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The urban renewal of Hammam-Lif: The case of Avenue Casino/ Habib Bourguiba

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Abstract

The old seaside city of Hammam-lif has undergone several changes since its creation. The urban sprawl is no longer possible since the city reached its limits. This study focuses on urban evolution through different city's plans. It refers to different bibliographic references. The comparison between old and recent photos illustrates these changes. The city has maintained its urban form but has undergone various changes in functions and density. There have been the introduction of new functions, especially those relating to the tertiary sector. The renewal of old buildings is characterized by the change in their height, which has become more important. These factors lead to a crowded city, with problems of congestion and parking. This study demonstrates one of the problems the city suffers from: the loss of its rich urban and architectural heritage, especially with the problems of safeguarding its two main architectural monuments: "Le Casino" and the beylical palace.

Keywords: Urban renewal; urban planning; Architectural heritage; urban heritage.

1. Introduction

Urban renewal allows the adaptation of cities to the different changes they may have over time. In this context, the city of Hammam-lif has known major changes that have affected its natural environment and landscape building. The urban sprawl has reached its limits and the population has changed and increased considerably, since the first establishment. The strong landscape potential, its location close to the capital and the presence of thermal springs, have made an attractive seaside site since the eighteenth century. The city is rich of architectural and urban heritage.

In the following context, the study tries to demonstrate the different urban and architectural transformations of Hammam-lif by focusing on the lecture of different modification of the Avenue Habib Bourguiba, as a case of study.

This study starts by the examining urban sprawl of the city since its first establishment that shows that this sprawl is no more possible since the urban fabric attempts its limits. Since the 70s, the different development pattern allows a densification of the urban core where the study was carried out.

Photos, and postcards dating from the beginning of the 20th century, show the state of the occupation of space. This allows tracing the evolution of the avenue and its various mutations.

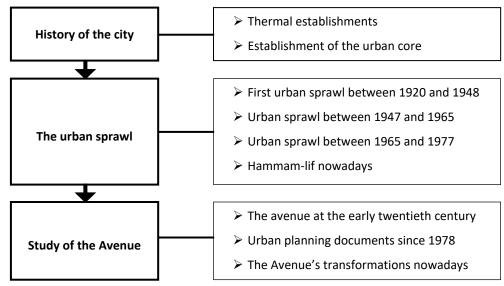


Figure 1. Structure of the Study (Developed by Author)

2. The History of The City

Since Phoenician times, the thermal springs were the source of the first settlements of the city called "Aquoe Persianoe". It was famous for the virtues of its thermal waters (Lambert 1912).

In the 2nd century, some sources evoked the city. Al-Maliki, (??? - after 1061) underlined in his writings, the name given to this city:" Hammat el Djazera". Al Bakri (1014-1094) evoked the name of "Ribat Al-Hamma", when discovering this place. He reported that this hot spring was considerable and recognized for its effectiveness.

2.1. Thermal Establishments

The *Hafside* dynasty (1207-1574) confirmed the curative practice, by the use of ancient installations that endured during this period In the 17th century, Ibn Abi Dinar (16 ?? - 1690) was the first historian to mention the name of Hammam-Lif. He described a small town built by the Andalusians (Abidi-Belhadj 2016).

2.1.1. The Beylical Palace 1750

In order to benefit from the thermal springs of Hammam-Lif, the Bey Ali Pasha (1735-1756) built a first pavilion and a caravanserai in 1750. Then, a palace was built nearby, near the base of the mountain and was oriented towards the sea, to enjoy the panorama. It has undergone several enlargements and extensions over time, with the installation of several residences in the neighborhood.

2.1.2. Construction of The Thermal Bath 1893

On the road connecting Hammam-Lif to Tunis and near the beylical palace, a new thermal establishment was built and it was opened to the public in 1893. This establishment is in a modern, neo-Moorish style and is fed by the Ain El Ariane spring. Immediately, many constructions came to complete the existing ensemble, in order to allow spa visitors a better stay, so that they can enjoy their curative treatments (Regaieg 1999).

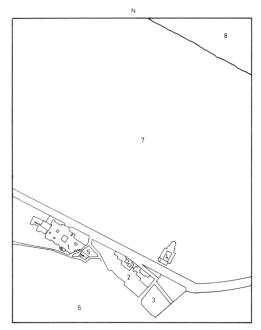


Figure 2. Beylical Palace (1) and Thermal baths (4) (Revault 1974)

2.2. Establishment of the urban core

Located between sea and mountain, Hammam-Lif was established because of its thermal springs, but was developed on the plain on the seafront. Hammam-Lif beach has the same particularity of all Mediterranean ones.

The coast belongs to the Tunis gulf. Its morphology is relatively airy and is sheltered from the south wind.

Its proximity to the capital makes it very frequented. It gives the city a seaside character during the summer period, as well as freshness and a sea song all year round for those who prefer calm and mountain hikes.

2.2.1. The Railway Line 1882

In 1882, the section of the Tunis-Hammam-lif railway line was completed and opened to the public, which was the basis for the birth of the city (Lambert 1912). A station was built in front of the beylical palace on the railway line. A few years later, the casino was built by the sea and on the palace-station axis.

2.2.2. The Casino 1895

In 1890, the construction of the casino began and the work lasted 5 years. The monument was inaugurated in 1895. This casino is located on the edge of the beach and materialized the extension of the Axis that connected the Beylical palace with the train station. That axis will subsequently be the subject of the study in this work.

The city attracted spa visitors at the end of winter, visitors from Tunis in summer. It was occupied by different social categories; Tunisians, Italians, French, etc

2.2.3. The Axis: Beylical Palace-Train Station-Casino

The Axis was the first urban core of the city. From there, the central square, located between the beach and the railway line, was born. The urban pattern was orthogonal composed by paths, which were perpendicular and parallel to the coast and to the Axis. The road network defines urban islands with regular geometric shapes. The land is cleaned up and occupied by scattered constructions which punctuate the new urban center (Ammar 2019).

Table 1. The tree Monuments of the Avenue

Building	Year
Beylical palace	1750
Train Station	1882
Casino	1895

Until 1920, the central square of the urban fabric was established. It is regular in shape and has an orthogonal layout. The municipality was created by the decree of March 9, 1899. Since then, the city has grown to accommodate a new population.

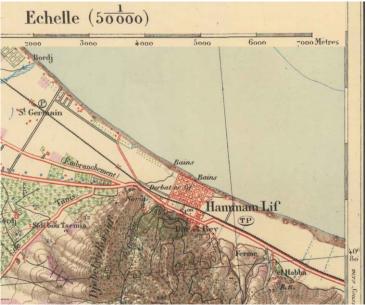


Figure 3. Plan of 1928 (Bouret et privée) 2012)

3. The Urban Sprawl

The city is located between two natural barriers; the sea to the north and the mountains to the south. Its urban extension was essentially lateral, on both east and west sides.

The urban sprawl was in continuity with the initial framework. It took place in two times. The city expanded to the West between 1920 and 1948. Then it expanded to the East from 1948 to the end of the 70s. The establishment of the new station facilitated this sprawl.

3.1. First Urban Sprawl (1920-1948)

Between 1920 and 1948, the city expanded to the west over a length of 1.5 km, in continuity with the initial frame. The urban islands were rectangular occupied by individual villas, giving the appearance of a garden city. This is quite normal because Hammam-lif was originally a seaside town.

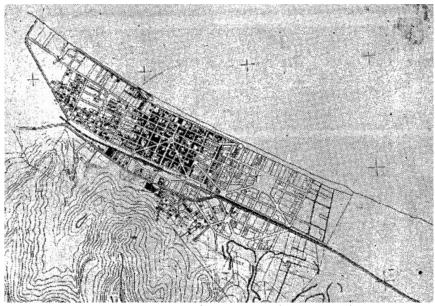


Figure 4. Hammam-lif around 1949 (Deloge 1949)

3.2. Urban sprawl between 1947 and 1965

Since 1947, the urban sprawl continued eastward, around the stadium. The establishment of the new station favored this sprawl, making the city approaching its limits.

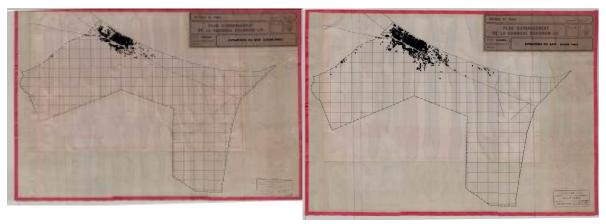


Figure 5. Urban Sprawl 1947, 1965 (District de Tunis, Plan d'aménagement de la commune de Hammam-Lif 1947); (District de Tunis, Plan d'aménagement de la commune de Hammam-Lif 1965)

3.3. Urban sprawl between 1965 and 1977

The urban sprawl continued eastward and the city reached its limits around 1977. The westward extension continued and construction became denser.

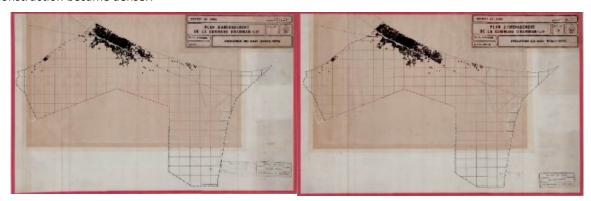


Figure 6. Urban Sprawl, 1970, 1977 (District de Tunis, Plan d'aménagement de la commune de Hammam-Lif 1970) (District de Tunis, Plan d'aménagement de la commune de Hammam-Lif 1977)

The various steps of sprawl of the city have succeeded with new continuous routes. The new neighborhood was mainly residential and the subdivisions provided housing. These sprawls kept the seaside and thermal character of the city and did not provide any tertiary activity zone. That explained the transformations made on the city center, the initial square of Hammam-Lif.

3.4. Hammam-lif nowadays

After all the various steps of urban sprawl, Hammam-lif became a larger city with an area of 16,000 hectares and a population of over 42,000 inhabitants (commune de hammam lif 2020).

With such a situation, the city cannot limit itself to its initial functions, which are thermal and seaside activities, especially since they are in decline. The flow of the thermal springs began to weaken. The structures suffer from a lack of maintenance. The construction of breakwaters to protect the coast from marine erosion and the dumping of waste by the wadi *Meliane* located a few kilometers away, are the main factors responsible of the sea pollution and degradation. Nowadays, swimming is prohibited there (Ouerghemmi 2020).

Thus, the city must find new attractive functions adapted to the needs of its size population. In this sense, the development pattern have reclassified the city center as a very high-density multifunctional zone. We will therefore examine the changes through the study of the main Axis; Avenue Casino, currently known as Avenue Habib Bourguiba.

4. Study of the Avenue

Avenue Casino, currently called Avenue Habib Bourguiba, is the very first axis, the first urban core of Hammam-Lif. It connects the casino located in the north by the beach, to the Beylical palace in the south near the base of the mountain. It is oriented north South. It measures 580 meters of length. The railway line divides it into two parts. The station is located on the same axis.



Figure 7. Plan View and photo of the Avenue

1: Beylical Palace; 2: Train station; 3: Roundabout; 4: Casino; 5: Beach

The avenue is straight, marked in the middle by a central place: the roundabout. Orthogonal roads cross the avenue forming a regular shape urban layout and rectangular islands. Two radiating roads cross the axis and meet in the roundabout forming four triangular islands in the south of the axis.

Table 1. Characteristics of the studied Avenue

Total length	• 634 yards= 580 meters
Width	19,7 yards= 18 meters
Orientation	North-South
Form	Straight
Main elements	The Beylical palace on the South
	The train station
	The casino on the North
	The roundabout in the center
Blocks	8 rectangular blocks
	4 triangular blocks

Many photographs from the beginning of the century show the nature of the occupation of this space.

4.1. The Avenue at The Early Twentieth Century

Photos dating from the beginning of the century show that the Avenue had two types of implantation of its buildings: aligned on the boundary of the street or in retreat. The urban islands are large sizes, regular shapes. Four types of space occupied it: Housing (individual or collective), hotels, restaurants and local shops

The functions

The study of different functions' location along the Avenue shows an organizational logic. In the North, towards the beach, most of the buildings are single-family houses isolated.

Local shops, bars and restaurants occupied the buildings in the south of the Avenue; this occupation takes place near the station, which is a source of visitor flows.

Suburban houses

They are located in the northern part of the artery between the roundabout and the casino. These are single-family houses isolated surrounded by green gardens.

Buildings aligned on the boundary of the street

They are located in the southern part of the Avenue between the roundabout and the station. These buildings are aligned with the street with a ground floor dedicated to local shops or restaurants, and a floor dedicated to collective housing. The height of the buildings did not exceed one floor above the ground floor, even for the two monuments: the casino and the beylical palace.

In 1949, most constructions in Hammam-Lif were on the ground floor or one floor at most. Only a few buildings exceed this height. (Deloge 1949)

Only the "Disca" palace had four floors above a ground floor and surmounted by a dome. It was built around 1930 and still exists.

4.2. Urban Planning Documents Since 1978

According to the 1978 development plan, the avenue belongs to an area of existing facilities and is defined as a center of economic activities (J.A.STORY&PARTNERS 1978)

The 1981 development pattern defines the "U1a" zone to which the Avenue belongs. The regulatory text (AUGT 1981) defines it as an economic activity zone characterized by the versatility of functions. It has a mixed vocation with only 30% housing and 70% trade, office, services, crafts.

The urban development pattern approved in 2008 (AUGT 2008) plans a very high-density multifunctional zone, as well as a very high-density collective housing zone, all along the Avenue. The two historical monuments are mentioned, including the casino, which has been a monument classified by a protection decree since September 1, 2000.

The artery belongs to the area called "UBa 1". The regulatory text defines it as a very high-density polyfunctional area.

Table 2. Comparison between Urban development pattern of 1981 and urban development pattern of 2009

	UDP 1981	UDP 2009							
Name	U1a	UBa1							
Nature	zone of economic activity characterized	very high density polyfunctional zone of							
	by the versatility of functions	continuous collective type							
Vocation	30% habitat	100% shops, services, social-collective							
	70% shops, offices, services, crafts.	equipment, offices and continuous collective							
		housing							
Lateral limits	Collective building built in continuous or	rder, implanted contiguous to the lateral limits of							
	the property.	· · · · · · · · · · · · · · · · · · ·							
Back limits	building withdrawal=	6 meters <building 2<="" high="" td="" withdrawal="building"></building>							
	- building high (dwelling)								
	- building high/2 (other function)								
Retreat on the	Buildings must be aligned on the bounda	ary of the street							
street									
Surfaces and	Regular form								
plot front	Minimum surface area 200 m²	Minimum surface area 250 m ²							
	Plot front: 10 meters minimum								
Depth of	13 meters au maximum et 8.5 meters	The coefficient of land use=							
building	au minimum	0,6 for continuous collective construction							
		1 for commercial ground floor							
High of building	The maximum high = 23 meters	The maximum high = 24 meters							

A comparison of the two documents shows that they have the same direction in the development of the avenue. In both cases, it is a question of densification, with an extension in height of up to 24 meters and a horizontal extension by aligning the building on the boundaries of the urban islands, occupying its entirety.

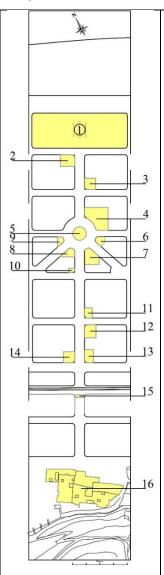
4.3. The Avenue's transformations nowadays

Since its creation, the avenue has integrated multiple functions, different from the initial ones. Linking the station to the maritime promenade, very busy especially during summer evenings, this dynamic axis has generated transformations of housing into shops and services. The central square, called "the roundabout", is a meeting place with symbolic value: it is the heart of the city.

The artery has also integrated a variety of facilities, shops, mainly local commerce, services and leisure spaces such as cinemas, cafes, etc.

4.3.1. Presentation of study specimens

As part of our study, we compared the changes made to the occupancy of 16 urban islands located along the Avenue. The specimens are numbered and positioned on the axis as shown on the pattern below.



- 1- The casino: it is a historical monument built in 1885. The urban island included the restaurant and the casino theater. The theater disappeared and 4 storeys high buildings were built in 1972 on the same lot. The restaurant still exists but is not functional
- 2- A one floor suburban house. For years, the house was occupied and ground floor buildings, aligned on the boundary of the street and making the garden disappear, constructed the void surrounding the house. Nowadays, the house is demolished.
- 3- A one floor suburban house. It was demolished and replaced by 5 storeys high buildings aligned on the two boundaries of the street occupied by shops on the ground floor and collective houses on the upper floors
- 4- The Zephyr is an isolated hotel with a big garden surrounding it. The building is still preserved but occupied as a dwelling. Shops aligned on the boundary of the street occupy the old garden
- 5- Roundapoint is a central, public square. The shape has not changed since its inception, but its layout has changed several times.
- 6- The Empire cinema was a building aligned on the two boundaries of streets. Today a 6 storeys high building occupy the urban island with shops on the ground floor and offices on the upper floors
- 7- A one floor suburban house was demolished and a building aligned on the two boundaries of streets replaced. It is composed of shops on the ground floor and offices on the upper floors
- 8- A café on the ground floor and a house upstairs. The one floor high building is aligned on the two boundaries of streets and it is conserved. Now an agency of a telephone operator occupies the café.
- 9- A one floor high grouped house, aligned on the two boundaries of streets was demolished and replaced by a 4 floor high building, occupied by shops on the ground floor and offices on the upper floors
- 10- A bank branch on the ground floor and a house upstairs . The building was demolished and replaced by a 6 storeys high building
- 11- The post office has been renovated with a more modern building while maintaining the same function and the same height Ground floor
- 12- The apartment building is conserved. Initially a café occupied the ground floor. Nowadays a bank branch has taken place. Collective housing occupies he floors. The construction has not undergone any important changes
- 13- A set of shops and a café, on the ground floor, occupied the lot at the beginning of the 20th century. A floor was added later. In 2012 the whole Building was demolished and replaced by a 6 storeys high building occupied by shops on the ground floor and offices on the upper floors
- 14- The Terminus restaurant has been built since the beginning of the 20th century. It is a detached building. Old photos show a garden on the two lanes surrounding the property. Today the building is converted into the headquarters of the delegation, maintaining the set back from the garden on Avenue Habib Bourguiba.
- 15- The station has been built since the beginning of the operation of the railway line. The station has been renovated and enlarged many times (at least twice according to the photos)
- 16- The Beylical Palace is the very first historical monument built since 1750. The Beys occupied the Beylical residence until independence in 1956. Then part of the building is converted into an administration. Abandoned since 2011, it has been squatted by residents. Nowadays, the monument threatens to ruin.

Figure 8. Studied specimens

4.3.2. Transformations' Typology

We have classified these modifications according to their typologies in order to be able to draw up the table below. Focusing on different transformations made to all of the buildings studied, two scenarios emerge:

- Modification of the building while maintaining its initial structure;
- Demolition of the building and replacing it by another.

Concerning the modifications encountered, we can identify four types:

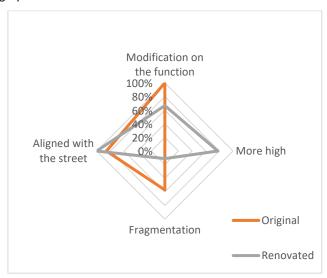
- Modifications relative to the function, either by adding an additional function while maintaining the initial function, or by changing the function, or even changing the typology if the building has residential function.
- Changes in the height, which becomes more important
- Fragmentation by multiplying the built masses within the same urban island
- Alignment of the built mass with the track. Some buildings have always been aligned with the boundary of the street; others have become aligned after their transformations.

Table 3. Modifications Matrix

			Original					Renovated										
			1	2	4	8	12	14	16	3	5	6	7	9	10	11	13	15
Modification on the function	Change function	of			٧	٧	٧	٧	٧	٧		٧	٧	٧	٧		٧	
	Add function	of	٧		٧													
	Change typology (habitat)	of		٧														
More high										٧		٧	٧	٧	٧		٧	٧
Fragmentation			٧	٧	٧				٧	٧								
Aligned with the	Maintained	t				٧						٧		٧	٧	٧	٧	
street	Changed to)	٧	٧	٧			٧		٧			٧					٧

Demolition and renovation concern 56% of studied cases while 44% maintained their original structure with some modifications.

The table allows drawing the graphs below:



Graph 1. Types of mutation in the studied cases

From the graph, we can identify some points:

- All buildings that have maintained their original structure have changed function (or type of function, or integrated an additional function). The same thing happened to renovated spaces, except three spaces: the roundabout, which retains its function as a public space, the post office and the train station.
- All the renovated spaces are higher, except the parcel of the roundabout, which does not contain any building and the post office building, which is renovated while maintaining the same function and the same height.
- The increase of height does not affect buildings that have maintained their original structure. This is probably because of the strength of the structure, which is designed initially for a limited height and would not be able to support an extension in height.
- All the urban islands concerned by the different transformation, are now occupied by buildings aligned on the boundary of the street, except the Beylical palace, where the retreat has been maintained
- The category of modification that we found the least is the fragmentation of the urban island. It is more common in conserved spaces than in renovated spaces, with only one case found on all 9 specimens concerned by conserved

spaces. This modification is difficult because of the constraints of the development plans, which require minimum urban island areas of 250 m² and frontage of plots of at least 10 meters.

However, and despite the various changes identified above, the roads pattern and the boundaries of the urban islands did not change. As a result, the avenue has been able to maintain certain characteristics. The length has not changed because of the two natural elements and the two monuments that blocked its extension. The width has not changed, either.

Table 4. Maintains and changes in the Avenue

Maintains	Changes
 Roads patter 	Horizontal and vertical densification
 Road's dimensions 	Poly functionality that attracts more users
	One-way road traffic

4.3.3. Consequences of Mutations

The various changes identified above generate essentially three consequences:

- The increase in the flow of users and the urban congestion;
- The loss of sunlight;
- The modification of urban landscape;

The multiplication of service and equipment spaces attracts a greater flow of users, a source of urban traffic and congestion.

Two parameters defines the built densification: the footprint and the height of the building (France 2005)

The artery has seen a double densification of urban islands by occupying it entirely and by extension in height. This generates a density with strong footprint and high height (Charmes 2010). No change in the size of the road accompanied the increase in pedestrian and vehicular flow. The roads keep the same initial width, and that causes urban congestion with traffic and parking problems.

The height of the new constructions (24m) is greater than the width of the Avenue (17m) that generates a loss of sunshine over the entire neighborhood, especially concerning the constructions on this avenue. Indeed, the shadow of the building looms over the neighboring facades at different times of the day, preventing direct solar radiation.

The change of the initial functions and the densification engender the loss of the seaside and thermal character of the city. Single-family homes no longer fit into their airy, sunny, peaceful urban context, bathed in the sea air, near leisure areas and local shops.

The urban pattern authorize construction up to 24 meters in height, which drives up the price of land.

This encourages the demolition of old buildings to renovate them with new taller ones that are better suited to accommodate new functions, which are essentially tertiary, but also more profitable.

These demolitions accelerate the loss of architectural and urban heritage.

5. Conclusion

Nowadays, Hammam-lif continues to experience major changes marked by its predominantly vertical urban extension because of the two natural barriers that surround the city. It has been able to keep the dynamics of its center, ensure the sustainability of its functions and adapt them to new and constantly changing needs. The avenue continues to be the heart of the city, very dynamic and busy, despite the time.

This multi-functional area provides a mix of functions concentrated on the Avenue, with 7 floors high buildings.

Some new buildings replaced the old demolished ones, more modern, but essentially taller and with larger footprint. Housing and leisure facilities, which were the primary functions of this Avenue, are disappearing gradually and replaced by service areas, commerce and collective housing.

No change takes into consideration the seaside character of the city. Land speculation comes at the detriment of an architectural heritage that is being lost in favor of modern architecture, displaying glass and aluminum facades.

The beylical palace is squatted and dilapidated. Some of its parts are in danger of ruin, and its restoration is long to come. The casino is now closed. Despite the various attempts to revive it. The city continues to evolve and ensure a social and economic dynamic. However, what is the cost?

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Conflict of Interests

The Authors declare no conflict of interest.

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