

1983 TECHNICAL REVIEW SUMMARY

Renovation of the Hafsia Quarter
Medina of Tunis , Tunisia

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TUN.

Dwellings , offices , shops , and a souk revitalize the old Jewish quarter of Tunis .

Date of Completion : 1976

I. Objectives

To begin the reconstruction of a residential and commercial sector of the Tunis Medina , with particular attention to :

maintaining a harmonious relationship with the existing morphology of the old city ; and

providing suitable housing solutions for the poor from neighboring areas

II. Description of Site

Historical Background

The Hafsia is the former Jewish quarter of Tunis and is located towards the central , eastern portion of the Medina . Its original community began to desert the sector for the newer , European areas during the colonial period . In 1928 , French authorities declared it a health hazard . Many buildings were expropriated between 1933 and 1939 and subsequently demolished . Further destruction occurred during World War II when the site was bombed . After liberation in the 1940's several housing blocks were constructed to the west , and some facilities were added after independence in the 1950's . Renewed demolition occurred during the 1960's while a poor population , including squatters , settled in the remaining derelict houses .

Topography of Site

Topographically the site of Hafsia belongs to the lower section of the Medina . It is rather flat , with a very gentle slope of one per cent . The soil is a mixture of clay and limestone . The watertable lies only 1 to 1.50 meter below the ground . The overall area is about 13.5 hectares (33.3 acres) , but the site of the project under review covers only 3 hectares (8.1 acres) of vacant land mainly located between Bab Carthagena and the former Souk el Hout .

Tunis has a Mediterranean semi-arid climate with an annual rainfall ranging from 300 to 600 mm. In winter , rain laden winds usually arrive from the

north or west , and the Hafsia is therefore somewhat protected by the topography of the Medina .

Local Architectural Character

The surrounding traditional architecture is of course characterized by courtyard houses and narrow winding alleys , although their historical and aesthetic value is not as pronounced as in other parts of the old city . They are also less well maintained .

The modern buildings bordering the site included three four-storey apartment buildings (constructed by French authorities) , a market , two schools and a children's club (built by Bulgarians) , as well as a social club under construction . Given such a varied context , it would have been difficult to integrate any project .

Access

The former Souk el Hout , a pedestrian route running north-south , had been severed by a straight new east-west vehicular avenue which linked the modern quarters of Tunis to Achour Street through Bab Carthagena , passing between the tall , modern buildings . Such a road logically implied a continuing avenue cutting straight across the old city towards the peripheral boulevard to the west .

III. Design and Construction

Architect's Brief and Functional Requirements

The brief focused on the following elements :

the reconstruction of Souk el Hout with about 100 shops . The structural frame was to allow flexibility in the allocation and dimensioning of shops . The structural frame was to allow flexibility in the allocation and dimensioning of shops .

the construction of 22 shops . These were to be adjacent to the dwellings and to face a pedestrian street . Private offices for professionals were to be provided above them .

the building of 95 housing units . Some were to include central courtyards ; others only required a garden or terrace .

The brief as well as the design concepts were elaborated by the Association de Sauvegarde de la Medina (A.S.M) between 1970 and 1973 . The functional requirements were defined after a survey of the neighbouring population's needs by the A.S.M.'s multidisciplinary team including historians , sociologists , economists , jurists , planners and architects . This survey (1972-1975) included detailed studies of :

the social background of projected inhabitants , and their income level ;

their requirements regarding the internal organization of dwellings ;

a commercial report on the shops needed outside the souk .

Design Concepts and Their Evolution

1. Response to physical constraints :

Existing pedestrian circulation axes were to be continued . The new Souk el Hout was to serve as a covered walkway connecting the existing souks of El Grana and Sidi Mahrez . Therefore the existing straight vehicular avenue running east-west , and cutting across the Souk el Hout was to be rebuilt along a zigzag route , while a pedestrian street was established along its former axis . Two parking lots for inhabitants and customers were to be located at either end of the vehicular avenue , near the Bab Carthage and beside the market .

2. Response to user requirements :

Examination of 900 housing applications permitted clarification of the requirements of the anticipated inhabitants , primarily :

- a quiet housing area separated from the noisy commercial district and thoroughways ;

- independent housing units with private entrances ;

- courtyard houses but with the internal circulation protected from winter weather . Some applicants preferred external gardens ; and

- reception area and living room near the entrance , with the kitchen and more private area towards the back .

Since some of the requests were contradictory , they could only be satisfied through the provision of several different types of houses . Each type was defined by its floor area and the inhabitants' income level , as well as their needs and aspirations .

The nature of the shops outside the souk was similarly decided through a survey . They were to include : a restaurant , a cafe , a laundry , barber , a shoe-repair shop , a photographer's studio , etc. , with offices for lawyers , dentists and other professionals on the floor above .

3. Urban design aspects :

Political decision-makers as well as some local and foreign architects and planners would have preferred a high-rise " modern " solution following the then-prevailing occidental models . Despite their opposition and despite the abandonment of rehabilitation plans for the neighbouring areas , the design was developed according to the guidelines set by the A.S.M.

The Souk el Hout serves as a barrier separating the new residential area from the existing tall apartment buildings and the large-scale facilities located to the west . The shopping lane to the south faces lots which will remain empty until a later phase of the reconstruction . The until a later phase of the reconstruction . The recent social centre was incorporated into the new 2- to 3--storey residential fabric , and therefore does not contrast with the surrounding houses . Most of the dwellings are clustered around stone-paved common areas such as small squares and

pedestrian streets where children can play safely .

4. Architectural aspects :

As politicians insisted on a more prestigious operation eliminating the poorest inhabitants , the housing standards had to be raised in the course of the project . Eleven house types were defined , ranging in area from 60 to 163 square meters , and are assembled in different configurations . The major types are :

- courtyard houses with two levels
- courtyard houses with one level
- row houses with individual enclosed gardens
- row houses adjacent to the souk

The units were standardized to facilitate the design and implementation of the project , but were combine so as to avoid monotonous repetition . A few special house types were also included , such as the " bridge houses " spanning some pedestrian streets .

The internal plans were intended to facilitate the appropriation of the houses by their inhabitants . Each dwelling has a small courtyard suitable for doing laundry ; none of the courtyards overlooks the interior house .

The framework of the souk allowed for a great deal of flexibility in both horizontal and vertical dimensions .

5. Decorative aspects :

From traditional architecture the architects retained the concept of white walls contrasting with coloured openings , as well as the feature of a small window to light the interior set just above the exterior doorways .

Structure , Materials and Technology

1. Structural systems :

From the outset the souk was designed with a concrete frame supporting concrete vaults , whereas the housing units and the shops were initially intended to have bearing walls but were built with a post and beam structure because of the water table .

2. Materials :

Structural members are in situ concrete while brick is used for exterior walls and internal partitions . Floors consist of brick filler blocks (hourdis creus) covered in concrete . Internal walls were not initially rendered but were simply painted off-white . Floors are paved with terrazzo tiles .

3. Technology and labour :

The project employs essentially low-tech construction . Most of the

on-site labour was unskilled .

4. Building services :

Heating was to be provided through municipal gas lines . Electricity and telephone cables were to be buried beneath the streets .

Origin of Technology and Professionals

1. Technology , materials and labour force :

The technology used is quite current in contemporary Tunisia . Most of the materials were locally produced and the labour force was 100 per cent Tunisian .

2. Professionals :

Most of the consultants were Tunisians (historians , sociologists , jurists and planners) with the exception of the economists . The architects included both foreigners and Tunisians , while the contractor was Tunisian .

IV. Construction Schedule and Costs

History of the Project

Thanks to the UNESCO/UNDP project for the preservation of historic sites in the Tunis - Carthage region , preliminary studies were jointly undertaken as early as 1970 by the A.S.M. staff and UNESCO experts . The brief and design principles were formulated between 1972 and 1973 , and the final project was concluded in May 1973 . The contractor was commissioned in July 1973 ; construction began at the end of the same year and ended in April 1977 . The project was gradually occupied between 1977 and 1978 . Modifications began to be made soon afterwards , such as those started in July 1978 for the house of Jacques Perez .

Total Costs and Main Sources of Finance

The developer (S.N.I.T.) gives the following cost breakdown :

Housing	1,112,000 T.D.	or	2,224,000 U.S. Dollars
Souks	563,000		1,126,000
Commerce	<u>163,000</u>		<u>326,000</u>
	1,838,000		3,676,000

(exchange rate : about 0.5 T.D. = US\$ 1 in 1980)

The cost of the studies is not included in these figures , although it represents the work of at least 15 people between 1970 and 1973 . UNESCO financed its expert , an architect , while the A.S.M. and its multi-disciplinary team were financed through municipal and international funds

The dwellings were allocated according to income level and solvency rather than according to need or previous residency in the area . According to a cost-recovery principle , each purchaser makes an initial down payment

and makes up the balance over a 20-year period in the form of a monthly rent ranging from 60 to 120 Tunisian Dinars , depending on the house type . For example , a type H30 house was bought by Jacques Perez for 14,500 T.D.

The shops in the souk were not sold but given to the municipality by the developer as compensation for the value of the land . Each shop is presently rented out by the city at about 4,000 T.D. per month . Thus the entire operation is to some extent self-financing .

1. Technical Assessment

Design Features

In their massing and volumes the buildings are inconspicuously integrated into the old city : The quarter is not easy to locate in a rooftop view of the Medina . The scale , shapes and colors are also discrete when viewed from the pre-existing traditional streets to the north . Unfortunately , a surveying error led to an unsatisfactorily narrow path between one of the quarter's squares and a neighbouring street . Too much abandoned land , especially to the south , still surrounds the new housing .

Functional Assessment

Users seem satisfied with their dwellings . However , the number of alterations they have undertaken in such a short time span is startling . These changes fall into three main categories :

- the internal subdivision of houses ;
- the external addition of new rooms or roof terraces ; and
- the modification of exterior details , mainly the openings .

The reasons for most of these changes will be explained below ; for the moment , it should be noted that the architects anticipated such development. They voluntarily provided a certain flexibility in their plans , and even over-designed the structure to accommodate additional loads in future . Arnold Heinz , one of the architects , has himself been designing a new arrangement for his friend Jacques Perez in the spirit of the Tunisian architectural tradition .

Environmental Performance

Due to their orientation , the gardens of the L-shaped H30 housing type are well protected against rainy winds from the north and west , while the courtyards of the H10 and H20 housing types are already naturally sheltered. All houses seem to have good natural light and ventilation . Skylights are even provided for internal staircases , as in housing type H20 .

The project will only be connected with the city gas mains at the end of 1983 . In the meantime , some inhabitants use paraffin or electrical heaters in the winter while others don't heat their houses at all .

Choice of Materials and Level of Technology

Although the tiling varies from one block to another , its quality is generally doubtful . The joinery of the openings is acceptable , with the

exception of the exterior doorways , most of which have already been changed. The plumbing system is rather poorly planned and executed .

Electrical and telephone cables were initially buried below the street , but perhaps because impatient public agents had difficulty finding them , anarchic connecting wires can now be seen along the walls and across the streets . Moreover , as the plastic electrical boxes provided in the streets began to get broken , they were gradually walled in with cement blocks .

Ageing and Maintenance Problems

Seepage from the soil has been a problem both indoors and in the small service courtyards . Trees planned for the private gardens and public squares were never planted , and the pedestrian squares have been turned into parking lots .

Analysis of Costs

The cost of the land hardly figures in the total cost as most of the land already belonged to the municipality . Instead , the figure of 60,000 T.D. should probably be considered a provision for still-unsettled cases of expropriation .

A major criticism of the implementation of the project has been that construction was so slow that its actual cost rose by 100 per cent between 1973 and 1977 . The contractor is said to have nearly gone bankrupt in Libya , which would explain the delay in the Hafsia project . In any case , official statistics published by the Ministry of Public Works indicate that construction costs increased by 121 per cent during the same period .

On official statistics are available for the period since 1977 and it is quite difficult even for informed persons to accurately evaluate the increase in construction costs between 1977 and 1983 . Estimates range from 15 to 20 even 30 per cent annually . Although it is clear that the project was not cheap , it is difficult to compare its cost with that of other projects completed three or four years later in the same country . To further complicate the evaluation , the exchange rate for the U.S. dollar has changed significantly during the same period .

Aesthetic Assessment

The project is externally free from any attempt at pastiche or superficial formalism in detailing which might have made it look like a resort village for autochtons . Even though central courtyards have been used , their design as well as the general organization of the plan does not really relate to the specific architectural tradition of the Tunis Medina . The plan only answers to the functional brief described above . However , the project generally succeeds as urban design , with a morphology directly inspired by tradition and well-related to the surrounding context .

The transition is gradual from the external public areas , to the internal semi-public (internal streets and squares) , semi-private (gardens) and private (houses) areas . The irregular layout and the " bridge houses " provide a variety of vistas , and above all , an unusual -- now -- forgotten -- degree of formal complexity . This is particularly true of the souk , which includes a succession of special sequences differentiated

by their length , width , height , orientation , lighting and other factors .

Extensions and modifications are more easily accommodated here than in other projects . They were, to a certain degree, anticipated and certainly help to make this project a living neighbourhood rather than a frozen monumental design .

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PROJECT BASIC FACT SHEET

1. 1.1 Country : TUNISIA
- 1.2. Project : Renovation of the Hafsia Quarter in the Medina of T
- 1.3. Architect : Arnold Heinz and Wassim Ben Mahmoud
- 1.4. Dates of i) design : 1970-73
- ii) construction : 1973-77
2. 2.1. Project Description : construction of ⁹⁵~~22~~ housing units, 22 shops
and a souk with about 100 shops
- 2.2. Project Objectives : 1. to maintain a harmonious relationship with
the Medina's existing urban morphology
2. to provide suitable housing solutions for
the poor from neighboring areas
- 2.3. Description of site and surroundings : The site is part of a larger, demolished area
in the Medina of Tunis, surrounded by derelict
old houses and a few modern buildings.
3. 3.1. Site Area : 29,199 sq.m. (about 3 ha.)
- Built
- 3.2. ~~Building~~ Area : 17,000 sq.m. housing 10,600 sq. m.
shops 1,700 sq. m.
souk 4,700 sq. m.
- 3.3. Building Materials & Techniques (identifying whether self-help or not)
- i) Foundations : Concrete
- ii) Walls : post and beam structure of in situ concrete
terracotta
- iii) Roofing : brick filler blocks covered with concrete
- iv) Other special : _____
features (if any)
- 3.4. Beneficiaries : Number of persons about 700
- Type of persons (socio/econ. level , etc.)
- lower and average middle class

adopted uniform exchange rate: 1 U.S. \$ = 0.6 T.D. (1983)
estimated annual rate of inflation in construction costs since 1977:
15 to 20 %

4. <u>Costs</u> (in US\$)	4.1. Budget	:	\$ <u>1,500,000</u> (1977) = \$ <u>3,750,000</u> (1983)
	4.2. Actual (tot.)	:	\$ <u>3,063,333</u> (1977) = \$ <u>7,658,330</u> (1983)
	4.3. Breakdown of Actual Costs	:	
	Land	:	\$ <u>96,666</u> (1977) = \$ <u>241,666</u> (1983)
	Infrastructure	:	\$ <u>583,333</u> (1977) = \$ <u>1,458,332</u> (1983)
	Building	:	\$ <u>2,383,333</u> (1977) = \$ <u>5,958,332</u> (1983)
	Total	:	\$ <u>3,063,333</u> (1977) = \$ <u>7,658,330</u> (1983)
	4.4. Unit Costs	:	
	(i) Unit Cost of Building	:	\$ <u>110</u> /sq.m. (1977) = \$ <u>275</u> /sq.m. (1983)
	[Compares with present range in country of :		
	High	:	\$ <u>360</u> /sq.m. (1983)
	Med	:	\$ <u>240</u> /sq.m. (1983)
	Low	:	\$ <u>160</u> /sq.m. (1983)]
	(ii) Actual Total Cost of <u>Housing Unit</u> in US\$ 1983		
	(Actual Cost ÷ Number of Units)		
	Land	:	\$ <u>1,137</u> (1983)
	Infrastructure	:	\$ <u>7,975</u> (1983)
	Building	:	\$ <u>39,663</u> (1983)
	Total	:	\$ <u>48,775</u> (1983)

5. Country Economic data

5.1. Per capita income	:	\$ <u>1,400</u> (1983) (p.a.) <i>(estimate)</i>
5.2. Average Household income	:	\$ _____ (1983) (p.a.)
	:	\$ _____ (1983) (p.mo.)
5.3. Poverty thresholds	:	\$ _____ (1983) per household per month 100 (SMIC in 1982)
5.4. Project beneficiaries :		
Average household income level		
(estimate)	:	\$ <u>400</u> (1983) per household per month

Although the last category has now disappeared , the sum total of 27 per cent vacancy in effect for 6 to 12 months after completion of construction was in sharp discrepancy with the housing shortage suffered by the Medina population .

The percentage of tenants is currently estimated as between 30 and 40 , which indicates the strength of speculation on built property in Tunis .

Client/User Response

1. Reasons for buying :

As the Hafsia used to be relatively undesirable socially , most of the current inhabitants would in fact have preferred a villa in one of the city's suburbs . Nevertheless they were attracted by its comparatively low cost and by its location near the city center . Some, of course, had speculative motives . Only a few , for example , some members of the A.S.M. , chose it for its aesthetic qualities .

2. Community life :

As in other recent neighbourhoods , no real local community life has emerged so far , in spite of the residents' stability in the area . Only children tend to meet and play together .

3. Commercial life :

As originally planned , the Souk el Hout no longer sells fish , but rather accommodates various trades . The specializations intended for the other shops, however , did not materialize and many of them sell cheap clothing . The provision of offices was a total failure , and most of them have been converted either to dwellings or to storage areas . Nonetheless the commercial life of the quarter is on the whole quite vigorous .

4. Redistribution of space :

The modification of the internal organization of dwellings often reveals the actual needs of their inhabitants . One year after completion , 80 per cent of the most affluent inhabitants had already modified the plans of their dwellings , eliminating or adding partitions , moving the entrance door or the kitchen or closet doors , rearranging storage areas , etc . By that time , 16 per cent of the units had already been sub-divided into smaller independent units , either by the poorer inhabitants to generate additional income , or by wealthier landlords for speculation . 31 per cent of the units were shared two or three households .

5. Addition of space :

In 1978 , 25 per cent of the residents had already undertaken extensions involving one to three additional rooms . Jacques Perez , for example , paid what was then 5,000 T.D. to add only one room and rearrange his dwelling ; that figure represents more than a third of the total cost of his unit . Half the additions were unanticipated by the architects and generate problems between neighbours over sunlight , ventilation , views and the like .

6. " Beautification " :

With the exception of the exterior doors , which were defective , and the railings which were added in front of the windows for safety reasons , most of the changes in external details (e.g., openings , fences , verandas) were undertaken by the affluent for the sake of prestige . Their reference was the " villa de banlieue " which they do indeed miss .

Impact on Local Environment :

The social impact of the project on its local environment was doubtful . The frustrations of the neighbouring communities were aggravated by the preliminary surveys which led them to believe that they would benefit themselves from the operation and would at least get their existing housing stock rehabilitated . Good relations with the new-comers at Hafsia were complicated by the fact that over 70 per cent of the pre-existing population were rural immigrants , maintaining a kind of tribal organization . After a few initial thefts and acts of vandalism , the new residents joined together to recruit a permanent care-taker , and now such problems have ceased .

Influence in Tunis :

1. The new renovation projects :

In 1975 , the Tunis Medina had 140,000 inhabitants and 15,000 dwellings over an area of 270 hectares . The scale of its problems is immense , prompting consideration of several renovation projects following Hafsia , such as Bab Saadoun , Hafsia 2 and the Kherba . Bab Saadoun project is already being implemented but lacks the same quality as Hafsia 1 . The Hafsia 2 project (also called the third urban project) is much more interesting and should be officially adopted by Tunisian authorities before the end of 1983 , with an important contribution from the World Bank .

2. The new renovation concepts and principles :

" integrated " projects : where all architectural , urban , demographic , socio-economic and employment data should be simultaneously taken into consideration ;

user participation : with financial and institutional incentives to private owners to undertake rehabilitation ;

" urban continuity " : renovation areas should not adjoin derelict ones but should be entirely surrounded by rehabilitation zones ;

"social solidarity" : in order to displace as few as possible of the poor already living in the neighbourhood , the incoming , more affluent inhabitants should pay a higher share of the costs ; and

replicability : to ensure the spread of the rehabilitation projects to the rest of the Medina , appropriate funding (FNAH) and agencies (ARRU) should be set up and cost recovery of expenses should be as high as possible.