
GROUPE 2	**GROUPE 2**	**GROUPE 3**
*بنايات للاندماج *للتمويل والمساعدة لتقني الهندسي *وقت التنفيذ الرابع	*Buildings for inclusion *For financing and assistance to engineering technicians *Execution time iv	*Accessibility to regular meetings for feedback and support *Rotational design review panel (DRP) with a diverse group of members *Establishing citizen-led organizations to support each other and share info etc *Involving schools and youth to become ambassadors of their heritage
ng the problem solving	*Contribute to sustaining the heritage	*Foster long-term commitment to the rehabilitation and management
*سؤال عن الظروف لمساعدة عملية مشاركة السكان *ادراجهم في جميع مراحل التصميم والتمثيلية... *اعتماد على القيادات المجتمعية والمؤثرين والجمعيات المؤثرة ميدانيا في التراث	*Question about the conditions to help the population participation process *Including them in all stages of the plan and representing... *Relying on community leaders, influencers, and active and influential associations on the ground in heritage	*Effective involvement of the community in decision-making and integrating local professionals
*سؤال 4: هل عملية التشاور ... التدقيق في اختيار او تحديد الفئات المستفيدة واعطاءهم للمشاركة . يمكن ان تعطى مؤاشرات ... للوصول إلى وتصميم يناسب الاغلبية	*Question 4: Is the consultation process... Scrutinizing the selection or identification of the beneficiary groups and allowing them to participate can give indicators... to reach solutions and designs that suit the majority.	*The process can be fair but the results may not serve everyone
ent facilitation arriers team with advocacy skills keholders to enhance participation d provide resources ultation	*The team should include representatives with diverse skills *Effective integration *Other advantages *Technical expertise	*Private sector government needs to be intensive *Balance administration + others gain stakeholder confidence *Adds value satisfaction
EXERCICE 2 :Creative Financing		
GROUPE 2	**GROUPE 2**	**GROUPE 3**
*تمويل حكومي من خلال صناديق *تمويل قطاع خاص استثماري *تمويل قروض... *تمويل منح *تمويل تشاركي تعاوني	*Government financing through funds *Private sector investment financing *Loan financing *Grant funding *Collaborative participatory financing	*Source of financing *Governmental *International *Private sectors with social responsibility *Owners *Type of financing *Grants *Form of financing ;collaborative financing *Dedicated to different projects
مزايا : *منح تتناسب مع محدودية الدخل *قطاع خاص استدامة .... *تشاركي القروض لديه إمتداد من خلال ....المستهدف	*Grants commensurate with limited income * Private sector sustainability.... *The loan shark has an extension through... targeted	*Loans *gentrification over-reliance on tourism *Allowing people without funding to contribute to the local economy
سلبيات : *المنح غير كافية لأعمال التدخل *القطاع خاص .... *القروض المشتركة لها إمكانية عدم الاسترداد	*Grants are insufficient for intervention work *Private sector.... * Shared loans have the possibility of non-refundability	*Grants *How to be attached to conditions to avoid speculations *Living in the city center is possible for poor families
*تحفيز القطاع خاص باعفاءات ضريبية.... *تسهيل الاجراءات	*Stimulating the private sector with tax exemptions *Facilitating procedures	*Partnerships *Private sector investments *Encouragements *Create the prestige of the historic city
nent of stakeholders with private funding ale development with international/Govt	*Soft interest rate *Tx exemption *Share in profit *Social value added CSR *Prestige valve	*Status of an individual may affect their loan status and ability to contribute *Gout funding affected by change GDP slowdown *Danger GF non Repayment *Problem of gentrification
ping Guidelines for Citizen Participation and Creative Financing Suited to Housing in Historic Centers		
GROUPE 2	**GROUPE 2**	**GROUPE 3**
ing appropriate grants for low-income clusion and formation of the labor force residents of these homes *Conducting awareness-raising operations in the field g the capabilities of craftsmen and s through training workshops *Training in intervention *Studies offices, and contractors ost of it is unrealistic *Great ambitions h reality *Absence of digitization nent slow wages *Administration *Real blems	*.....وضع منح مناسبة لمحدودي الدخل *إدراج و تكوين اليد العاملة من بين قاطني هذه الدور *القيام بعمليات تحسيس واسعة و ميدانية *خطة *أغلبها غير واقعية *الطموحات الكبيرة و انصدامها بالواقع *غياب الرقمنة * بطئ الاجراءات الادارية *الإدارة *المشاكل العقارية *دعم قدرات الحرفيين و المراقبين من طرف ورشات تدريبية *تأهيل مختصين في التدخل *مكاتب الدراسات و المهندسين و المقاولين	*Practice guidelines Panel committee --> represents the society as a whole Communication : +virtual --> biggest scale -impersonal *Communication --> Virtual biggest scale *Raise the awareness of the project -->story telling
financing funds for these operations	*خلق صناديق التمويل خاصة بهذه العمليات	
for financing...in qualifying processes ship between the public and private cording to the tolerance book ing flexible mechanisms for financing on projects	*...مباريات للتمويل ...في عمليات التأهل *شراكة بين القطاع العام و الخاص حسب دفتر التحملات وضع اليات مرنة لتمويل مشاريع التأهل	*Prestige of the city center
building *Effective community on in Yemen Egypt *Top-down allowing participation possible ackages agile for bottom up decision eactive the individual needs		*Ensuring agencies perfect community management *Effective communication *Social media platforms story... *Prestige capitalization change perception *Financial *Negotiate terms by gout to ensure structure *Design grants building in community safeguarding benefit

WORKSHOP 3: Land tenure policy and sustainable governance

ROOM 1	GROUPE 1	
Q1 : Describe policy strategies and/or bylaws that designers and decision-makers can propose to address land tenure issues in the rehabilitation of housing projects.	*To develop the legal frame work, to adopt multi ownership *Formalize contract agreement	صناع القرار مباني المهجورة
Q2: What are the advantages of each policy strategy and/or bylaw? **Q3**: What are the disadvantages of each strategy and/or bylaw?	*Possibility of legal issues *Time consuming *Dependey on individuals approval *Synchronizing	العقارات و تثمار و رفع تأهيل موارد المالية ...و هذا يمثل
Q4 : Which policy strategies and/or legal tools can facilitate the integration of housing in a state of ruin or abandoned housing within conservation projects of historic centers?	*Encouraging adaptive reuse *Incentives to encourage occupation of abandoned houses *Reuse abondend houses for communal pruposes	عداد برنامج لإعتبار الإدماج
Q5 : What conditions (socio-economic, governance, UNESCO listing, etc.) facilitate the implementation of new policies regarding land tenure in historic centers?	*Socio-economic -->Provide direct benefits *Mutual interest	كز التاريخي لات مهمة لتركيز ت التقافي
	*Recognition of public entities as legitimate owners	*Establishme certain rehab

EXERCICE 1 : Land Tenure		
GROUPE 2	**GROUPE 2**	**GROUPE 3**
*الإستحواذ *لوائح و إستراتيجيات التي يمكن للمصمم و ص إقتراحها *قوانين توضح العلاقة بين المالك المهمل للمبا *إنتزاع الملكية للمصلحة العامة *مشروع المباني المتداعية للسقوط *تفعيل ... تهديد	*Prevent change in land subdivision *Collect or divide the original land tenure to protect the urban fabric *Conssissions *Long lease *Regulations and strategies that the designer and decision-makers can propose *Laws clarifying the relationship between the negligent owner of abandoned buildings *Expropriation of property for the public interest *Project dilapidated buildings to fall *Activate... Threat	*Title assembly from multiple owners to one *Create a leasehold system to restore and use sites,while administering sites for a long term period
المزايا: التصفية العقارية للملكيات المتشعبة و تحديد الع مجال التدخل و حوز الأراضي إمكانية الإستتما النقاط السودا ء بالنسيج العمراني و إعادة التأهيل العيوب : *عدم قدرة السلط المحلية من التدخل لقلة الموار و الإمكانيات *بعد الانتزاع يكون في أغلب الأحيان الهدم ...و مشكل بيئي كما يهدد النسيج العمراني	Advantages: Real estate liquidation of complex properties, determining real estate, the scope of intervention, land acquisition, the possibility of investment, removing black spots in the urban fabric, and rehabilitation. Defects : *The inability of local authorities to intervene due to lack of funds and capabilities *After expropriation, there is often demolition...and this poses an environmental problem and threatens the urban fabric	*Financing restoration wors in exchange of use *Advisory departement to offer support and advice to home awners on available legal tools
*إستراتيجيات و سياسات و الأدوات *لا بد من تحديد مجال التدخل العمراني و إعداد كامل و شامل للتأهيل العمراني ياخد بعين الإعت الإجتماعي و الإقتصادي للساكنة الاصلية	*Strategies, policies, and tools *It is necessary to define the scope of urban intervention and prepare a complete and comprehensive program for urban rehabilitation that takes into account the social and economic integration of the original population.	*Compulsory purchase for the public good
*دور يونيسكو مهم و خاصة في إطار المركز ا المصنف ثرات عالمي و الذي يتطلب تمويلات سياسة عامة للمحاظة على الثرات و الموروت والإجتماعي	*The role of UNESCO is important, especially within the framework of the historical center classified as world heritage, which requires important funds to focus on a general policy for the preservation of cultural and social heritage.	*UNESCO listing as a backup that projects heritage sites *Local landmarking system
nment of legal ownership to make habilitation possible	*Importance of UNESCO listing as a protection system to incentivize enactment of legal measures for the preservation	*Incentivise awareness of importance of hosing rehabilitation

SUMMARY	*Financing *Restoration *Works *In exchange for use for a number of years	*Title asse new single
ROOM 1	**GROUPE 1**	
Q1 : Describe different models of sustainable governance used during the implementation of housing rehabilitation projects in historic centers of the Arab region. **& Q2 :** What challenges are faced by each model?	*Cooperative model between owners *Gov plus temoins plus professional organisation *Misfat … *Owners were at times …to lease properties *Time management	
stainable governance during post-occupancy housing rehabilitation projects ir **& Q4 :** What challenges are faced by each model?	*Cooperative-run community facilities arco touristic products *Franchise *Remain competitive *maintenance challenges	صر
Q5 : How can a governance model help enforce architectural and urban guidelines both pre and post-occupancy?	*Yeanty rating or ranting *Awards,gov incentives *Cooperative buy in	النمط
SUMMARY		
ROOM 1	**EXERCICE 3 :Co-developing Guidelines for I Governance Suited to Housing i**	
	GROUPE 1	
Q1 : What are the best practice land tenure legal/policy guidelines to ensure the success and longevity of housing rehabilitation projects in historic centers?	*Cooperative *Lease hold *Rental agreement *With communities *Organizing ownership by grouping ownership *Interface with public to monitor train and follow up	
Q2 : What are the best practice guidelines for sustainable governance during the implementation and post-occupancy periods of housing rehabilitation projects in historic centers?	municipality to guarantee ownership and maintenance *Risk to profit sharing	ملك بعد عملية انة

ssembly framework for issurance of a gle title or on changed boundaries	*Adaptive reuse regulations to change use and make rehabilitation possible	*Use ruins as an opportunity for the creation of public space in a dense neighborhood
EXERCICE 2 : Sustainable Governance		
GROUPE 2	**GROUPE 2**	**GROUPE 3**
*الحكامة المستدامة خلال إنجاز مشروع تتبع لجنة مختصة في الإنجاز تؤخذ بعين الإعتبار هيكل مختص كجمعية *التعامل مع المواطن توجيه المواطن	*Sustainable governance during the completion of a tracking project *A specialized committee for completion is taken into consideration *Competent structure as an association *Dealing with the citizen, directing the citizen	*Establishing a physical office for neighborhood assistance and advice
	*Lack of access to sites for monitoring	*Monitoring team,who provide supervision
*إعادة إستعمال المواد البناء الموجودة و العناصر المعمارية الموجودة اليد العاملة المحلية *عدم وجود اليد العاملة *تصور تشاركي	*Reusing existing building materials and existing architectural elements *Local labor force *Lack of labor *Participatory visualization *The Social Support Committee to include and sensitize the citizen to be the primary participant, as he is the first beneficiary	*Capacity building and training *Create and active network of crafts people who help maintain
*التحديات : *لا توجد مقاولة أو مكاتب دراسة لارجاع هذا النم عدم انخراط المواطن *غياب المالك و وجود الأجير هي أهداف هيكل نظرة شاملة	Challenges : *You cannot find companies or study offices to return this style Lack of citizen involvement *The absence of the owner and the presence of the renter are goals Comprehensive fresh structure	*Public program and awareness raising on best practices
	*Training programs for the whole value chain (architects, masons…)on technical matter and also how to interact with the owners *Create …packages for ..private sector to participate in… housing…maintenance *Establish a committee made of citizens and decision-makers	*Establishment of a physical office comprised of architects, craftsmen, and a social workforce to provide assistance (Example ASM) *Assemble network of crafts to support private and public projects all *Corporate buy-in of guidelines through…. And awards …ratting of projects and swocace
or Land Tenure and Sustainable g in Historic Centers		
GROUPE 2		
*تنظيم الملكيات و ذلك بتجميع الملكيات		
*إستعمال طريقة الإيجار مع إمكانية تمليك التملك الترميم من البلدية حتى نضمن التملك و الصيانة		

SUMMARY	*Cooperative model address fragmented ownership and prevision of benefits to owners
	*Benefit of owners and commu (….)need to be addressed thro measures like rent control + fre of …(...)
	*Establish use regulations that ensure housing for occupiers is maintained
	*Establish NGO/association to assemble fragmented ownersh exchange for rent for 1s year
	*Ensuring continuous assistanc and interface throughout the v chain and delivery chain
	*Rent-to-own schemes align th interest of occupiers with the objectives of CMP

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WORKSHOP 4: Resilience and reconstruction of housing in historic centers in post-crisis contexts

ROOM 1	EXER	
	GROUPE 1	GROUPE
Q1: Examine different types of crises (natural disasters, economic downturns, conflicts, etc.) and describe how they impact historic centers, particularly housing [use the case studies of Iraq, Yemen, Lebanon and Hebron]	*Political aisis des fonctions at least a temporary collapse of the government, Economic downturns long-term damage to governance	ما فيها ممثلين الوزارت ات المناخية ، ت عادة البناء واطنين
Q2 : To what extent should historically valuable buildings that have suffered damage during a war be reconstructed? Discuss various approaches, including the ICOMOS (International Council on Monuments and Sites) Australia Burra Charter (which advocates using different materials that can be easily identified as recent) and the "Polish School of Conservation" (which encourages scrupulous reconstruction reproducing past architecture).	*To prepare a criterion management plan that is to be reviewed update	عليها لإعادة تاهيل اني و شبكة الطرقات ي و على طريقة البناء للمبنى و تقييم الحالة الإنشائية للمبنى و ية مختصة
Q3 : How important are the buildings and their materials themselves compared to other aims of reconstruction, such as poverty reduction, identity building, and professional training?	*There is no contraduction.It's a phase of the cycle to restore the identity and to identify the approach of professional training, therefore it' s the creation of different work opportunities	
Q5 : Should we erase all traces of the crisis's damage while rehabilitating, or should we leave traces that can be used for interpretation or presentation, integrating a shared narrative of the traumatic events?	*Human immigration's economic downturns *Natural disasters earth ravages, Flach floods *Political conflicts war, revolutions, and security miss	*Political conflicts war, revolu miss
SUMMARY	*Opportunity for restructuring *Classification of selecting the buildings for reconstruction or repair *Structure conditions *evaluability *Previous documentations	

XERCICE 1 : Historic Centers in Post-Crisis Contexts		
PE 2	GROUPE 2	GROUPE 3
*خلق لجان تتبع من الخبراء بما ف *جرد المباني و كيفية التدخل	*Creating follow-up committees of experts, including representatives of ministries *Building inventory and how to intervene	*Historic sites with later interventions that introduced new materials, were more affected than others
*تحديد الأزمات *الهجرة ، الإزدحام ،التغييرات الزلزال :السياسة المتبعة *تمويل خلق الصندوق الكوارت *التبذير الإداري إنقاذ البشر إعاد *تضامن من طرف جميع المواط	*Identify crises *Migration, crowding, climate change *Earthquake: Policy *Financing the creation of the Quart Fund *Administrative waste saving humans rebuilding *Solidarity by all citizens	
*المعايير التي يجب ان نعتمد علي *المحافظة على الذاكرة *المحافظة على النسيج العمراني *المحافظة على النمط المعماري *القيمة التاريخية و المعمارية للمب كيفية التدخل من قبل *لجنة فنية م	*The standards we must rely on for rehabilitation *Preserving memory *Preserving the urban fabric and road network *Preserving the architectural style and construction method *The historical and architectural value of the building, evaluation of the building's structural condition, and how to intervene by a specialized technical committee	
	*Violence *Obstecales in implimentation immigration	
olutions, and security	*The impact of the crises *Urban transformation morphology, hights, character usage *Growth of some areas *Lost of job opportunities *Introductions of new materials in later interventions eart… *Code of buildings for reconstruction	*Reconstruction after crises to what extent *Memory recovery *Urban and social fabric *keep the same original characters if the documentation exists
	*Structure conditions *evaluability	

ROOM 1		
	GROUPE 1	**GROU**
Q1 : How are reconstruction projects typically structured in historic centers? State key phases and relevant laws, regulations, and policies.	*وضع دفتر تحملات من أجل الحفاظ على المعالم التاريخية	*Create a foundation of kn historic material,data ,site
Q2 : What are the governance models for the development and implementation of reconstruction and repair of housing in historic centers, based on the 18 case studies and your experience in the aftermath of a crisis? (top-down, grassroots, both, etc.)	*مراحل التنفيذ *المعاينة الفنية و أخذ المقاييس *الرجوع إلى الأرشيف في حالة الهدم الكلي للمبنى *إعداد الملف الفني الهندسي و إعداد ملف طلب العروض بإختيار المقاومة المختصة بعد تقييم التكلفة لمشروع إعادة البناء *الإنطلاق في التنفيذ مع المتابعة من قبل مكتب الدراسات المختصة و مكتب المراقبة لتنفيذ الأشغال العمرانية و الطريقة بشكل حسن	*Implementation stages *Technical inspection and *Réglement parasismique *Proposer une charte d'int réhabilitation du tissu anci
Q3 : What challenges are faced by each model?	*خلق شبكة للجمعيات و تأطيرهم من أجل تحديد الأهداف و لعب دور الرقيب	*Creating a network of ass them to set goals and play
SUMMARY	*نموذج الحكامة *تعويض الخسائر للمستفيدين *Data Base for buildings historically, urban, structural *Intervention schedule according to various aspects	*Governance model *Compensation for losses t

ROOM 1		
	GROUPE 1	**GROU**
Q1 : How do you define resilience in the context of historic centers, particularly in relation to housing, in a post-crisis context?	*التحسيس و التوعية بالأهداف المرصودة بين السلطة والمواطن بالمشروع *المبدأ التشاركي و خاصة تمكين المواطن من مواصلة مشروع الحفظ *عدم تبني المشروع *عدم الإنخراط في إنجاز المشروع إ*جراءات لا تتناسب مع حاجيات السكان *وجود عراقيل لإنجاز الخطة	*Sensitization and awarene between the authority and *The participatory principl citizens to continue the co *Failure to adopt the proje *Failure to participate in pr *Procedures that do not su population *There are obstacles to ach
Q2 : Which aspects of resilience can be facilitated by the built environment?	*خلق لجنة اليقضة تقوم بمراقبة و مواكبة الأسر المستهدفة لتحسيسهم باهمية الموروث العمراني الذي يعتبر تاريخ و ذاكرة المدن *المعادلة بين المحافظة على القديم و الذاكرة و التوجه نحو المستقبل. فلإعادة التاهيل يجب أن يؤخذ بعين الإعتبار الحاجيات حتى نحافظ على بيئته السكنية	*Creating a vigilance comm keeps up with the targeted them to the importance of which is considered the his cities. *The equation between pr memory and moving towar rehabilitation must take int preserve its residential env
Q3 : Which design strategies can make historic centers and their housing resilient in the post-traumatic aftermath of a crisis?		*Built environment *change acceptance *Define resilience *The value of buildings and

EXERCICE 2 : Reconstruction Process		
OUPE 2	GROUPE 3	GROUPE 4
knowledge,including te analysis…	*Establishing a book of commitments to preserve historical monuments	*Commencement of implementation with follow-up by the Specialized Studies Office and the Monitoring Office for proper implementation of urban works and method
nd measurements	*Refer to the archive in case of total demolition of the building *Preparing the engineering technical file and preparing the request for proposals file by choosing the relevant resistance after evaluating the cost of the reconstruction project	
ue intervention pour la ncien		
associations and framing ay the role of watchdog		
es to beneficiaries	*Ownership issues *Cost estimation *Capacity buildings *Building conditions *CMP	*The role of civil society *Needs assessment *Community engagement *Awareness camp *Enabler role
EXERCICE 3 : Design Strategies and Resilience		
OUPE 2	**GROUPE 3**	**GROUPE 4**
eness of the goals set nd the citizen in the project ciple, especially enabling conservation project oject n project completion t suit the needs of the achieving the plan	*Procedures that do not suit the needs of the population *There are obstacles to achieving the plan *Understand principles of traditional design and inform them of technological advances to make them anti seismic	*Provide dynamic livelihoods, jobs, schools… *Alongside water, electricity, and those type of basic things *The main thing is to refine the spirit as well, especially since historic cities are characterized by their spatial experiences, and the reconstruction should be beyond the visual identity
mmittee that monitors and ted families to sensitize of the urban heritage, history and memory of preserving the old and wards the future for into account the needs to environment.	*Capitaliser toutes les experiences réalisées au niveau de toutes les medinas à l'échelle internationale	*Créer des organisateures à l'échelle de chaque ville qui seront responsables de la gestion des medinas
and future	*New designs *New material *Use of technology *Capacity building *Create job opportunities, access to activities, infrastructure collective effort united gov and community	*Awareness of true value

CHALLENGES & OPPORTUNITIES OF

HOUSING REHABILITATION IN HISTORIC SETTLEMENTS OF THE ARAB REGION



وزارة إعداد التراب الوطني و التعمير و الإسكان و سياسة المدينة
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المركز الإقليمي العربي للتراث العالمي
Arab Regional Centre for World Heritage (ARC-WH)