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**Urban renewal as a strategy for showcasing the
Kasbah through the reconquest of its surroundings**

E.S.P: Integrated housing and leisure project with landscaping

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Presented by :

OUMRANI Khadidja Anfal M201439020386

ZAMAKI Amira M201531004824

Groupe : 06

Supervised by:

Mrs. Naimi Ait Aoudia Meriem

Mrs. Boukeratem Oumelkheir

Mr. SAIDI Mohamed

Jury:

President : Mr. BENHAMOUCHE Mustapha

Examinator : Mrs. KHATTAB Samira

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Dedication

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Abstract

The urban fabric of Algiers 19th and 20th century urban fabric is under the threat of dilapidation and degradation especially the surroundings of the Kasbah, putting the historic center in a crucial situation, by hiding this heritage core in one hand and participating in the loss of its articulation and identity in the other.

This work aims to treat the addressed issues concerning the surroundings of the Kasbah, by integrating urban renewal along with sustainable development for a better living quality, in addition to enhancing the articulation of the historic center with the rest of the city in order to revitalize it and give it its rightful value.

Key words: urban renewal, urban sustainability, the 19th and 20th century architecture, Algiers, Casbah

Résumé

Le tissu urbain d'Alger des XIXe et XXe siècles est menacé de délabrement et de dégradation, en particulier les abords de la Casbah, ce qui place le centre historique dans une situation cruciale, en cachant ce noyau patrimonial d'une part et en participant à la perte de son articulation et de son identité dans l'autre.

Ce travail vise à traiter les questions abordées concernant les alentours de la Casbah d'Alger, en intégrant le renouvellement urbain et le développement durable pour une meilleure qualité de vie, en plus de renforcer l'articulation du centre historique avec le reste de la ville pour le redynamiser et de lui donner la valeur qui lui revient.

Mots Clefs : renouvellement urbain, durabilité urbaine, architecture des 19 ème et 20 ème siècles, Alger, Casbah

المُلخَص

يتعرض النسيج العمراني في الجزائر العاصمة للقرنين التاسع عشر والعشرين الى التدهور وخطر الانهيار خاصة محيط القصبة ، مما يضع المركز التاريخي في وضع حرج ، من خلال إخفاء الموروث المركزي من جهة، والمساهمة في فقدان التعبير والهوية المعمارية من جهة أخرى.

يهدف هذه العمل إلى معالجة المشاكل التي تم تناولها فيما يتعلق بمحيط القصبة ، من خلال دمج التجديد الحضري و التنمية المستدامة من أجل جودة معيشية أفضل ، بالإضافة إلى تعزيز الارتباط بين المركز التاريخي القصبة وبقية المدينة، وهذا لتنشيطها واعطائها قيمتها المستحقة.

كلمات مفتاحية : التجديد الحضري، الاستدامة الحضرية، العمارة في القرنين التاسع عشر والعشرين، الجزائر، القصبة.

"We're at war with nature. If we win, we're lost."

Hubert Reeves, 2012

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CHAPTER

01

GENERAL INTRODUCTION

I General introduction

I - 1 Context

The city of Algiers through the test of time

Algiers, the capital and the main economic pole of the country, is the first city in Algeria, known for its status, its size and its functions. Since the colonization, Algiers had inherited the characteristics of colonial cities that shaped its buildings along with its space, leaving it with an outstanding architecture embellished with various and rich styles.

This remarkable architecture is threatened by dilapidation, degradation and deterioration, which are caused by physical factors known as the natural aging of buildings, climatic factors, social factors such as mistreatment and overcrowding, and last but not least, administrative factors such as the lack of management policy and maintenance. Those issues depressed the quality of life by creating an unsafe, unhealthy and a dangerous environment.

Therefore, the city required heavy rehabilitation and renovation operations to most buildings from the colonial era, which reached 14,767 buildings (about 583,184 dwellings). About 1.47% of the total housing stock are classified as buildings threatening ruin, while the number of renovated buildings reached 3,289 in 2018, along with some slight renovations for the post-independence buildings. The actions took place exclusively on buildings located in main axes, such as Larbi-Ben-M'hidi Avenue, Didouche-Mourad, Mohamed-V, Colonel-Amirouche, Zighoud Youcef boulevard, Memory promenade, and Grande-Poste along with famous squares, while the rest were severely neglected.

Furthermore, after the independence, the city faced some profound transformations, leading to multiple problems, in particular, the urban growth of the recent decades that spawned various phenomena which impacted the social and spatial division. This unbalanced demographic growth is due to the encouraged migrations from rural areas because of the concentration of economic and social activities in the central areas. The issue led to a serious housing crisis resulting in precarious housing, spontaneous housing and the expansion of slums. The emergence of enclaves became an issue as well due to the unequal spatial development between the periphery and the center.

This urban sprawl increased energy use, pollution with the appearance of illegal dumping on the peripheries of habitable areas and traffic congestion.

Therefore, the presence of a global approach such urban renewal is necessary, being the key to transition from an urbanism of expansion to an urbanism of transformation and management. In other words, the answer does not articulate on creating, but on modifying and managing already urbanized territories.

The Kasbah, a stifled heritage treasure

The Kasbah is known for being Algiers oldest medina and its forming point, originally marked by its highest point "the citadel", and the ramparts dating back to the Ottoman period.

In the beginning, the center of the Kasbah took place in the lower part, after the advent of the French colonialism, the historic center gradually lost its functions and centrality, after being known for its commercial prosperity, and became a closed residential area for Algerians, while its lower part disappeared to make way for the colonial city. The French colonialism proceeded with actions destined to hide the Algerian identity, along with tendencies to erase it completely through unachieved plans. The Kasbah, a symbol and major architectural expression of Algerian society is threatened with disrepair due to the severe degradation, making the living conditions harder for its inhabitants. After all, the Kasbah is the home of Algerian culture and its history should never be forgotten, taking that into consideration, the historic center had been classified as safeguarded sector and joined the world's heritage list.

I - 2 Problematic

Our study is based on Algiers's old fabric from the 19th and the 20th century, in particular the surroundings of the Kasbah, which are limited to the north by the Emir Abd-el-Kader high school and the Louni-Arezki ramp along with the avenue de Bengana Boualem to the northwest, to the west by the hospital and the cemetery of El Kettar, to the east by the Mediterranean Sea, to the south by Debbih Cherif road joining Patrice le Mumba street and Ali Boumendjel street which extends to Boulevard CHE GUIVARA.

Some parts of our perimeter are included in the safeguarded limits of the PPSMVSS, which covers about 105 hectares, as well as the safeguarded limits of the UNESCO, that covers 70 hectares.

The surroundings of the historic center are considered as sort of a buffer zone, working as shield to strengthen the protection around the heritage, which is ironic, considering the fact that they are under the threat of dilapidation and degradation due to aging, natural disasters (earthquakes, floods, etc.), lack of maintenance, overcrowding, lack of management policy and neglect from local authorities. Those issues created an unhealthy and a dangerous environment for the inhabitants resulting in an inadequate quality of life.

The disruption of the physical and visual relationship of the Kasbah with its surroundings is the main cause of the town's isolation. This issue is reinforced by the safeguarding limits of UNESCO and PPSMVSS which included parts of the surroundings as a supposed buffer zone that does not provide the imperatives of protection. The surroundings should contribute in the articulation of the old town with the new one, allowing the integration and insertion of the cultural property within the urban dynamic of the city while respecting its historical identity.

Development and investment projects are never meant for providing green, leisure and relaxation spaces or attracting facilities, that are equally important as housing and infrastructure. These dysfunctions are due to the absence of adequate urban management and illegal acts in town planning.

What can be accomplished to treat the problem of the old city's articulation with the new one while maintaining the historical identity, and in accordance with the principles of urban renewal and sustainable development?

I - 3 Specific problematic

Our study area is located on the northwest outskirts of the upper Kasbah, it is delimited by the Louni-Arezki ramp to the north and northwest, Dey's palace to the west and the Kasbah to the south, as well as the Ali Ait Idir hospital, the Mohamed Boudjil street, and by the Okba high school in the northeast.

The zone is at risk of physical and socio-economic degradation, and it's all because of the following reasons:

- Besides almost half of it being a military zone. Most of its buildings are in poor status (structure, disfigured facades...), along with precarious housing, causing the inhabitants to live in unhealthy and dangerous conditions, resulting in poor living quality.
- Lack of facilities and activities that meet the needs of the residents, such as libraries and medical facilities alongside the deficiency of commercial activities.
- The streets are extremely narrow, as well as the pavements, causing major lack of security and difficulty of transportation.
- Lack of parking lots, green spaces, leisure and relaxation spaces.

This leads us to question ourselves in **how to provide a better living and housing quality to the inhabitants, and what are the types of urban renewal interventions that guarantee the sustainability of the district while increasing its attractiveness?**

I - 4 Hypothesis

The urban renewal approach will help us understand the history of the urban and architectural context of our case study, and guide us towards using the appropriate interventions to revitalize it while preserving its heritage, along with the ideal insertion of the project.

We also believe that integrating a sustainable development approach with urban renewal will reinforce the heritage's preservation and provide a better living quality for the inhabitants while guaranteeing the sustainability and durability of the district.

Furthermore, creating spatial and functional links between the historic center and the study area will help reinforce and improve the articulation between the Kasbah and the city of the XIX-XX century.

I - 5 Objectives

- Understanding the history behind the evolution of Algiers's urban fabric, from developing it to match the colonial city's appearance, to the tendencies to hide and eventually erase the Algerian identity.
- Recognizing and understanding our architectural heritage through the different styles and typologies, and ensuring to enhance it while preserving its identity.
- Enhancing the living quality along with the local development, as well as improving the urban attractiveness, All within the context of sustainable development.

I - 6 Methodology used

To achieve the objectives of our thesis, we will be ensuing the typo morphological approach, which is studying and learning the city's history to understand its growth pattern, it consists the following methods:

Starting from diachronic reading, that allows us to know the evolution and transformation of the urban fabric through the years, by using various books, articles, laws, photos, maps and plans as a guide.

Then, synchronic analysis which we achieved through several site visits, and documenting the process through various photos and sketches. We analyzed the structure and state of each building along the architectural style of their facades, and understanding their typological characteristics, as well as the analysis of the roads hierarchy and the overall functioning system of the zone, allowing us to retain a profound study of our intervention zone.

Next, we will be using the HQE²R method, which is an approach that integrates sustainable development with the urban renewal, through objectives, targets and sub-targets. Later we will be using an environmental approach called AEU, to help us find environmental and energy related solutions or recommendations for the previously mentioned targets and sub-targets.

I - 7 Thesis structure

Our thesis is organized around three chapters:

The first chapter is an introductory chapter. It consists of a general introduction to our research, the general and specific problems of our case study, the objectives of our research and the presentation of our working methodology.

the second chapter is about the state of the art, where we will be discussing the urban renewal approach and its challenges. We will be presenting two urban renewal examples, on older project (The historical center, Bologna), and a new one (Requalification of the old Farmer's market, "The Navile Market", Bologna), in order to understand the operations. Next, we will be presenting a sustainable development approach for district's renewal called HQE²R,

alongside an environmental approach called AEU. Lastly, we will be presenting the typo morphological approach.

The third chapter is dedicated to the case study. Starting from site analysis (Physical entities, natural and artificial elements and site morphology of Algiers). Then, we present our case study's perimeters along with an analysis at different scales based on the typo morphological method, which are the diachronic and synchronic readings. The chapter is also dedicated to the elaboration of the development and architectural project which will be implanted using orientations of the HQE²R and AEU approaches as well as POS and PPSMVS's recommendations, along with the presentation of the different stages of its implementation.

CHAPTER

02

STATE-OF-ART

**URBAN
RENEWAL**

II State-of-the-art : Urban renewal

II - 1 Definition of the urban renewal concept

The term "urban renewal" refers to a construction program that replaces or restores buildings in urban areas that are below standards. (Badariotti, 2006)

The concept of urban renewal covers a wide range of contexts. The means used by the different urban policies at different times, the issues taken into account, the territories concerned make it difficult to define urban renewal clearly and precisely. (Anaïs, 2018)

There is a very large heterogeneity of the modes of intervention on the existing urban fabric as well as the vocabulary used to cover the notion of urban renewal. Such as regeneration, restoration, rehabilitation, redevelopment, revitalization, restructuring, revaluation, urban recomposition... (Anaïs, 2018)

Cities have renewed their content since their inception. The older the cities, the greater the activity (Badariotti, 2006).

URBAN RENEWAL: Types and forms

Urban renewal activity has also experienced different ways of implementing over time; we can spot two types, spontaneous renewal (the oldest method) and planned renewal (Badariotti, 2006).

Spontaneous renewal:

It relies on demolishing buildings and rebuilt them under another form. (Badariotti, 2006)

Planned renewal:

On the other hand, group renewal because its action is usually concentrated on a limited space or public initiative because it takes place in the context of planned development operations. This type of urban renewal is strategic and planned; it appears during the major urban changes that follow demographic, political, economic or technological crises or during natural disasters (Badariotti, 2006).

When it comes to urban renewal forms, we can also distinguish two different kinds:

Revaluation of old Centers:

It works on existing ones that involve neighborhoods or buildings of heritage interest. Interventions must combine planning procedures with heritage protection procedures, and objectives of the action are the following: (NAIMI AIT AOUDIA, 2020)

The requalification and diversification of housing offer (to fight against a double phenomenon of degradation-impoverishment and "gentrification"

The revitalization of the commercial fabric

Improving the quality of downtown spaces.

Regeneration of brownfield sites, which are old abandoned industrial sites that sometimes need to be cleaned up beforehand. It must be carried out according to rules provided for by the environment code (NAIMI AIT AOUDIA, 2020).

Requalification of large housing estate :

Which is transforming the vast plots into urban islands connected to structured streets to have a clear road network. Also relocating, on or near the neighborhood, facilities and accompanying facilities, which must be calibrated according to the needs of the new expected population (NAIMI AIT AOUDIA, 2020).

Proposing mechanisms for consultation, communication and urban management that adapt to the specifics of the social fabric that are able to take action to improve the quality of life. Moreover, performing certain actions on the building (rehabilitation, restructuring of the type of housing, transformation of use, securing common areas ...) (NAIMI AIT AOUDIA, 2020).

II - 1 Urban renewal challenges

There are many issues to be taken into account in urban renewal, like the quality of life and housing from the point of view of physical, functional and psychological well-being, environmental quality regarding building and neighborhood, interconnection quality, urban quality and finally heritage quality (Anaïs, 2018).

When it comes to social issues, the participatory process is highly recommended in order to integrate the needs of the inhabitants into future projects. The use of participatory approaches promotes acceptance of densification and helps to better understand the needs of present and future residents (Anaïs, 2018).

Also, the economic issues have several natures. For example, the supply of housing must be varied and correspond to different incomes in order to guarantee diversity. And as known, the implementation of urban renewal process is more costly than the construction of new neighborhoods and requires a significant investment of public and/or private funds (Anaïs, 2018).

Environmental issues can be solved. It is possible to improve the impact of buildings and infrastructure on the environment, particularly by making buildings less energy-consuming (Anaïs, 2018).

II - 1 - 1 Life and housing quality

The city must consider the needs of people by proposing workplaces near the living place, attractive mobility services and daily supply of facilities that makes the neighborhood attractive (Anaïs, 2018).

Quality of life and housing: the physical well-being

In a society, there is a variety of people such as, the elderly, people with modest incomes, singles, young people, students, couples, single-parent families, etc. Each member has his own needs and lifestyles. Urban renewal comes to meet the daily desires of the inhabitants,

and it must allow a rebalancing of the usual situation between each inhabitant and not lead to social segregation. In addition, the building must be transformed to meet a changing population, providing new spaces for new uses. Physical well-being is also linked to public spaces, so the quality of outdoor spaces makes the neighborhood attractive (Anaïs, 2018).

Quality of life and housing: functional well-being

Functional well-being is the ability to meet the demands of a neighborhood's inhabitants by promoting proximity to jobs and services and the creation of living spaces. It often takes different functions to achieve functional mix in terms of infrastructure, housing, shops and services (Anaïs, 2018).

Quality of life and housing: psychic well-being

Psychic well-being is linked to social interactions as well as to the integration of the individual into his or her environment. That's why spaces for rest and relaxation like gardens, playgrounds and meeting spaces are necessary (Anaïs, 2018).

II - 1 - 1 Environmental quality

The quality of urban renewal also depends on working on the environment, and not only on housing but also through improving the quality of the environment to provide neighborhoods with recreational spaces. Environmental quality must be considered on two levels, the building and what surrounds it (Anaïs, 2018).

Building-wide environmental quality

Urban renewal must improve the comfort of the inhabitants while preserving resources, for example, the energy balance of the buildings must be improved. Local resources must also be promoted and renewable energy as well (Anaïs, 2018).

Neighborhood-wide environmental quality

Nature, landscape, biodiversity and traffic, green spaces are essential elements around buildings. They must be taken into account when landscaping for the environmental quality of the neighborhood (Anaïs, 2018).

II - 1 - 1 Quality of inter connection

Interconnection is the integration of all functions to facilitate proximity and accessibility to all services for all residents (Anaïs, 2018).

The purpose of urban renewal is to connect all areas of the neighborhood, whether public or private, by improving accessibility, managing the neighborhood's transportation, roads and parking lots. Accessibility must be guaranteed to as many people as possible, including children, people with reduced mobility, seniors or the disabled. Proximity to services, public facilities, leisure and activities promote accessibility (Anaïs, 2018).

II - 1 - 1 Urban quality

The city must be a dense space that represents communities. To create a quality urban environment, one must first take into account the sense of belonging of the inhabitants by improving meeting places, facilities and services covering daily needs (Anaïs, 2018).

II - 1 - 1 Heritage quality

To renew an old city, we must first know the past, because renewal is the improvement of a fabric that is already present. The presence of the heritage obligates the considerations of the logics of implementation, to minimize the risk of losing the value of the existing old fabric (Anaïs, 2018).

II - 1 Interventions of urban renewal

We can identify some of the interventions regarding urban renewal such as:

II - 1 - 1 Rehabilitation

Consists in the preservation of external elements (facades, gantries, entrances, courtyards, loggias, roofs) as well as structure and interior organization. The restored building thus becomes the exact replica of the original building (Merlin & Choay, 1988).

II - 1 - 1 Restoration

Aims to preserve all the typological and formal characteristics of the building. It therefore consists of keeping all the authentic elements, regaining the way the building is integrated into the urban landscape, reconstituting its destroyed or damaged parts, eliminating late additions indistinguishable from the urban context, or restore open spaces (Merlin & Choay, 1988).

II - 1 - 2 Conversion or reconversion :

Is the transformation of all or a portion of a building, which results in a greater number of units of each use. The conversion of obsolescent or historic buildings from their original or most recent use to a new use. For example, the conversion of former hospital or school buildings to residential use, or the conversion of an historic single-family home to office use (DAVIDSON & DOLNICK, 2003).

II - 1 - 3 Restructuring

Urban restructuring is a set of actions that aim to improve the built environment of a neighborhood, or recreate natural landscapes, create or recreate collective facilities, transform buildings by demolition or remodeling, build or rebuild housing and business buildings (Saïdouni, 2000).

II - 1 - 4 The question of demolition

Is an act or process that destroys parts or the whole building or structure (DAVIDSON & DOLNICK, 2003).

Demolition can occur in certain situations, for example when dealing with dilapidated buildings that are more expensive to rehabilitate than to rebuild. Homes that exceeded comfort standards lead to costly restructurings with unsatisfactory results (NAIMI AIT AOUDIA, 2020).

There are several techniques for demolition, such as explosive demolition where we can identify:

Lightning strike, which is more suitable for taller structures (at least R+10). The technique allows impressive precision, but requires careful preparation over several months (NAIMI AIT AOUDIA, 2020).

When space permits, tipping is possible to proceed with a tilting demolition. This method involves placing explosive charges at the foot of the building asymmetrically to tip the building to the chosen side (NAIMI AIT AOUDIA, 2020).

And other techniques such as using the ball, which allows partial demolitions but requires a great dexterity of the crane operator. This kind of demolition here is longer, so the nuisances due to noise and dust are long lasting (NAIMI AIT AOUDIA, 2020).

In addition, by using the excavator, this technique allows partial demolitions, but requires the dexterity of the driver (NAIMI AIT AOUDIA, 2020).

II - 1 Urban renewal examples analysis

II - 1 - 1 Example 1 Historical center of Bologna

The historical center project is the perfect example of urban renewal, where maintaining the heritage and identity of the city center is the main goal as well as keeping a strong relationship with its periphery. Those were the reasons that made us choose this project in particular.

The project took place in Bologna, the capital of Emilia-Romagna region, in northern Italy. Its main objectives consisted of reusing the existing built heritage and protecting the social, human and architectural characteristics of the city.

It initiated in 1973 by dividing the historical town into thirteen urban divisions, each sector had specific interventions such as restoration, rehabilitation with construction of original type, partial restructuring, demolition followed by reconstruction and demolition. In 2009, the concept of historic heritage was extended to include more recent fabric, such as the requalification of Ex-Manufattura Tabacchi, as well as integrating new public transport system to connect the historic center to the rest of the territory.

The project demonstrated the proper ways to conserve and revitalize a historic fabric while increasing the quality of life of the inhabitants. It also showed us the suitable ways to integrate some of the urban renewal interventions. (Check boards n° 2 and 3)

II - 1 - 2 Example 2 Requalification of the old Farmer's market, The Navile Market

This project is characterized by the proper integration of environmental sustainability, technological innovation, and green space and landscaping. It demonstrates a perfect modern eco-neighborhood, making it an eye-catching subject for us to include in our analysis.

The project started in 2015, in the old farmer's market near the immediate vicinity of the historic center of Bologna, north of the central railway line. It provides a link between the new and the existing urban developments by continuing the urban road network of Bologna, guaranteeing the continuity of the urban layout and its relationship with the surrounding areas (society and services). Also ensuring centrality, accessibility and mobility alongside the construction of a new building for the Municipality of Bologna, homes, commercial buildings, public parks, a new clinic, a school, a gym, social and recreational centers, and a student center for the University.

The project showed us the proper ways for guaranteeing higher quality of life while achieving high environmental standards, with small energetic footprint and light mobility grid, which privileges pedestrian, and cyclist space at the expense of the vehicular. (Check boards n° 4,5 and 6)

II - 2 Urban renewal in the legal context in Algeria

II - 2 - 1 National Scheme of Land use Planning : SNAT

The key challenge is to restore the city to its functional dimension and to create the right conditions to move it towards a sustainable city.

To do this, the city's policy will integrate the social dimension in areas with disabilities through the following actions:

- Restoration of precarious housing
- Access to community facilities
- Improving urban integration
- Participation of inhabitants in projects development.

The approach "SNAT" rehabilitates the city in its most significant dimension through the development and implementation of ambitious programs. They are included in the city's policy agenda, which revolves around the following segments:

Urban renewal

The urban renewal strategy is based on urban planning documents (PDAU, POS) that helps to guide such as master plans for the development. Urban renewal is an emergency issue in the city's policy in our country because of the dilapidation and degradation of the urban fabric in practically all cities.

Various operations support the re-qualification of peripheral neighborhoods:

- Rehabilitation of large complexes and resorption of unsanitary housing,

- Upgrading basic equipment and services (connection to AEP and sanitation networks, education, health, sports, culture, etc.),
- Assigning abandoned buildings to reintegrate them into urban operations,
- Structuring urban fabric, urban integration and public spaces development: roads, green spaces, reclaiming urban wasteland
- Improving links with the urban central space and inter-neighborhood links, both through infrastructure and adapted services (public transport).

Renovation action must be accompanied by actions related to:

- Rehabilitation, development and maintenance of public spaces,
- Rehabilitation, restoration and enhancement of historical and cultural heritage by assigning them to uses compatible with their status and allowing them to be opened to the public;
- Protection and enhancement of urban landscapes (natural and built) with the implementation of urban landscape plans included in urban planning documents and their requirements (PDAU, POS),
- Enhancement of green spaces in the city by the maintenance or creation of parks and gardens, by urban plantations (tree alignments...), by the enhancement of non-urbanized spaces,
- Modernization of efficient sanitation and garbage collection systems to limit pollution and nuisances.

Catching up and integrating urban areas with disabilities

This program aims to reduce disparities to ensure consistency and integration of different districts of the city.

Interventions in Urban Handicap Zones (ZUH) set up various actions:

- Restoration of precarious housing and the creation of social housing.
- Ensuring equipment for the neighborhoods in order to maintain public health and hygiene.
- Access to collective facilities (education, health, sports, culture ...).
- Improving urban integration of neighborhoods, both in terms of functioning and urban form, as well as in the social and economic integration of the inhabitants:
- Improving access to neighborhoods by public transport infrastructure and networks to ensure their integration into the rest of the city,
- Local facilities such as "Neighborhood Houses" provide social and cultural support and the promotion of an urban culture,
- The participation of residents in projects that concern them allows them to be more adjusted to their needs and to ensure better management.

The reform of urban management

It requires new types of governance intervention through:

- Improving municipal management capabilities,
- Generalization of decision-making tools in the city's development,
- New regulatory instruments for specific urban areas,
- Promoting participatory urban planning through consultation with city stakeholders.

II - 2 - 2 The Permanent Plan for the Safeguarding and Enhancement of Safeguarded Sectors PPSMVSS

<p>Executive Decree No. 03-324 of 9 Chaâbane 1424 corresponding to October 5, 2003 relating to the establishment of the permanent plan for the safeguarding and enhancement of the safeguarded sectors (PPSMVSS);</p> <p>Art. 2. In accordance with the provisions of the master plan for development and planning, the permanent plan for the safeguarding and enhancement of the sectors safeguarded by the abbreviation "PPSMVSS" fixed for urban or rural real estate complexes erected in safeguarded sectors. The general rules and easements of land use that must include the indication of buildings that must not be the object of demolition or modification or whose demolition or modification would be imposed.</p> <p>It also fixes the architectural conditions under which the conservation of buildings and the urban environment is ensured. The PPSMVSS enacts specific protection measures, including those relating to cultural real estate properties listed on the supplementary inventory, pending classification or classified, located in the safeguarded sectors.</p>	<p>Art. 14. — The PPSMVSS includes:</p> <p>1. The presentation report, which highlights the current state of the architectural, urban and social values for which the safeguarded sector is established, sets out the measures taken for its conservation and enhancement.</p> <p>It also shows, in addition to its references to the PDAU, when it exists, the following synthesized aspects:</p> <ul style="list-style-type: none"> • The state of conservation of the building, • The condition and layout of the road networks, irrigation, rainwater and wastewater evacuation; • The disposal and possibly disposal of solid waste; • The demographic and socio-economic framework; • The economic activities and equipment • The legal nature of real estate, the demographic, socio-economic outlook and the public facilities programs envisaged.
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II - 2 - 3 Executive decree N° 16-55 of 22, February 1st, setting the conditions and modalities of intervention on ancient urban fabrics

<p><i>Executive Decree No. 16-55 of 22 Rabie Ethani 1437 corresponding to February 1, 2016 setting the terms and conditions for intervention on old urban fabrics.</i></p> <p>Art. 2. For the purposes of this decree, it is understood by:</p> <ul style="list-style-type: none"> • Old urban fabric object of intervention: Set of buildings and constructions presenting a state of dilapidation, 	<p>degradation, unsanitary conditions and inadequacies in terms of regulatory requirements, in terms of habitability, comfort, safety, viability, infrastructure, facilities or public spaces.</p> <ul style="list-style-type: none"> • Intervention operation: Set of actions and works of rehabilitation, renovation and/or urban and rural restructuring.
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- Intervention plan: Set of documents and studies detailing operations and actions to be undertaken, intervention methodology, necessary plans, regulations, and financial arrangement of these operations established based on diagnosis, data analysis of the old urban fabric and of the perimeter and type of intervention.
 - Operator: Organization specialized in the field, responsible for the delegated project management of intervention operations on old urban fabrics.
 - - Intervener(s): Physical or moral person(s) set up by the operator and empowered to undertake intervention operations.
- GENERAL DISPOSITIONS
- Art. 3.* The intervention on ancient urban fabrics aims to:
- Rehabilitate old urban fabrics in order to improve their resistance, durability, aesthetics and living conditions.
Renovate old neighborhoods through restructuring, rehabilitation or renewal of the state of networks, buildings and constructions, infrastructures, equipments and public spaces.
 - Priority old urban fabrics requiring heavy rehabilitation operations, which consists of strengthening structures and/or strengthening foundations.
 - Old urban fabrics requiring urban renewal and / or restructuring operations;
- Old urban fabrics, including signs of degradation requiring medium rehabilitation operations, which consists of repairing common areas, networks and technical equipment;
 - Old urban fabrics requiring light rehabilitation operations, which consists of repairing facades and waterproofing.
- Art. 6.* The rehabilitation of buildings or constructions of particular historical, cultural or architectural interest unclassified and unprotected under Law 98-04 of 20 Safar 1419 corresponding to June 15, 1998, will be carried out in respect for their intrinsic values.
- Art. 8.* Intervention operations on old urban fabrics involve complementary measures and actions, including:
- Improving the living environment of the population and the environment's quality;
 - Raising public awareness of the preservation of heritage and the quality of the living environment;
 - Promoting the culture of maintenance and management of condominiums;
 - Training in the field of intervention on old urban fabrics.
- Art. 10.* The old urban fabrics must be identified and classified by the wilaya, according to their degree of deterioration and unsanitary conditions, by identifying:
- Buildings threatening ruin and specific actions to be taken.

II - 3 HQE²R : An integrated approach to sustainable development for the renewal of a neighborhood

II - 3 - 1 Defining a sustainable city:

The sustainable city is defined as a coherent and livable city. The Coherent City ensures:

Social coherence

Which is, maintaining culture and identity, intergenerational cohesion, integrated transport policy, accessibility and flexibility of equipment and services

Economic coherences

Which is the maintenance of economic diversity and environmental coherence: managing resources, maintaining heritage and health preservation

Spatial coherence

Is the clarity of the various functions in the city and the improvement of urban art and urban composition in order to correct the dislocations between each parts of the city, and the livable city is considered as a system that integrates social, cultural, economic and ecological

dimensions, with the objective of livability and Sustainability that incorporates factors related to employment, affordable housing, crime and poverty (CHARLOT-VALDIEU, 2006).

The European HQE²R project is an integrated approach to sustainable development for urban renewal projects.

This involves applying the principles of sustainable development to the neighborhood in order to ensure a better quality of life for residents (CHARLOT-VALDIEU, 2006).

II - 3 - 2 Principles of sustainable urban development according to the HQE²R approach

The HQE²R approach proposes the following six guiding principles of sustainable development:

1) Economic Efficiency

Which is the efficient use of available, financial, human and natural resources. It can help the community and investors when it comes to the cost of projects.

2) Social equity

Which is focusing on the fight against poverty and social exclusion by providing employment, housing, medical care and education to have a more stable society that can develop its traditions while promoting a sustainable way of life.

3) Environmental caution

Which is improving sustainability, technical efficiency of resource processing systems, access to resources and saving nonrenewable resources

4) Precaution and long-term consideration

Which is against making decisions with short-term impacts, the future must be taken into consideration by using technical and social innovations.

5) Globality

The impact of decisions and actions must be considered at different territorial scales, at the local and global levels. Those decisions must be taken by directly concerned organizations or by the nearest authorities (CHARLOT-VALDIEU, 2006).

6) Governance:

"This principle must lead to the adoption of a doctrine of public responsibility, which gives the State the duty to preserve natural resources." (CHARLOT-VALDIEU, 2006, p. 49).

II - 3 - 3 Objectives of sustainable development of a neighbourhood

The integrated approach is based on six principles and five sustainable development objectives in 21 targets. Each target has sub-targets. These five objectives are used to analyze a neighborhood from a sustainable development perspective. (CHARLOT-VALDIEU, 2006)

Preserving and valuing heritage and conserving resources

Managing space consumption results in limiting or reducing urban sprawl, and the preservation of energy, water, and space and built heritage resources must be taken into account for future generations (CHARLOT-VALDIEU, 2006).

Improving the quality of the local environment

Providing a better quality of life for people and making sure keep it in the present and future is the top priority, which means applying actions that fight against: waste, noise; and improves health, education, employment and housing (CHARLOT-VALDIEU, 2006).

Improving diversity

This objective allows planning actions that ensure the variability of economic, cultural and natural functions; while offering social and urban diversity and valuing human resources (CHARLOT-VALDIEU, 2006).

Improving integration

The principle of integration is balancing between territories to provide actions that lead to real social and economic integration of the neighborhood in its environment (CHARLOT-VALDIEU, 2006).

Strengthening the social bond

The important part of neighborhood's development is social cohesion, as well as respect between the inhabitants. In addition, the sense of belonging must be obtained through the strengthening of the social bond.

An organizational chart that shows these Five Goals and their Targets and Sub targets is presented below (CHARLOT-VALDIEU, 2006).

II - 3 - 4 Analysis grid of the HQDIL method (HQE²R approach):

A systemic analysis grid that divides the neighborhood into four spaces; residential, non-residential, built space, non-built and infrastructure. Each of these spaces will be treated with the suitable actions according to the objectives of the HQE²R approach (CHARLOT-VALDIEU, 2006).

II - 4 AEU : An integrated approach to sustainable development for the renewal of a neighborhood

The Environmental Approach to Urban planning (AEU) is a decision-making approach for operational development projects and urban planning documents, and considering environmental and energy aspects is its essential objective. It can be applied to any kind of projects, but it is mainly intended to accompany the development of planning documents and the implementation of development operations such as ZAC, housing estates, urban renewal operations, eco-districts or economic activity zones (Méditerranée).

It was developed by ADEME, and it's a tool that methodically takes into account, at each stage of an urban project, the main factors that influence the quality of the relationship between building and environment (water, waste, energy, transport, noise, landscapes, biodiversity and climate.). It also allows the initiation or analysis of development projects from an environmental and energy perspective and makes planning choices accordingly (ADEME, 2006).

The AEU deals with all environmental issues of urban planning or development operations not just the field of energy. And it promotes a good appropriation of energy-climate issues that shows a new perspective of the environmental issues. The AEU sometimes appears as a project management assistance service that constantly question the project in terms of its environmental impact (Méditerranée).

When it comes to the efficiency, the AEU must intervene as early as possible in the project and must become a guideline that analyze the environmental issues, define the environmental objectives and planning principles and monitor the project. (Méditerranée)

The AEU is not intended to replace approaches to meet regulatory obligations, such as the initial inventory, the impact assessment, the environmental assessment..., instead, it anticipates and enriches them depending on its level of integration into the project. It targets objectives that go beyond strict compliance with environmental standards that are also articulated with economic and local objectives (Méditerranée).

The implementation of an AEU improves the environmental quality of an urban project. All environmental issues are treated separately and then lead to a set of possible solutions (Méditerranée).

II - 5 Typomorphologic analysis as a methodological framework for intervention on fabrics already constituted : Definition element

II - 5 - 1 Typo-morphology approach

The typo-morphology approach is based on the reading of the urban fabric and physical forms as a result of an evolutionary process. It is the systematic understanding of cities' history, which leads to the understanding of their growth pattern as living organism, by revealing the physical and spatial structure using the employed fundamental concept of type, fabric, organism and territory to form the typologies of the urban form (Syahidah Amni Mohamed, 2017).

II - 5 - 2 Type

The Muratorian School defines the type as a set of conventions and norms that are acquired through constructive experience, and it is a mixture of knowledge and constructive solutions (Malfroy, 2001).

A priori type and a posteriori type:

A priori type is a set of organized information and ideas that come before an experiment. A posteriori type is a scientific construction, based on the result of experiments and solutions resulting from urban and architectural analysis instruments (Malfroy, 2001).

II - 5 - 3 Typology

Typology is listing different types of buildings, streets, neighborhoods, cities, etc. including processes and rules to create types. When making building typologies, architects usually focus on the building elements and their configurations such as types of windows and doors,

design of the façades and organization of the rooms, orientations of the building and its relation with surrounding spaces, and so on (Stojanovski, 2019).

II - 5 - 4 Diachronic analysis

It is an analysis that demonstrates the evolution of the urban fabric throughout the time (structuring; composition)

II - 5 - 5 Synchronic analysis

The study of the urban organism at a given time, and it is based on different typological, topographical, structural and sociological factors. It allows us to define the characteristics of each type of the urban fabric and heritage (Malfroy, 2001).

II - 5 - 6 Urban morphology

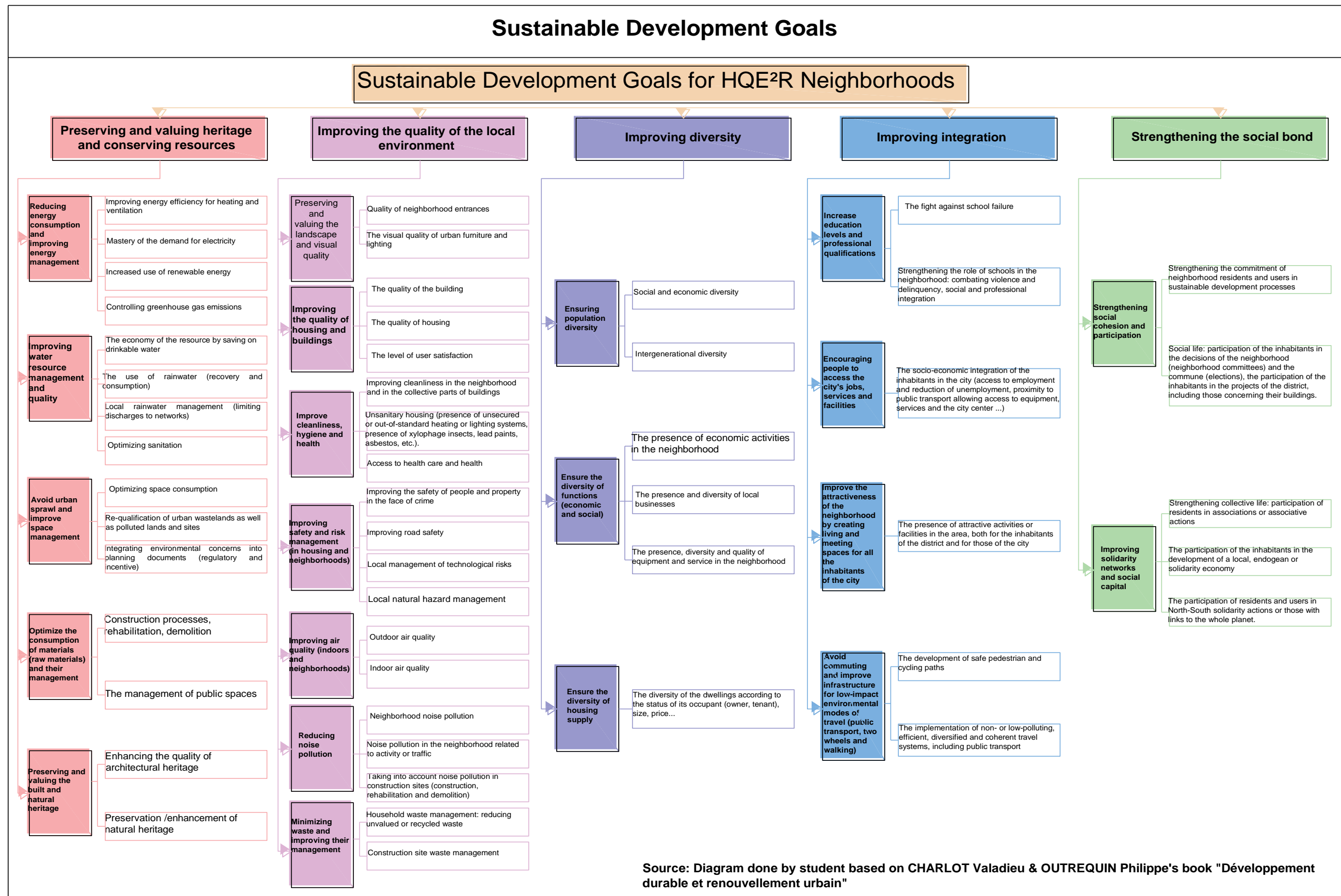
It is the study of a city's formation and transformation history and its architecture, it is also the study of the organization of the built environment, the fabric, the city, the territory and their correspondences, as well as the study of space and the relationships it establishes with the different parts of the urban organism (BOUKRATEM, 2020).

II - 6 Synthesis and colclusion of the chapter

This chapter has demonstrated the concept of urban renewal, which is the result of various operations that enhance and improve the old city, while raising several quality issues such as life and housing quality, environmental quality, interconnection quality, urban and heritage quality. We have developed specific intervention types that suit our case study such as urban restoration, urban densification, conversion or reconversion, demolition, urban rehabilitation and restructuring.

Sustainable development is always associated with urban renewal, and the HQE²R approach is an integrated sustainable development method for urban renewal projects. It applies the principles of sustainable development to the neighborhood in order to ensure a better quality of life for its inhabitants. We are going to apply this analytical grid along with the AEU recommendations to our case study to identify the suitable actions for the intervention zone's renewal.

The typo-morphology approach will be used as a tool for reading and understanding the history of the urban fabric, its formation and transformation with the aim of integrating a new fabric into the historical continuity of the city while preserving its identity.



Board 1 Sustainable development goals of the HQE²R approach

THEMATIC ANALYSIS OF AN EXAMPLE OF URBAN RENEWAL Historical Center, Bologna, Italy

Factsheet:

Situation: Bologna, Emilia-Romagna, Italy.
Project management: Leonardo Benovolò, Pier Luigi Cervellati.
Contracting authority: Municipality of Emilia-Romagna, ATC Transportation
Launching year: 1973
Completion year: Ongoing
Project budget:

Location:

Bologna is the capital and largest city of Emilia-Romagna region in northern Italy. It is the seventh most populous city in Italy, at the heart of a metropolitan area of about 800.000 people.



Location and accessibility of the city of Bologna

Historic center problems:

The problem of the historic center has been addressed in all these aspects: full and empty relationship, public space - private space, typology of buildings, connection of the historical center with the rest of the city, its assets, etc. The main problem remains that of housing, with its social, cultural, medical extensions and also above all its relationship with professional activity.

Issues of the historic center:

- The conflicts of the Second World War had inflicted heavy damage on the city of Bologna to the built heritage throughout the territory.
- The challenge of the Historic Center Plan is to remove the historic center from the laws of the land and real estate markets and return it to the community.



Bologna city plan in 1943 (source Google earth archive)



Bologna city plan in 2020 (source Google earth)

Project missions:

The Plan for the Historic Center of Bologna was built around six politico-cultural missions. This program plan objectives are:

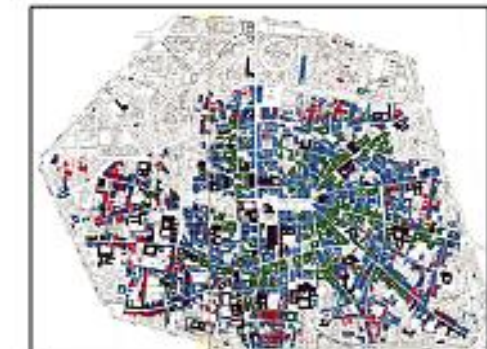
- Conserve and revitalize the historic fabric
- Requalification of the residential function inside the historic center
- Development of social, cultural, institutional and commercial all over the metropolitan area
- Enhance the place of the university through the development of university activities
- Connect the historic center to the rest of the territory by connecting it to the major communication axes
- Increase the quality of life of the inhabitants of the historic center



Program:

P.E.E.P Plan: 13 Conservative sectors.
 The Plan divided the historical town into thirteen urban divisions, meant to represent sufficiently homogeneous zones from the morphological, functional and socio-economic point of view, and defined by a high physical and hygienic building degeneration.

Physical conservation	Building typology	Active conservation functionalism
Intervention techniques	Punctual intervention	
Category 1a & 1b: Restoration	Category A: Monumental buildings	Category A: public or collective cultural activities
Category 2a: Rehabilitation with construction of original type	Category B: Palaces and typical mansions	Category B: residence/ ground or main floor, cultural activities
Category 2b: Partial restructuring	Grouped intervention	
Category 3a: Demolition followed by reconstruction subjecting precise standards	Category C: Minor Habitat (workers and craftsmen houses)	Category C: normal or temporary students residence, singles, elderly, young couple, workers
Category 3b: Demolition	Category D: Private buildings deriving from either category A or B	Category D: Residence or similar destination
	Buildings with no historical value	Buildings with no historical value



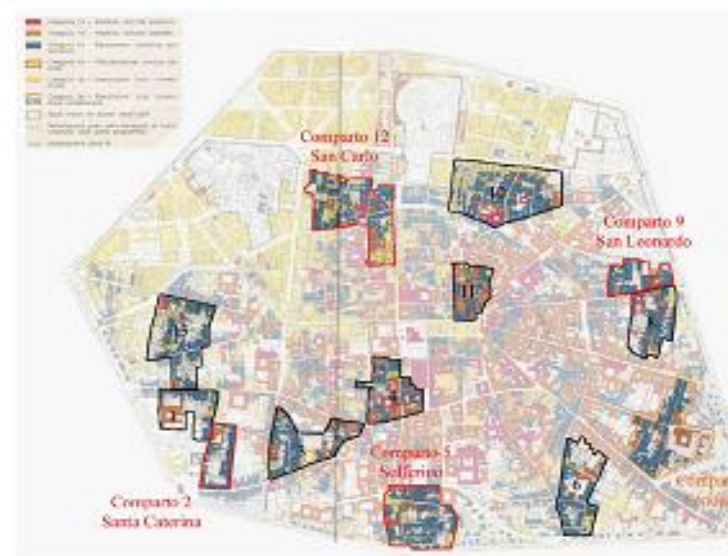
Category (A) Category (B) Category (C) Category (D)



Category 1a and 1b Category 2a Category 2b Category 3a Category 3b

The saved sectors:

The rehabilitation of sectors 2, 5, 9 and 12 has been a successful operation as forty years after the building is still in good condition.



Plan of the 12 saved sectors

Sector 2 : Santa caterina



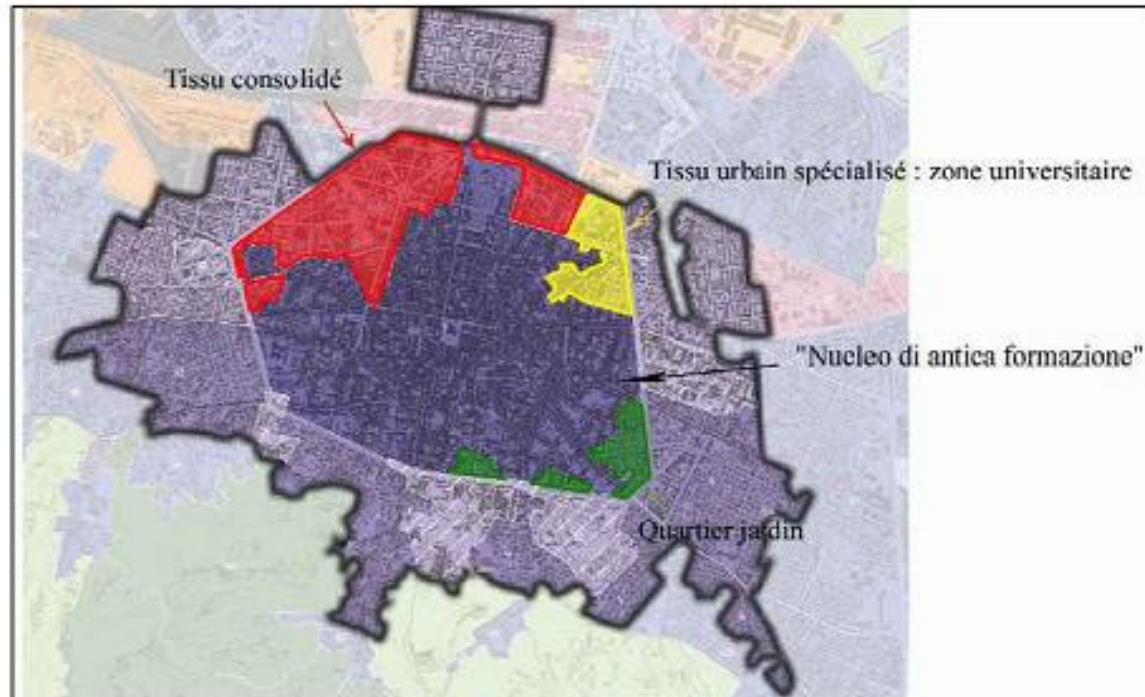
Sector 5 : Solferino



Sector 9 : San Leonardo



THEMATIC ANALYSIS OF AN EXAMPLE OF URBAN RENEWAL Historical Center, Bologna, Italy



Different zones of the historic center according to R.U.E

A sustainable project:

New urban instruments has replaced the old ones:

The P.S.C. defines the main development axes of the territory for the next twenty years, Implemented In 2008.

The P.O.C. is a programming tool for interventions - conservation, enhancement, and protection projects as well as all expropriation procedures, forecasts for the allocation of public services, Implemented In 2009.

The R.U.E, implemented in 2009, establishes intervention standards for built heritage.



A. Pedestrianization of the university area:

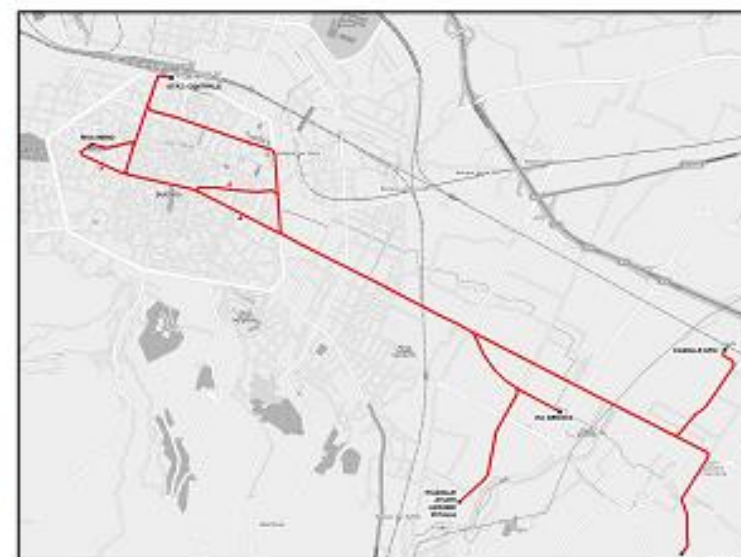
The general urban traffic plan of Bologna provided for the pedestrianization of an area of 54 hectares in the heart of the historic center, the university area.

The aims of this project are as follows:

- Develop commercial, cultural, historical, artistic and social activities
- Value and protect historical and artistic monuments
- Promote urban requalification - public spaces.
- Eliminate the pedestrian-car conflict
- Reduce the pollution

B. A commercial development program

The P.O.C. plans Commercial Development Programs to revive commercial activity, and with regard to the historic center, there is the P.V.C. for Place Verdi, the P.V.C. for Via Azeglio and a commercial requalification for Via Indipendenza. These P.V.C. are only for the moment indications of the P.O.C. no policy has yet been launched by the municipality



C. Redevelopment of a socio-cultural district in the heart of the historic center

Following the plan of the historic center of 1969, one of the most important requalification interventions inside the historic center was the requalification of Ex- Manifattura Tabacchi. This 10 hectare island has been transformed into a city-wide cultural-multimedia hub. This project included:

- The requalification of the Ex-Manifattura Tabacchi by transforming it into a cinemathèque and by redeveloping the green spaces
- The reclassification of social housing - residence for students and retirees - with the parking area
- The reopening of the Cavaticcio canal and the installation of a turbine for the production of electricity; the reclassification of the green space of the canal; the reclassification of the former bread oven into a modern art gallery; that of the Exabattoir in an art workshop and finally that of the Ex-Tamburi mill as a communications hub for the University of Bologna.



A new public transport system:

Since 2003, the Municipality has wanted to set up a new public transport system, the CIVIS. CIVIS is a trolleybus network that will link San Lazzaro di Savena and the historic center of Bologna.

This project was not part of the original project. The goal was to attract more people to the historic center



THEMATIC ANALYSIS OF AN EXAMPLE OF URBAN RENEWAL

The Navile Market: requalification of the old Farmer's Market

Data:

- Surface area: circa 300.000 m²
- Public spaces planned: circa 100.000 m²
- Funding "Piano Città": € 10.250.000
- Masterplan: Studio Scagliarini con TASCA studio
- Urbanization and public spaces projects: TASCA studio
- Realization: Consorzio Mercato Navile.



Location:

The Bolognina quarter is located in the immediate vicinity of the historic center of Bologna, north of the central railway line.



The Goal

The vast agricultural market (fruits and vegetables) characterized by storage buildings and also a large arcaded awning (pensilina Nervi). The entrance of this market is also symbolized by an entrance tower.

The main goal of the requalification project of this large area, is the development of the neighborhood, in terms of urban quality and services. The "requalified" area, will host new housing as well as new public facilities and vast green areas which will be integrated with the residential buildings in a continuous system of open and livable spaces connected with the historic part of the Bolognina.

The plan guaranteed the connections and relations between the neighborhood and the border; society and services; centrality and accessibility; green space and landscaping; environmental sustainability; technological innovation; and mobility. Conclusions included the construction of a new building for the Municipality of Bologna, homes, commercial buildings, public parks, a new clinic, a school, a gym, social and recreational centers, and a student center for the University.



Pensilina Nervi
Source: www.mercatonavile.org



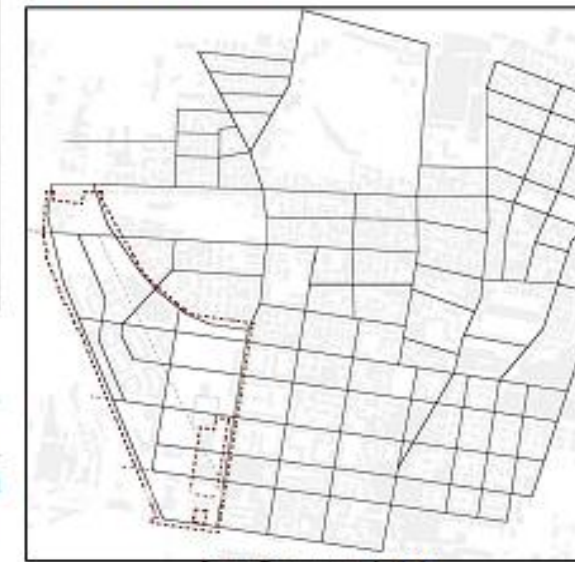
Entrance tower
Source: <http://www.casablog.it/tag/vecchio-mercato/>

The program:

1) Maintenance of the Nervi pensilina and the tower building (entrance to the former market)

2) Urban layout:

- Continuity of the Axes of the Bolognina and the creation of a garden footbridge allowing access to the park space of villa Angeletti



Source: Ex mercato ortofruticolo



Garden footbridge
Source: www.mercatonavile.org

Mobility systems:

Road sections

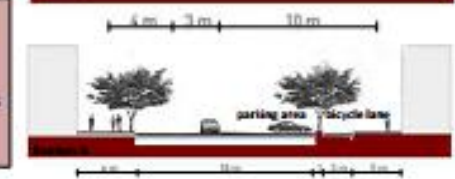


Source: Ex mercato ortofruticolo

Section A: internal service road.
-One way lane, plus urban pedestrian spaces



Section B: internal road towards north-south axis
-One way lane, plus parking on both sides



Section C: green diagonal



Section D: The new Gobetti street



Source: Ex mercato ortofruticolo

THEMATIC ANALYSIS OF AN EXAMPLE OF URBAN RENEWAL

The Navile Market: requalification of the old Farmer's Market

URBAN COMPOSITION



- Bike path 1.7 km
- Cycle paths on reserved lane 2.0 km
- Cycle-pedestrian routes 2.2 km

- The communications systems have varying degrees of extension and control: while the network of cycle and pedestrian routes is continuous and widespread, vehicle mobility and parking is controlled and regimented according to a hierarchy of traffic separation, distinguishing between through-traffic and that serving the residential community.



- neighborhood streets
- urban roads

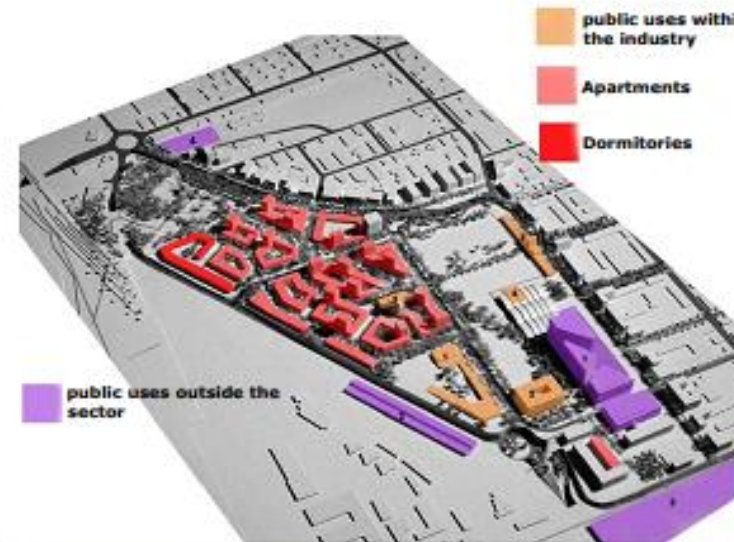
Other uses : 17,159 sqm

Squares: 1 - Station 2 - pensilina 3 - Unique location

- Creating numerous public services (administrative, cultural, sanitary) and proximity

Other functions :

- Other uses : 17,159 sqm public establishments, health and sports services offices



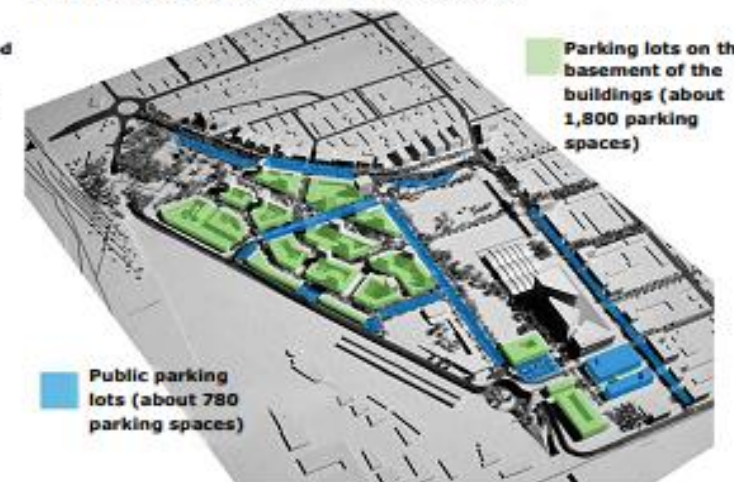
- public uses within the industry
- Apartments
- Dormitories

public uses outside the sector

Public uses within the industry	Public uses outside the sector
1 school 4200 sqm	1-Single office of municipal offices and complementary service activities
2 polyclinics AUSL 6,150 sqm	2-North-Arcoveggio station
3 gym 850 sqm	3-Access from Carracci street to the new High Speed station
4 Katia Bertasi Social Centre 1,300 sqm	4-School complex via Flora
5 former entrance of the Market 3,000 sqm	

Residence functions :

- Residences - 92,503 sqm about 1,200 apartments
- For the students about 6.500 square meters

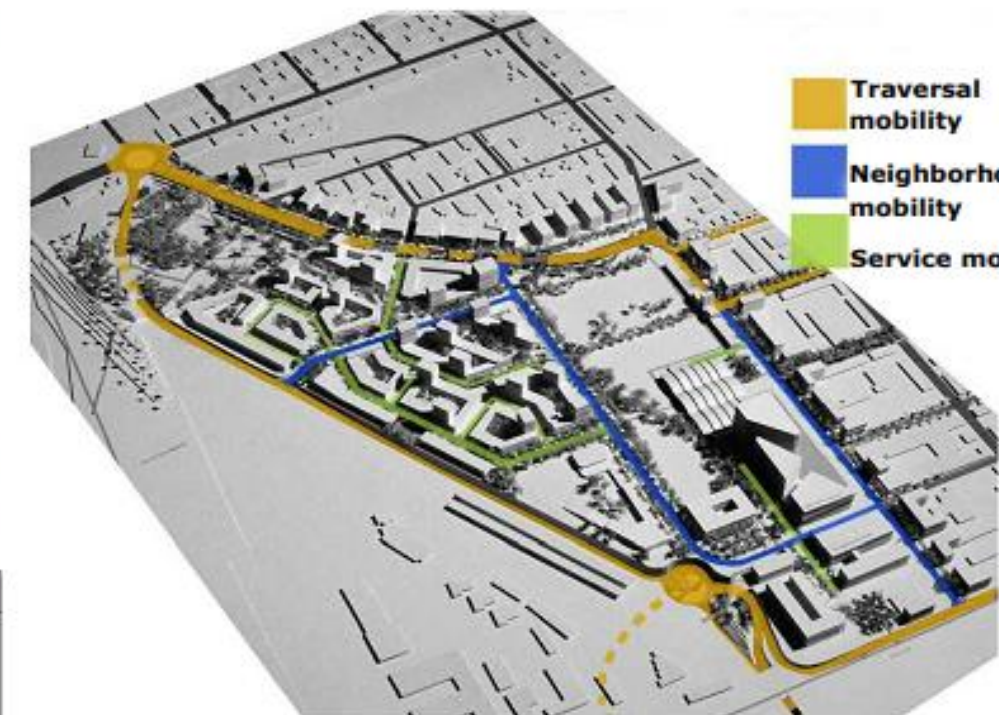


Parking lots on the basement of the buildings (about 1,800 parking spaces)

Public parking lots (about 780 parking spaces)

Parking functions :

- Parking lots on the basement of the buildings (about 1,800 parking spaces)
- Public parking lots (about 780 parking spaces)
- 1 -multi-storey car park (about 900 parking spaces)
- 2 -multi-storey car park compartment (About 200 parking spaces)



- Traversal mobility
- Neighborhood mobility
- Service mobility

- The creation of a north-south axis and urban street through Fioravanti, provides the link between the new and the existing urban developments, becoming the true heart of Bolognina.



- public green
- existing green
- school and private green

- The creation of public spaces (squares and green spaces) with the desire to create a central urban park in Bolognina in response to the lack of green spaces in the quarter.

THEMATIC ANALYSIS OF AN EXAMPLE OF URBAN RENEWAL

The Navile Market: requalification of the old Farmer's Market

ENERGY AND SUSTAINABLE DEVELOPMENT

Alongside the actual design factors, the urban plan considers environmental values and priorities, organizing a framework of energy policies, both active and passive, with the strategic objective of achieving high environmental standards and of distinguishing the development for its energy sustainability.

The research into energy questions, which will be applied for the first time in specific Energy Implementation Regulations in the plan, has looked into the question of the economic feasibility of choices made, seeking to find the right balance between obligatory requirements and recommendations, taking into consideration the public financial resources and the construction firms that will carry out the new development.

By reason of its size and the questions examined, this constitutes a pilot project for urban regeneration and development policies in all cities.

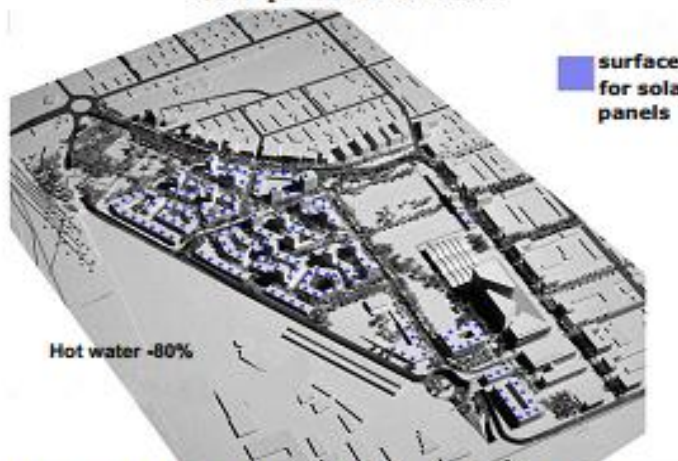
In general terms, the plan adopts the following technical and engineering requisites:

Photovoltaic panels



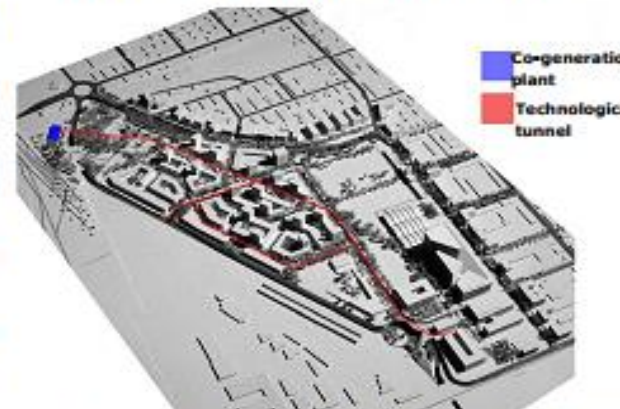
- Provision of photovoltaic equipment on all buildings, in order to encourage the private sector to install equipment that will enable it to sell energy, as well as to consume it

Solar panels for hot water



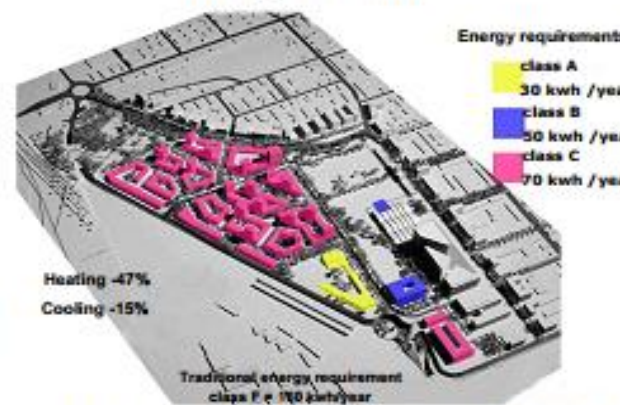
- Production of hot water by way of solar panels on all buildings

Co-generation plant and technological tunnel



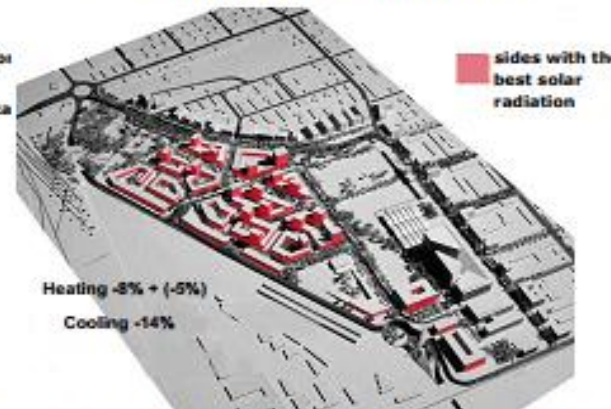
- Co-generation plant, fed by methane gas, serving the whole development and distribution of services by way of underground technological service channels. The size of the plant will be based on the requirements of the area, net of energy saving obtained through the energy regulations in the plan;

Energy classification



- Energy certification of the buildings on the basis of Casaclima criteria, already adopted by the Autonomous Province of Bolzano. In particular, all private buildings must be Class C (70kWh/m²/year), all public buildings must be Class B (50kWh/m²/year) except for schools which must be Class A (30kWh/m²/year);

Orientation and solar contributions



- Use of passive sunlight, by way of the correct positioning of buildings and identification of the "warm sides" on which to situate the daytime areas
- Covering of surfaces and green areas of all buildings in order to reduce the re-radiation of heat into the atmosphere and to increase the thermal inertia of the buildings;

Ecological islands



Urban refuse collection by way of 6 underground ecological islands, replacing 128 traditional, above ground containers. The overall effect of all of these factors, some obligatory and others recommended, will carry the urban system towards an energy requirement of around 60% less than traditional buildings.

Permeability



- Provision of a permeable land surface (both public and private) of around 35% of the surface area and a semi-permeable surface (30% permeability) of around 25%

Water resource



Provision of a dual network of water collection in order to encourage collection and recycling of water, thanks to 2 underground accumulation tanks for irrigation purposes and a lamination basin which overflows into the Navile Canal



CHAPTER

03

CASE STUDY

KASBAH

SURROUNDINGS

III Case study : Kasbah surroundings

III - 1 Presentation of the case study : Towards a multi-scales reading of the urban fabric

III - 1 - 1 Delimitation of the perimeter of the city

Our study area is located in the eastern part of the bay of Algiers. It encompasses a large part of the city of Algiers, delimited according to the trapezium defined by RENE Lespes in his book *"Alger, étude de géographie et d'histoire urbaine, 1930"*. It is limited by:

- On the North, by the Boulevard Said Touati connecting to Frais Vallon street;
- On the East, Avenue Mohamed (to Bois Boulogne), and Boulevard Colonel Bouguara until Frais Vallon street;
- On the West, by the coastline of the Mediterranean Sea;
- On the South, by the highway n°5 to the Boulevard Khalifa Oulmane and Maach Malek.

This perimeter is characterized by its richness of architectural heritage: the Medina of Algiers, which represents a district that is listed as a UNESCO World Heritage Site. In addition, constructions that marked the colonial heritage. We also cite the memorial of the Martyr (or even مقام الشهيد Maqam E'chahid).

Our study area is accessed by:

- National road 11 along the port
- National road n ° 1 on the side of Bab Azzoun
- The national road n ° 41, next to the citadel (check board n°09)

III - 1 - 2 Delimitation of the Kasbah's surroundings

Our study area is located in the center of the city of Algiers. It covers the surroundings of the Kasbah of which there are parts which belongs to the safeguard plan of PPMVSS and of UNESCO.

It is limited:

To the north, by the Emir Abd-el-Kader high school and by the Louni Arezki ramp along the avenue de Bengana Boualem to the northwest;

- To the west by the hospital and the cemetery of El Kettar;
- To the east by the Mediterranean Sea;
- To the south by rue Debbih Cherif joining Patrice le Mumba street and Ali Boumendjel street which extends to Boulevard CHE GUIVARA.

A variety of important facilities exists in this perimeter. They have been a witness of the French colonialism. Such as the Dey palace, national theatre, the Emir Abd-el-Kader high school, Serkadji prison. In addition, the different open spaces like the martyrs square (place

des martyrs) and Port Said square and Praque garden. El jaded mosque and la Grande mosquée dated since the ottoman era.

The perimeter is accessible by:

- The highway n°36 from the side of the Citadel;
- The highway n°1 from Bab El-Oued;
- Zighoud Yousef Boulevard from the ouest.

(check board n° 10)

III - 1 - 3 Delimitation of the intervention zone

Our intervention site is located in the region of Bab El-Oued. It underwent a lot of change during the colonial era. A strategic location thanks to its proximity to the Kasbah, providing a good link between the old Kasbah and the rest of the city.

The area is located on the northwest side of the upper Kasbah. It is delimited by:

- The Louni Arezki ramp to the north and northwest
- Dey's palace to the west
- The Kasbah to the south
- The Ali Ait Idir hospital, the Mohamed Boudjil street, and also by the Okba high school in the northeast.

This zone is remarquably splited into two area; one is a military area where the Serkaji prison is located. In addition to other military facilities and apartments. Where the other area is the habitable part of the zone

(check board n° 11)

III - 1 - 4 Climatic data

Algiers lies on 102m above sea level, known for its Mediterranean climate, where the summers are warm, humid, dry, and the winters are long, cold, windy, and rainy

Temperature

The hot season lasts for 3 months (June 22 to September 22), with an average daily high temperature above 27°C (min 16.2°C, max 32.3°C). The cool season lasts for 4 months (November 24 to March 23), with an average daily high temperature below 18°C (min 5.8°C, max 19.3°C).

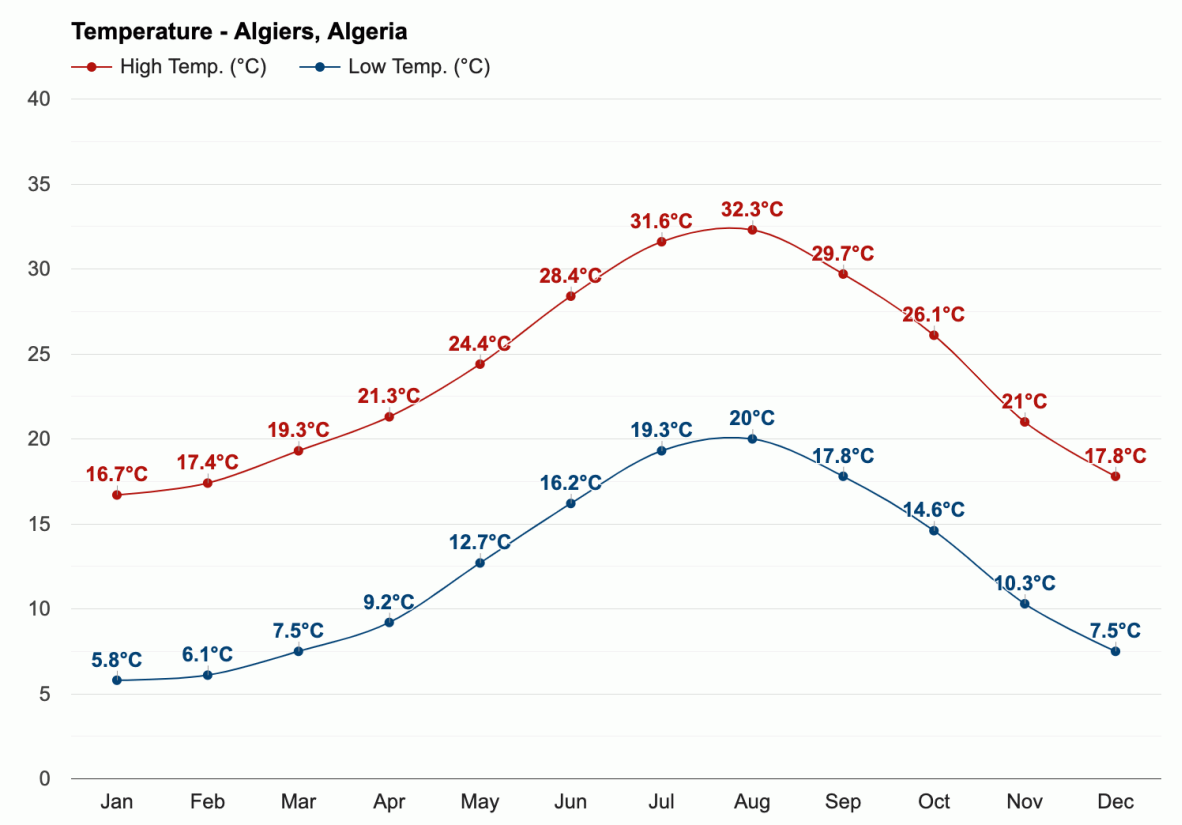


Figure 2 Average temperature
Source: weather-atlas, 2020

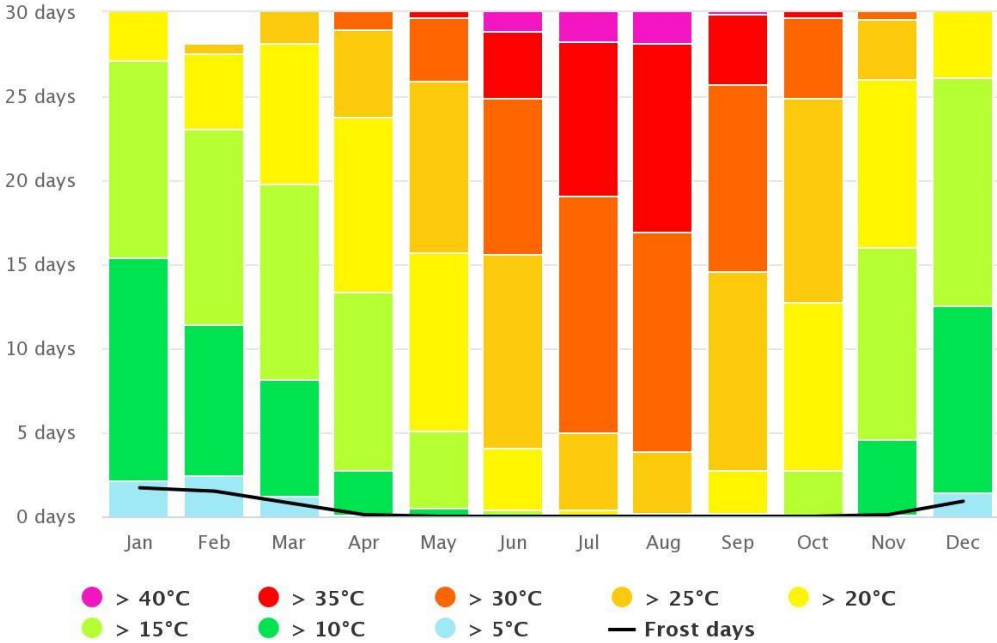


Figure 1 Maximum temperatures
Source: Meteoblue, 2020

Wind

The average daily wind speed in Algiers experiences mild seasonal variation over the course of the year. The windier part of the year lasts from October 29 to April 16, with average wind speeds of more than 15 Km per hour. The calmer time of year lasts from April 16 to October 29. The wind is most often from the east starting from May 9 to October 1, with a peak percentage of 48%. The wind is most often from the west starting from October 1 to May 9, with a peak percentage of 44%.

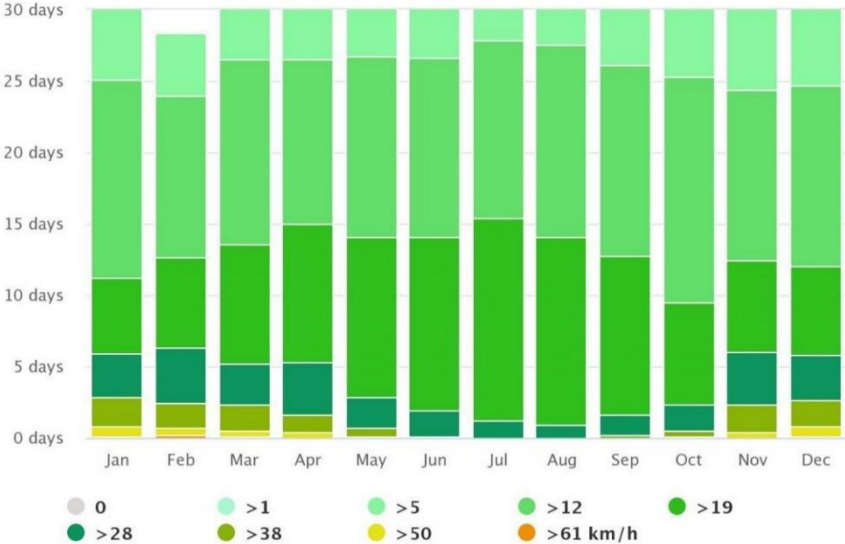


Figure 3 Wind speed
Source: Meteoblue,2020

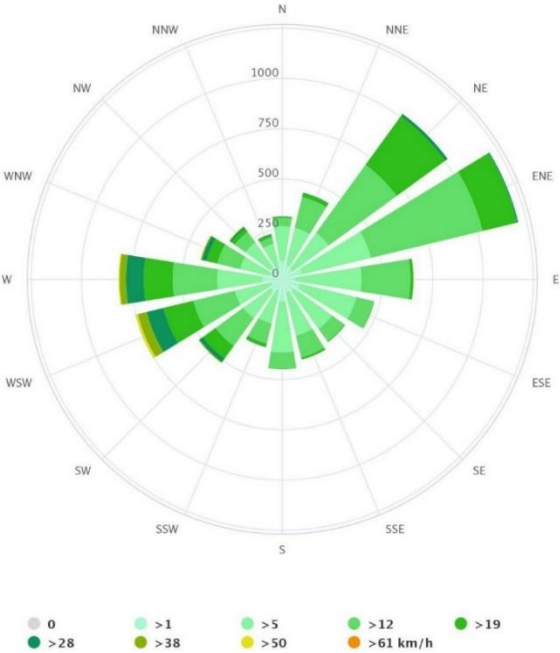


Figure 4 Wind rose
Source: meteoblue, 2020

III - 2 Diachronic reading

III - 2 - 1 Site reading

Algiers territory has known many changes throughout the history under series of dynasties, starting from the Phoenicians, Romans, Berbers, Ottoman and during the French occupation. Hence, in order to understand the French implantations, this latter constitute the purpose of our study, we have relied on RENE Lespès' work "*Etude de géographie et d'histoire urbaine, Alger*"; as he described the site before its changes and also its urban history during the mentioned dynasties; to study the features of the territory before the arrival of the French.

Regional context

The territorial context of Algiers is characterized by three major entities, the Sahel, the Mitidja plain and the Atlas mountains. The Sahel spreads along the coast of the Mediterranean Sea. It separates the western part of the Mitidja from the sea. The Mitidja plain stretches about 100km long from east to west, with a width varying from 5 to 20km, and at an altitude of 50m. It slopes very slightly towards the sea, and the Atlas plain (Atlas Tellien) limits the Mitidja on the south and extends in parallel with the coast.

So many historical paths, dated from the Roman times, traverse the territory. Connecting the area with the principal urban cores. The Constantine route that connects Algiers with Constantine, and extends towards Cherchel from the west, passing through Zeralda, Tipaza and Kolea. The third line prolong towards the south (Laghouat) passing through Blida and Boufarik. And also the fourth line that folks from Constantine road at "Maison carrée" and prolongs towards Larbaa and Medea.

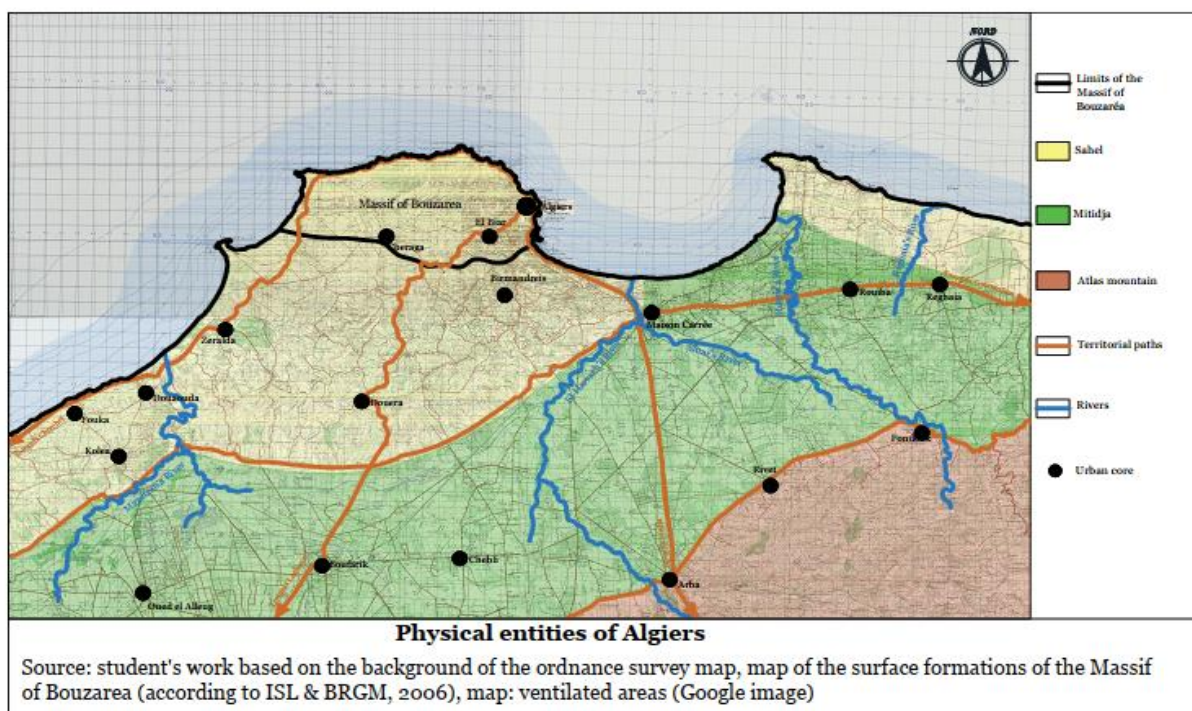


Figure 5 physical entities of Algiers

The area of site implantation is located on the west side of the bay of Algiers. It relies to the coastal side of the Bouzarea massif, which takes a major part of the Sahel. The plain of the Mitidja limits a big part of the Sahel from the south and extends to the north, northeastern side to the Mediterranean Sea. Those two massifs, alongside with the Atlas Mountains, form the main plains of the north thus it is remarkable that the river system on this area is quite rich. Some rivers cut through from the mountains north to the Mediterranean.

Natural and artificial elements:

We distinguish two elements existing in the area. Natural and artificial elements.

1) *Natural elements:*

The site is limited by a series of valleys and rivers from its northern to the southern side, according to the description of RENE Lespes, they forms trapezoidal shape all connected together with the coast side as a base. As shown in the following map, the valley of Ben Lazzhar limits it from the north and northwestern side, and with the Frais Vallon that goes downhill and connects with Oued M'kacel toward Beb El-Oued. From the south and southwestern side, it is limited with the ravine of Hydra.

To provide the Medina inhabitants with water the city was supplied by four main aqueducts: (SEFFAJ, 2011)

- Birtraria aqueduct: the shortest among the four aqueducts (1,7 km long). Collects from the resource of Frais Vallon and extends alongside M'kacel River entering the Medina from Bab el-oued's side.
- El-Hamma aqueduct: 4,3 km long. It collects the water from the Hamma resources. It extends to the medina entering from the lower side until the Mosque's fountain.
- Telemly aqueduct: 3,8 km long. It collects the groundwater from the south of Algiers and extends towards the Kasbah entering from the lower side of Bab El-Djdid.
- Ain Zeboudja aqueduct: the longest (more than 10km long, according to Seffaj) and the most important among the four aqueducts. It collects the water from various sources; water resources of Ben-Aknoun plateau, which blocks the upper part of Kerma's river, and Hydra resources.

Besides, the site is characterized by the existence of six plateaus in the area: Bab Al-Oued, El-Biar, Empror plateau, Saulière, Birmendreis and Mustapha inferior plateau.

2) *Artificial elements*

The medina (Kasbah) was built in the slope side of the massif of Bouzarea. Fortified and surrounded by walls with five gates to secure the city from the outsiders.

- Bab El-Oued to the north
- Bab El-Djedid to the southwest
- Bab Azoun to the south
- Bab El-Bhar on the sea front

- Bab El-Djazeera on the entry of the harbor

As it shows on board n°9 , the site is accessible by four major historical routes. Each route leads and connects the site to an urban core (city). The Constantine route extends all the way in parallel with the coastline, leading to Constantine (east) and to Cherchel (west). Another route connecting the Kasbah to El-Biar plateau (southwest) and another one leading to Laghouat.

III - 2 - 2 Morphology of the site

Topographically, two major ridgelines are in this area, which, both diverge from El-Biar plateau. The first ridgeline splits from the head of Birtraria’s ravine, next to El-Biar, and goes downwards the point of Sidi-El-Kettani, passing by the Fort d’Empereur (216m) and the old Casbah (120m). The second line also connects with the first line (El-Biar) and goes down to Maisons Carrées, which is 50 m altitude. These two lines, as RENE described them, form an amphitheater that dominate the Algiers’ bay including the plateau of Mustapha and Saulière (LESPES, 1930). (Check board n° 09)

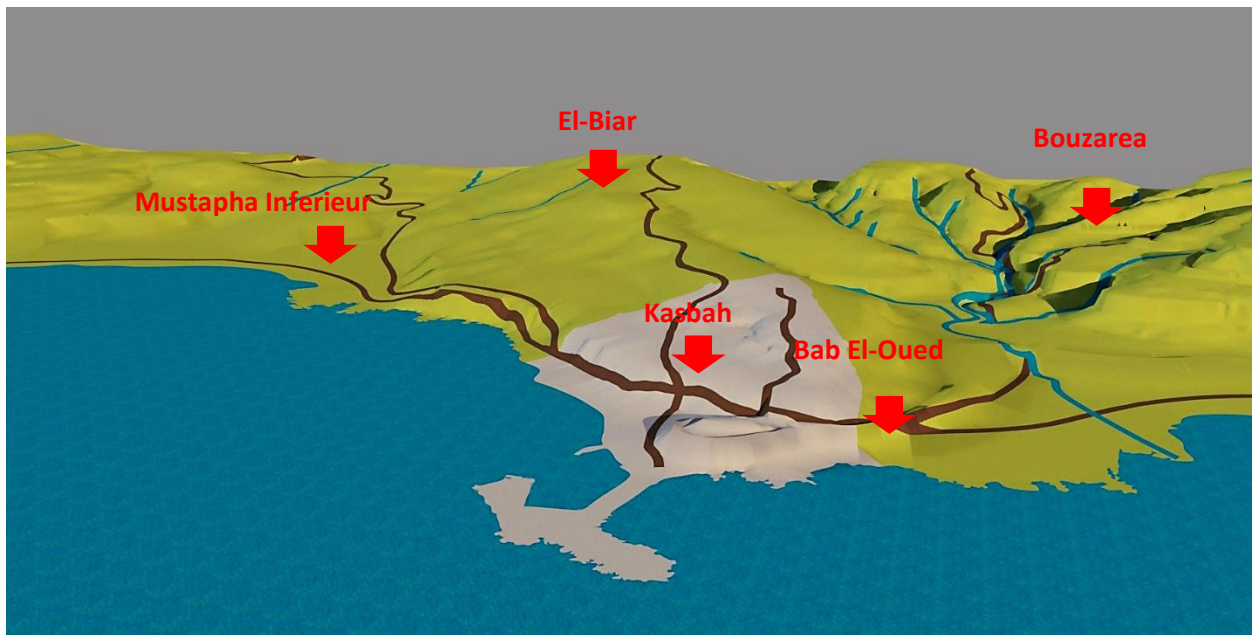


Figure 6 3D shows the morphology of the site
Source: created by author

III - 2 - 3 Historic process of the city of Algiers

The purpose of this study is to make a historical analysis of Algiers, and to bring out the urban changes of the city and its evolution during the French colonial era.

When the French came to Algiers by 1830, they found that the urban order of the Medina was unsuitable with the military need as well as the French lifestyle, a city with narrow streets, as well as the lack of public spaces. Thus, the French did not hesitate to start the

demolition/construction works to change the city and adopt it to the European lifestyle and for military purposes.

We can divide the urban development of the city during the French era to five main stages. The first four stages were mentioned by RENE Lespès in his book "*ALGER, Etude géographique de l'histoire urbaine, 1930*":

1° de 1830 à 1846, celle de l'installation dans la ville indigène et de la création des faubourgs partiellement englobés dans l'enceinte de 1840 ;

2° de 1846 à 1880, période marquée par un développement plus lent, mais par la croissance du quartier d'Isly et des faubourgs, notamment de Mustapha où se crée peu à peu une cité nouvelle;

3° de 1880 à 1896, pendant laquelle l'essor des affaires a favorisé la reprise de la construction et précipité l'adoption des mesures qui LA CONSTRUCTION DE LA VILLE 199devaient permettre l'extension de la ville et la fusion définitive avec ses anciens faubourgs;

4° de 1896 à 1930, période de la poussée la plus rapide, de l'annexion de Mustapha, de la naissance des quartiers neufs et du plus grand accroissement d'Alger.»

J.J DELUZ mentions the fifth period from 1930 until the independence in 1962 on his book "L'urbanisme et l'architecture d'Alger, 1995".



Figure 7 View from the sea of the Kasbha of Algiers, 1830

Source: Gallica BnF

State of the city before the settlement:

Algiers, or as it was called "Kasbah", was the capital of the Ottoman regency. A fortified city from all sides with a 3100 meters long wall including the sea, with an area of 46 hectares. It was accessible by five gates: Bab Azzoun in the south; Bab El-Oued in the north; Bab El-Jazira on the entry of the harbor; Bab El-Jadid in the southwest and Bab El-Bhar on the sea front.

The roads that connect the two gates, Bab El-Oued and Bab Azoun, divided the city into two sections: the upper city (private) and the lower city. Upper-class families mostly inhabited the lower city. It contained all the major mosques, such as E-Jadid, Es-Sayida mosques as well as the Dey residence and the Janina Palace. In addition to the Souks (markets) that were located in the same area.



Figure 8 Plan of the old city, c.1900, showing the Kasbah (1) and the Marine Quarter (2)

Source: Zeynep çelik, *urban forms and colonial confrontations*, 1997.

From the reconstitution plan, the lack of open spaces inside the city is very perceivable (only the Djenina existed back then). The plan also shows the existence of four cemeteries on the Bab El-Oued's side: two for Muslims, one for Jewish and the fourth one was for Christians.

The city was supplied with water by four main aqueducts during the Algiers regency: Telemly, El-Hamma, Ain Zeboudja and Birtraria. (Check board n° 12)

Right before the French conquest, there were about a dozen major mosques and about sixty smaller ones (masjid). The primary mosques, namely El-Kebir, Ketchawa mosque from 1612, Ali Bitchin from 1632, El-Jedid from 1660, and El-Sayyida.



Figure 9 Es-Sayida mosque

Source : Kanoun, 2003



Figure 10 El-Kebir Mosque

Source: Kanoun, 2003

Period 1830 – 1846:

After the French settlement in the Algiers core by 1830, the most important question that needed to be solved was to shelter the troops, officers, general staffs and military services, and in order to adapt the structure of the Moorish city to the new military requirements, a set of redevelopment and demolition activities has been started.

To the French, the structure of the city was considered very dense, with narrow streets that it was hard for vehicles to pass and the absence of open spaces. Thus, the first interventions took place in the early years of colonization. The main three streets in the lower city were intended to be widened (6 to 8 meters large) to ensure the connection between the strategic



Figure 11 General plan of the city of Algiers, alignment of Bab El-Oued, Bab Azoun and La Marine routes.
Source: Gallica.bnf

gates (Bab El-Oued, Bab El-Jazira and Bab El-Bhar) and creating a square in the intersection of those streets (Place d'Armes named later as place du Gouvernement)

In order to achieve the project, and since 1830-1832, many mosques and houses have been demolished, ex: Es-Sayida mosque, as well as many shops and houses because they existed in the terrains provided for the new planning of the Government square.

By 1840, the Government square started to take a definitive shape. A square opened to the sea and surrounded with arcaded streets and rows of trees from the three other sides.

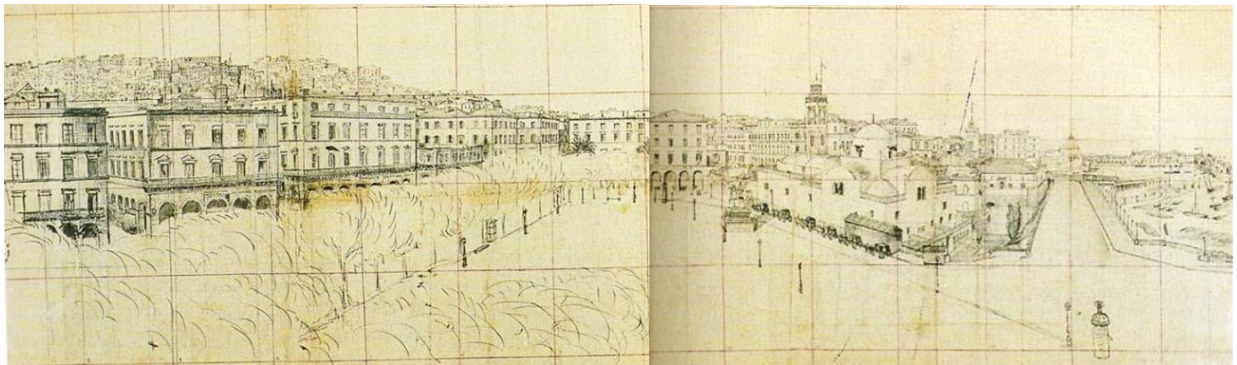


Figure 12 Government square
Source : Alger, paysage urbain et architecture, Kanoun, 2003

By the same year, many important facilities were transformed, like the Ketchawa Mosque that was transformed into Saint Philippe cathedral.

We also remarked the enlargement of the Chartres Street with the creation of a square with the same name.

According to Lespes, and as shown in the board n°13, the city started to develop outside the ottoman walls from the south following the territorial paths. That is where the Isly quarter started to grow. On the other hand, only the Marengo garden have been created from the side of Bab El-Oued.

Period 1846 – 1880:

In this period, we consider the replacement of the old fortification by new ones three times larger, is one of the major steps towards future extensions.

As a development strategy between the boundaries of the new fortifications, Algiers was divided into two parts. A flat part, a kind of parallelogram extending from the new Bab-Azoun Gate to the new Bab-el-Oued Gate; where we can find the locations of the establishments essential to European cities, the Governor's Palace, the courts, the administration hotels, the theatre and the public squares. And a hilly part, where the indigenous city is storied up to the Citadel. (LESPÈS, 1930)

Because of the crisis that slowed the development of buildings and the growth of the city, the attention was drawn towards the alignments. And starting from 1846, the creation of two carriage ways uniting the Valée and Rovigo ramps, the first called Lyre street that starts from the first Rovigo turn connecting with Isly street and reaching the Government Square (current Malakof Square) that was enlarged afterwards, the second is called Montpensier Street, which is an eight meter open street that began from the third Rovigo turn. (LESPÈS, 1930)

Later on, an eight meters wide boulevard extending from the Neuve gate to the Valée ramp called the Victory Boulevard was created. And two straight boulevards replaced the ditches of the Turkish precinct; the Valée boulevard which is a staircase forming a shortcut to the ramp, and the Gambetta boulevard that was transformed into a track composed of about 200

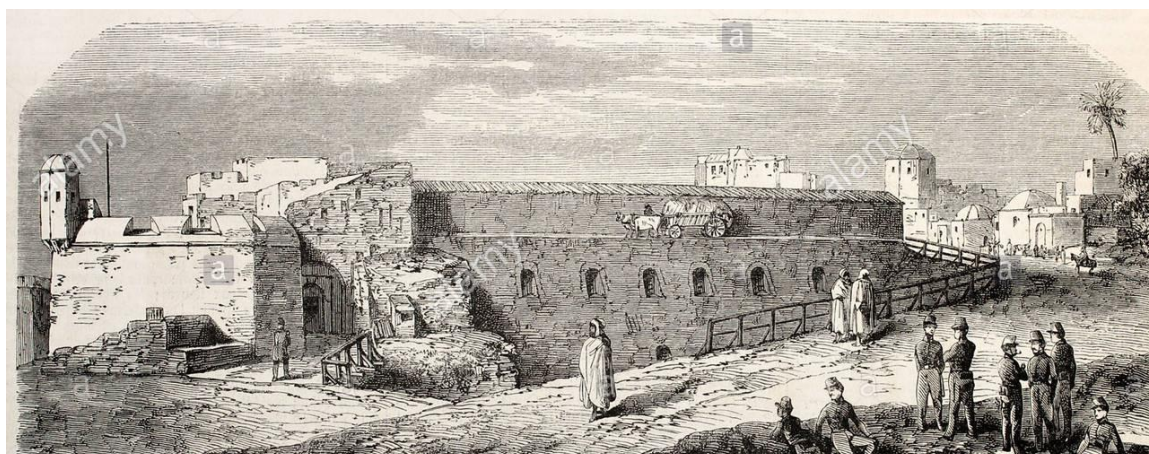


Figure 13 Fort Neuve (civil prison), 1858
Source: Alamy, created by Gaildrau

steps of stairs in 1873. Also, the Empress Boulevard that later became the République Boulevard, was established afterwards. (LESPÈS, 1930)

Expanding the city toward the south became a common interest in the 1850s as many projects were proposed, for example Charles Delaroche's 1848 project, that doubled the size of Algiers by new fortifications and a modern settlement With Wide arteries and squares in the European quarter. (ÇELIK, 1997)

"Delaroche's unrealized interventions to the kasbah consisted of broadening three major streets that cut across the Old town and carving a few squares at important intersections". (ÇELIK, 1997, p. 32)



Figure 14 Algiers plan by CH. Delaroche, 1848
Source: LESPES, 1930

And the F.Delamare's 1850 project that contains Several alignments and breakthroughs that will never be achieved. (Lespès, 1921)



Figure 15 Projects and alignments plan of Algiers and its suburbs by F. Delamare
Source : Gallica BnF

Also, Chassériau's 1858 "Napoléonville" project, that presented an orthogonal grid in Mustafa filled with houses grouped around green spaces and densities did not exceed 282 people per hectare. (ÇELIK, 1997)

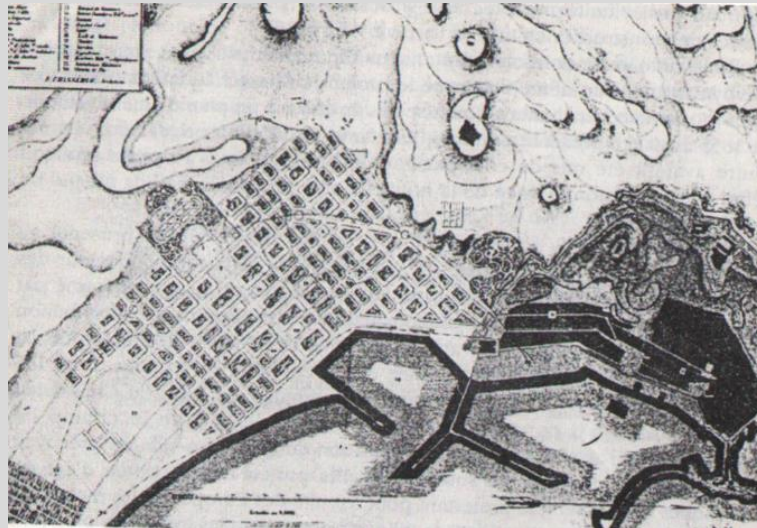


Figure 16 Algiers' plan by Chassériau, 1858 "Napoléonville"
 Source : FREDERICO Cresti, Contribution à l'histoire d'Alger 1994

In the same year, Vigouroux and Philippe Caillat's project presented the same ideas. Both Chassériau and Vigouroux-Caillat's proposals were considered idealistic and too perfect to become real, and none of them stirred an interest among municipal authorities. (ÇELIK, 1997)

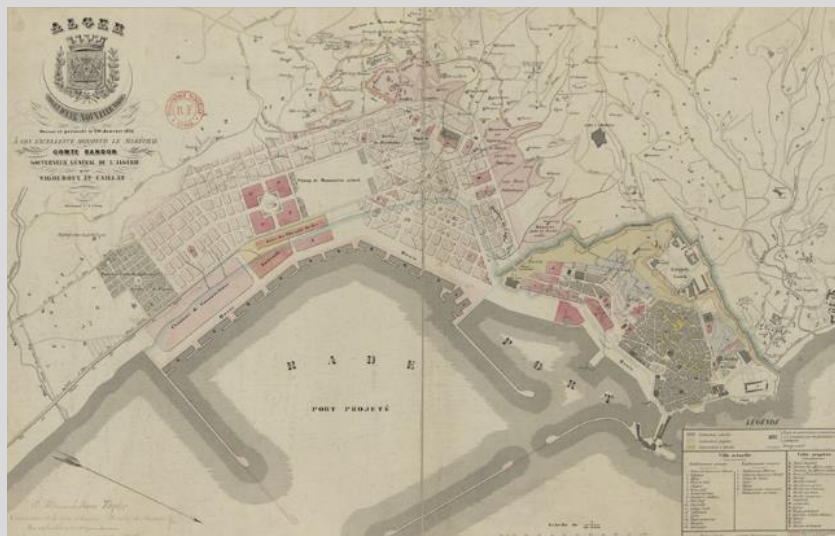


Figure 17 General plan of Algiers' by Vigouroux and Caillat
 Source: Gallica BnF

Table 1 Algiers new expansion proposals

Still in the light of expanding the city, a new quarter was created in Inferior Mustapha called "Louis-Napoleon", where country houses were built on the slopes that descend from Fort the Emperor to the Agha originally known as the Roux project; also in 1856 new houses were built on the ruins of the Djenina after it was demolished. Later in the 1860s, along the creation of the victory Street with a network of orthogonal streets, a new neighborhood was

presented. In 1870s, more than 300 houses were built, along some factories in the Agha quarter, and Lower Mustapha was populated by buildings. (LESPÈS, 1930)

The economic crisis ended, and the city welcomed new facilities and public buildings. In 1851, the Civil Prison, the Governor's Palace, the Palace of Justice and the Theatre were established. By 1854, a small square was created called Soutl Berg Square along new alignments, later in 1857 two large 'hotels with courtyards and several indigenous bazaars were constructed, and the Cathedral known as the former Ketchaoua Mosque was rebuilt in 1860 (LESPÈS, 1930).

Alongside the facilities and the public buildings, several alignments were established as well. In 1859, a boulevard starting from the Gate of France to Bab-Azoun's fort called «Cours de l'Impératrice» was built, but later in 1870 was renamed the République boulevard. And in 1863, the promenade following the Telemly Aqueduct, from Sacré-Coeur road to Rovigo road was established. In the beginning of 1870s, two stair ramps (100 steps) between Bresson square that later in 1873 became the République square and Lyre square were created, and a street with 150 steps starting from Isly to St Augustine Street called Joinville Street, was completed in 1874. By 1879, new streets called Levacher, Dupuch and St Augustine were opened, and others were completed by 1880 (LESPÈS, 1930).



Figure 18 Demolishing of old Moorish buildings to make way for the new Emperatrice Avenue

Source: Alamy, photograph by Artokoloro

Beside all changes that the city was experiencing in this period, some modifications were applied to the port as well, starting from 1848 when a closed port of 90 ha was created, later in 1870 had its north and south piers and two forms of refit that had been built in the southern part of the port (Lespès, 1921). (check boards n°14 and 15)

Period 1880 - 1895

For strengthening the public transportation, this period was mostly marked by the completion of the creation of railway lines connecting Algiers to: Blida since 1862, Oran since 1868, Constantine in 1887, Bougie in 1888 and Tizi-Ouzou in 1890. In addition to that, the steam tramway was also created alongside the coastline in 1892.

The Isly quarter has developed to the Forum. In addition, most of the urban tissue around Champs des Manoeuvres have reached a saturated capacity until the Botanical Garden



Figure 20 Saturated urban network, Isly quarter

Source: Gallica.bnf



Figure 19 Tramway, Bab El-Oued around 1916

Source: Alger-roi

With the partial suppression of the French fortification in 1894, the city began to develop alongside Bab El-Oued. In 1895, the Algerian agglomeration was completely welded to the French city. (check boards 16 and 17)

From 1895 to 1930:

The city's walls became obsolete, acting only as artificial barriers between Algiers proper and its suburbs. After negotiations that lasted over a decade, the rampart was completely demolished by 1939 (ÇELIK, 1997).

The expansion and development of the city continued, where new quarters and agglomerations kept appearing. In 1895, the former Julienne quarter between the path of Fontaine Bleue and the Muslim cemetery of Hamma that became a dense group. and in the beginning of 1900s, two quarters on the side of Mustapha were created, one between Constantine Road, Charras street and the extended Isly Street, the other between Michelet Street, the University Palace and the Berthezène street.

Later in the first decade of the 1900s, a new neighborhood appeared between El-Kettar and the avenue of Bouzaréa, where 20 streets have been filled with vast buildings housing more than 5,000 inhabitants.

Another form of urbanization was presented in Redon's project, which consisted of demolishing the lower part of the Kasbah, and building a new neighborhood called the Marine quarter. In 1922, the plan emphasized the congestion of the quarter and erasing the entire area was necessary for circulation and the displacement of twelve to fifteen thousand people. The new buildings would provide all the needs of trade, hotel, casino and the mosques were preserved (ÇELIK, 1997).

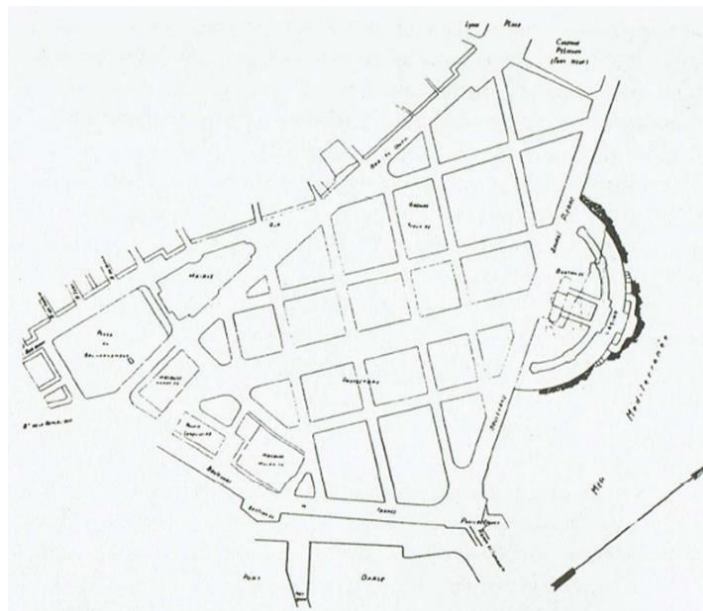


Figure 21 Marine quarter's plan by Eugène de Redon, 1925.
Source: CHELIK Zeynep, *Urban forms and colonial confrontations*, 1997

In the first decade of 1900s, 66 new streets were formed, 18 for Algiers, 9 for Bab-el-Oued and 19 for Mustapha. And two monuments were built, a new Prefecture and the Great Post Office, in the southern region of the ancient city. In addition, two 72 meters military

boulevards were established, called Boulevard Laferrière on the south side and Boulevard Général Farre (current Guillemain Boulevard). The path for direct communications between Inferior Mustapha, Agha and Birmandreis joined the new road to Blida-Laghouat (LESPÈS, 1930) .



Figure 23 Boulevard Guillemain
Source : LESPES, 1930



Figure 22 Boulevard Lafrière
Source : LESPES, 1930

In this period, the port experienced several modifications and new constructions. As in 1892, the north Pier was expanded and strengthened and a rear port in Agha Bay was constructed in the south of the former one. Later, a new basin with 10 hectares and a 200 m long mole was constructed and sheltered by a 300 m pier rooted at the Coude fort on the former South pier and was oriented South-Southeast in 1904.

A year later, the first mole built in the rear port was extended by 100 m and reserved for minerals, and a second large 550m mole was created south of the first one, the East Pier was extended by 500 m and two secondary piers oriented to the Southeast closed the 35 ha basin (Lespès, 1921).

In 1912, the north pier was reinforced and extended once again and the south pier was transformed into a mole, later that year, a mole linking Al Djefna Island to the land (200m) was constructed (Lespès, 1921).

Nine years later, an outer harbor of 115 ha was created along two large basins with a total area of 140 ha. The outer harbor develops to the south-east of the old port, and the northern pier extended towards its extremity, covers it on the north and north-east side for 850m, it is closed on the east side by an 838m pier which is slightly inflected, and keeps an 175m wide pass between it and the north pier (Lespès, 1921).

Later, two new basins east the current inner harbor of Agha were created, the first, called Mustapha Basin and covers an area of 80 ha, the second occupies 60 ha. Also, a large mole of 1848m long and 100m wide was constructed on north side, and another of 140m wide, 1360m long on the east side called mole of Oued Kniss (Lespès, 1921).



Figure 24 Algiers harbor, 1899

Source: Ebay

Finally, at the eastern end, three forms of refit of 300, 200 and 150m and three fairing of 100m to the west will be available (Lespès, 1921). (check board 18)

From 1930 to 1962:

The 1930s were known for the international economic crisis that effected Algeria deeply, the crisis included unemployment and lack of funds for building investment. Then World War II came along and made the matter worst, which forced the colony into a closed economy. However, the housing was prioritized over other issues and it started by dividing the city into four zones in 1933-1934, it was considered as a discrimination method based on current needs and tendencies. (ÇELIK, 1997)

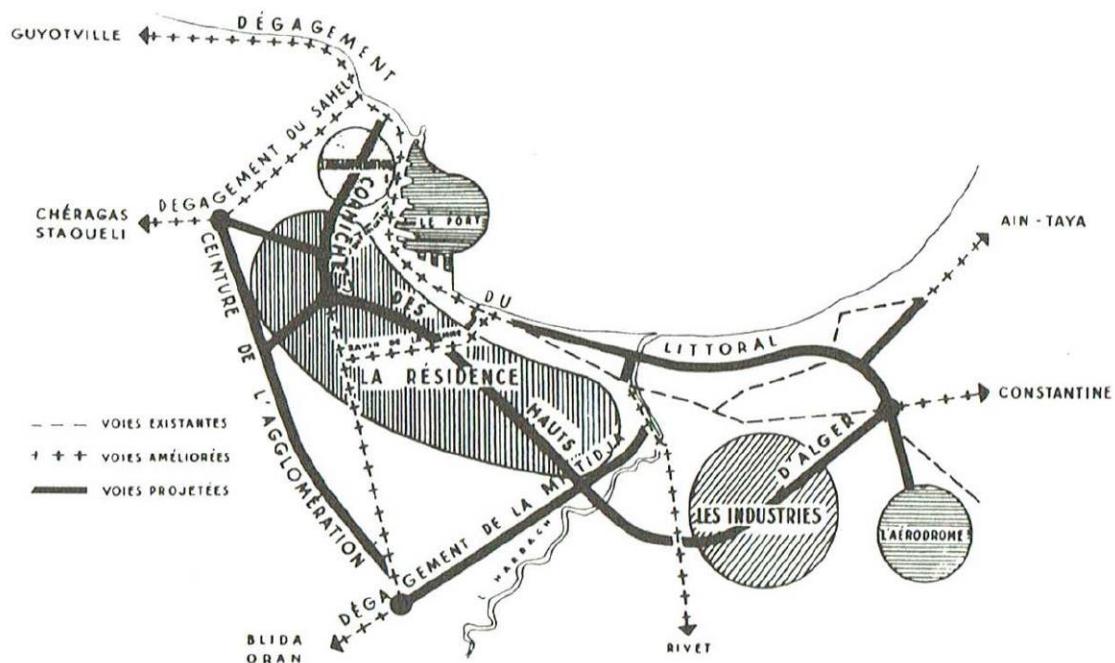


Figure 25 Plan of the four zones, 1930

Source: CHELIK Zeynep, Urban forms and colonial confrontations, 1997

First was zone A, which was the commercial area that covered the lower part of Bab el-Oued, the Esplanade quarter, the old town, Agha, and the middle and inner parts of Mustafa all the

way to the Jardin d'Essai. Then was zone B, which was a residential area and consisted of small, single-family houses covering a large and longitudinal area from Bab el-Oued to Mustafa. Then zone C which located on the heights of Mustafa, and finally zone D, the industrial region that was on the southern border of Bab el-Oued and on the south past Jardin d'Essai, also Hussein-Dey was an industrial suburb (ÇELIK, 1997).

Regardless of the crisis, developing residential zones continued, especially on the heights where housing would be built on the rides and plateaus and the growth of already built-up quarters would be blocked. The new residential zones were divided into two categories; the peripheral residential sectors, that are reserved for modest-income groups with maximum density of 124 persons per hectare and are located near the industrial zones, and the sectors with special status with densities of 97 to 294 per hectare and buildings would range from one to twelve stories. The upper regions of the amphitheater were reserved for villas, gardens and parks (ÇELIK, 1997).

The development started with the extension of the Marine quarter towards the lower Casbah, and the building of the Redoute city in 1932. Three years later, the civic home of the *Champ de Manoeuvres* was built along the native house by claro. In 1950, 200 dwellings of the *Climat de France* were built along 210 groups of 816 homes, called the "Indigenous city of Sainte-Corinne". After that, the Scala quarter (cité El Djenane) was constructed on the point of Clos Salembier, towards the ravine of Femme Sauvage to house 6,000 "natives" on 8 hectares (DELUZ, 2007).



Figure 26 Aerial view of Champ de manoeuvre, 1930

Source : <http://esmma.free.fr/>



Figure 27 City of Climat de France, 1957
Source Alger-roi

The seven years from 1954 to 1961 manifest the intensive campaigns to build large-scale housing projects known as "les grands ensembles", Diar es Saada (1955) and Diar el Mahçoul (1956) were the first "grands ensembles" in Algiers (ÇELIK, 1997).

Alongside the housing projects, many educational facilities were constructed, such as the student house that was built in 1933, Lazerge school, Dujon-Chay school and the Maneuvers Field High School were built in 1938 (DELUZ, 2007).

Rural operations were taken into consideration as well, they started by the extensions of Galiéni boulevard (Bougara) on El Biar and the Frantz Fanon boulevard on the Tagarins in 1931, two years later, the Champagne boulevard and Sadi-Carnot street were constructed. By 1948 major roads were established such as, the Moutonnière road, the road of the oued Kniss (ravine of Femme Sauvage), the high parts of the Boulevards Galiéni (Bougara) and Laferrière (Khemisti) (DELUZ, 2007).

The decade from 1950 to 1960 marked the construction of the major intersections such as, the tunnel of the Marine that links the port to Bab el Oued by Amiral Pierre Boulevard (Amara Mohamed Rachid), Tafourah that links the port to the Grande Poste and the ramps of Ruisseau, which are located between the Moutonnière and the avenue Polignac (DELUZ, 2007). (check board n°19)

III - 2 - 4 Evolution of the architectural styles during the colonial period

Since the beginning of the French colonization, Algiers has known many changes (road piercing, demolishing, and transformations on the existing buildings, etc...). In fact, this period is also marked with a variation regarding the architectural styles and the construction techniques adopted in the new buildings.

In this section, we are going to address the five different styles adopted in the metropolis during this period (1830 – 1962)

Neoclassical/ Classical revival

This style is inspired by the classical architecture of ancient Greece and Rome. After the discovery of the ancient Roman cities of Herculaneum and Pompeii, the artist sought to revive the ideal of classical Greece and Rome in different art disciplines. In architecture, this style flourished during the revolutionary periods in France and the United States (approx. 1750 – 1900) (Hopkins 2014)

In France, this style has known different changes in different periods, and each period has its own special characteristics, with some similarities between each other.

*CARACTERISTICS:(Larbodière, 2006)**1760 - 1790*

- The porches often become rectangular and no longer include the mezzanine
- Deep horizontal slits at the bottom of the facades, more or less articulated with the porch.
- The gate leaves are hardly decorated.
- The facade can be cutstone or plastered. In the latter case, there are often very slight horizontal slits that run parallel over the entire width of the facade
- The very high windows no longer rely on the floor separation strips because these tend to disappear, favoring and giving the building a more slender appearance.
- The windows remain the same width from one floor to another, but their height, like that of the ceilings, decreases upwards.
- The supports of the windows are made of wrought iron, of a simpler design than under Louis XV.
- Consoles placed under the windowsill
- Cornices supported by series of cubic modillions, their shape tends towards the rectangle.
- Balconies are quite rare. The railings are of wrought iron.

1790 -1800

- Consoles under the windowsills
- Mansart roofs with rectangular dormers topped by a pediment or a triangular structure
- Uniformity
- Removal of the consoles and the bas-reliefs
- Some ornaments more or less inspired by Antiquity
- Drawn panels between the windows,
- Very simple, flat or rounded portals, including or not including a mezzanine, with a jellyfish head surmounted by two swans

1800 -1815:

- Appearance of stilted arched windows
- Finely underlined window frames, balcony spinning above the ledge
- Disappearance of the flat portal in favor of the stilted arch portal
- split facade by horizontal bands that separate or group certain floors

1815 -1830:

- Appearance of stilted arched windows

1830 1850

- Diversity of windows: very fine frame decoration with a discreet canopy, with a slightly more insistent decor, passing through a mezzanine with abundant decor, and going up to this bel-storey with slightly delusional columns engaged or towards these three floors each illustrates one of the Greek orders (Doric, Ionic and Corinthian).
- Bay framed by angelic consoles
- The shutters pose a problem: they hide most of the facade, so the first reflex is to remove them, even if it means leaving them on the upper floors, which are less decorated. But at that moment we start to have the first folding louvers
- The first folding louvers: more practical on the farm, in wood, thinner and more resistant
- The appearance of a small protruding balcony, which profoundly changes the appearance of the facades.

1850 -1870:

- The stone facade
- The rear facade and cross wall are in rubble, while the base and party walls are in millstone
- The ground floor and the mezzanine are streaked with deep horizontal slits
- The transition with the upper floor by a balcony, generally running along the entire facade, posed on consoles, which can take several forms: simple, modillions, modest consoles and especially at the end of the empire larger consoles
- Caryatids and atlantes sometimes framing the mezzanine window located above the porch, can also lend a shoulder to support the robust and somewhat heavy-looking balcony that marks the reception room on the first floor
- Uniformity: construction by whole islands with very precise rules, which is repeated on the following islands

1870 -1895:

- Outright extension of the second empire.
- The consoles are more voluminous, the pilasters and columns engaged as much more frequent
- Atlantes and caryatids are more and more present
- A short phase of return to original classicism: ornaments are becoming scarce, pediments and canopies are used more sparingly.
- Eclecticism: a new regulation which seems to give the signal for an astonishing proliferation of styles
- This adjustment does nothing more than permitting higher roof heights depending on the width of the road

- Finely underlined window frames, balcony spinning above the ledge
- Disappearance of the flat portal in favor of the stilted arch portal
- Split facade by horizontal bands that separate or group certain floors

Table 2 General characteristics of Neoclassical style in France

The French colons, and since their entrance to Algiers, searched for the most appropriate style to the colony. The roman architecture was the best inspiration for the new colony as it represents a good example of prosperity (PIATON 2016).

In Algeria, the neoclassical style was developed from 1830 until the end of the 19th century. The main achievements have very often remained faithful to the Haussmann style. The Algiers seafront façade by Frederic CHASSERIAU (1860) is one of the most representative images of this style.

The width of the road is fixed at 8 m, and a law that requires the construction of arcaded galleries to "protect the ground floors from the rays of the sun" was made by the Civil Buildings Commission in 1844 (PIATON, 2016).

Characteristics in Algiers (PIATON, 2016)

- Arcades in the ground floor and two floors with only cordons, cornices and doorframes of windows
- A gallery with semicircular arcades on the ground floor, cornice decorated under the balconies on the first floor and a cornice decorated under the attic.
- Vertical hierarchy of the bay decoration with triangular pediments on the first floor, simple ledges on the second and no decoration on the third floor.
- Strict respect for the size (height of floors and position of balconies and cornices)
- Decorations such as (pilasters, corner chain) evolve according to the time of construction



Figure 28 Revenue house, Ernesto Che-Guevara Boulevard
Source: twitter



Figure 29 Revenue House (old Padrix house) Place Ahmed Bouzrina
Source: Piaton, 2016

- Walls and ceilings decorations: frieze, cornice, medallions, grapes, sculptures (lion head), balconies, consoles, bands with docile molding.
- Most post-Haussmannian facades have spinning balconies with elaborate ironwork railings, wood pelmets, corner chains and hollow joint coating. Some stand out for the abundance of reinforced cement décor
- Late Haussmannian style, characterized by spinning balconies, more elaborated decorations, and orderly compositions.
- The façade is also decorated with many different mascarons, fluted pilasters, lion heads, and balconies known for the complexity of their masonry railings.
- Balconies run all over the floors. The facades are poorly decorated
- Decorations with pilasters, consoles, balconies, and oriels



**Figure 31 Revenue House (Old Bégey house) 1892,
37 rue Larbi-Ben-M'hidi
Source: PIATON 2016**



**Figure 32 Revenue house, Didouche Mourad
Source: www.airfrance.fr**

The minimum height of the ground floors and basements is set at 5.9 m, 0.5 m more than in Paris, as is the total height of buildings (front and attic) can reach 29 m on streets more



**Figure 30 Revenue house (Old Aschiak house) 1897, rue Ahmed-Chaib
Source: Piaton 2016**

than 10 m wide, compared to 28.5 m in Paris. Balconies that can be closed by glazing can reach up to 1.5 m on streets of more than 12 m including sidewalks.

Stucco ceiling, stylobate wall in cement tile with geometric patterns topped with faux marble panels, cast iron candelabra, with plenty of architectural motifs such as layers of fluted pilasters with Corinthian and Ionic capitals, lintelled bays topped with ledge, entrance doors with fluted pilasters and bumps. The façade is also enlivened with bow windows copiously decorated. Finely opened lambrequins, various railings, and lion-headed consoles.

This style knew three successive periods in Algiers: (Ghalia, 2012)

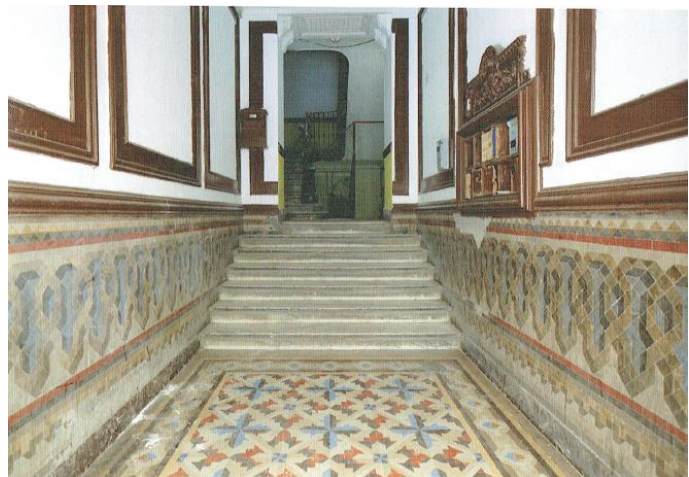
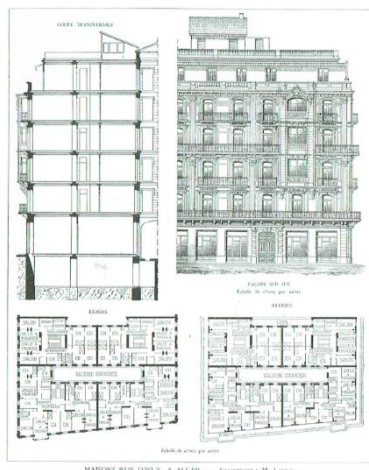


Figure 33 Revenue house, 1901. St. Larbi Ben M'hidi
Source: Piaton 2016

First phase 1830 – 1854 :

By the arrival of the French colons, a set of demolishing activities started and followed by reconstructing projects. The major buildings' typology adopted was the one borrowed from the European city of the 19th century with a commercial gallery as well as a regular arcaded façade on the street and a maximum parcel occupancy. The façades present principal characteristics

- Three distinct parts: sub-basement materialized with a portico gallery of 3.50m high, facade body is of stone and the cover is generally with a roof or an attic.
- A symmetrical and rhythmical disposition of windows;
- The height of the facade is governed by a French regulation, that of 1784; precise relationship between width of the street and height of the building which is 84:
- 14.62 m across 9 m;
- 17.54 m across a width of 12 m.

This eclectic style characterizes all the buildings of alignment of Algiers: rue de la lyre, Bab El-Oued, Bab Azoun.

Second phase 1854 – 1881

By 1854, new plot shapes appeared (triangular, trapezoidal...) because of the radial concentric layout in the city. Thus the 1859 regulation about the diagonal at 45° in large boulevards of more than 20m wide generated buildings with irregular shapes.

For the buildings with a rectangular plot, the windows are rhythmic with a portal in the middle serving as a symmetric element. The legible horizontal hierarchization on the facade is due to the artifices of the molding separating the entresol and the rest of the facade. Rows of balconies with wrought iron balustrades, a decor intensified by the colossal order, bands of framing and caryatids that highlight the spans creating a division on the facade.

For triangular plots, several styles are adopted: Roman Greco, Renaissance, etc. On the facade, a cut panel replaced later by the Bow windows marks the symmetry.

Third phase 1881 – 1900

After 1881, the multitude of plots with arbitrary irregularities, trapezoidal form, triangular... etc. is generated by the radio-centric trace following the uneven topography of the terrain. Buildings of irregular shapes are served by stairs from the courtyards.

The facades are generally characterized by:

- A rich decoration, which reveals its origins to the upper class of the inhabitants;
- The revolution of the façade by the possibility of creating corbels;
- The cut panel is replaced by rotundas and bow windows that correspond in the housing to the main rooms rhymed with a plastic decoration.

Art Nouveau

"Art nouveau design is most readily identified by its preponderance of flowing organic forms, such as flowers, vines and leaves, most often represented in ironwork- in many ways a conscious reaction to Beaux-Arts academicism. The stairway of Horta's Hotel Tassel in Brussels deploys these forms structurally to create a sense of tension and movement. " (Hopkins, 2014)

This style has emerged at the end of the nineteenth century and prevailed until the outbreak of World War I in 1914. It was a deliberate attempt to create a new style, free of the imitative historicism that dominated much of the 19th-century art and design. About this time, the term Art Nouveau was coined, in Belgium by the periodical *L'Art Moderne* to describe the work of the artist group Les Vingts and in Paris by S. Bing, who named his gallery *L'Art Nouveau*. (Hopkins, 2014)

Table 3 General characteristics of Art Nouveau

At the beginning of the 20th century, Algerian cities were given a new image, which was the image of the protector or "the Jonnart style". Indeed, in 1903, Governor Charles Célestin Jonnart imposed a new style which was to be inspired by the Arab architecture, and which could identify all of the communities. At the time, several associations were created, including "the committee of old Algiers" chaired by Henri Klein¹⁵ in 1905. Its members denounced the destruction of the old Arab battles, which, according to the colonial administration hampered the extension of the European city. The buildings designed in this period presented a facade

with direct quotations from the Moorish language with decorative Arab elements used such as horseshoes arcades; door and window frames; ceramic coating. (Boulbene, 2012)



Figure 34 Excelsior hotel - rue Khettabi Alger
Source: Google image

Moorish revival

Exotic Revival :

The exotic revivals were inspired, and expressed in, various Asian and Islamic styles, some of which were popularized by French archeological work in Egypt during Napoleon's campaigns. In Europe and the United States, these styles were adapted to the design of contemporary public buildings, as well as expensive private homes, beginning in the early nineteenth century (Sarah CUNLIFFE, 2006)

Neo Moorish or Moorish revival was inspired by the Moorish architecture of North Africa and Spain. It appeared in Europe in the early nineteenth century.

At the beginning of the 20th century, this style appeared in Algerian cities, and it was also known as "Jonnart style". The facades designed in this era are characterized by the Moorish language with decorative elements such as oversized arcades, door and window frames, ceramic coating ... etc

The best-known example is *La Grande Poste*, designed by Voinot and Tondoire in 1910 located in Algiers.

Characteristics (PIATON, 2016)

- Ceramic frieze decorations, plasterwork, carpentry, architectural ceramics, mosaics, ironwork;
- Also, the use of horseshoe arches, studded windows;
- A frieze of earthenware tiles;
- Spinning balconies carried by a frieze of muqarnas and roller consoles;
- the iron railing pattern inspired by Arabic architecture with broken arched frames;

- A wide overhang of the roof with glazed tiles, open masonry railing, large curved consoles, and chiseled plaster decoration.



Figure 36 Revenue house, 1906, st. Sal:
Boulhart
Source: Piaton 2016



Figure 35 La Grande Poste, Algiers
Source : Mahdi Aridj Photography

Art Deco 1920 – 1930

The Art Deco style in architecture emerged in Paris just before World War I. It was derived from the *Exposition des art décoratifs et industriels* that was held in Paris in 1925. This style has immediately followed the Art Nouveau at the end of the 19th century and reached its peak between the two World Wars 1919 – 1939 (Hopkins, 2014).

In contrast with the Art Nouveau, Art Deco was on the rectilinear. This was due to the influence of the beaux-arts planning. It was also a result of the rectilinear frames used to realize the types of interior spaces required for modern building such as factories (Hopkins, 2014).

Its characteristics are:

- Simple decoration, often geometric, always confined to very specific places on the façade;
- Very simple ornaments;
- Stripping of facades, a preponderance of geometric shapes and widening of bays;
- The decoration: sculptures or bas-reliefs;
- Columns are a frequent ornament. It is no longer the ancient columns, but rather simple cylinders that we find in different forms;
- Very geometric consoles supporting balconies or bow windows, very prominent cornices, large columns;
- Very varied windows: rectangular and high.

Table 4 General characteristics of Art Deco

The Algerian expression of Art Deco based on the combination of Parisian influence and local references are being put in place. This interbreeding refers to the intersections of the arts, in an attempt to renew aesthetic codes, drawing its vocabulary from both Berber arts and neo-Moorish architecture.

The geometrization of the motifs, already noticeable in the Art Nouveau trend, is confirmed with the considerable growth of Art Deco (PIATON, 2016)

Characteristics: (PIATON, 2016)

- Expressed in particular in the geometry of the railings;
- An imposing stained glass windows with floral-inspired geometric patterns;
- decoration of beams;
- The avant-garde, modern forms with simple geometric lines;

- Carved wooden entrance doors;
- Earthenware or model slabs are used for facade coating.



**Figure 37 Revenue house (ancient Scottish church), Didouche Mourad st
Source: Piaton, 2016**

Modern style 1930- 1962

Modern style characteristics :

- The harmony of the facade is essentially a successful combination of different parallel and perpendicular planes;
- A kind of nesting of parallelepipeds;
- Arrangement of bow windows and balconies with rounded or beveled ends;
- Shooting balconies or lighters, drawing long ribbons, generally white, over the entire width of the facade;
- Veneered stone, ceramics, broken tiles, brick... more often than not rough concrete;
- Windows: bay in width, even continuous;
- Facades freed from ornaments;
- Roller shutter is generalized except, sometimes, on the bays; most accessible to burglars: ground floor and terraces, where the more resistant metallic shutters.

**Table 5 general characteristics of modern style
Source: Deluz, 1995**

Modern architecture has, in general, imposed itself rather in mixed forms, crossed with academicism or folklorism. (DELUZ, 1995)



Among the achievements materializing this architecture in Algiers: the government palace (Palais du Gouvernement) designed by Guiauchain and Perret, the agricultural house, civic home, and beaux-arts museum

Characteristics: (DELUZ, 1995)

- Use of stilts, the slopes of land;
- Panoramic façade open towards Algiers Bay;
- Use of sun breaker, hanging garden, and terrace roof;
- Free plan and free façade;
- Transparency (use of glass);
- Simple volumes and simple buildings without decoration;
- Use of reinforced concrete structure and filling of brick walls;
- High buildings and reduced built-up areas.

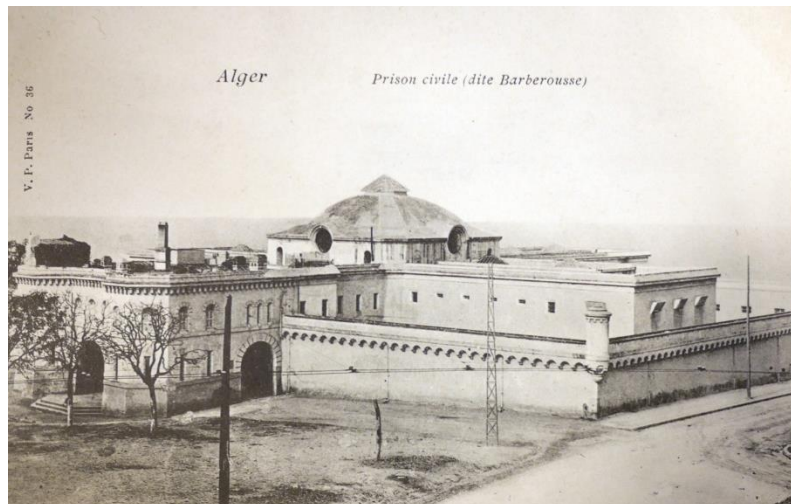
III - 2 - 5 Structural process of the intervention area

Period 1830-1846:

The area was practically empty (non built) by this year. Yet a part of the old ottoman fortification still existed. The curved road, connecting Algiers to Blida (later called Valley Ramp), was pierced in this period with an impasse shortcut street that connects the upper part of the ramp to the lower part. (Check board n°20)

Period 1846 - 1880:

During this period, the old ottoman fortification was removed. A civil prison was built in the upper part of the Valley ramp plot, along with some buildings in the lower part (Check board n°21)



Some changes were made on the road (valley ramp), where a curved part of this road has been removed and recreated in a straight form on the north ditch of the old fortifications alongside the Kasbah. We noticed a creation of two straight and crossed shortcut roads; where the first one connects the upper part and the lower part of the valley ramp (while the

old one was removed), and the second one connects the ramp with the big road (Boulevard).(Check board n°21)

Period 1880 -1896:

During this period, new constructions appeared in place of the demolished fortification, in addition to the buildings along with the valley ramp plots where the old buildings were demolished. (Check board n°22)

Period 1896 – 1930:

During this period, buildings in some parts have been demolished on the plots of the valley ramp and along the valley boulevard where a school has been built instead. Besides, the removal of some stairs and enlarging of the street (Parmentier road) (Check board n°23)



By this year, the road that separated the eastern buildings in the previous period, was replaced by new buildings, and also the appearance of new buildings on the west side, and the construction of the gendarme facility. (Check board n°24)

By 1925, most of the buildings in the plots of the Valley Ramp have been demolished again, and the acute angle of the Valée Ramp road have been removed. Valée Boulevard became Verdun Boulevard.(Check board n°25)

Period 1930- 1962:

By 1937, buildings in the North West part of the Valée Ramp have been completely demolished. In addition, some buildings that were demolished in the previous period (the Valée ramp plots and along Verdun Boulevard), have been reconstructed. (Check board n°26)



Finally, in 1961, we noticed the appearance of a road that pierced through the buildings of the previous period and new buildings occupied the northwestern side of the site, also new construction was added to the gendarme facility. South side buildings went through some changes as well. (Check board n°27)

III - 3 Synchronic analysis

III - 3 - 1 Road hierarchy

Our intervention zone contains mainly three types of roads. Primary road (Blvrd Abderrezzak Haddad), secondary road (Louni Arezki), and other pedestrian streets (Mohammed Boudjil). After analyzing the site, we have noticed that the buildings occupies most of the plots overlooking the roads. Also, the majority of commercial activities occupies the ground floors of some buildings along Louni Arezki, which leads to an important pedestrian flux comparing to Boulevard Haddad. (Check board n°28)

III - 3 - 2 Building height

After a couple of visits to our intervention site, we have remarked a variation in buildings' elevation. It varies from ground floored to six floored (G+5).

Eventually, we have noticed that the highest buildings of the area are those built along the northern west part of Louni Arezki ramp, which varies from four to six floor buildings. However, the buildings varies from ground to three floors high on the rest part of the ramp. As you walk on the Louni Arezki Street, you can clearly sense the differentiation and non-homogeneity between the elevation and street length (Louni Arezki). The high-elevated buildings on the narrow part gives it a suffocating feeling as you walk down it. While on the other wide parts, and with less elevated houses, we could pretty much walk comfortably the street, and we could see the beautiful sea horizon.

We also noticed some illicit additional floors in some of the buildings (due to the housing crisis), which also caused the variety of elevations. (Check board n°30)

III - 3 - 3 Typology : existant architectural styles

After several visits to our intervention area, we have remarked that this zone is not as rich as the other surrounding areas of the Kasbah regarding its facades.

In this area, there are two different architectural styles, Neoclassical and Art Deco. However, the neoclassic style is more dominant and mostly the first phase of this style.

Facade 1: facade 7.5: Louni Arezki

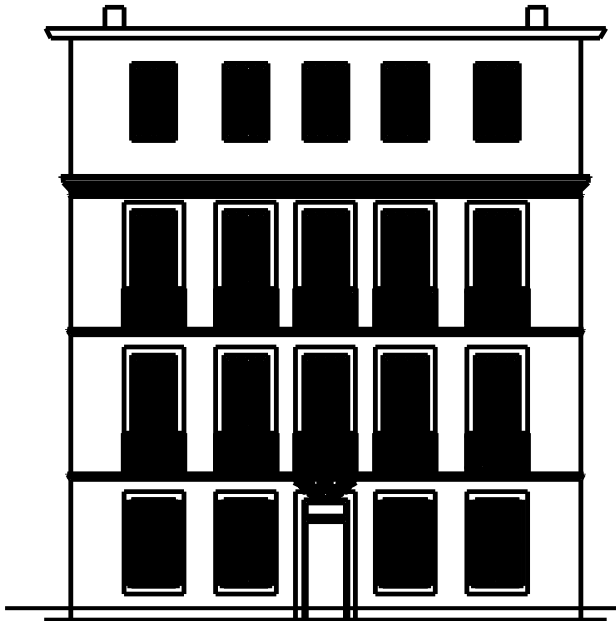


Figure 39 Facade 7 plot 5
Source: Drawn by author, 2020



Figure 38 Facade 7 plot 5
Source: Photographed by author, 2020

It is a four floors building, located in the plot n°5 (check board n ° 31), neo-classical style of the first phase. It is recognizable with the following characteristics:

- The decoration of this facade is simple
- Absence of balconies, and French windows protected by wrought iron railing.
- The 'listel' that separates between floors.
- Rhythmic and symmetrical arrangement of French windows.



Figure 40 Mascarons of the entry
Source: Photographed by author, 2020

Façade 2: facade 2.3 Louni Arezki

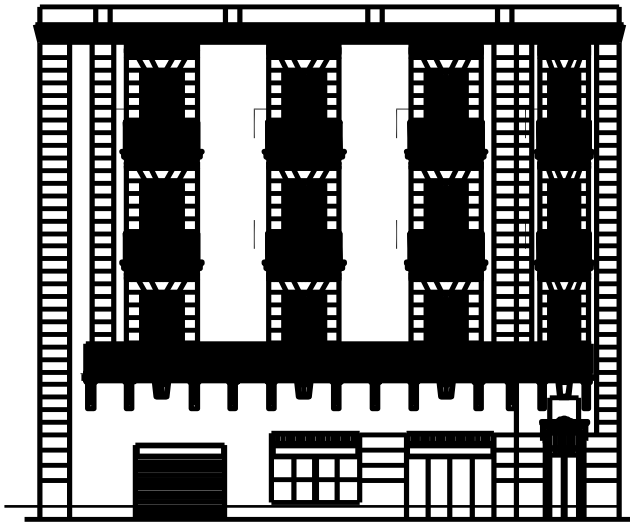


Figure 41 Drawing of the facade 2 plot 3
Source: Drawn by author



Figure 42 Façade 2 plot 3
Source: Photographed by author, 2020

It is a revenue house of five floors, located in the third plot (check board n°32) neoclassic style (2nd phase). It is recognizable with the following characteristics:

- A symmetrical arrangement and rhythmicity of the openings at the different levels except the ground floor.
- A facade more or less rich with ornaments: mascarons at the principal entry, arrangement of console under the balcony, decorative keys and framed openings topped with ceramic tiles.
- Long balcony on the first floor, with a rhythmic arrangement of French windows, which are structured by the wrought iron railing on the last two floors.
- Rusticated wall (only for the ground floor)



Figure 43 Ceramic tiles
Source: Photographed by author, 2020



Figure 44 Consoles and decorative keys under the balcony
Source: Photographed by author, 2020

facade3: facade2.4 Louni Arezki

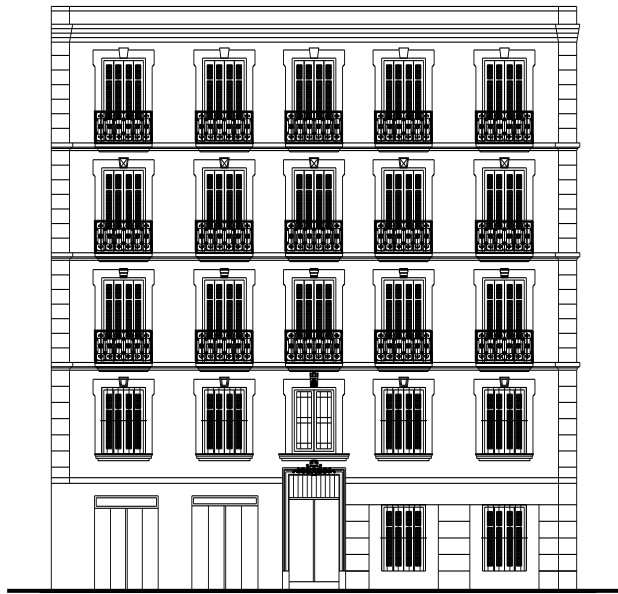


Figure 45 Drawing of the facade 2 plot 4
Source: Drawn by author



Figure 46 Facade 2 plot 4
Source: Photographed by author, 2020

This is a five floors revenue house, located in the 4th plot (check boardn°32) neoclassical style (1st phase). It is recognizable with the following characteristics:

- Simple decoration: use of refund lines only in the ground floor.
- Balconies, which are not long, structured with wrought iron railing;
- Separated floors by the use of "Listel";
- Rhythmic and symmetrical arrangement of French windows in all floors;
- Usage of simple ornaments: mascaron in the entry door, simple decorative on top of all French windows.



Figure 48 Mascaron on the entry
Source: Photographed by author, 2020



Figure 47 Decorative key of the windows
Source: Photographed by author, 2020

Façade 3: façade 2.5 Louni Arezki

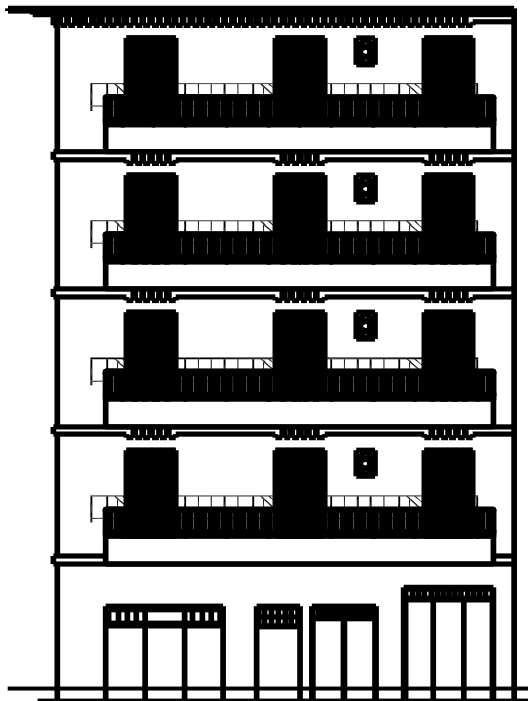


Figure 49 Drawing of the facade 2, plot 5
Source: Drawn by author



Figure 50 Façade 2, plot 5
Source: photographed by author, 2020

A five floors revenue house (with an extra floor added by inhabitants), Art Deco style, located in the 5th plot (Check board n°33). It is recognizable with the following characteristics:

- A very clear vocabulary with simple and harmonious lines and volumes;
- The decoration is very simple;
- Absence of any ornamentation on the facade (windows without ornamentation);
- Rows of balconies with wrought iron railing;
- Smooth and homogeneous texture and a light color.

III - 3 - 4 Relevance area: trade and facilities

Our intervention area is divided into two zones; one, along Abderezzak Haddad Boulevard, is mostly a military area. The famous Serkaji prison exists in this area, as well as other gendarmerie buildings, a parking lot, and military housing. In addition to that, there is a post office and a school feeding inspectorate (مفتشية التغذية المدرسية), and an elementary school (Ibrahim Fatah). The other zone, along Louni Arezki Ramp, is quite the housing area, with the existence of some small shops based on the ground floors and a police station. (Check board n° 34)

III - 3 - 5 Condition of the buildings

The criteria we have adopted in the classification of the buildings' conditions in our intervention area are based on the apparent state of these buildings and facilities as well as

the condition of the interior and exterior structure, type of floor, and the condition of the staircase.

The intervention area is remarkably divided into two areas. The first, which is considered a residential area, is the area limited by Louni Arezki ramp and Mohamed BOUDJIL Street. Most of the buildings in this area are either in good or in a bad condition. Some are just ruins.

The second area is considered a military zone. All buildings are in very good condition except for the Serkadji prison. (Check board n°35)

III - 3 - 6 Platforms

Our zone combines a variation of steep terrains with a 46.2% slope, the platforms of the southern part have nearly the same altitude and shows a significant difference from northern platforms, demonstrated in the transition from a nearly flat area to a steeped one.

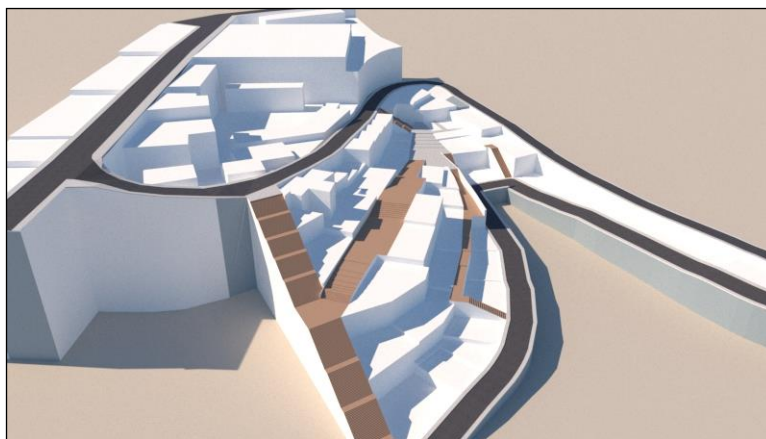


Figure 51 3D showing the existing platforms
Source: created by author, 2020

III - 4 Sustainable local development and heritage preservation: planning design of the intervention zone

We benefited from the following instruments and approaches, to find and apply the suitable solutions to treat the issues of our intervention zone.

III - 4 - 1 Diagnosis and state of play

Diachronic reading synthesis

Through the diachronic reading, we have noticed that the intervention zone has known a lot of transformations during the colonial period, which gave the area an unhomogenous plots.

Synchronic analysis synthesis

From the synchronic analysis, we noticed that the intervention area suffers from several problems. We have noticed that most of the buildings are in a very deteriorated condition as well as the existence of illegal dwellings and ruins. On the economic and commercial side, it is very low and not diverse, Also the absence of public and leisure spaces.

The absence of parking lots posed traffic problems along Louni Arezki and block the sidewalks.

Weaknesses and strengths

Our intervention site, which covers an area of about 5 hectares; is considered one of central Algiers's districts that witnessed the French architectural production during the colonial period. It has faced many problems that affected the built environment and consequently life quality over the time:

- Deterioration of urban quality: disrepair of the buildings, illicit constructions that disfigure the image of the area,
- Lack of green and public spaces,
- Insufficiency in facilities that meet the needs of the population of the area,
- The concentration of traffic, especially along Louni Arezki, and lack of public parking lots.

Regardless of all these problems, the site also benefits from certain assets:

- Its proximity to the Kasbah,
- The existence of a historical monument: Serkadji Prison,
- It sprawls along a historical axis: Louni Arezki and Abderezzak Haddad Boulevard,
- It benefits from wonderful views of the sea.

III - 4 - 2 Recommendations for the implementation of urban renewal at the scale of the intervention zone

We have taken in consideration the operations of urban renewal that responds to the problems posed in our intervention area by respecting the POS and PPSMVSS:

Considering the orientations of the urban planning documents POS/ PPSMVSS

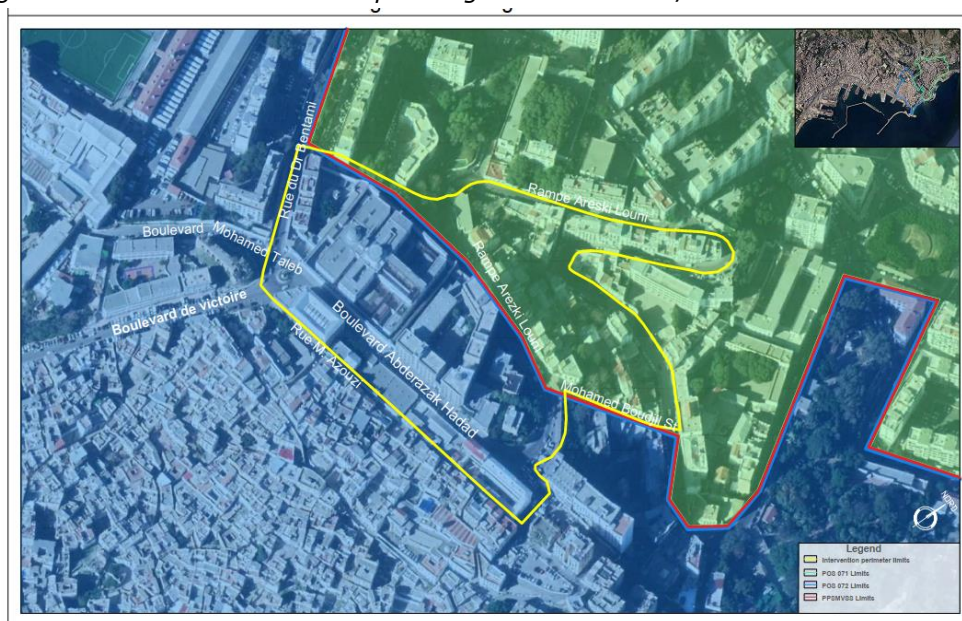


Figure 52 Inclusion of the intervention area in the safeguard planning instruments
Source: Created by the author based on the background of Google earth image, PPSMVSS, POS

POS n° 072/ 073 recommendations:

- Development of a framework for urban renewal operations and reference interventions, consistent with the long-term strategy included in the revision of the Algiers PDAU considering the strategic guidelines set for public authorities;
- Revitalization of urban and rural of the Wilaya of Algiers, economic, social, environmental and heritage;
- Valuation of structuring urban and rural areas of the Wilaya of Algiers, including the municipalities of Bab el Oued and La Casbah;
- Safeguarde of the existing built heritage and remarkable urban elements / ensembles and fabrics.
- Rehabilitation of the historical relationship of the city with the sea;
- Renovation of buildings and modernization of infrastructure;
- Integration of sustainable development and consolidation of urban occupation with the development and enhancement of agricultural, forestry and agro-food activity;
- Restoration of ecological balance through the safeguarding and enhancement of the cultural and environmental heritage;
- Development and affirmation of the cultural and tourist vocation of the Wilaya of Algiers.

Table 6 Recommendations of the POS n°072/073

Therefore, according to these recommendations, we will respond to the objectives of the POS through our project by :

- Safeguarding the existing built heritage.
- Rehabilitation, renovation of buildings and modernization of infrastructures.
- Revitalization of the urban fabric and enhancement of the urban spaces of our site.

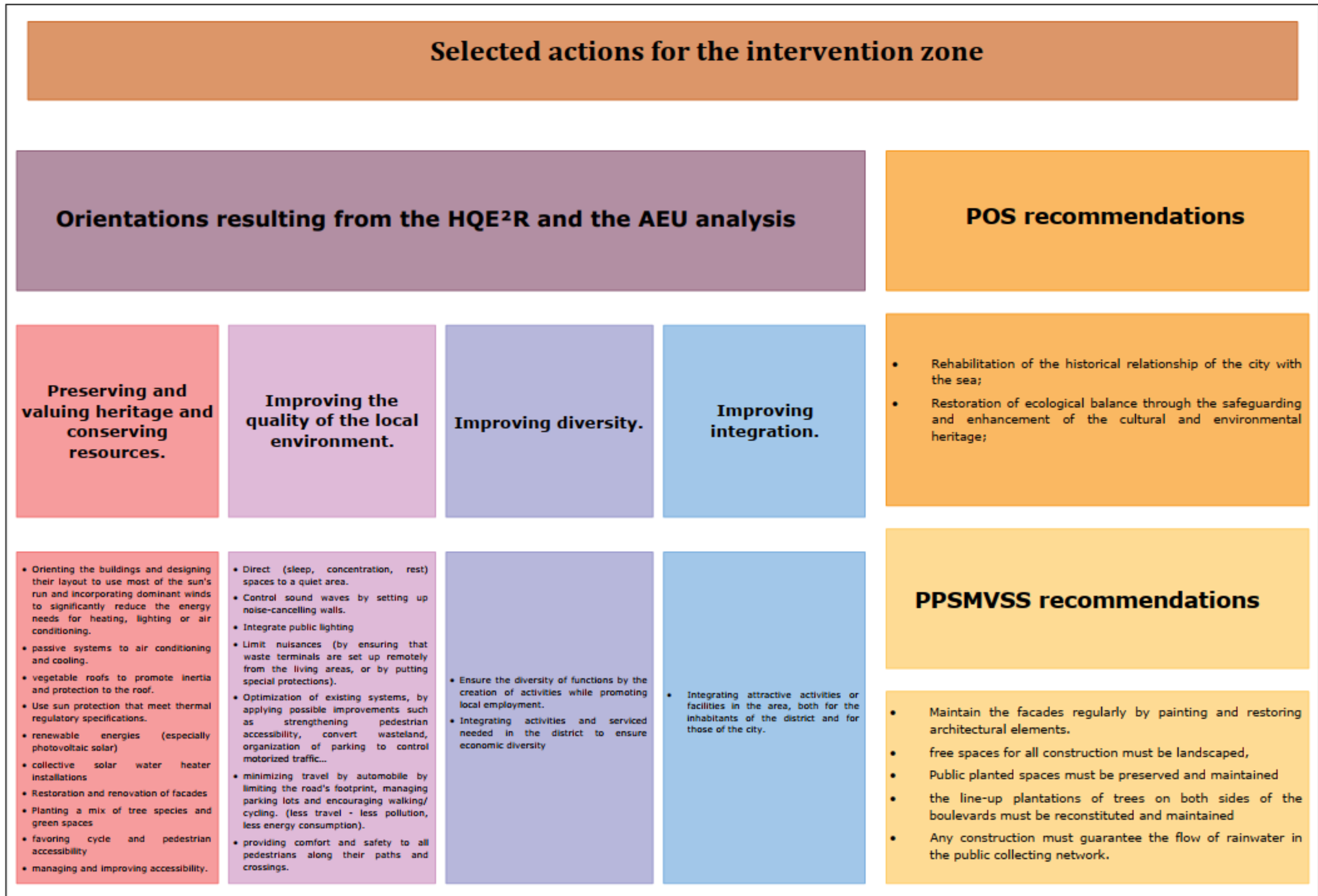
Consideration of HQE²R Objectives-Targets-Sub-Targets

Objectives	Orientations of the HQE²R /AEU method
Preserving and valuing heritage and conserving resources.	<ul style="list-style-type: none"> • Orienting the buildings and designing their layout to use most of the sun's run and incorporating dominant winds to significantly reduce the energy needs for heating, lighting, or air conditioning. • passive systems to air conditioning and cooling. • Green roofs to promote thermal inertia and protection to the roof. • The use of sun protection that meets thermal regulatory specifications. • renewable energies (especially photovoltaic solar) • collective solar water heater installations • Restoration and renovation of facades
Improving the quality of the local environment.	<ul style="list-style-type: none"> • Building offices or commercial activities on the edge of an inconvenient axis to prevent the spread of noise and protects the spaces and buildings behind them. • Direction (Sleep, concentration, rest) spaces to a quiet area. • The control control sound waves by setting up noise-canceling walls.

Improving diversity.	<ul style="list-style-type: none"> • The ensure of the diversity of functions by the creation of activities while promoting local employment. • Integrating activities and service needed in the district to ensure economic diversity
Improving integration.	<ul style="list-style-type: none"> • Integrating attractive activities or facilities in the area, both for the inhabitants of the district and for those of the city.
Preserving and valuing heritage and conserving resources.	<ul style="list-style-type: none"> • renewable energies (especially photovoltaic solar) for public lighting, street furniture (signage, Bus shelters ...) • Set a limit height for plant hedges and/or a minimum distance between hedges in communal areas and property boundaries. • Planting a mix of tree species • Planting green spaces
Improving the quality of the local environment.	<ul style="list-style-type: none"> • Integrating public lighting • Limit olfactory nuisances (by ensuring that waste terminals are set up remotely from the living areas, or by putting special protections). • The installation of a professional or mixed recycling center
Preserving and valuing heritage and conserving resources.	<ul style="list-style-type: none"> • Permeabilization of sidewalks and footpaths for better rainwater management • Rainwater treatment system • Favoring cycle and pedestrian accessibility • Managing and improving accessibility.
Improving the quality of the local environment.	<ul style="list-style-type: none"> • Optimization of existing systems, by applying possible improvements such as strengthening pedestrian accessibility, convert wasteland, organization of parking to control motorized traffic... • Minimizing travel by automobile by limiting the road's footprint, managing parking lots, and encouraging walking/ cycling. (less travel - less pollution, less energy consumption). • Providing comfort and safety to all pedestrians along their paths and crossings. • Organizing parking considering all-modes needs and accessibility, especially parking spaces and places reserved for people with reduced mobility. • Integrating people with reduced mobility, especially in pedestrian continuity. • Optimization of existing systems, by applying possible improvements such as strengthening pedestrian accessibility, convert wasteland, organization of parking to control motorized traffic... • Minimizing travel by automobile by limiting the road's footprint, managing parking lots, and encouraging walking/ cycling. (less travel - less pollution, less energy consumption).

	<ul style="list-style-type: none"> • Providing comfort and safety to all pedestrians along their paths and crossings.
Improving the quality of the local environment.	<ul style="list-style-type: none"> • Organizing parking considering all-modes needs and accessibility, especially parking spaces and places reserved for people with reduced mobility. • Integrating people with reduced mobility, especially in pedestrian continuity.
Improving integration.	<ul style="list-style-type: none"> • Integrating an appropriate road network and pedestrian accessibility in close connection with public transport to facilitate access to the district.

Table 7 Recommendations according to HQE²R and AEU



Board 7 Selected actions for the intervention zone

III - 4 - 3 Planning and restructuration principle

Types of interventions

We have chosen to demolish most of the buildings considering their poor conditions alongside the absence of any aesthetic value, as well as the selective demolition of the buildings next to the Serkadji Prison to open a pedestrian way and reorganize the urban fabric

The rehabilitations will occur on buildings that are in average condition, and their facades have architectural aesthetic value. (Check board n°36)

Functional program

We have proposed to make our zone a commercial area with residential complexes, highlighted by a cinema and media library as source of attraction, alongside a landscape and a smart park next to the Kasbah to integrate innovation and technology with heritage and traditions, the park will have Wi-Fi and free phone charging, self-healing concrete, photocatalytic titanium dioxide coating, automatic lawn mowers and smart water metering.

Housing

Dwelling	Maintained	Demolished	Proposed
Number	38	86	110

Housing types and surfaces

	T2 (m ²)	T3 (m ²)	T4 (m ²)	T5 (m ²)
Living room	26.00	35.00	37.00	37.00
Room 1	13.00	24.00	26.00	26.00
Room 2	/	19.00	19.00	19.00
Room 3	/	/	19.00	19.00
Room 4	/	/	/	19.00
Kitchen	15.00	26.00	26.00	28.00
Bathroom	5.00	5.00	5.00	6.00
Toilet	2.00	2.00	2.00	3.00

Facilities

Equipment	Maintained	Demolished	Proposed
Number	1	3	2
Type	Prison (Serkadji)	Police offices (2) + post office	Cinema + media library

Cinema and media library

Area	Number	Surface
Theatre	6	250 m ²
Amphitheatre	1	400 m ²
Media library	1	250 m ²
Cafeteria	1	170 m ²
Ticket counter	1	20 m ²
Restroom	2	50 m ²
Storage	4	80 m ²
Store	1	140 m ²

Projection room	6	20 m ²
Entrance	1	120 m ²
Waiting area	1	120 m ²

Trade

Trade	Maintained	Demolished	Proposed
Type	/	All trades existed	Grocery store + clothing shops + pharmacy + cafés + restaurant + Clinique

Green spaces

Unbuilt area	Existing	Maintained	Proposed green spaces	Proposed squares
Area	2,335 m ²	Either transformed into green spaces or built	3,873 m ²	2 squares Sq1= 332.1 m ² Sq2= 610 m ²

Axes and new paths

Creation of new pedestrian roads in the site to improve the ventilation of the exterior spaces and to facilitate the circulation in the area, as well as reinforcing the Kasbah’s articulation with the colonial city by promoting an easier access to it.

To benefit from the wind, we created a few openings in the direction of the western wind to promote natural ventilation for the zone.

The simulation results shown below, demonstrate the various western wind speed, the speed around and through the new openings varies from 1.60 m/s to 3.20 m/s, which is the appropriate speed for pedestrian comfort.

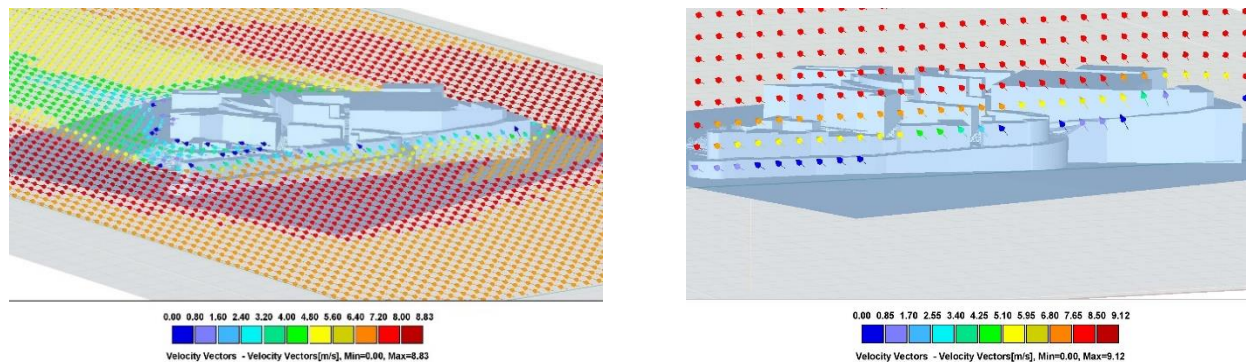


Figure 53 western wind simulation
Source: created by the author, 2020

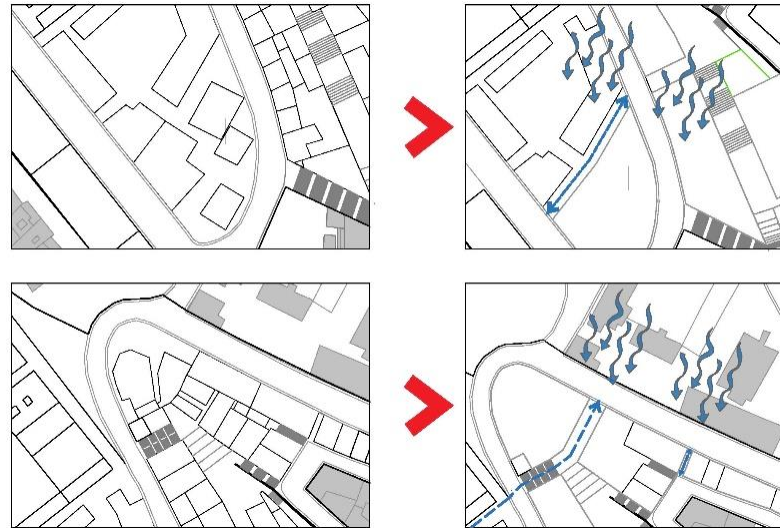


Figure 54 new openings according to western wind
 Source: created by the author, 2020

Green and public places

We have proposed several green spaces including a public garden, a landscape continuing the existing garden and public squares. We also proposed a smart park next to the Kasbah and the materials obtained from demolitions will be reused in the landscaping.

Plots (Check structure plan on board n°38)

We have proposed a new configuration for the plots to promote new openings and facilitate the circulation and accessibility.

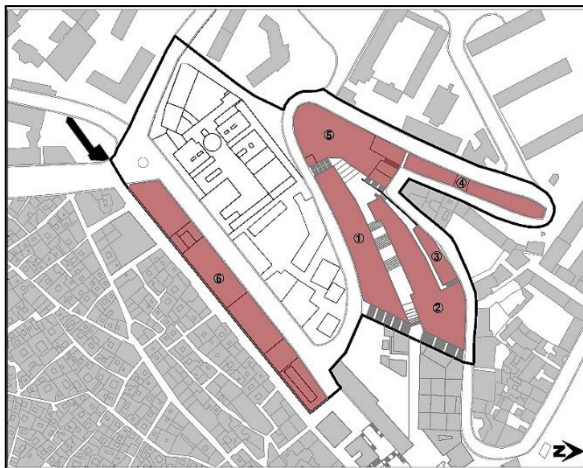


Figure 55 Original configuration of the plots
 Source: created by the author, 2020

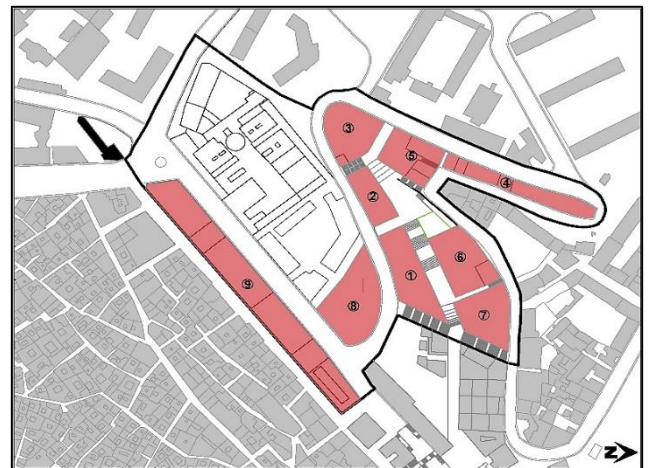


Figure 56 New configuration of the plots
 Source: created by the author, 2020

Alignement

We have aligned our plots and buildings on the existing roads to preserve the initial continuity of the zone's fabric and to benefit from the facades next to the historic road. (check board n°38)

Views

All the buildings benefit from views towards the historic road Louni Arezki, while the northern buildings have views towards both the road and the sea.

Ventilation

Our zone benefits from both eastern and western winds, and the creation of the new paths helped promoting a better natural ventilation without a discomforting wind pressure for a guaranteed pedestrian comfort.

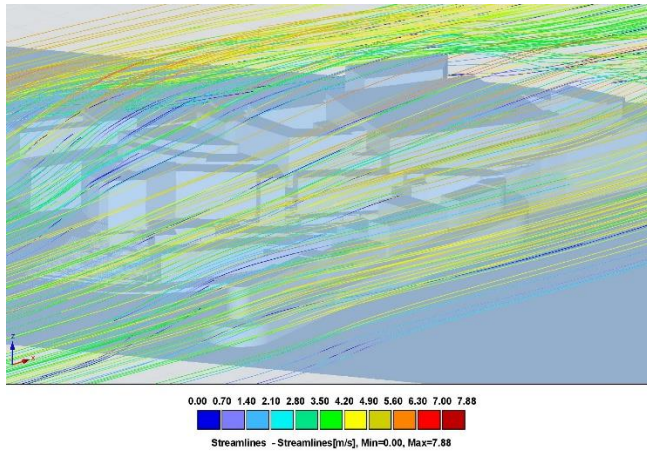


Figure 58 Eastern wind simulation
Source: created by the author, 2020

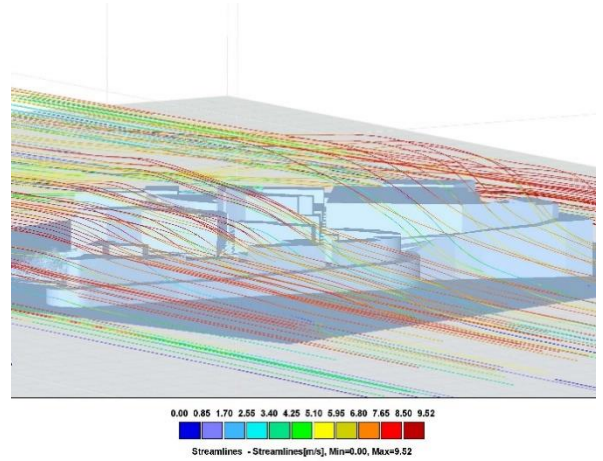


Figure 57 Western wind simulation
Source: created by the author, 2020

Building heights

The height of the buildings will reach up to 6 stories so that each building can benefit from the proper ventilation and sunlight as well as having a sea view.

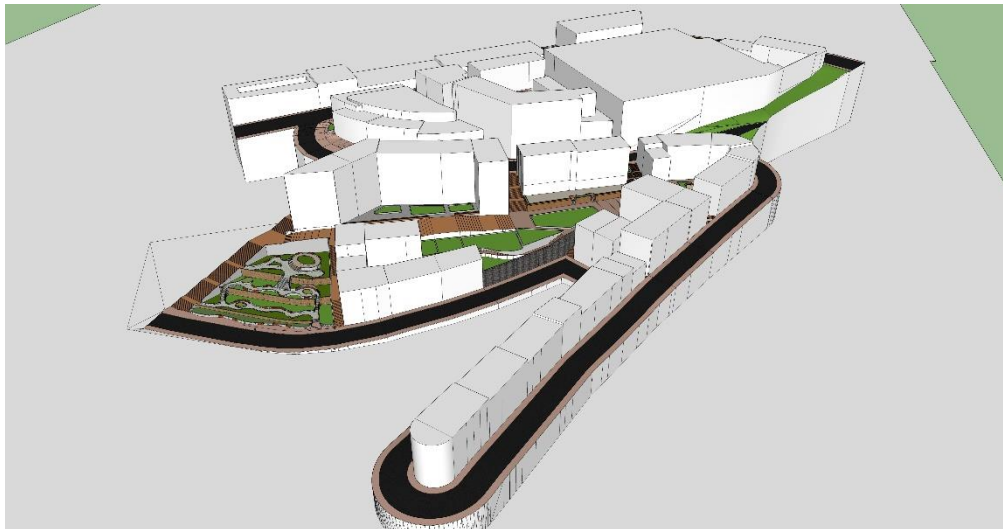


Figure 59 Building elevations of the intervention zone

III - 4 - 4 Master plan
(Check board n°39)

III - 5 Scale of the plot

III - 5 - 1 Planning concept

We have followed the original configuration of the plot, and modified the platforms aligned with the main road to reach it and to facilitate the accessibility to the ground floor. We have aligned the buildings in accordance with the main road and the secondary paths delimiting the plot with the presence of a square.

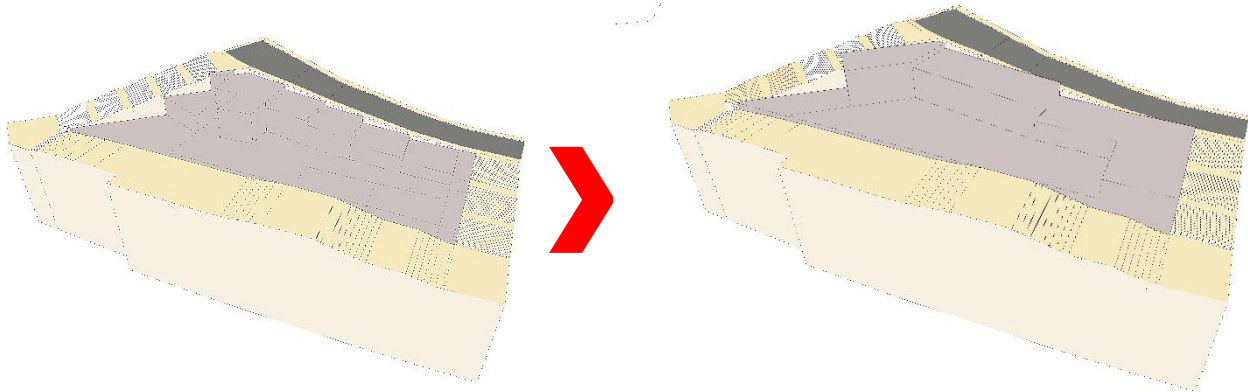


Figure 60 Plot platforms (before modification)

Figure 61 Plot platforms (after modification)

III - 5 - 2 Accessibility and paths

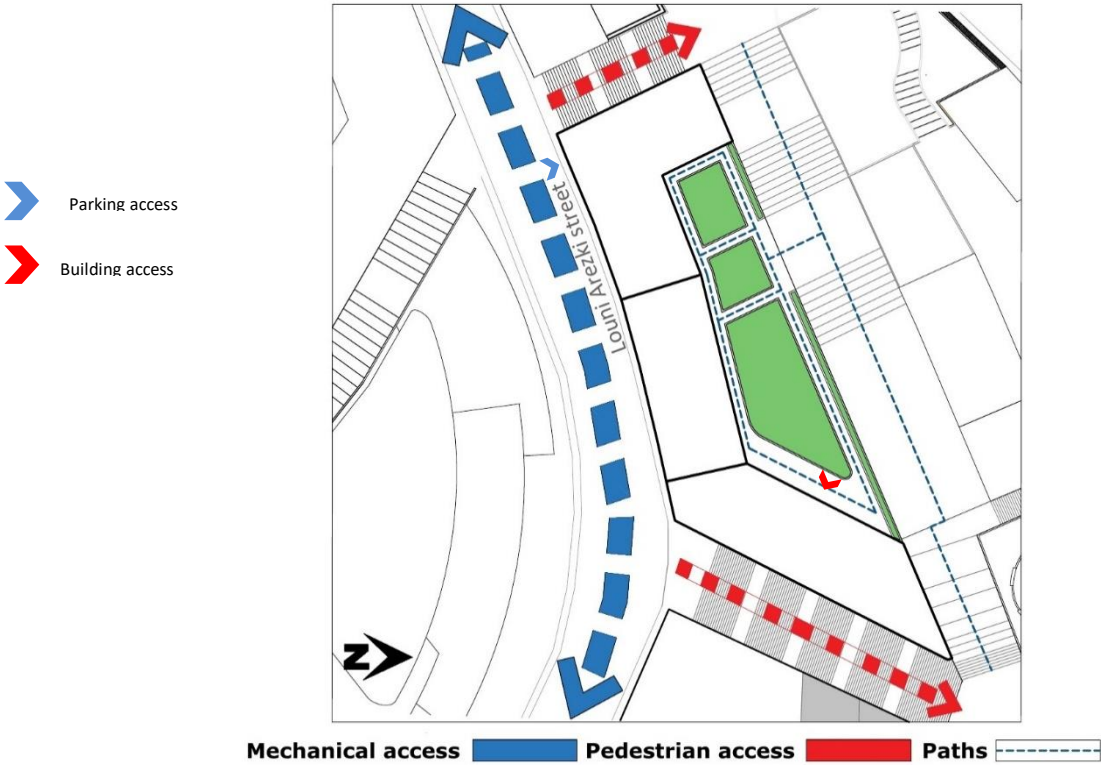


Figure 62 Accessibility of the plot (plan)
Source: created by the author

The plot is accessed from three roads, the mechanical Louni Arezki road, the pedestrian Houcine Houibeh and Mohamed Boudjil streets.

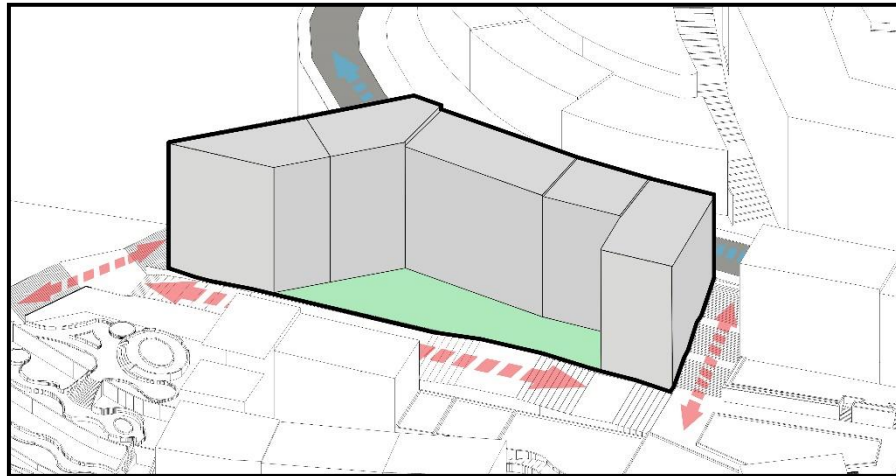


Figure 63 Accessibility diagram of the plot (3D)
Source: created by the author

III - 5 - 3 Parking

One of the problems that the region suffered from, is the lack of parking lots. So considering the morphology of the area, we have created un derground parking lots of 3 levels.

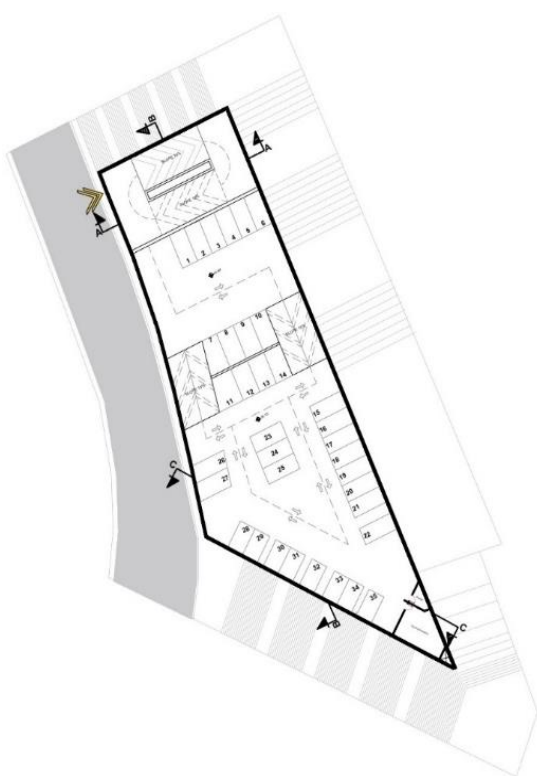


Figure 64 Underground parking plan (1st and 2nd levels)

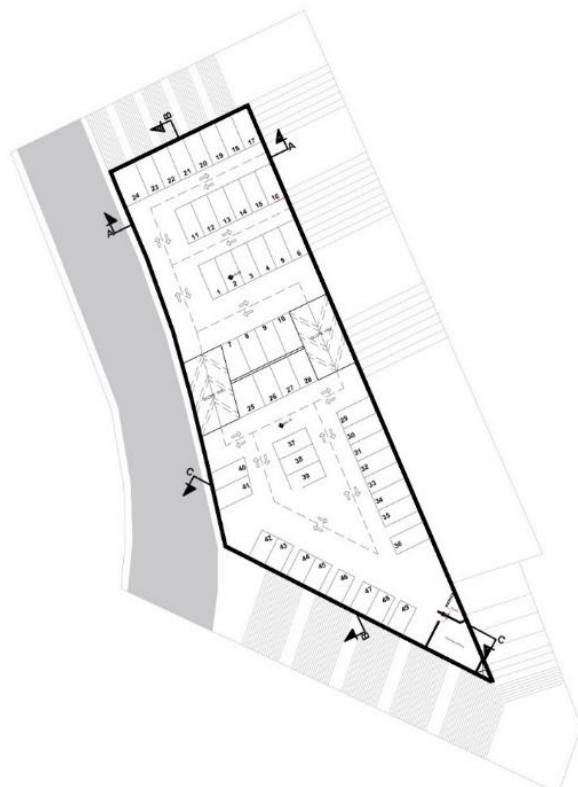


Figure 65 Underground parking plan (3rd and 4th levels)

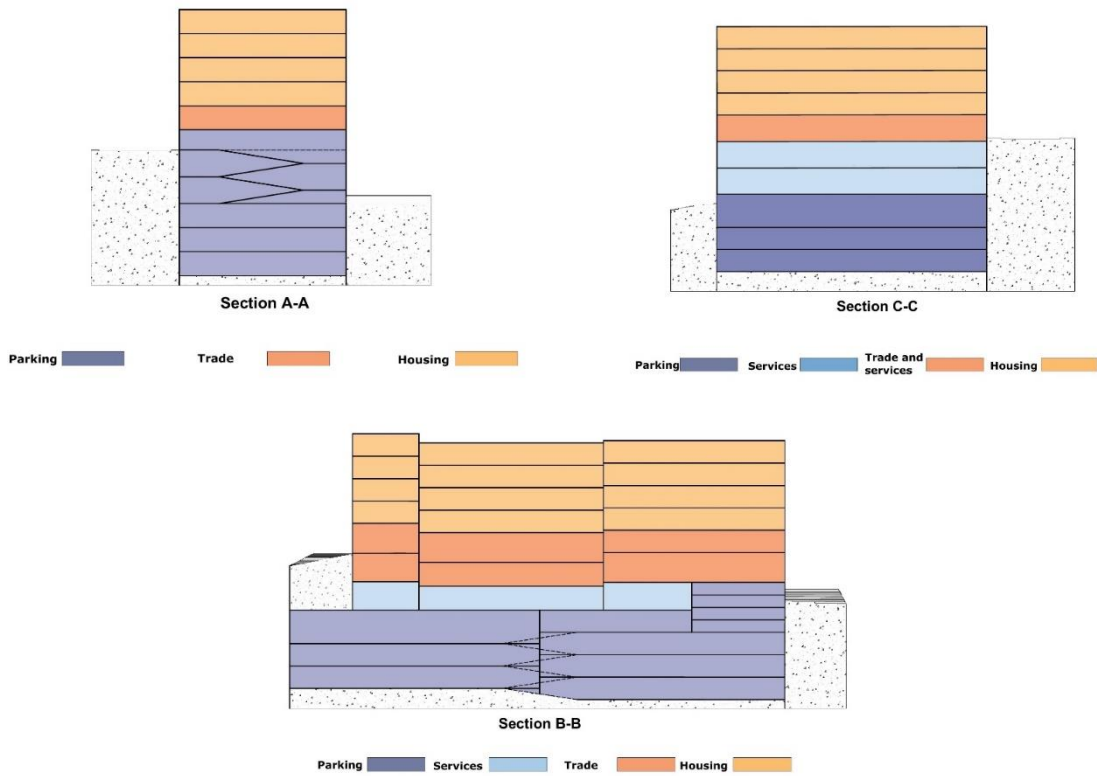


Figure 67 Section diagram showing the different functions planned
Source: created by the author

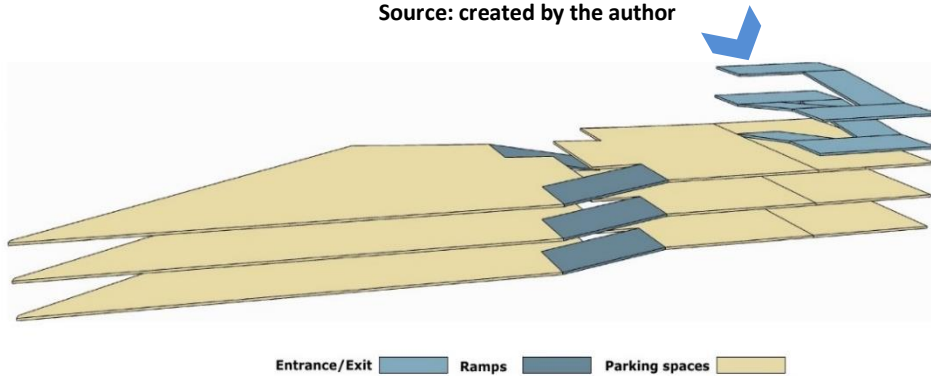


Figure 66 Parking 3D

III - 5 - 4 Outdoor areas

We have programmed coffee shops and restaurant on the ground floors which over look the garden, there will be green spaces as well as garden terraces with pergolas to create a confortbale atmosphere for the clients. The garden is also limited from the street (Houcine Rouibeh) with wooden flower boxes.



Figure 69 Terrace garden



Figure 70 Wooden flower boxes separating tables area from the street

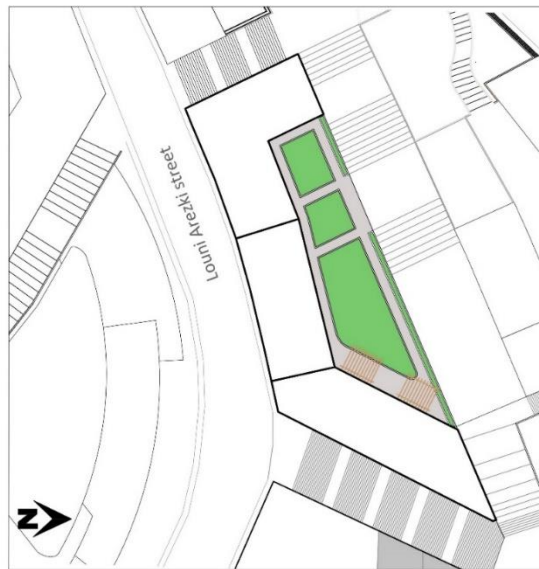


Figure 68 Terrace garden planned

III - 5 - 5 Storeys

The height of the buildings reaches up to 5 floors, in order to benefit from natural ventilation and sunlight, as well as the sea view.

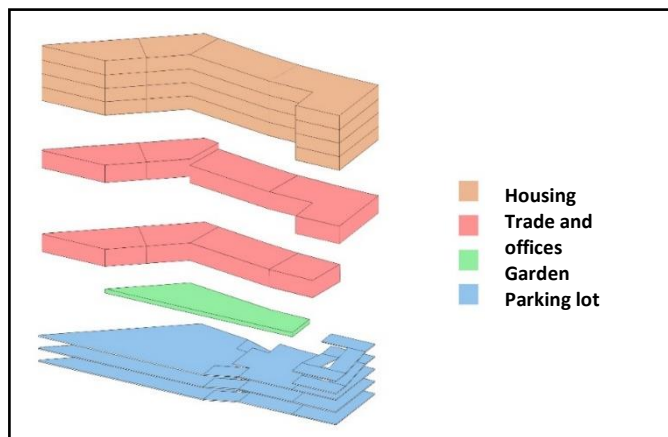


Figure 71 Plot concept diagram
Source: created by the Author

III - 5 - 6 Eco- urbanism principles

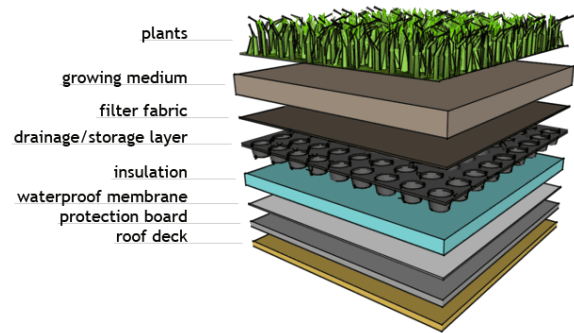
Reuse of demolishing wastes

Recycling and reusing the demolition waste materials for the landscaping. Reuse of the brick for the pavement and the wood to make the flower boxes used in the plot.



Garden waterproofing

Waterproofing membrane used for the terrace garden



Ventilation

Benefiting from the eastern and western wind to naturally ventilate the buildings .

Inspiring from one of Bab El-oued gardens, we planned ventilation pillars on the edges of the green space to provide a natural ventilation for the underground parking.



Figure 72 Parking ventilation pillars, cite Le Moulin between Colonel Lotfi Avenue and Ahmed Boudier Street
Source: photographed by the author, 2020

III - 6 Architectural project

III - 6 - 1 Spatial organization concept

The organization of the different levels of our building is based on, the first level contains the trades, while the second and third level which have a direct contact with the main road, contains commercial activities and services as well. The remaining levels are dedicated to housing.

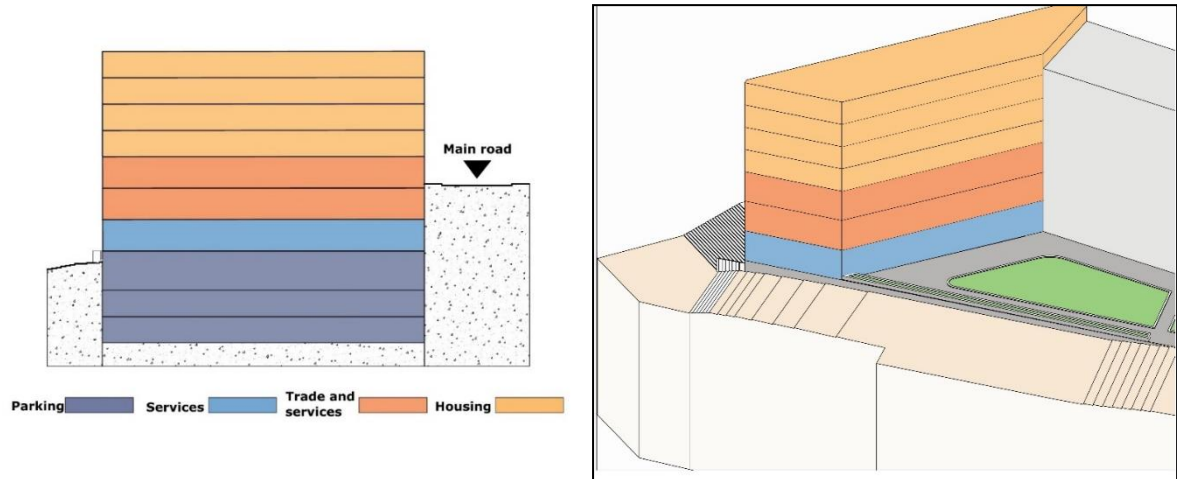


Figure 73 Spatial organization of the project
Source: created by the author, 2020

III - 6 - 2 Space organization

We organized the spaces in accordance with the provided views, where the eastern areas benefit from views towards the historic center and the sea, the western areas have views towards the square and the gardens, and the northern area benefit from views towards the sea and the landscape.

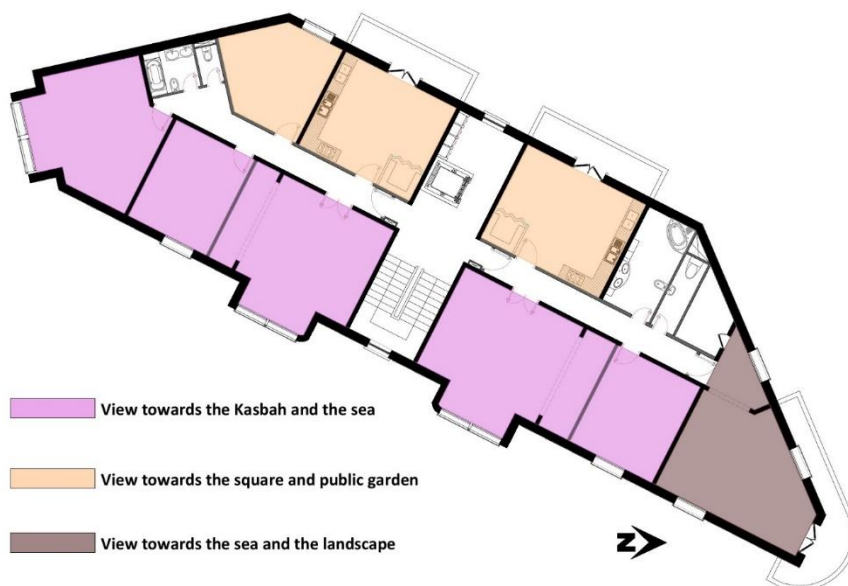


Figure 74 Urban views

The distribution towards the different spaces is done through the halls, where the day areas are located at the entrance, and night and humid areas at the end of the halls.



Figure 75 Space distribution

III - 6 - 3 Circulation

Vertical circulation is provided by stairs and elevators, while horizontal circulation is through halls and hallways.

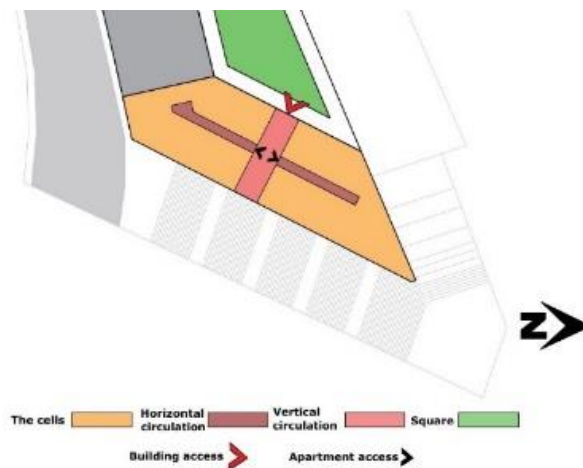


Figure 76 Circulation organization of the project
Source: created by the author, 2020

III - 6 - 4 Cells assembly

The shape of our cells is guided by the form of our plot and parcel which resulted in having irregular forms shaping our building.

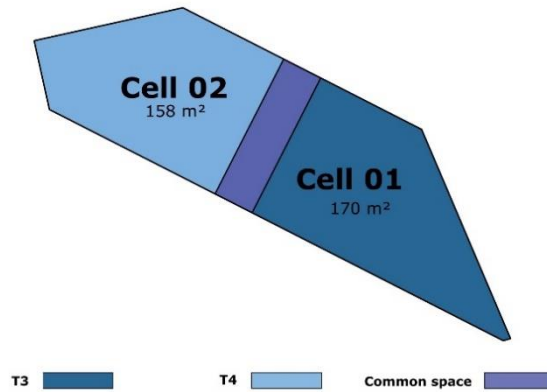


Figure 77 Cell assembly of the project
Source: by the authors

III - 6 - 5 Bioclimatic architecture concept

The orientation of our building allows natural ventilation by the eastern and western wind as well as benefiting from the sunlight. We organized the spaces according to wind directions to benefit from proper ventilation, living rooms and bedrooms are placed in the eastern part of the building, while kitchens and bathroom in west. The underground parking is naturally ventilated as well by ventilation shafts.

To ensure the thermal comfort while saving conventional energy, we used rockwool as insulation material for the walls and photovoltaic solar panels to produce part of the electricity and for water heating, as well as green roofs to promote thermal protection to the roof.

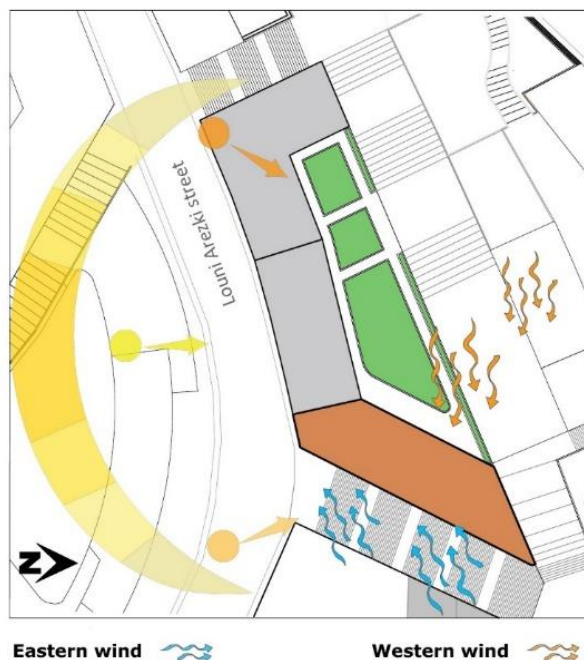


Figure 78 Building orientation

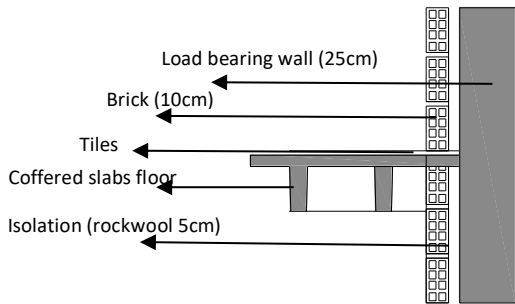


Figure 81 Detail of the wall



Figure 79 Photovoltaic panels
Source: Google image



Figure 80 Green roof

III - 6 - 6 Facades composition

The facade concept is a mixture between the classic architecture with a contemporary twist. We have marked the three principle composition elements of the classic architecture: base; which contains the different trade activities and offices, body; which contains the different apartments, and the crown which marks the last apartments' floor with the rooftop.

We also used elements of both styles such as the cornice that separates the base of the body, bow windows with geometric consoles under them, aluminum glass railing for balconies and curtain wall.

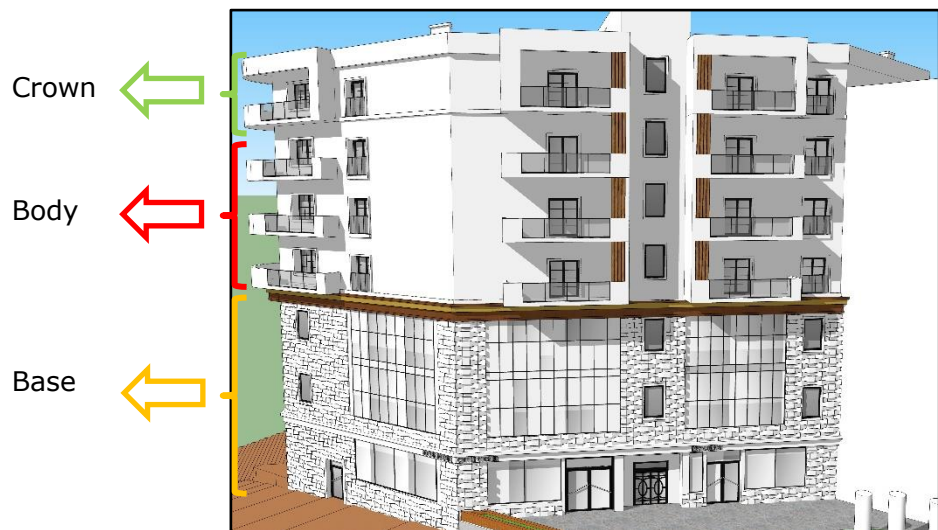


Figure 82 Façade's composition



Figure 85 Bow-Windows (southern façade)



Figure 84 Geometric consoles under bow-window



Figure 83 Cornice with wooden texture

We have created geometric stone patterns on the walls of the base part .

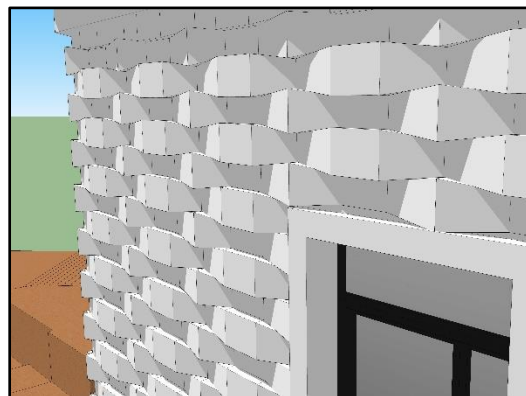
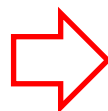
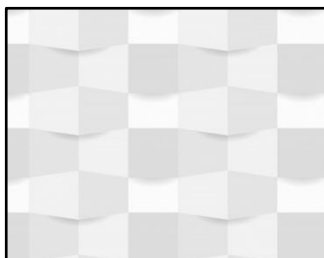


Figure 86 Geometric pattern of the wall



Figure 87 Building's entry

III - 6 - 7 Construction system

We have chosen the coffered slabs system and load-bearing walls, as a construction system for our project. The coffered slabs hold a greater amount of load compared to the conventional concrete slabs with a smaller number of columns. They also facilitate the installation of different services such as air-conditioning, lighting, insulation materials and wiring.

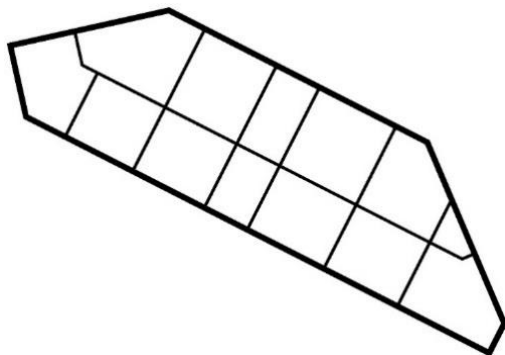


Figure 88 Building's structure

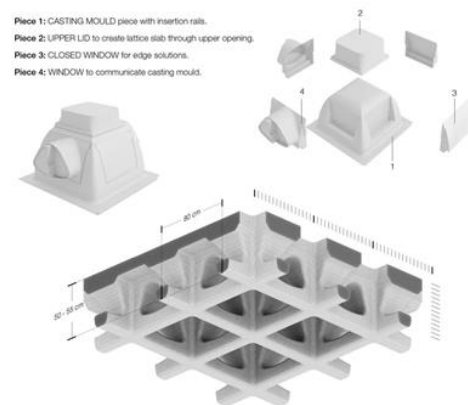


Figure 89 Detail of a coffered slab
Source: www.designboom.com

III - 6 - 8 Architectural layout

(Check boards n°...)

III - 7 Synthesis and conclusion of the chapter

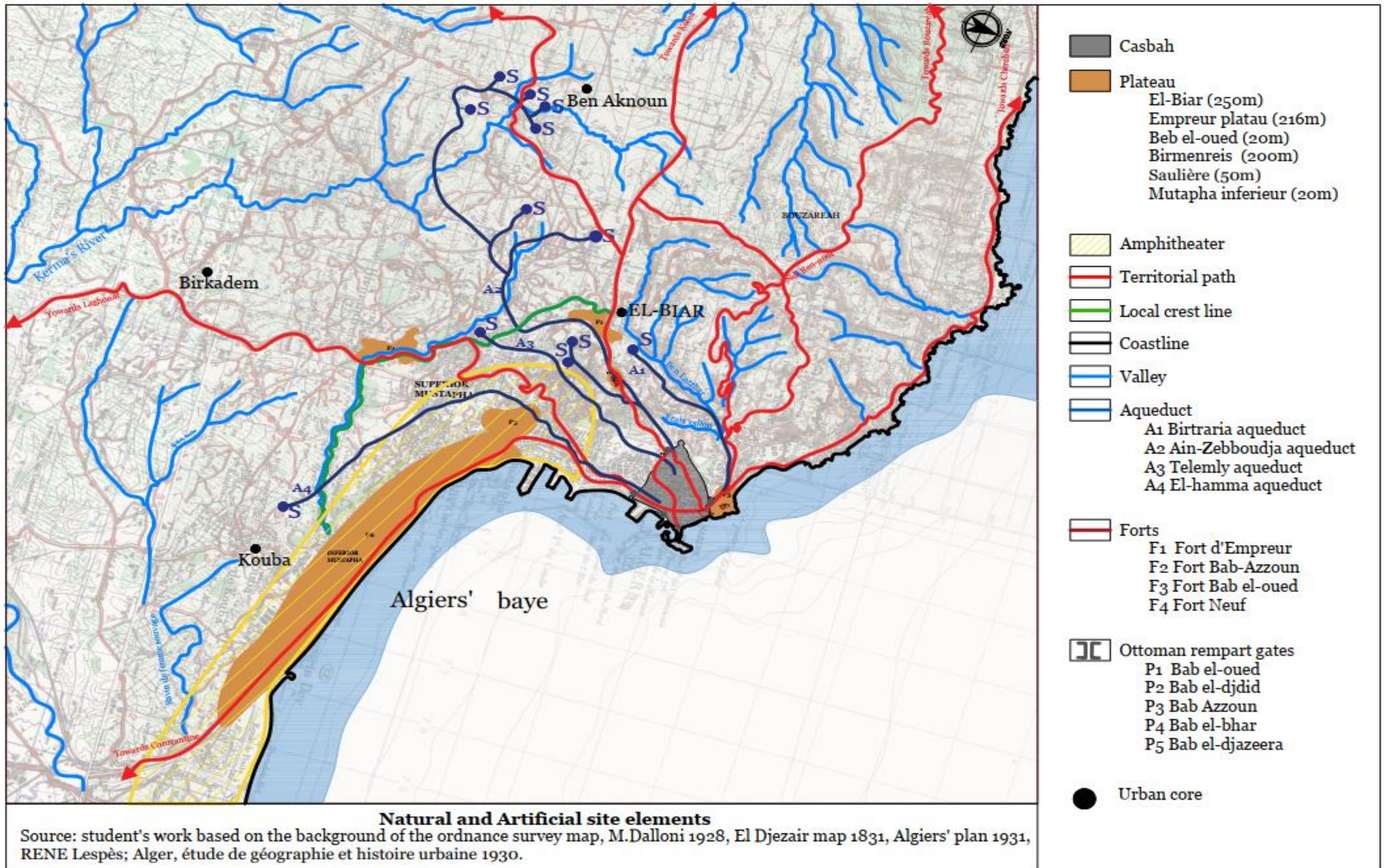
This chapter has demonstrated our case study which is the surroundings of the Kasbah, where we presented the different delimitations starting from the city, then the surroundings of the Kasbah and finely our intervention zone, with the presentation of the climate and morphology data.

We started the diachronic analysis by site reading to understand the initial morphology of the city, then the historical process of the city and intervention zone's formation in particular, along with the evolution of the architectural styles during the colonial period

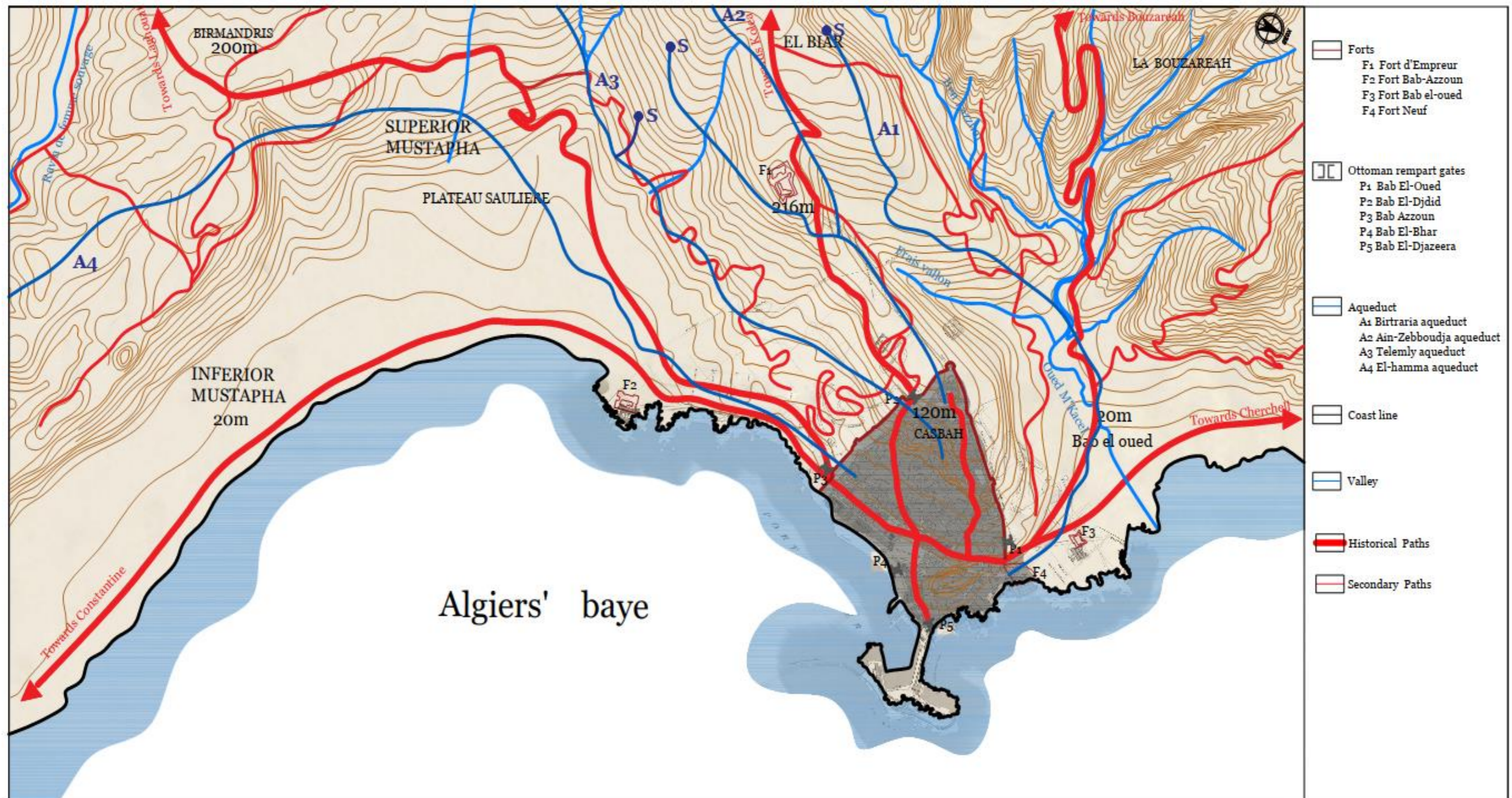
The synchronic analysis was an in-depth study of our zone to understand the urban fabric and define the characteristics of its architectural style alongside the overall construction state and functioning system.

The development of our intervention zone started by listing the different problems of the zone and offering several recommendations to treat the mentioned issues and more, leading to restructuring principles that we proposed for our zone in general, and our projected plot in particular.

Finally, we have proposed the several steps and assembly concept of our architectural project, alongside the selected construction system and the different principals to establish a sustainable and bioclimatic project.



Board 8 Natural and artificial elements



Site morphology

Source: student's work based on the background of Algiers' plan 1846, Algiers' plan 1904, M.Dalloni 1928, El Djezair map 1831, Algiers' plan 1931.

Synchronic reading Algiers' perimeter



Source: done by student based on the background of Google Earth image

Board 10 Delimitation of the case study

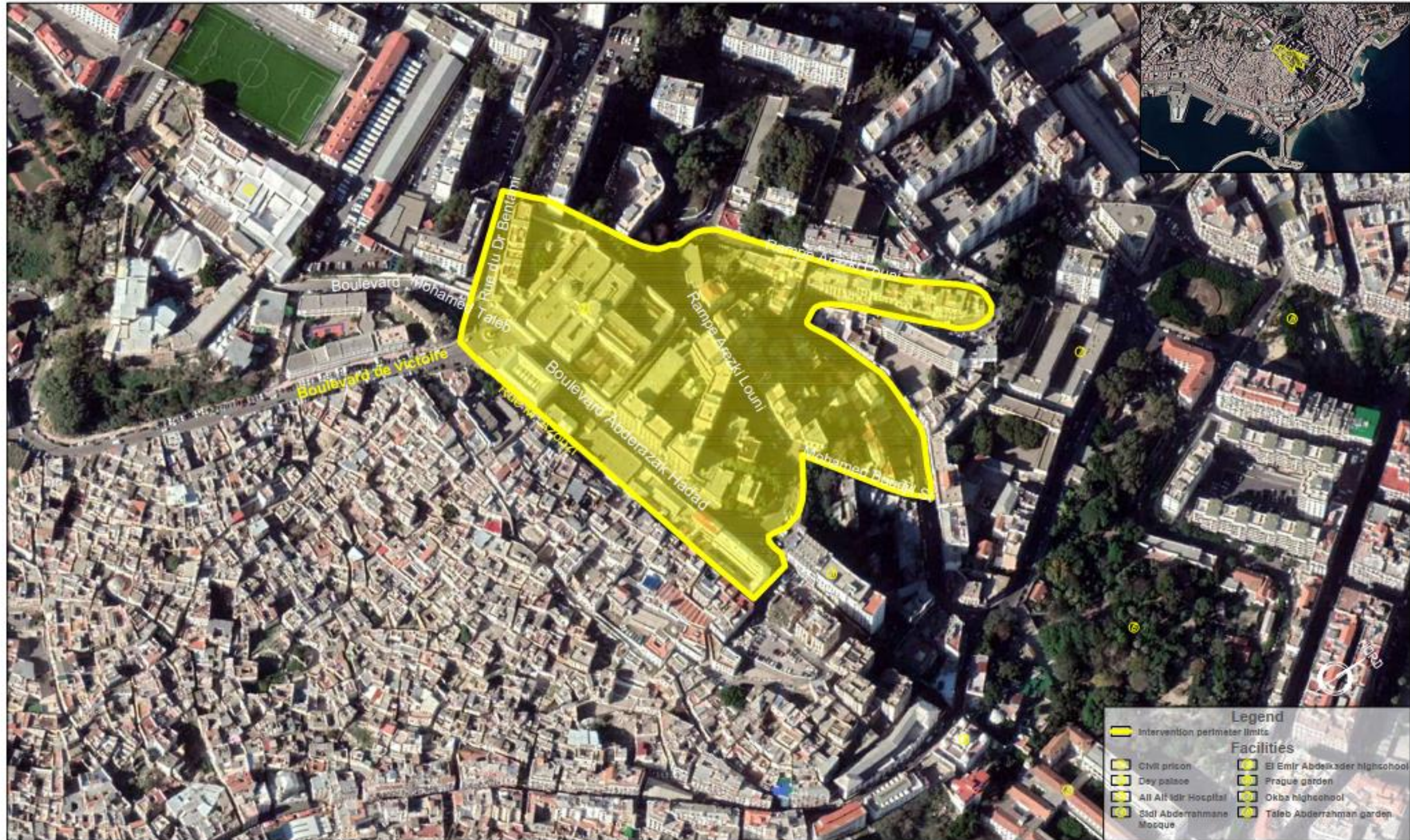
Synchronic reading Casbah surroundings' perimeter



Source: done by student based on the background of Google Earth image

Board 11 Delimitation of the Kasbah's surroundings

Synchronic reading Intervention area



Source: done by student based on the background of Google Earth image

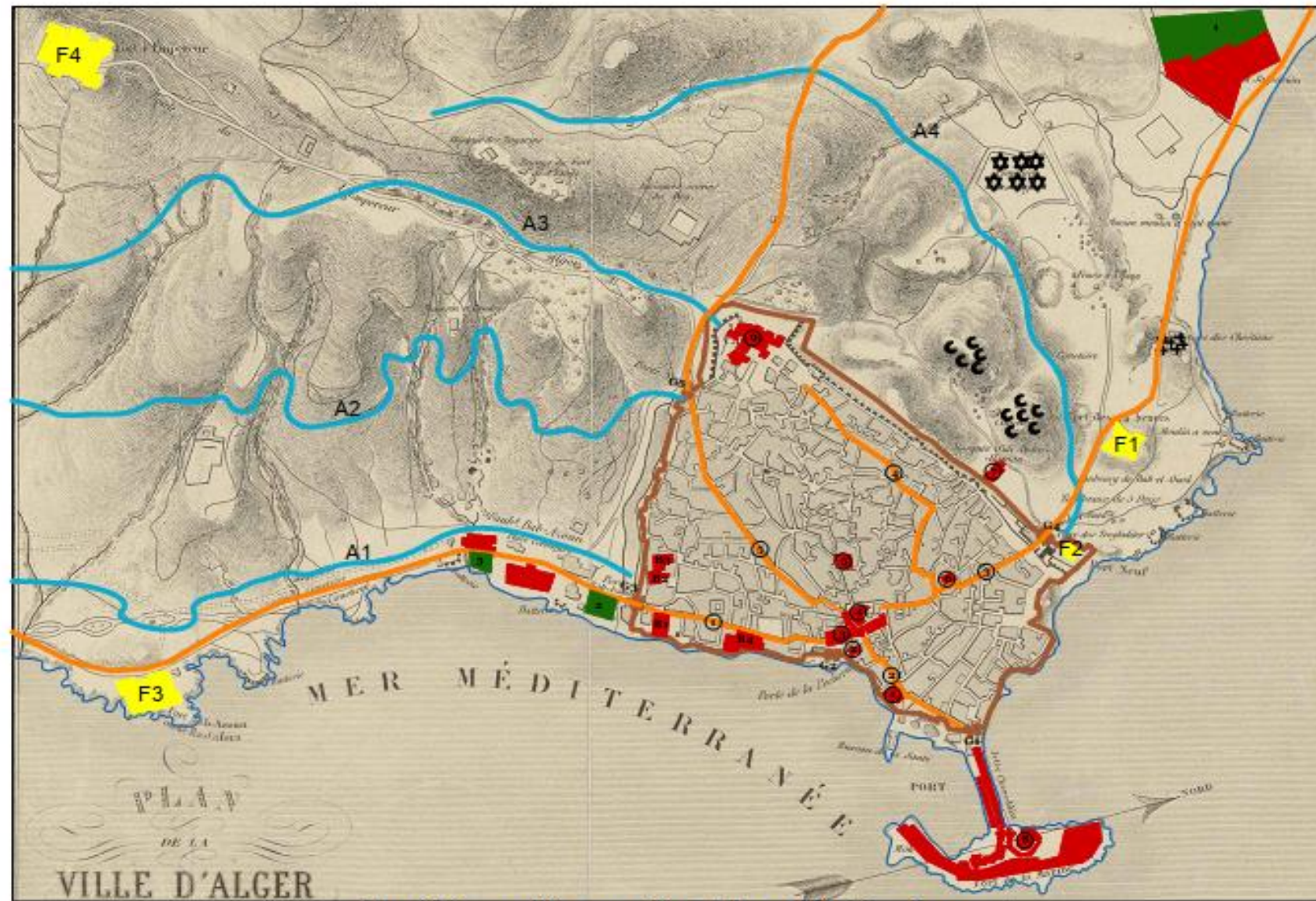
Board 12 Delimitation of the intervention area

Diachronic reading Formation and deformation of the city

Plan

Characteristics

Algiers and its surroundings in 1830

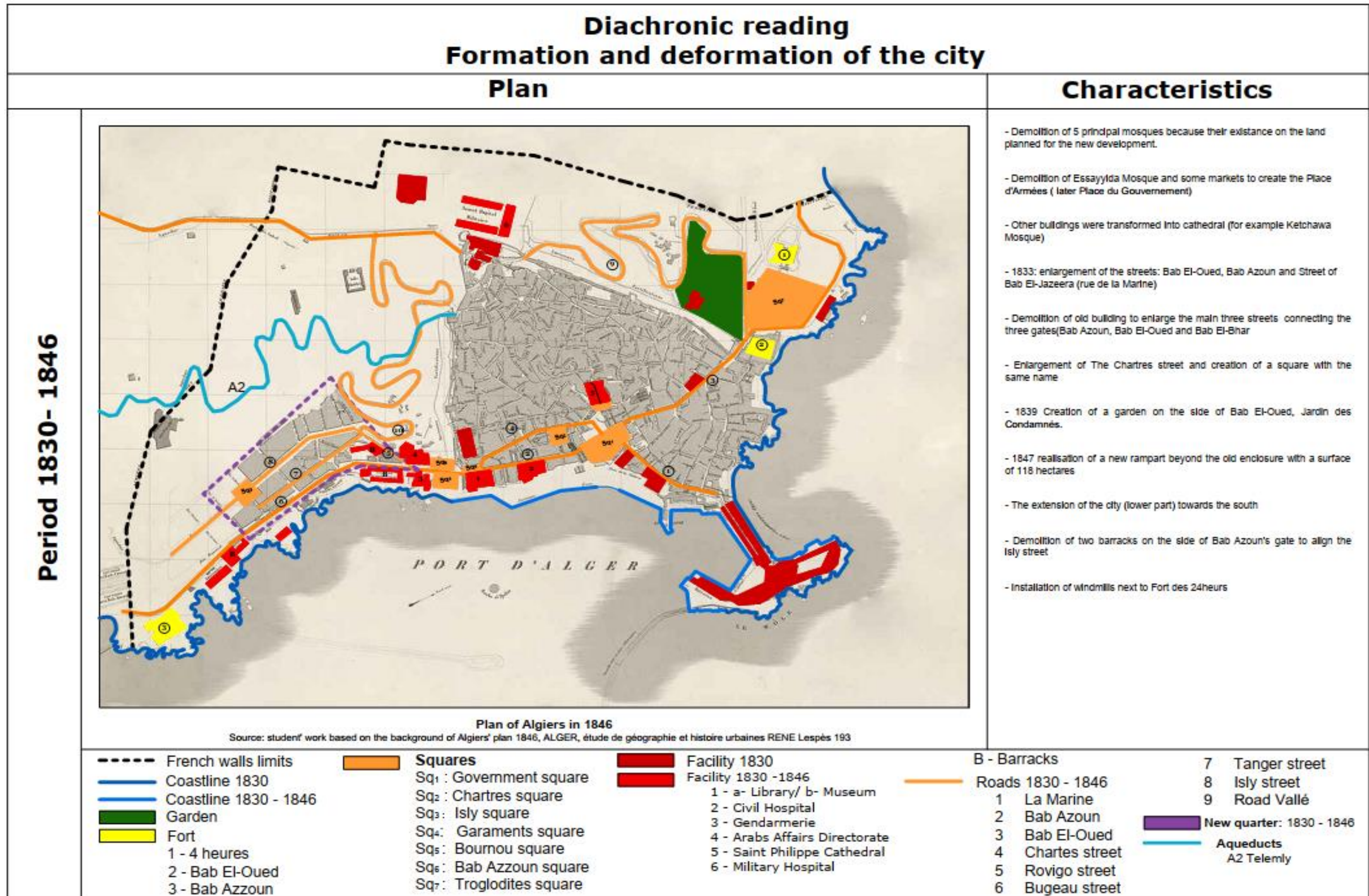


Plan of Algiers and its surroundings at the eve of the French conquest

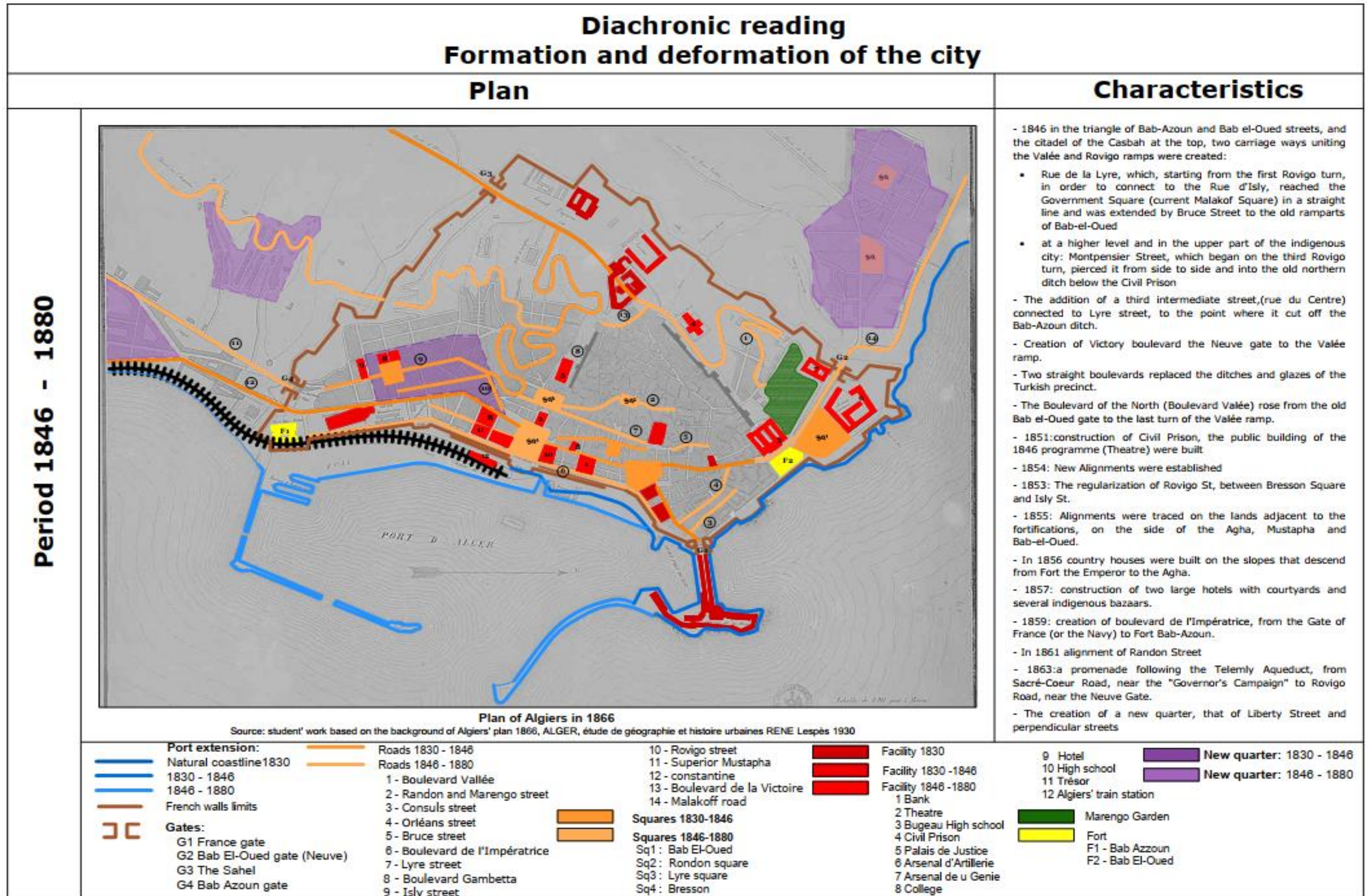
Source: student' work based on the background of Algiers' plan 1830, ALGER, étude de géographie et histoire urbaines RENE Lespès 1930, contributions à l'histoire d'Alger; FREDERICO CRESI, Sakina MISSOUM; Alger à l'époque ottomane

- A fortification enclose the city from all sides including the sea, and had five gates:
 - Bab El-Oued to the north
 - Bab Azoun to the south
 - Bab El-Bhar on the sea front
 - Bab El-Jazeera on entry of the harbor
 - Bab El-Jadid to the southwest
- The city has a triangular shape with the coastline
- A dense urban network with narrow streets.
- Almost total lack of squares and open spaces
- Existence of four cemeteries on the north side of the city :
 - 2 Muslim Cemeteries;
 - A Jewish cemetery;
 - And a Christian cemetery.
- Two transversal roads connects the lower part of the town with the upper part :
 - The Kasbah street and Hamadache street
- Djenina square and palace represents the city center (place du gouvernement, now place des Martyrs)
- the upper part is occupied by residential buildings with the existence of some mosques and praying rooms.
- The principal facilities of the city are situated in the lower part.
- The city occupies an area of 46 hectares

	Ottoman walls		Facility		Aqueducts		Gates:		Fort:
	Coastline		1 - Mosque El-Kebir		A1 El-Hamma		G1 Bab El-Jazeera		F1 Fort 4heures
	Territorial path		2 - Mosque El-Jadid		A2 Telemly		G2 Bab El-Bhar		F2 Bab El-Oued
	1 - Bab Azoun		3 - Mosque El-Sebaghin		A3 Ain Zebouja		G3 Bab Azzoun		F3 Bab Azzoun
	2 - Bab El-Jazeera		4 - Mosque Es-sayida		A4 Birtraria		G4 Bab El-Oued		F4 Empeur
	3 - Bab El-Oued		5 - Ketchawa Mosque				G5 Bab El-Jdid		
	4 - Kasbah street		6 - Ali Pitchin Mosque				Garden:		
	5 - Hamadache street		7 - Sidi Abderrahman Mosque				1 Dey Garden		
			8 - Jetée de Khireddine				2 Bournou place		
			9 - Citadel				3 Fidon place		



Board 14 Diachronic reading: study perimeter, 1846



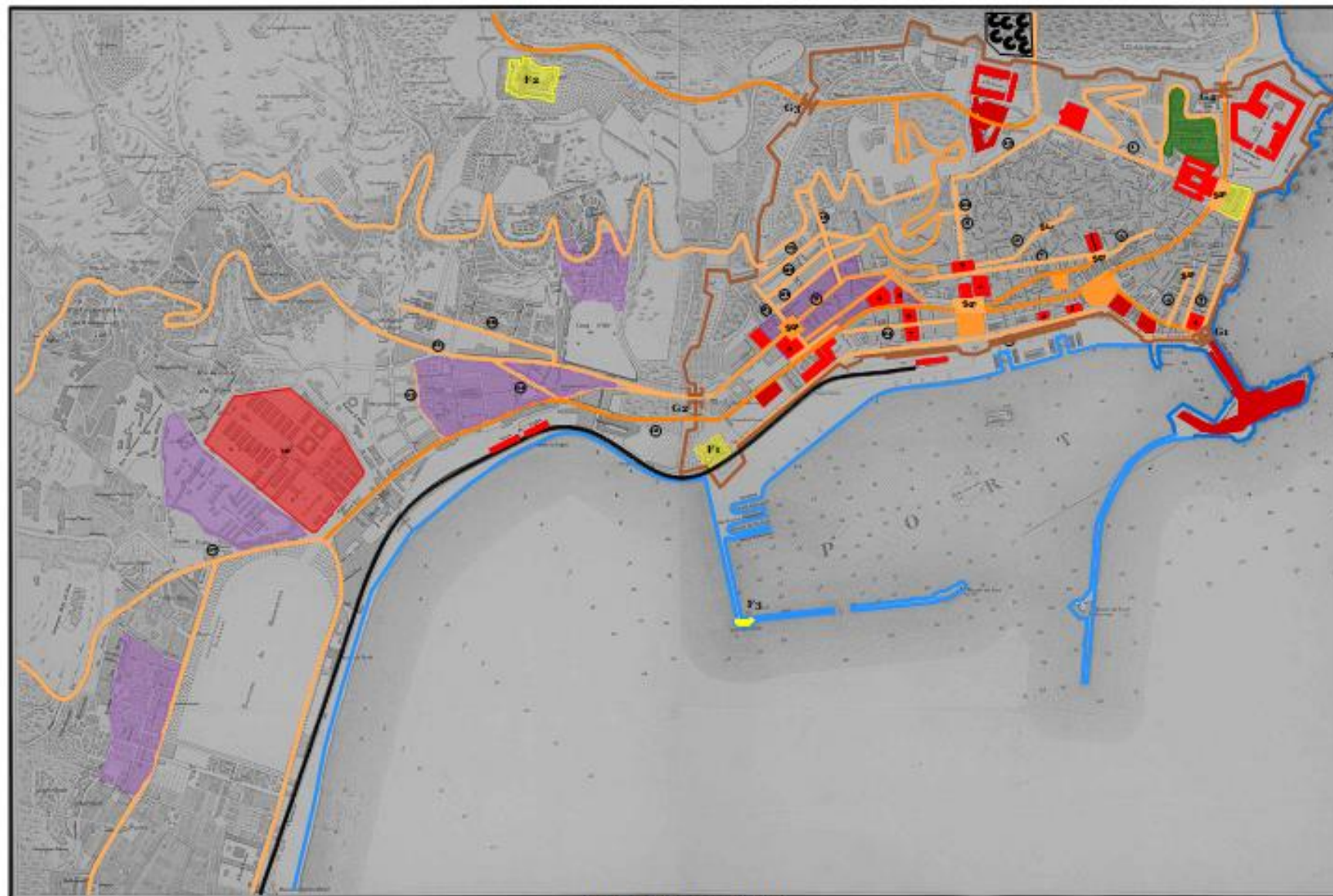
Board 15 Diachronic reading: study perimeter, 1866

Diachronic reading Formation and deformation of the city

Plan

Characteristics

Period 1846 - 1880



Plan of Algiers in 1879

Source: student' work based on the background of Algiers' plan 1879, ALGER, étude de géographie et histoire urbaines RENE Lespès 1930

<p>Port extension:</p> <ul style="list-style-type: none"> — Natural coastline 1830 — 1830 - 1846 — 1846 - 1880 + + + + + Railway — French walls limits <p>Gates: G1 France gate G2 Isly gate G3 The Sahel G4 Bab El-Oued</p>	<p>Facilities</p> <ul style="list-style-type: none"> ■ 1830 ■ 1830 - 1846 ■ 1846 - 1880 1 - Academie Militaire 2 - Banque 3 - Mairie 4 - Brracks 5 - Beaux arts 6 - Palais de justice 7 - Tresor 	<p>Quarter:</p> <ul style="list-style-type: none"> ■ 1830 - 1846 ■ 1846 - 1880 ■ Garden ■ Fort F3 - Bab Azzoun F4 - Empereur F5 - Coude 	<p>— Roads 1830 - 1846</p> <p>— Roads 1846 - 1880</p> <ul style="list-style-type: none"> 1 - Boulevard Vallée 2 - Randon and Marengo street 3 - Consuls street 4 - Orléans street 5 - Bruce street 6 - Boulevard de l'Impératrice 7 - Lyre street 8 - Boulevard Gambetta 9 - Isly street 	<ul style="list-style-type: none"> 10 - Rovigo street 11 - Superior Mustapha 12 - constantine road 13 - Boulevard de la Victoire 14 - Liberte street 15 - Boulevard of agha 16 - Boulevard bon Accueil 17 - fontaine bleue 18 - Joinville Street 19 - Saint Augustin street 20 - Dupuch street 21 - Mogador street 	<p>Square:</p> <ul style="list-style-type: none"> ■ 1830 ■ 1830 - 1846 ■ 1846 - 1880 Sq1 - Republique square Sq2 - Bugeaud square Sq3 - Randon square Sq4 - Bab el Oued square Sq5 - Malakoff square Sq6 - Soult-berg square
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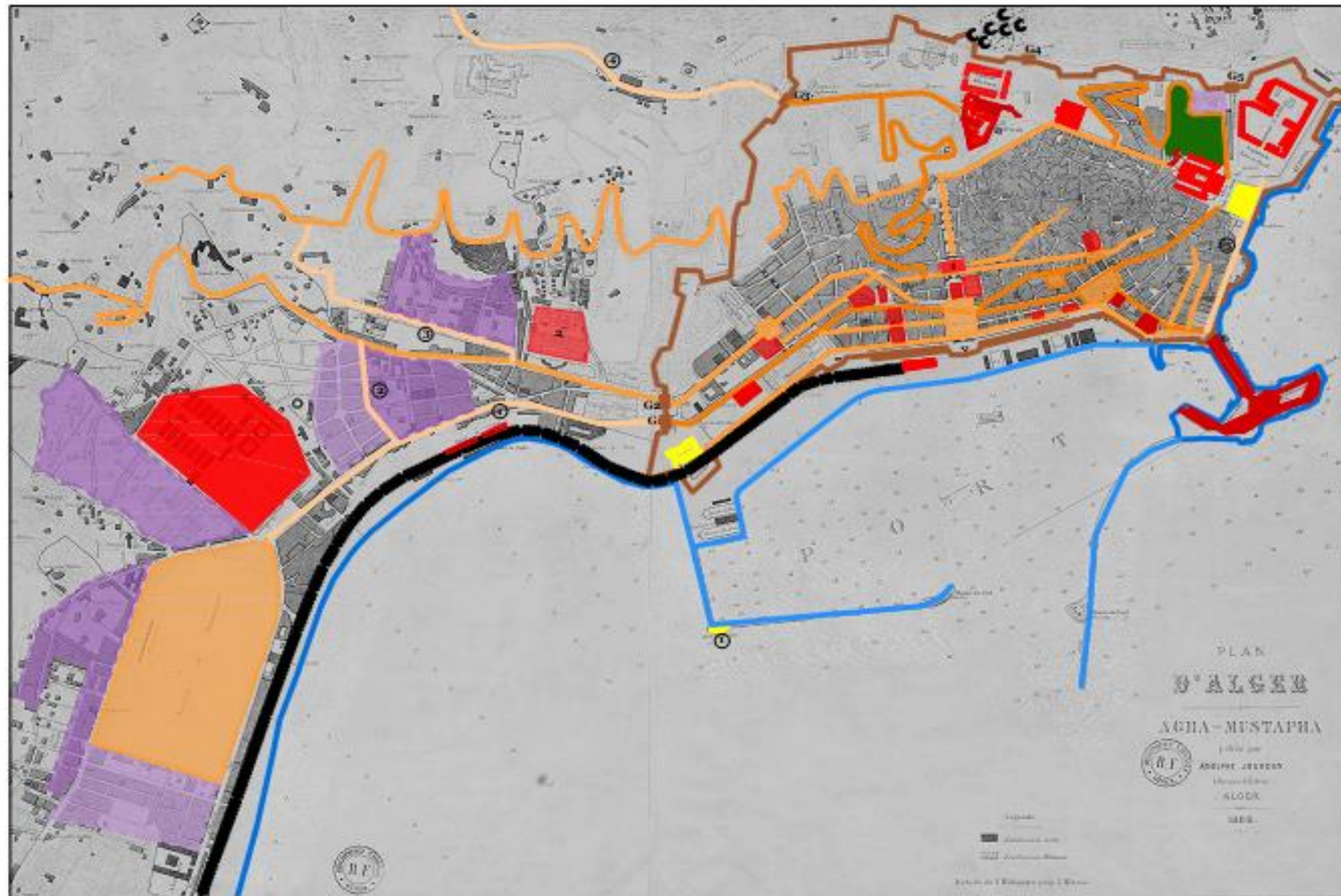
- A small Post Office and a Treasury were installed in 1867 on the Empress's Boulevard
 - South Rempart Street and bastions 15 and 16 were executed from 1865 to 1869.
 - Decongesting of Bab-el-Oued Street, using Rempart street, between the bastion 23 and the gate of France (1865 to 1874)
 - Boulevard de l'Impératrice became Boulevard de la République after the Revolution of September 4, 1870
 - 1871 : Boulevard Vallée was reduced, by the construction of the Lycée in the lower part
 - The widening of the Valée ramp
 - Bresson Square became Place de la République in 1873
 - Boulevard Gambetta was transformed into a track composed of about 200 steps of stairs
 - The creation of two stair ramps, 100 steps, between Bresson Square and Rue de la Lyre.
 - Joinville Street, completed in 1874, from Isly Street to St Augustine Street, has 150 steps and 5 landings.
 - From 1871 to 1874, more than 300 houses were built, some factories were established in the Agha quarter, Lower Mustapha was populated by buildings
 - Prolonged drilling of Randon Street in 1873
 - The levelling of Isly quarter by creating many stairs
 - The opening of new streets, such as Levacher, Dupuch and St Augustine streets
 - The construction of St. Augustine's Church (1876-1879) in the former suburb of Bab-Azoun and Isly.
 - A military quarter was created next to constantine's gate 1880
- Port:
- 1873: the creation of a closed port of 90 ha
- 1870: the port contained its north and south piers, but the Al Djefna rock was still an islet
- Two forms of refit had been built from 1860 to 1870 in the southern part of the port

Diachronic reading Formation and deformation of the city

Plan

Characteristics

Period: 1880 - 1895



Plan of Algiers in 1888

Source: student' work based on the background of Algiers' plan 1888, ALGER, étude de géographie et histoire urbaines RENE LESPÈS 1930

- Creation of les Palmiers Boulevard next to Bab El-Oued (now boulevard Mouloud Bel Houchete)
 - Creation of Victor Hugo boulevard connecting Constantine road with Mustapha supérieur street.(currently boulevard Mouloud Bel Houchete)
 - Piercing the road of El-Biar from Sahel gate towards El-Biar (now Mohamed Taleb)
 - Creation of the cornice boulevard (Bon Accueil boulevard currently boulevard Mohamed 5) which connects the road Nationale de Lagouat (rue Michelet Supérieure) at Chemin Vicinal du Ruisseau (chemin des Arcades) in 1881.
- We have observed :
- Continuity of the Algiers Constantine route
 - Creation of ElBiar road which starts from the Gate of the Sahel to El Biar (now Boulevard Mohamed Taleb)
 - Transformation of the Lyre square (place de Lyre) into a market (marché du Lyre)
 - Appearance of new quarters in the side of Mustapha Inferieur

<p>Port extension:</p> <ul style="list-style-type: none"> — Natural coastline 1830 — 1830 - 1846 — 1846 - 1880 — 1880 - 1895 — French walls — Railway ■ Fort 1 Coude Fort 	<p>Path 1830</p> <ul style="list-style-type: none"> — Road 1830 - 1846 — Road 1846 - 1880 — Road 1880 - 1895 <p>1- Algiers-Constantine road 2 - Blv Victor Hugo 3 - Blv Bon Accueil 4 - El-Biar Road 5 - Blv Palmiers</p>	<p>Gates:</p> <ul style="list-style-type: none"> G1 Constantine G2 Isly gate G3 The Sahel gate G4 Valée gate G5 Bab El-Oued G6 France gate 	<p>Square:</p> <ul style="list-style-type: none"> ■ 1830 ■ 1830 - 1846 ■ 1846 - 1880 <p>■ Muslim Cemetery</p> <p>■ Christian Cemetery</p>	<p>Facilities</p> <ul style="list-style-type: none"> ■ 1830 ■ 1830 - 1846 ■ 1846 - 1880 ■ 1880 - 1895 <p>1 - Lyre Market 2 - Facilities</p>	<p>Quarter:</p> <ul style="list-style-type: none"> ■ 1830 - 1846 ■ 1846 - 1880 ■ 1880 - 1895 ■ Garden 1 - Maringo Garden
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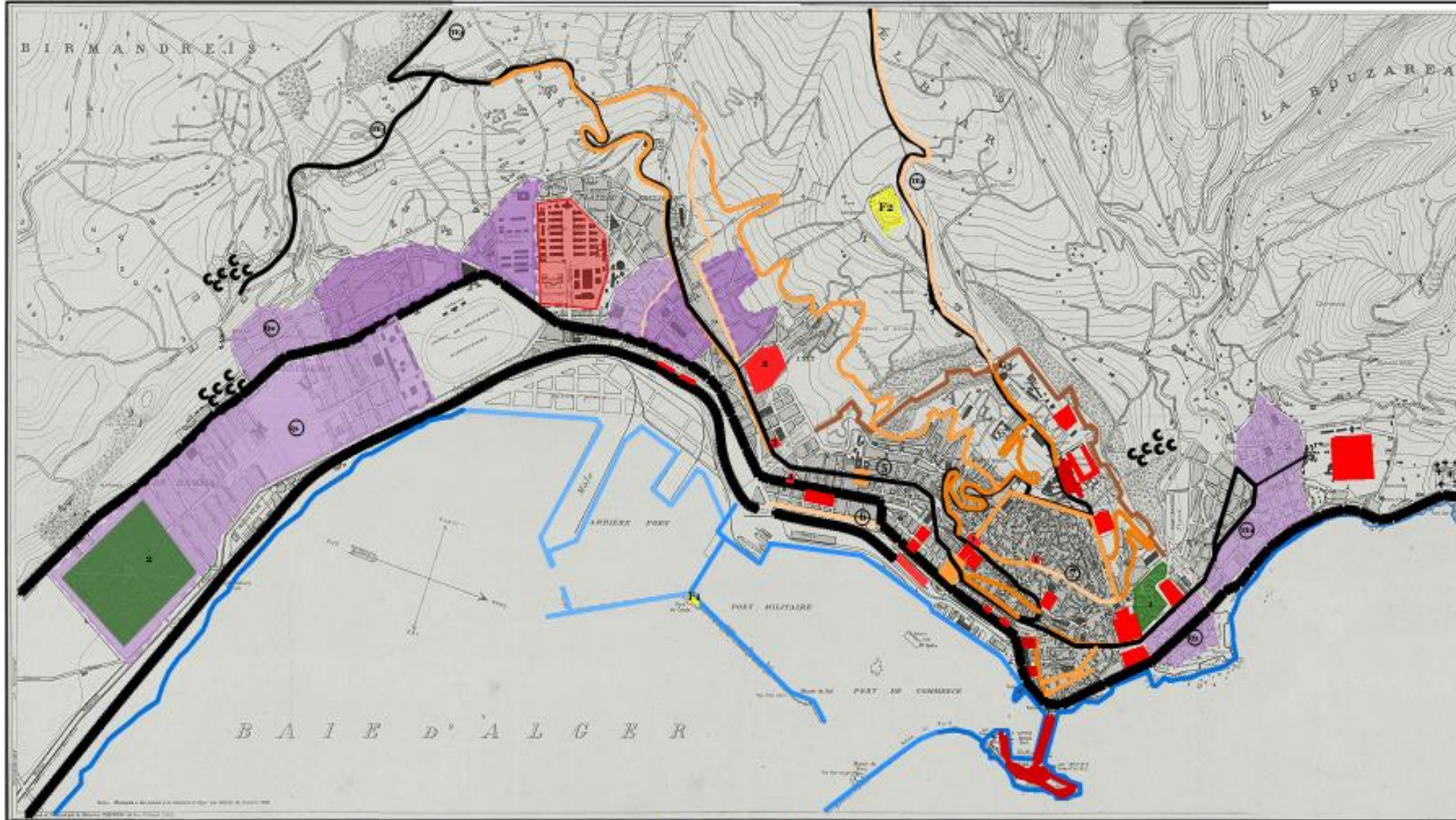
Board 17 Diachronic reading: study perimeter, 1888

Diachronic reading Formation and deformation of the city

Plan

Characteristics

Period: 1880 - 1895



Plan of Algiers in 1904

Source: student' work based on the background of Algiers' plan 1904, ALGER, étude de géographie et histoire urbaines RENE Lespès 1930

- Realisation of railway lines to connect Algiers to the cities:
*Alger - Blida in 1862.
*Alger - Oran in 1868.
*Alger - constantine in 1887.
*Alger - Bougie in 1888.
*Alger - Tizi ouzou in 1890, connecting also Dellys in 1896 and Boughni in 1900
- Installation of CRFA network along the entire coastline
- Realization of a steam tramway along the coastline in 1892
- Installation of electric tramway in 1896 that connect:
Dey hospital to Bab El-Oued
Colonne Virol to Mustapha
- Construction of more than 874 houses on the suburb of the north and south sides between 1881 and 1896
- Creation of new quarters in the old military grounds
- Creation of Pasteur institute
- Construction of a synagogue in place of Randon square
- Extension of Randon and Bruce streets
- Partial demolition of the French fortification from the sides of Isly and Bab El-Oued.
- Expansion of the Julienne quarter and the birth of Belcourt quarter (from Champ de Manoeuvre to the Botanic Garden) in 1891.
- Construction of Esplanade quarter in Bab El-Oued.
- Dmolishing of Fort Bab Azoun in order to prolong the Empératrice Boulevard towards Agha.
- Creation of a maritime city by a right of way over the sea, and opening onto a new basin defined by a mole of 7200 m²

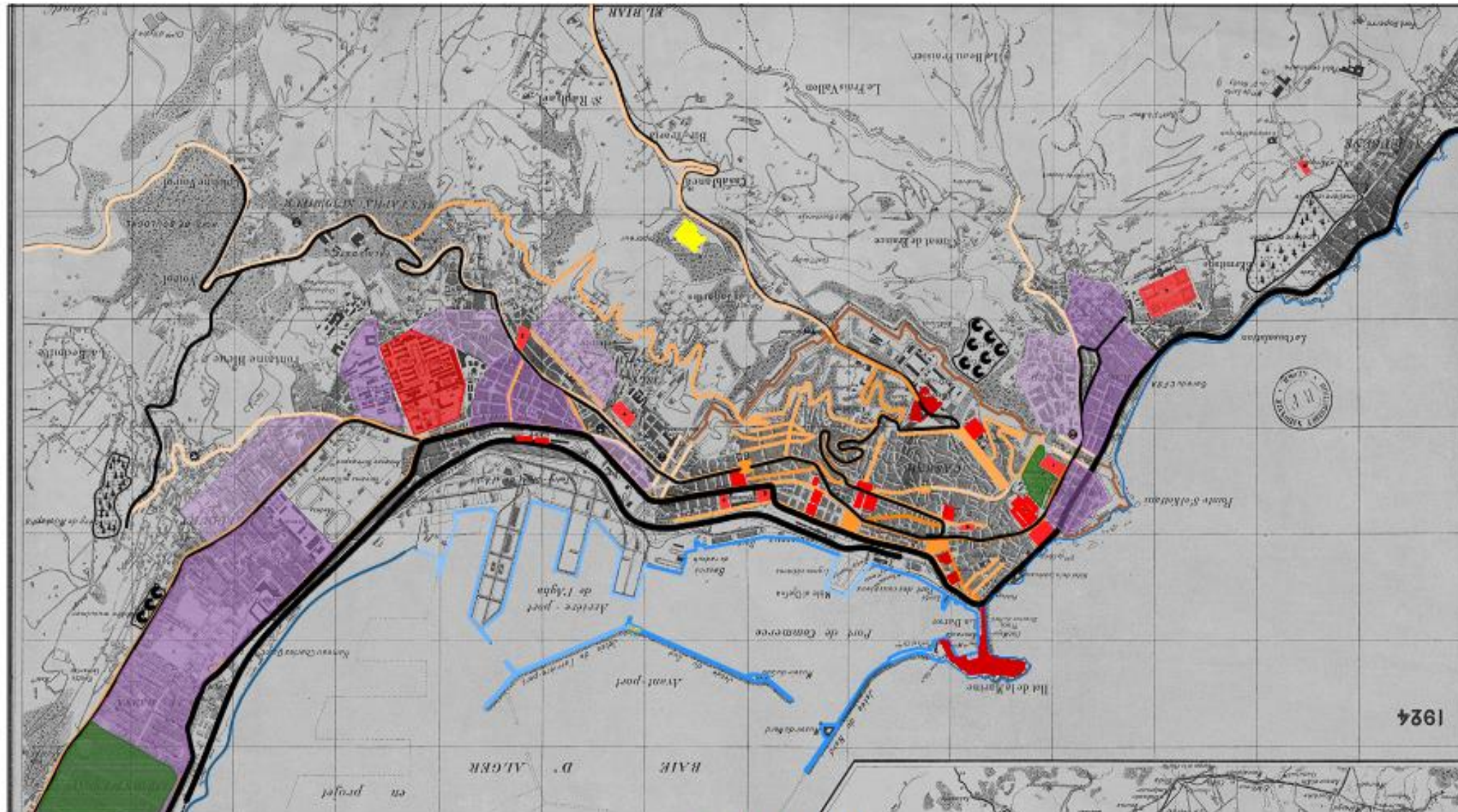
<p>Port extension:</p> <ul style="list-style-type: none"> — natural coastline 1830 — 1830 - 1846 — 1846 - 1880 — 1880 - 1895 <p>— French walls</p> <p>— G3 The Sahel gate</p> <p>— Railway</p>	<p>Tramway</p> <ul style="list-style-type: none"> Ⓜ Dey Hospital to Bab El-Oued Ⓜ Aliers to El-Biar Ⓜ Clonne Virol to Mustapha Ⓜ Algiers to Colonne Virol <p>■ Fort</p> <ul style="list-style-type: none"> 1 Coude Fort 2 Fort d'Empreur 	<p>— Path 1830</p> <p>— Road 1830 - 1846</p> <p>— Road 1846 - 1880</p> <p>— Road 1880 - 1895</p> <p>— Square:</p> <ul style="list-style-type: none"> 1- Algiers-Constantine road 2 - Blv Victor Hugo 3 - Blv Bon Accueil 4 - El-Biar Road 5 - Blv Palmiers 	<p>6 Carnot Boulevard</p> <p>7 Marengo street</p> <p>■ Quarter:</p> <ul style="list-style-type: none"> 1830 - 1846 1846 - 1880 1880 - 1895 <p>Q1 Belcourt quarter</p> <p>Q2 Julienne quarter</p> <p>Q3 Esplanade quarter</p>	<p>■ Facilities</p> <ul style="list-style-type: none"> 1830 1830 - 1846 1846 - 1880 1880 - 1895 <ul style="list-style-type: none"> 1 - Lyre Market 2 - Pasteur Institute 3 - Excelion Hotel 4 - Anglican Church 5 - Synagogue 	<p>Ⓜ Muslim Cemetery</p> <p>Ⓜ Christian Cemetery</p> <p>■ Garden</p> <ul style="list-style-type: none"> 1 - Maringo Garden 2 - Botanic Garden
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Diachronic reading Formation and deformation of the city

Plan

Characteristics

Period 1895 - 1930



Plan of Algiers in 1924

Source: student' work based on the background of Algiers' plan 1924, ALGER, étude de géographie et histoire urbaines RENE Lespès 1930; RENE Lespès, Annales de géographie le port d'Alger, 1921

1912: Redon's project :

- The centre of the city is always located in the place of the government.
- On the Marine quarter, the demolition is planned ilot by ilot, with the transfer of working-class populations to Bab el Oued.
- The freed-up land must constitute the large tertiary urban complex: shops and bazaars, prefecture, hotel, commercial court, stock exchange, casino.
- Mosques will be "moved" elsewhere. The southern extension is taken into account: extension of the waterfront to the agha (2600 m), development of a 9-hectare park at the Champ de Manoeuvre with the Palace of Agriculture, the stadium
- From 1907 to 1914, there were 1,200 new buildings, under the influence of Jonnart,
- 172 new houses were built since 1921
- 1923 the extension of Maréchal Gallieni Boulevard is set to be the central artery of a new quarter.

1923: subdivisions have been made on the north side of the Oued Kniss ravine (Femme Sauvage ravine), Bonessio's project between the Lyon Street and Henri Rivière Road)

Port:

1912: Reinforcement and extension of the North Pier, further reduction of the pass, construction of a mole linking Al Djefna island to the land for 200 m, finally reinforcement of the South Pier partially transformed a mole; access ramps were added and 27 hectares were raised

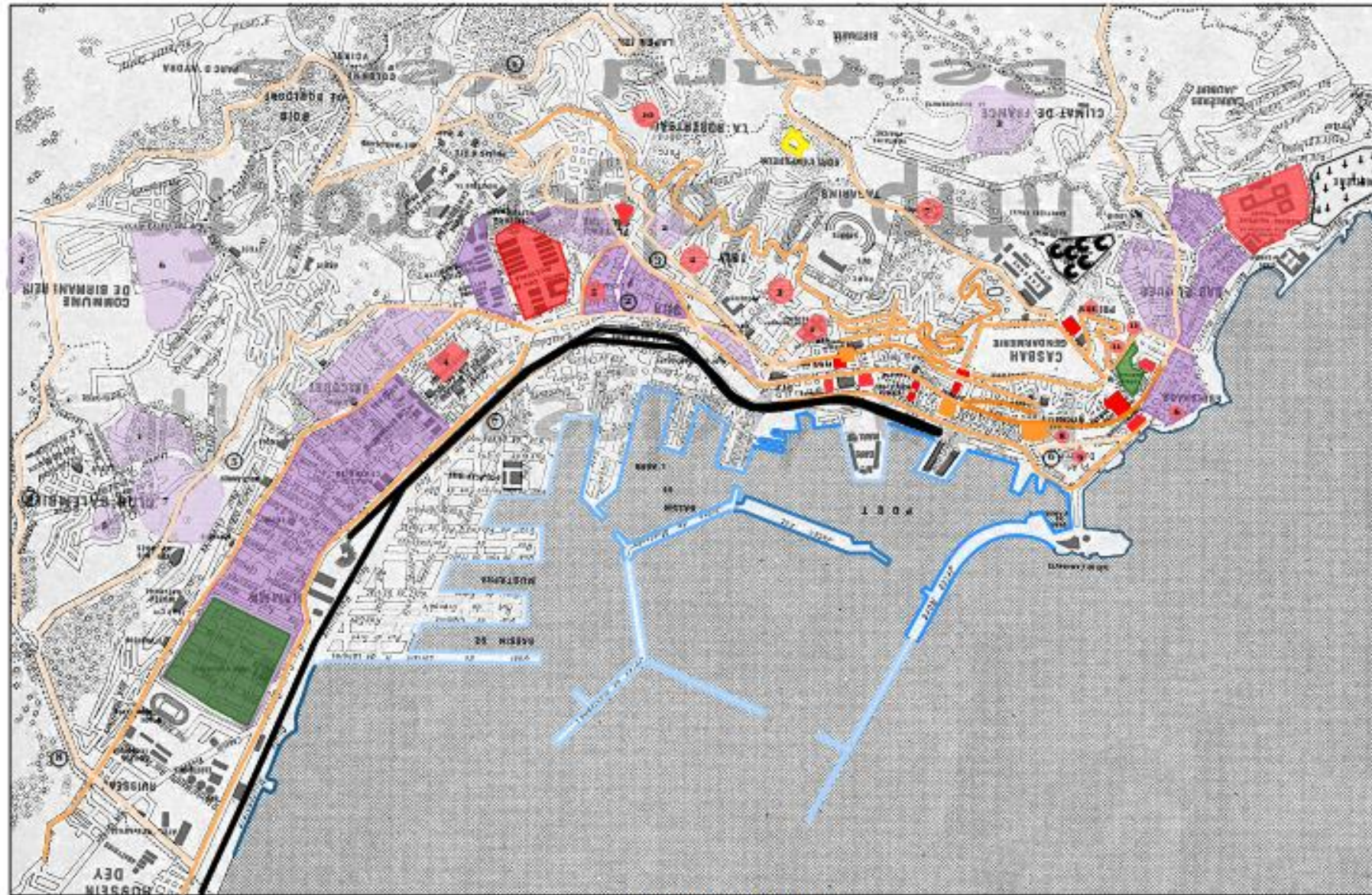
<p>Port extension:</p> <ul style="list-style-type: none"> — Natural coastline 1830 — 1830 - 1846 — 1846 - 1880 — 1880 - 1895 — 1895 - 1930 <ul style="list-style-type: none"> — French walls limits +++++ Railway — Tramway 	<ul style="list-style-type: none"> — Roads 1830 - 1846 — Roads 1846 - 1880 — 1880 - 1895 — 1896 - 1930 <ul style="list-style-type: none"> 17 - fontaine bleue 19 - Boulevard Laferrière 20 - Guillemain Boulevard 21 - Charras street 22 - Blida-Laghouat road 	<ul style="list-style-type: none"> ■ Squares 1830-1846 ■ Squares 1846-1880 ■ Muslim cemetery ■ Christian cemetery ■ Garden ■ Fort 	<p>Facilities</p> <ul style="list-style-type: none"> ■ 1830 ■ 1830 - 1846 ■ 1846 - 1880 ■ 1880 - 1895 ■ 1895 - 1930 <ul style="list-style-type: none"> 1 - Caserne vallé 2 - University 3 - La grande Poste 4 - Prefecture 	<ul style="list-style-type: none"> 5 - Museum 6 - Cathedrale 7 - Maillot Hospital 8 - Basilica of Our Lady of Africa 	<ul style="list-style-type: none"> ☪☪☪ Muslim cemetery ☩☩☩ Christian cemetery <p>Gates</p> <ul style="list-style-type: none"> □ G4 Sahel gate 	<p>Quarter:</p> <ul style="list-style-type: none"> ■ 1830 - 1846 ■ 1846 - 1880 ■ 1880 - 1895 ■ 1895 - 1930
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Diachronic reading Formation and deformation of the city

Plan

Characteristics

Period 1930 - 1962



Plan of Algiers in 1961

Source: student work based on the background of Algiers' plan 1961; J.J DELUZ, L'Urbanisme et l'Architecture d'Alger, 1995; RENE Lespès, Annales de géographie le port d'Alger, 1921

1926: On the edge of Polignac Street, the Bank of Algeria has built a garden city.

1930: the construction of the Palace of the Government

1931: the extensions of Galiéni Boulevard (Bougara) on El Biar and the Frantz Fanon Boulevard on the Tagarins. the Marine quarter extended to the lower Casbah

1932: the Redoute Garden City was built

1933: the construction of boulevard de Champagne, Sadi-Carnot street, and Beni-Messous orphanage, Dujon-Chay school in 1938

1933: the construction of Shell headquarters building at the current Mohamed V boulevard,

In 1935, the civic home of the Field of Maneuvers was built

1937: the construction of the home of delinquent children in El Biar,

1938: the construction of the Maneuvers Field High School,

1938: Lazerge school was built in

1938: the construction Barracks of Mobile Guards, current Ministry of Defense in Tagarins,

1948: A few major road operations: the Moutonnière road, the road of the oued Kniss (ravine of Femme Sauvage), the high parts of the Boulevards Galiéni (Bougara) and Laferrière (Khemisti)

1950: the 200 dwellings of the Climat de France were made a 210 groups of 816 homes, "Indigenous city of Sainte-Corinne" were built

The construction of Scala quarter (cité El Djenane) on the point of Clos Salembier, towards the ravine of Femme Sauvage

1951: a set of buildings for the Muslim populations of the marine quarter was built

1953: the construction of the university building on boulevard of Télémy

In 1955 "Aéro-habitat" at boulevard Salah Bouakouir was constructed

The Port:

1921: the creation of an outer harbor of 115 ha. and two large basins with a total area of 140 ha

the outer harbor develops to the south-east of the old port, and the northern pier, extended towards its extremity, covers it on the North and North-East side for a length 850m. It is closed on the other side, on the east side by an 838m pier.

The creation of two new basins east of the current inner harbor of Agha; the shelter will be provided on the north side by the (môle du Large) of 1848m long and 100m wide; on the east side by the mole (of oued Kniss) 140m wide, 1360m long

At 450m from the railways of P-L-M, five oblique moles and a land that connect the new port to the great mole of Agha. Finally, at the eastern end, three forms of refit of 300, 200 and 150m and to the west, three fairing of 100m

<p>Port extension:</p> <ul style="list-style-type: none"> Natural coastline 1830 1830 - 1846 1846 - 1880 1880 - 1895 1895 - 1930 1930 - 1962 French walls limits Railway 	<p>Path 1830</p> <ul style="list-style-type: none"> Road 1830 - 1846 Road 1846 - 1880 Road 1880 - 1895 Road 1895 - 1930 Road 1930 - 1962 	<ul style="list-style-type: none"> 6 - November 8th Avenue 7 - Ramps Poiré 8 - Polignac avenue 	<p>Facilities</p> <ul style="list-style-type: none"> 1830 1830 - 1846 1846 - 1880 1880 - 1895 1895 - 1930 1930 - 1962 <ul style="list-style-type: none"> Squares 1830-1846 Squares 1846-1880 Muslim cemetery Christian cemetery Garden Fort 	<ul style="list-style-type: none"> 4 - Civic home of Champ de Manoeuvre 5 - Maneuvers Field High School 6 - Lazerge school 7 - Barracks of Mobile Guards 8 - The Treasury 9 - The Casiora 10 - Aéro-habitat 11 - Rampe valée's schools and college 	<p>Quarter:</p> <ul style="list-style-type: none"> 1830 - 1846 1846 - 1880 1880 - 1895 1895 - 1930 1930 - 1962 <ul style="list-style-type: none"> 1 - Redoute City 2 - Shell headquarters building 3 - Climat de France 4 - Indigenous city of Sainte-Corinne 5 - Scala quarter 	<ul style="list-style-type: none"> 6 - Diar es Saada 7 - Diar el Mahçoul
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Board 20 Diachronic reading: study perimeter, 1961

Diachronic reading Formation and deformation of the city

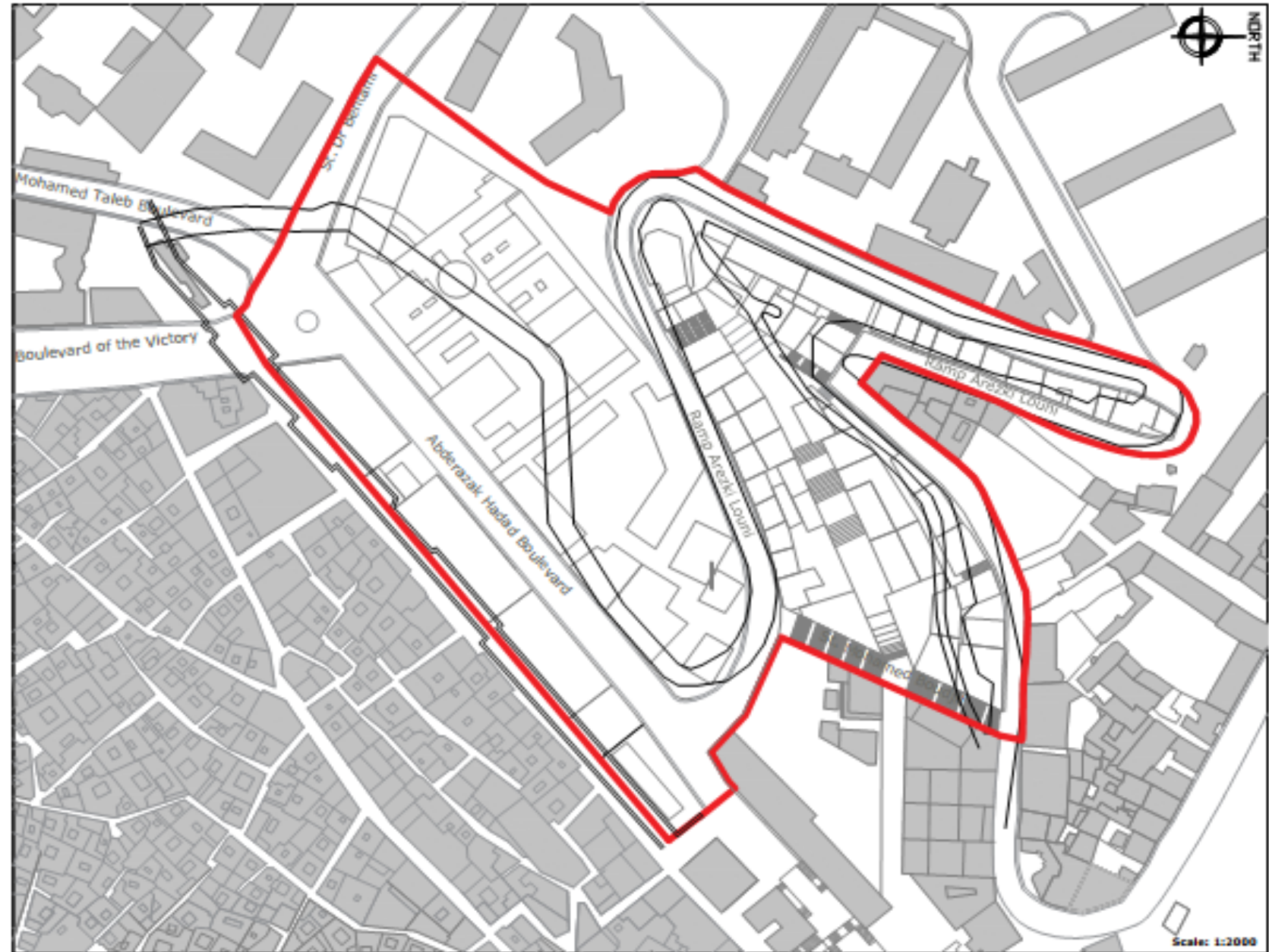
Period: 1830 - 1846



Algiers plan 1846
Source: Gallica bnf



Algiers plan 1846, intervention area.
Source: Gallica bnf



Student's work on the base of Algiers' cadastral plan and the 1846 plan

SITE CHARACTERISTICS:

The site was practically empty in the year 1846, except the rampart, we noticed an ancient curved road connecting Algiers to Blida. A part of the road was removed, the rest was preserved and only minor changes were applied on it.

Legend:

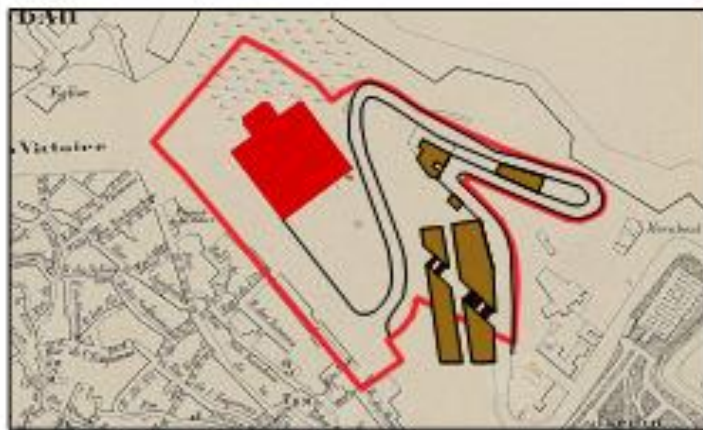
Current building	1830	1916 (1896 - 1930)	1830	1916 (1896 - 1930)
Intervention area boundaries	1846 (1830 - 1846)	1925 (1896 - 1930)	1846 (1830 - 1846)	1925 (1896 - 1930)
Ottoman rampart	1865 (1846 - 1880)	1937 (1930 - 1962)	1865 (1846 - 1880)	1937 (1930 - 1962)
Demolished rampart	1888 (1880 - 1896)	1961 (1930 - 1962)	1888 (1880 - 1896)	1961 (1930 - 1962)
	1904 (1896 - 1930)	Demolished	1904 (1896 - 1930)	Garden

Diachronic reading Formation and deformation of the city

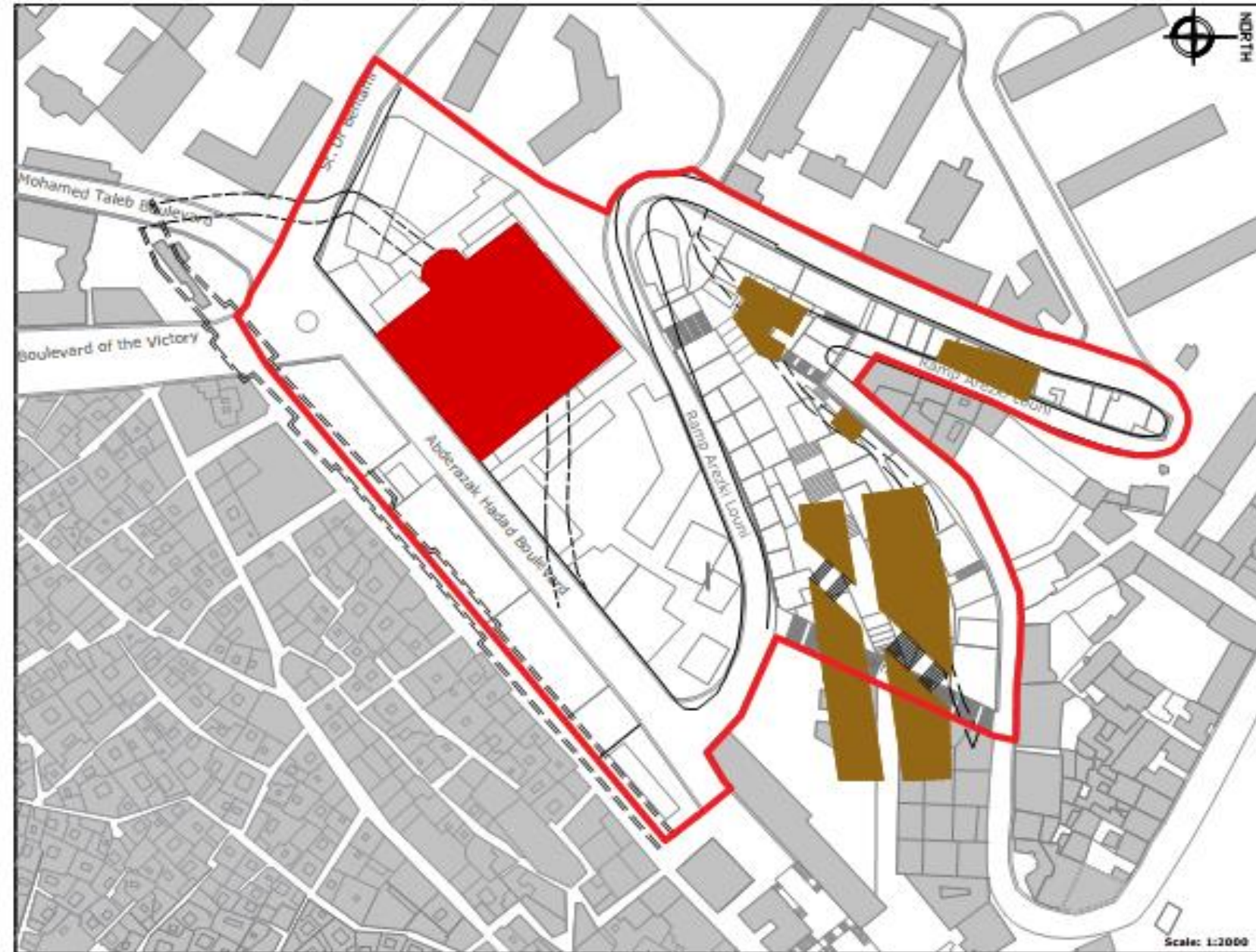
Period: 1846 - 1880



Algiers plan 1865
Source: Gallica bnf



Algiers plan 1865, intervention area.
Source: Gallica bnf



Student's work on the base of Algiers' cadastral plan and Algiers 1865 plan

SITE CHARACTERISTICS:

- Demolishing of the old fortification
- Construction of a civil prison
- Parts of the road have been removed
- New buildings built on the Valley Ramp plot

Legend:

Current building	1830	1916 (1896 - 1930)	1830	1916 (1896 - 1930)
Intervention area boundaries	1846 (1830 - 1846)	1925 (1896 - 1930)	1846 (1830 - 1846)	1925 (1896 - 1930)
Ottoman rampart	1865 (1846 - 1880)	1937 (1930 - 1962)	1865 (1846 - 1880)	1937 (1930 - 1962)
Demolished rampart	1888 (1880 - 1896)	Demolished	1888 (1880 - 1896)	1961 (1930 - 1962)
	1904 (1896 - 1930)		1904 (1896 - 1930)	Garden

Board 22 Diachronic reading: Intervention area, 1865

Diachronic reading Formation and deformation of the city

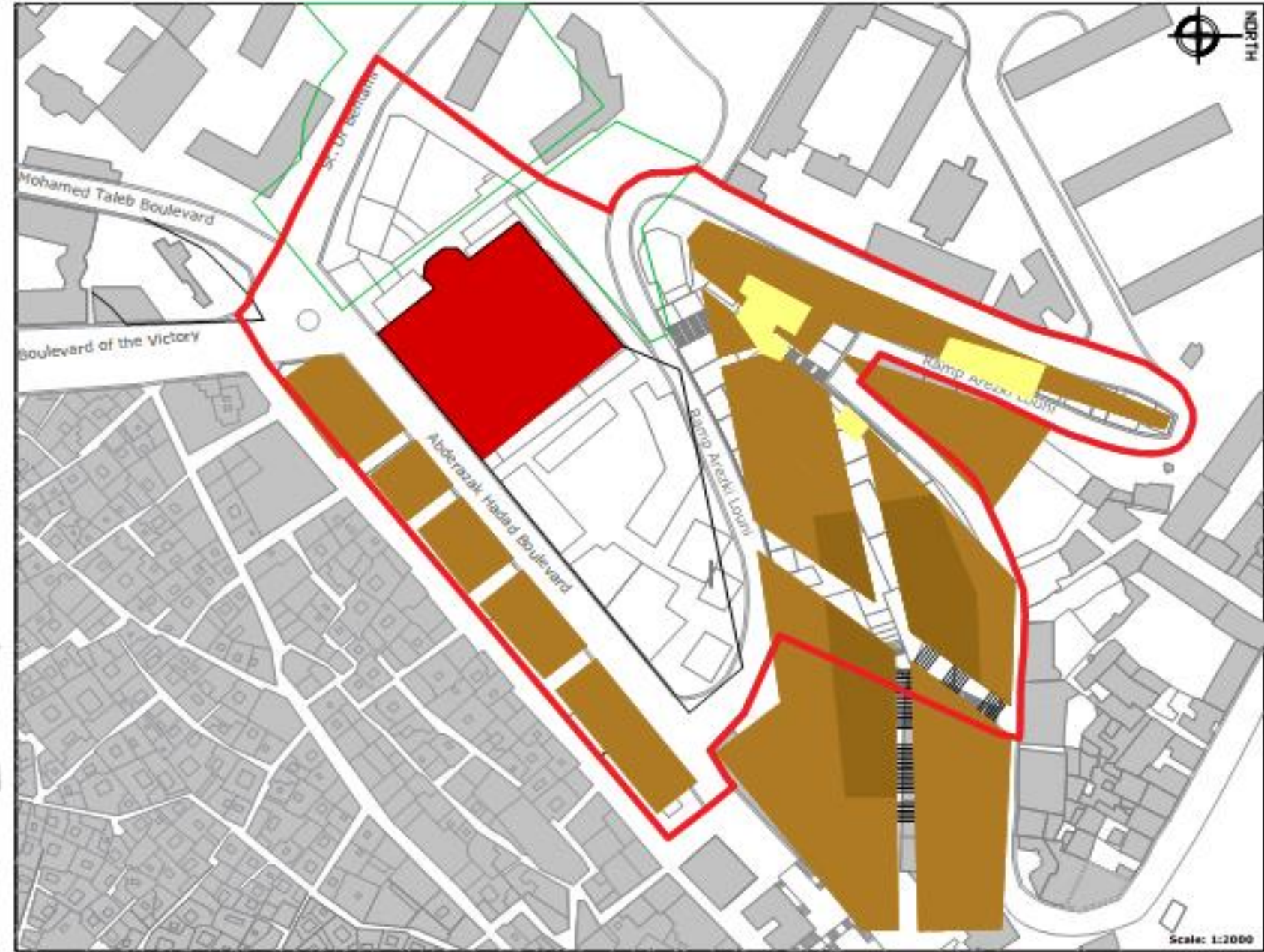
Period: 1880 - 1896



Algiers plan 1888
Source: Gallica bnf



Algiers plan 1888, intervention area.
Source: Gallica bnf



Student's work on the base of Algiers' cadastral plan and Algiers 1888 plan

SITE CHARACTERISTICS:

- Enlarging of the Kasbah ditch (that became Valée Boulevard in this period)
- New constructions in place of the old fortification and in Valée Ramp plot land were some old buildings have been demolished

Legend:

<ul style="list-style-type: none"> Current building Intervention area boundaries Ottoman rampart Demolished rampart 	<p>Building</p> <ul style="list-style-type: none"> 1830 1846 (1830 - 1846) 1865 (1846 - 1880) 1888 (1880 - 1896) 1904 (1896 - 1930) 1916 (1896 - 1930) 1925 (1896 - 1930) 1937 (1930 - 1962) 1961 (1930 - 1962) Demolished 	<p>Facility</p> <ul style="list-style-type: none"> 1830 1846 (1830 - 1846) 1865 (1846 - 1880) 1888 (1880 - 1896) 1904 (1896 - 1930) 1916 (1896 - 1930) 1925 (1896 - 1930) 1937 (1930 - 1962) 1961 (1930 - 1962) Garden
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Board 23 Diachronic reading: Intervention area, 1888

Diachronic reading Formation and deformation of the city

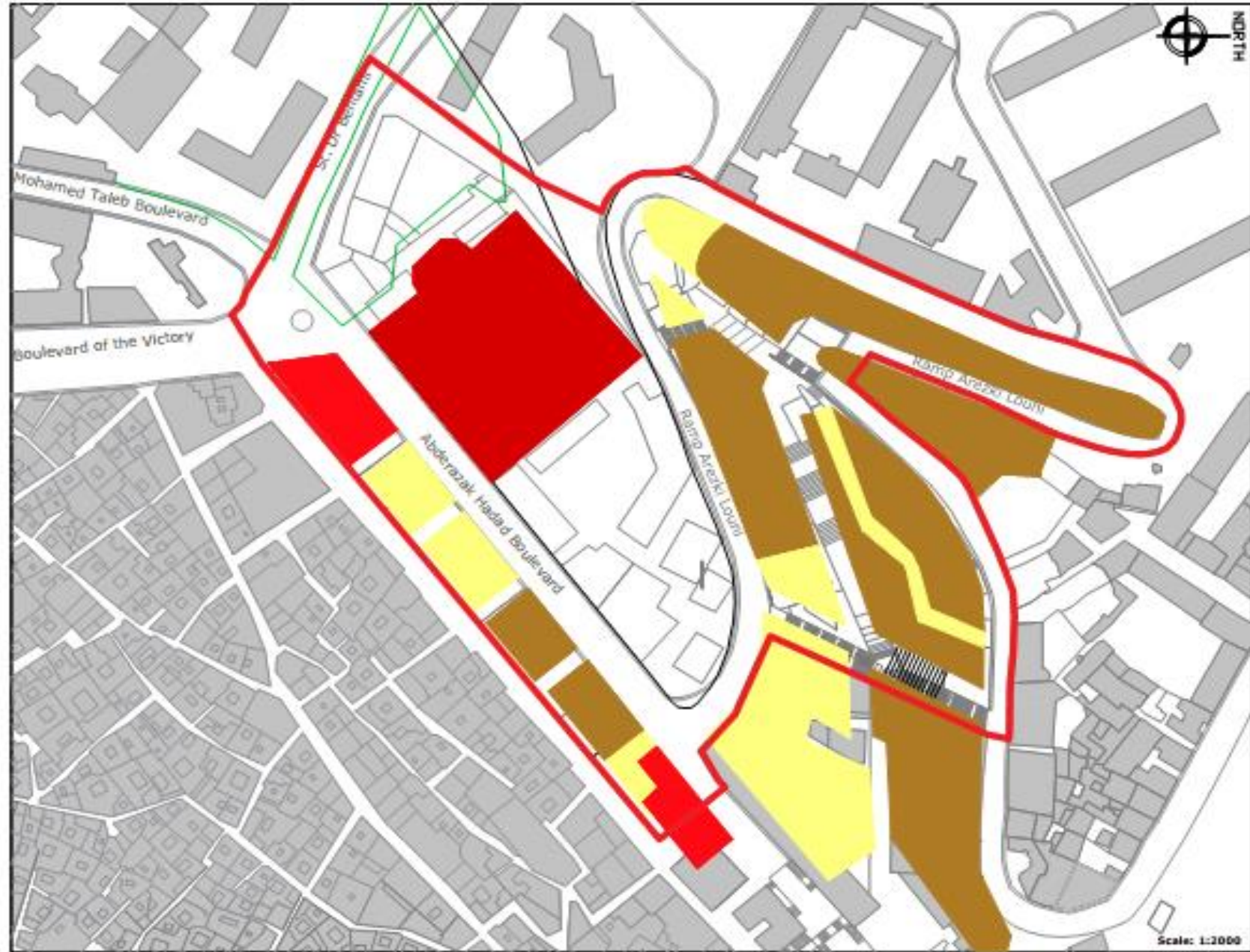
Period: 1896 - 1930



Algiers plan 1846
Source: Gallica bnf



Algiers plan 1904, intervention area.
Source: Gallica bnf



Student's work on the base of Algiers' cadastral plan and the 1904 plan

SITE CHARACTERISTICS:

- Some buildings have been demolished, along the Valée Boulevard and the plots of the Valée Ramp
- Construction of a new school on the side of Valée Boulevard.
- Removal of some stairs and enlarging of the street (Parmentier road)

Legend:

<ul style="list-style-type: none"> Current building Intervention area boundaries Ottoman rampart Demolished rampart 	<p>Building</p> <ul style="list-style-type: none"> 1830 1846 (1830 - 1846) 1865 (1846 - 1880) 1888 (1880 - 1896) 1904 (1896 - 1930) 1916 (1896 - 1930) 1925 (1896 - 1930) 1937 (1930 - 1962) 1961 (1930 - 1962) Demolished 	<p>Facility</p> <ul style="list-style-type: none"> 1830 1846 (1830 - 1846) 1865 (1846 - 1880) 1888 (1880 - 1896) 1904 (1896 - 1930) 1916 (1896 - 1930) 1925 (1896 - 1930) 1937 (1930 - 1962) 1961 (1930 - 1962) Garden
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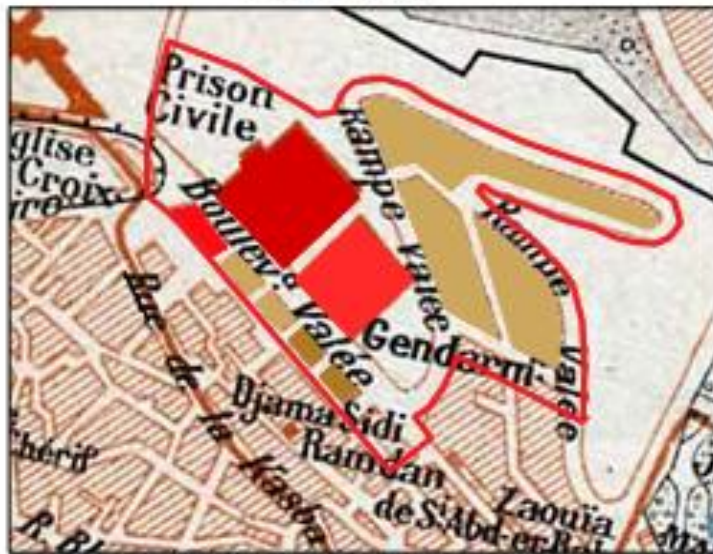
Board 24 Diachronic reading: Intervention area, 1904

Diachronic reading Formation and deformation of the city

Period: 1896 - 1930



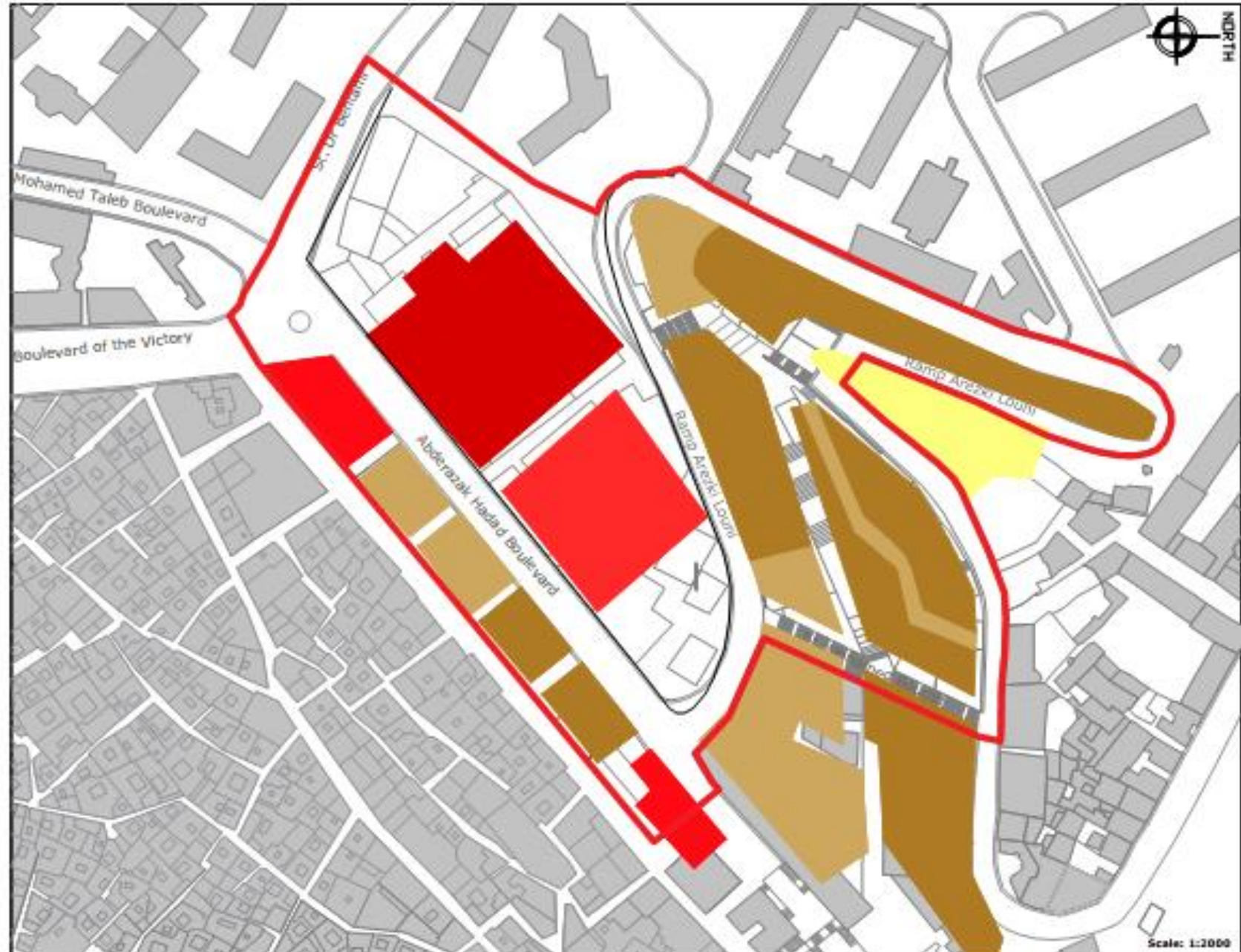
Algiers plan 1916
Source: Gallica bnf



Algiers plan 1916, intervention area.
Source: Gallica bnf

SITE CHARACTERISTICS:

- Construction of an Army facility next to the civil prison
- Reconstruction of some buildings in place of the demolished areas in the previous period.
- The complete removal of the stairs from the area.
- The demolition of some buildings (the acuted part of the Valée Ramp)



Student's work on the base of Algiers' cadastral plan and the 1916 plan

Legend:

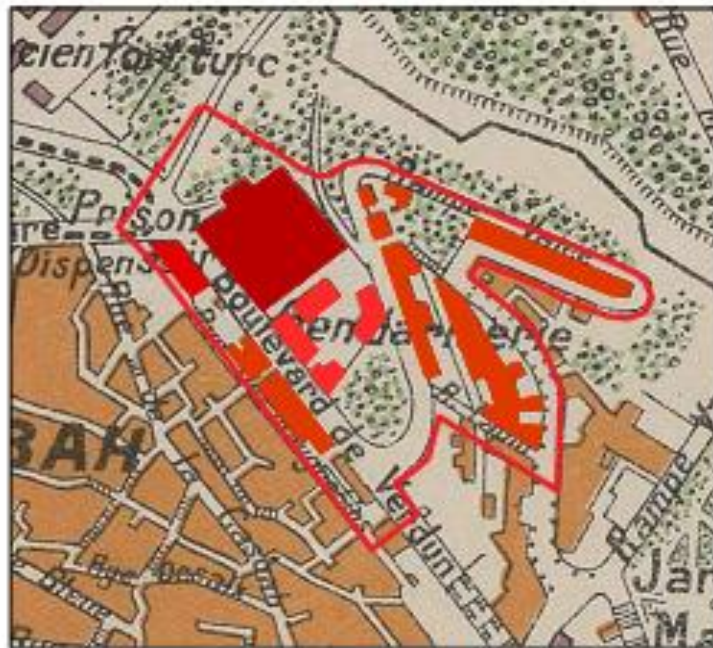
<ul style="list-style-type: none"> Current building Intervention area boundaries Ottoman rampart Demolished rampart 	<p>Building</p> <ul style="list-style-type: none"> 1830 1846 (1830 - 1846) 1865 (1846 - 1880) 1888 (1880 - 1896) 1904 (1896 - 1930) 	<ul style="list-style-type: none"> 1916 (1896 - 1930) 1925 (1896 - 1930) 1937 (1930 - 1962) 1961 (1930 - 1962) Demolished 	<p>Facility</p> <ul style="list-style-type: none"> 1830 1846 (1830 - 1846) 1865 (1846 - 1880) 1888 (1880 - 1896) 1904 (1896 - 1930) 1916 (1896 - 1930) 1925 (1896 - 1930) 1937 (1930 - 1962) 1961 (1930 - 1962) Garden
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Diachronic reading Formation and deformation of the city

Period: 1896 - 1930



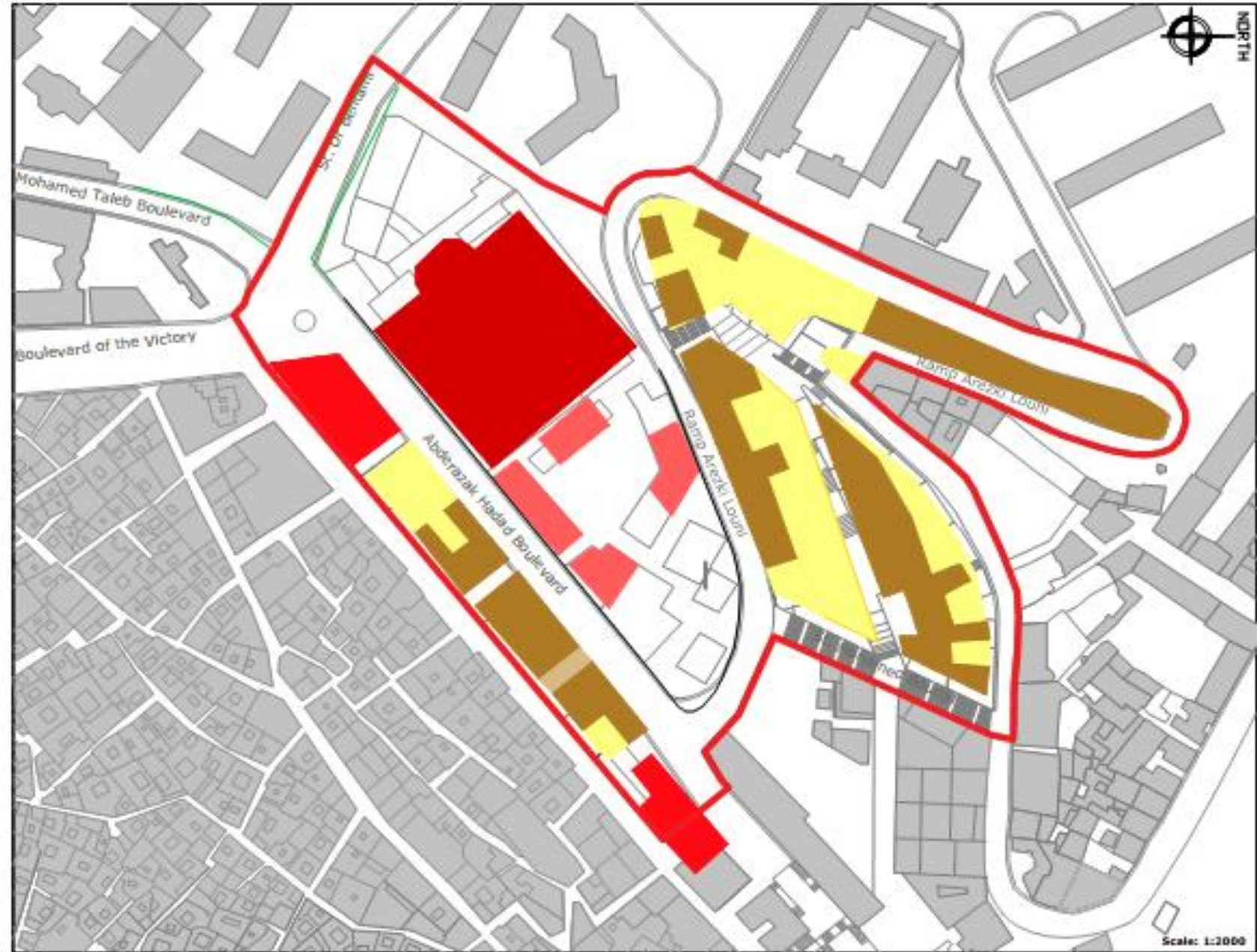
Algiers plan 1925
Source: Gallica bnf



Algiers plan 1925, intervention area.
Source: Gallica bnf

SITE CHARACTERISTICS:

- Most of the buildings have been demolished
- The acute angle of the Valée Ramp road have been removed.
- Valée Boulevard became Verdun Boulevard.



Student's work on the base of Algiers' cadastral plan and the 1925 plan

Legend:

Current building	Building 1830	Building 1916 (1896 - 1930)	Facility 1830	Facility 1916 (1896 - 1930)
Intervention area boundaries	Building 1846 (1830 - 1846)	Building 1925 (1896 - 1930)	Facility 1846 (1830 - 1846)	Facility 1925 (1896 - 1930)
Ottoman rampart	Building 1865 (1846 - 1880)	Building 1937 (1930 - 1962)	Facility 1866 (1846 - 1880)	Facility 1937 (1930 - 1962)
Demolished rampart	Building 1888 (1880 - 1896)	Building 1961 (1930 - 1962)	Facility 1888 (1880 - 1896)	Facility 1961 (1930 - 1962)
	Building 1904 (1896 - 1930)	Demolished	Facility 1904 (1896 - 1930)	Garden

Diachronic reading Formation and deformation of the city

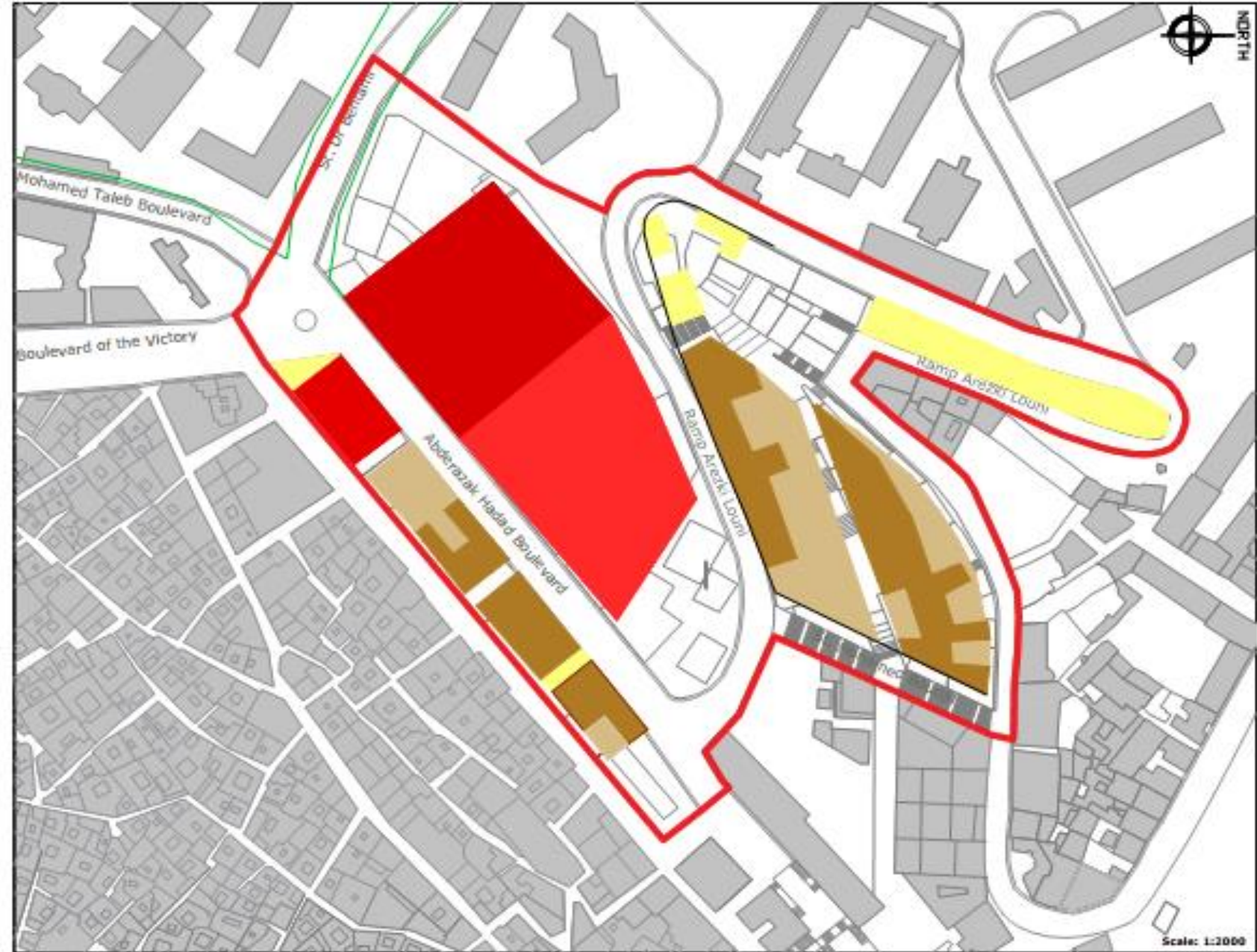
Period: 1930 - 1962



Algiers plan 1937
Source: Gallica bnf



Algiers plan 1937, intervention area.
Source: Gallica bnf



Student's work on the base of Algiers' cadastral plan and the 1937 plan

SITE CHARACTERISTICS:

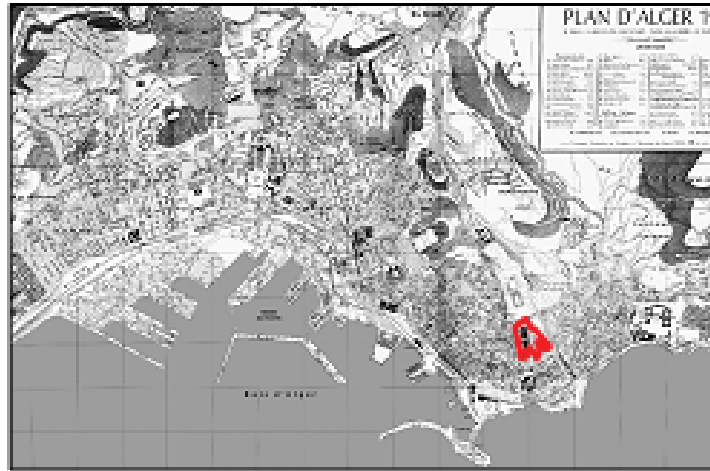
- Buildings in the north west part of the Valée Ramp have been completely demolished.
- Reconstruction of some demolished areas demolished in the previous period (the Valée ramp plots and along Verdun Boulevard).

Legend:

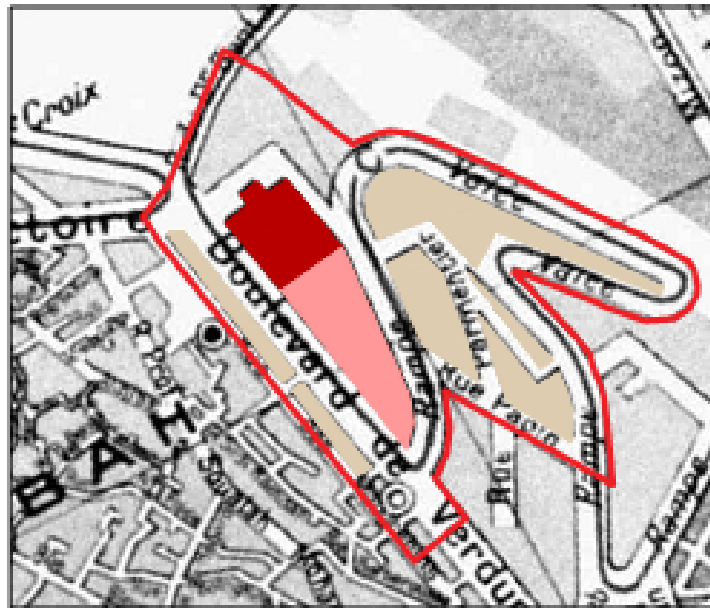
<ul style="list-style-type: none"> Current building Intervention area boundaries Ottoman rampart Demolished rampart 	<p>Building</p> <ul style="list-style-type: none"> 1830 1846 (1830 - 1846) 1865 (1846 - 1880) 1888 (1880 - 1896) 1904 (1896 - 1930) 1916 (1896 - 1930) 1925 (1896 - 1930) 1937 (1930 - 1962) 1961 (1930 - 1962) Demolished 	<p>Facility</p> <ul style="list-style-type: none"> 1830 1846 (1830 - 1846) 1866 (1846 - 1880) 1888 (1880 - 1896) 1904 (1896 - 1930) 1916 (1896 - 1930) 1925 (1896 - 1930) 1937 (1930 - 1962) 1961 (1930 - 1962) Garden
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Diachronic reading Formation and deformation of the city

Period: 1930 - 1962



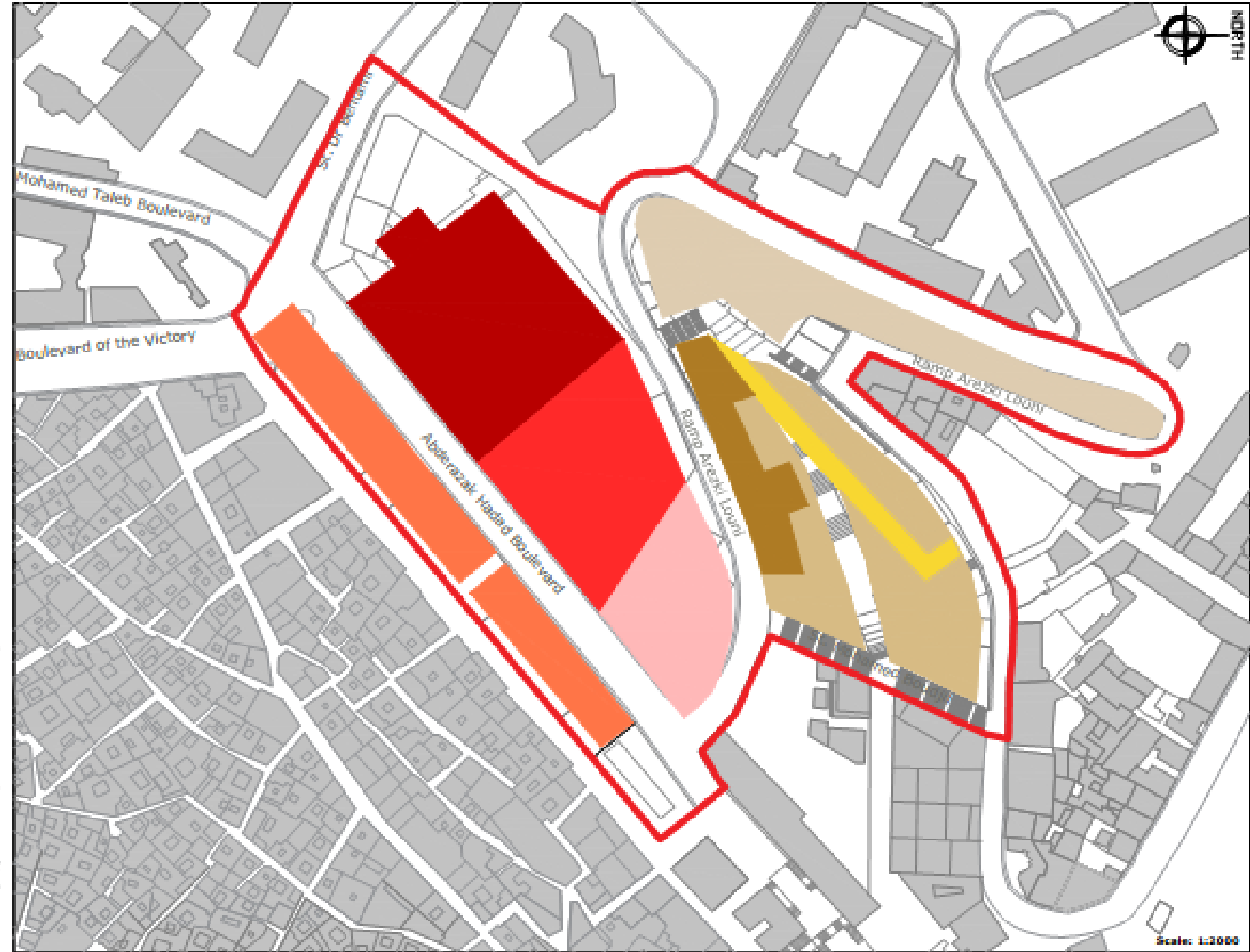
Algiers plan 1961
Source: Gallica bnf



Algiers plan 1961, intervention area.
Source: Gallica bnf

SITE CHARACTERISTICS:

And finally, in 1961, we noticed the appearance of a road that pierced through the buildings of the previous period and new buildings occupied the north western side of the site, also new construction was added to the gendarme facility. south side buildings went through some changes as well.



Student's work on the base of Algiers' cadastral plan and the 1961 plan

Legend:

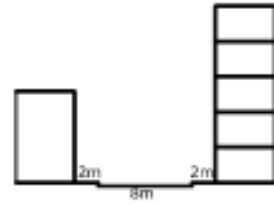
<ul style="list-style-type: none"> Current building Intervention area boundaries Ottoman rampart Demolished rampart 	<p>Building</p> <ul style="list-style-type: none"> 1830 1846 (1830 - 1846) 1865 (1846 - 1880) 1888 (1880 - 1896) 1904 (1896 - 1930) 1916 (1896 - 1930) 1925 (1896 - 1930) 1937 (1930 - 1962) 1961 (1930 - 1962) Demolished 	<p>Facility</p> <ul style="list-style-type: none"> 1830 1846 (1830 - 1846) 1866 (1846 - 1880) 1888 (1880 - 1896) 1904 (1896 - 1930) 1916 (1896 - 1930) 1925 (1896 - 1930) 1937 (1930 - 1962) 1961 (1930 - 1962) Garden
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SYNCHRONIC READING

Intervention area: road hierarchy



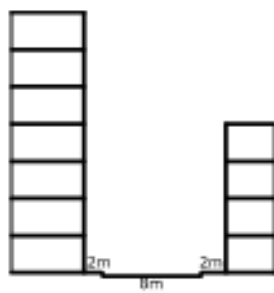
Boulevard Abderrezak HADDAD
Source: facebook page; Info Traffic Algérie



Road section AA': Boulevard Abderrezak HADDAD
Source: drawn by student



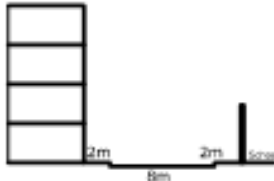
Ramp Louni Arezki
Source: facebook page (Rampe Vallée)



Road section BB': Ramp Louni Arezki
Source: drawn by student



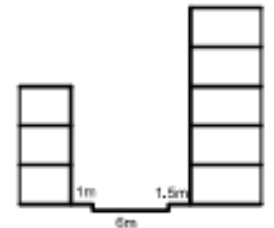
Ramp Louni Arezki
Source: Photographed by author, 2020



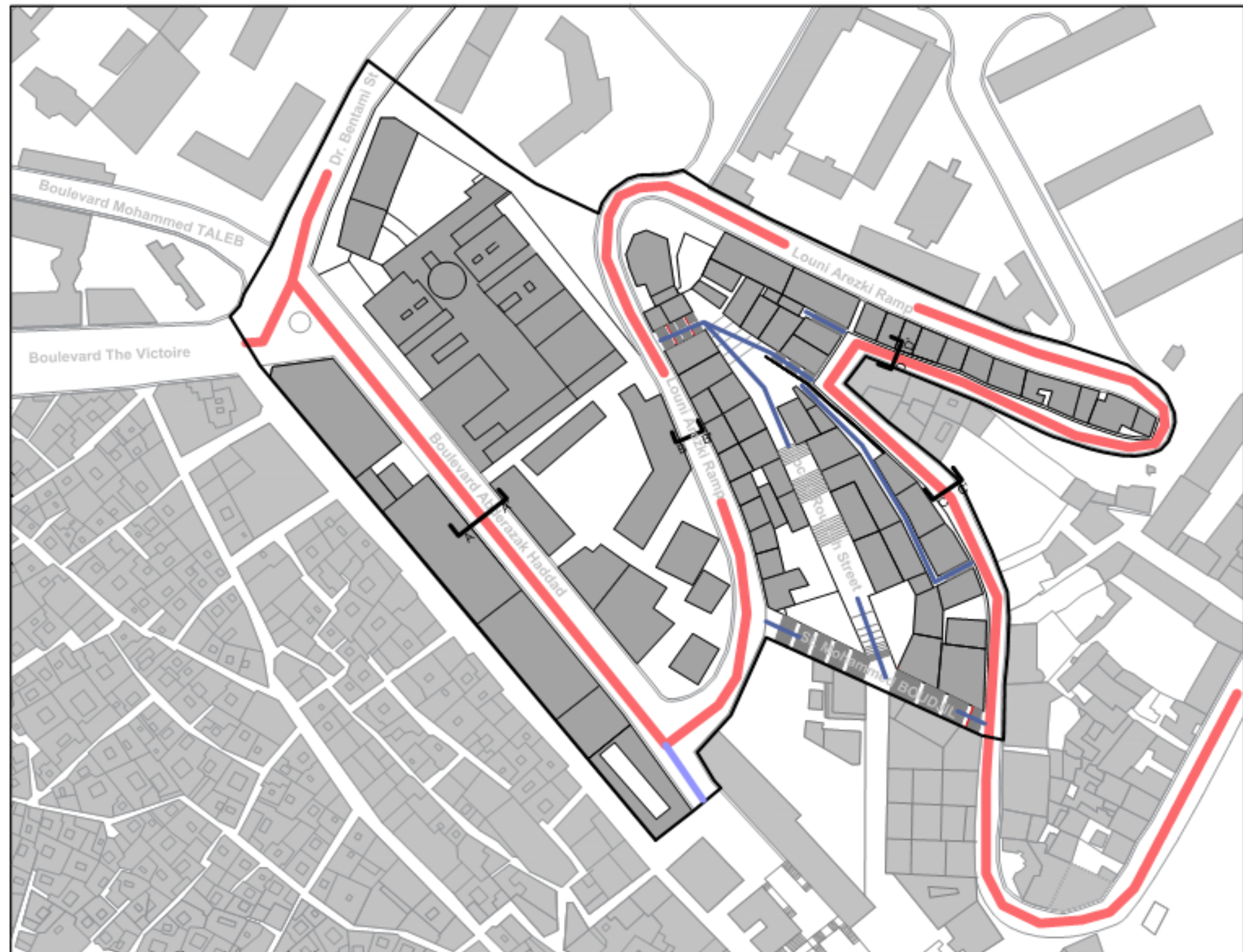
Road section CC': Ramp Louni Arezki
Source: drawn by author



Ramp Louni Arezki (view DD')
Source: Photographed by author, 2020



Road section DD': Ramp Louni Arezki
Source: drawn by author



Road hierarchy plan of the intervention area
Source: created by author based on the cadastral plan of the area

- Primary road
- Secondary road
- Pedestrian/ Residential road
- Intervention zone limits

SYNCHRONIC READING

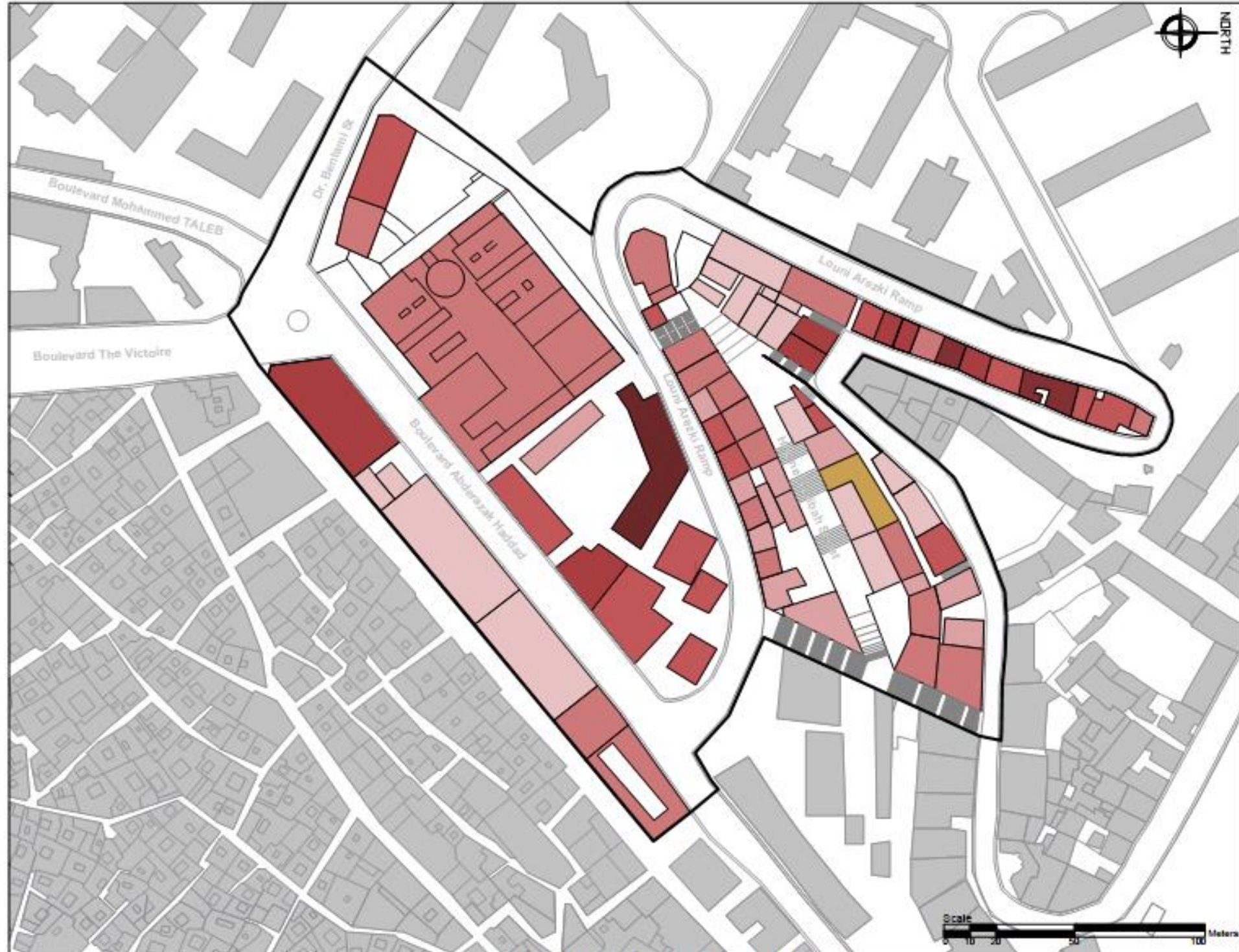
Intervention area: building height



A 5 floors building along Louni Arezki Street
Source: Photographed by the author, 2020



A 4 floors building along Louni Arezki Street
Source: Photographed by the author, 2020

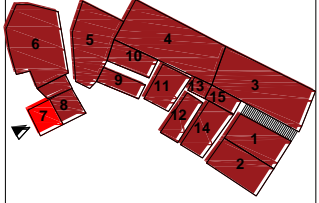
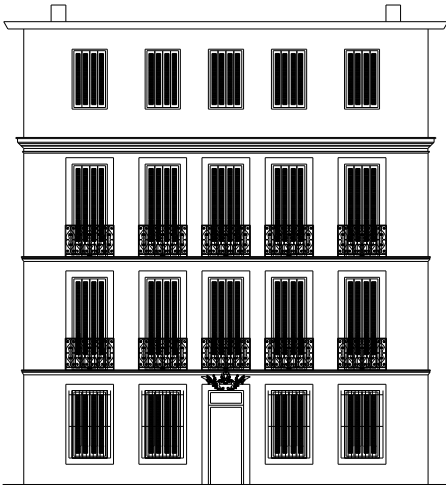
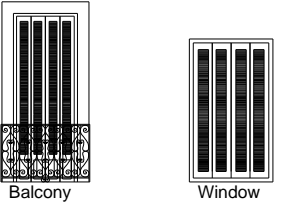
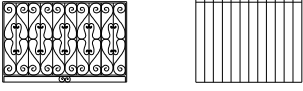
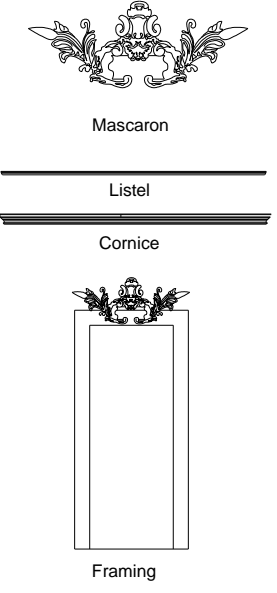
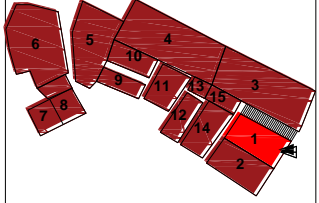
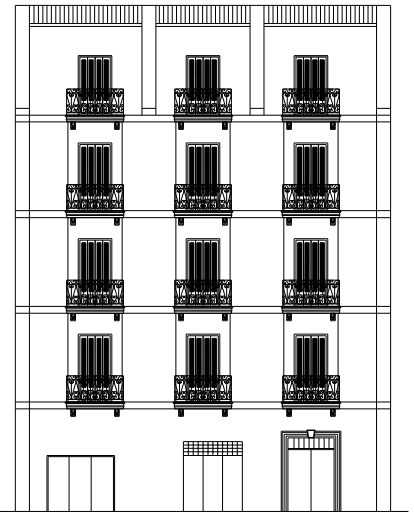
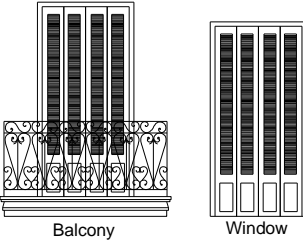

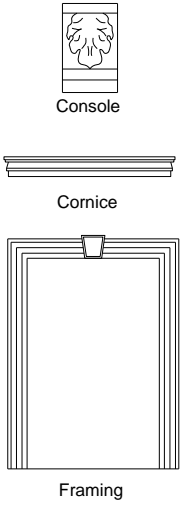


Buildings' heights plan of the intervention area
Source: created by authors based on the cadastral plan of the area



SYNCHRONIC ANALYSIS

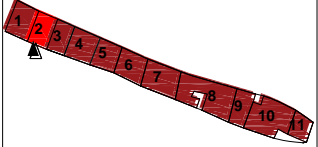
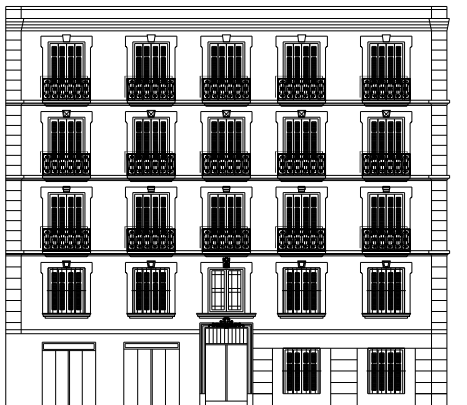
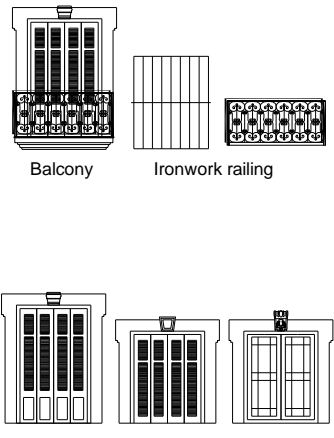
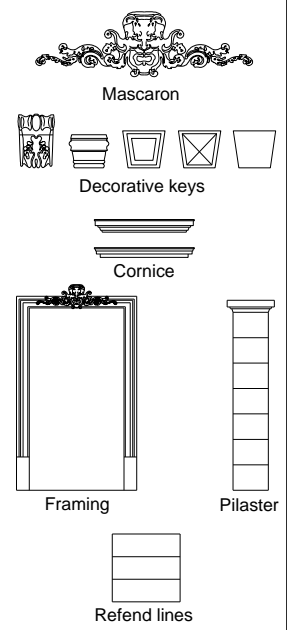
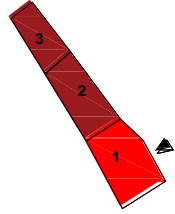

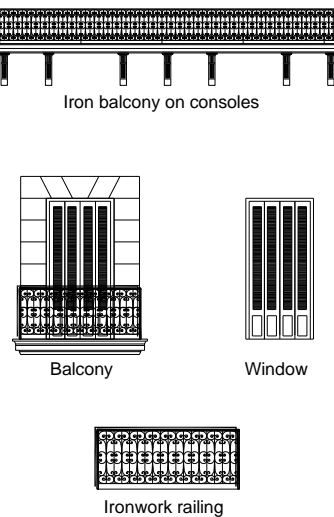
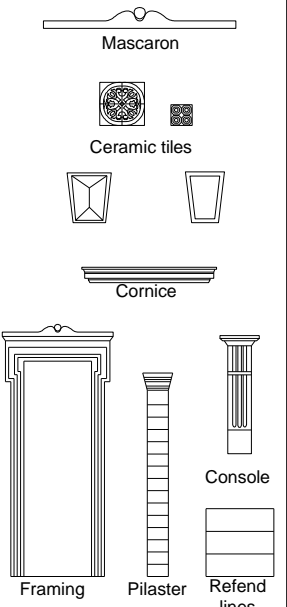
Building typology

Plots	Facade	Architectonic elements	Decorative elements	Construction techniques	Construction period	Synthesis
<p>Plot 5</p> 	 <p style="text-align: center;">Facade 5 - 7 Neoclassical style (1st phase)</p>	 <p>Balcony Window</p>  <p>Ironwork railing</p>	 <p>Mascarone</p> <p>Listel</p> <p>Cornice</p> <p>Framing</p>	<p>Wooden floors</p> <p>Stone bearing wall</p>	<p>1930 - 1962</p>	<p>The facade shows some richness due to the presence of a Mascarone and different types of railing making it aesthetically valuable.</p>
<p>Plot 5</p> 	 <p style="text-align: center;">Facade 5 - 1 Neoclassical style (1st phase)</p>	 <p>Balcony Window</p>  <p>Ironwork railing</p>	 <p>Console</p> <p>Cornice</p> <p>Framing</p>	<p>Wooden floors</p> <p>Stone bearing wall</p>	<p>1930 - 1962</p>	<p>The facade doesn't display much richness, but have some interesting elements making it aesthetically valuable.</p>

Board 31 Synchroni reading: building typology (1)

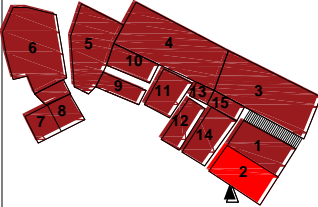
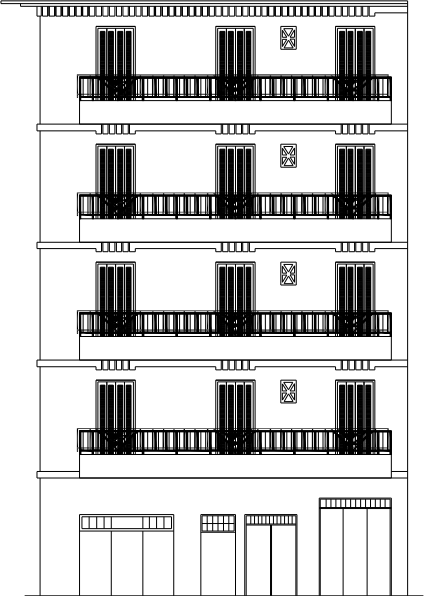
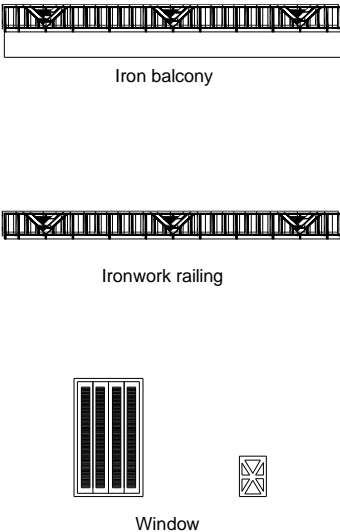

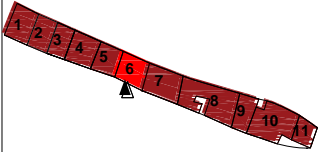
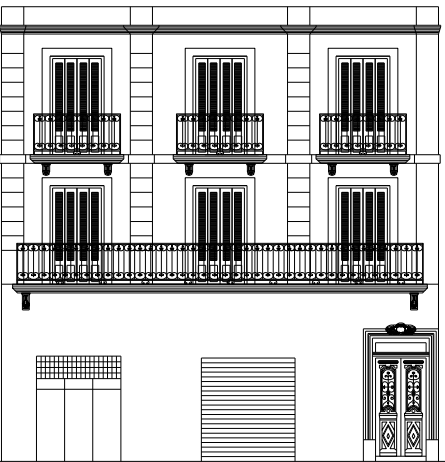
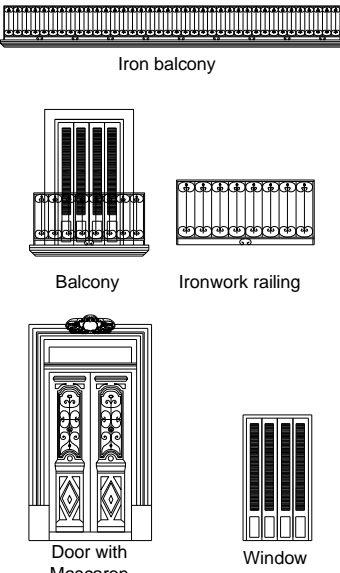
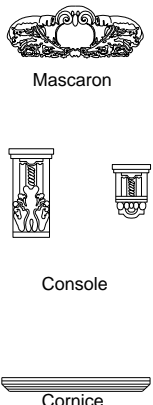
SYNCHRONIC ANALYSIS

Building typology

Plots	Facade	Architectonic elements	Decorative elements	Construction techniques	Construction period	Synthesis
<p>Plot 4</p> 	 <p style="text-align: center;">Facade 4 - 2 Neoclassical style (1st phase)</p>	 <p>Balcony Ironwork railing</p> <p>Framed Window</p>	 <p>Mascaron</p> <p>Decorative keys</p> <p>Cornice</p> <p>Framing Pilaster</p> <p>Refend lines</p>	<p>Wooden floors</p> <p>Stone bearing wall</p>	<p>1930 - 1962</p>	<p>The facade have an esthetic value due to the presence of a significant amount of elements</p>
<p>Plot 3</p> 	 <p style="text-align: center;">Facade 3 - 2 Neoclassical style (End of the 1st phase)</p>	 <p>Iron balcony on consoles</p> <p>Balcony Window</p> <p>Ironwork railing</p>	 <p>Mascaron</p> <p>Ceramic tiles</p> <p>Cornice</p> <p>Framing Pilaster Console</p> <p>Refend lines</p>	<p>Metallic structure</p> <p>Stone bearing wall</p> <p>Metallic balconies</p>	<p>1930 - 1962</p>	<p>The facade have a significant amount of elements giving it richness and making it aesthetically valuable.</p>

SYNCHRONIC ANALYSIS

Building typology

Plots	Facade	Architectonic elements	Decorative elements	Construction techniques	Construction period	Synthesis
<p>Plot 5</p> 	 <p style="text-align: center;">Facade 5 - 2 Art deco style (1st phase)</p>	 <p style="text-align: center;">Iron balcony</p> <p style="text-align: center;">Ironwork railing</p> <p style="text-align: center;">Window</p>		<p style="text-align: center;">Metallic structure</p> <p style="text-align: center;">Stone bearing wall</p> <p style="text-align: center;">Metallic balconies</p>	<p style="text-align: center;">1930 - 1962</p>	<p>The facade displays some richness considering it being Art deco, which's makes it aesthetically valuable</p>
<p>Plot 4</p> 	 <p style="text-align: center;">Facade 4 - 6 Neoclassical style (1st phase)</p>	 <p style="text-align: center;">Iron balcony</p> <p style="text-align: center;">Balcony Ironwork railing</p> <p style="text-align: center;">Door with Mascarons</p> <p style="text-align: center;">Window</p>	 <p style="text-align: center;">Mascarons</p> <p style="text-align: center;">Console</p> <p style="text-align: center;">Cornice</p>	<p style="text-align: center;">Wooden floors</p> <p style="text-align: center;">Stone bearing wall</p> <p style="text-align: center;">Metallic balconies</p>	<p style="text-align: center;">1930 - 1962</p>	<p>The balconies and pilaster gave the facade some richness and esthetic value.</p>

SYNCHRONIC READING

Relevance area: Trade and facilities



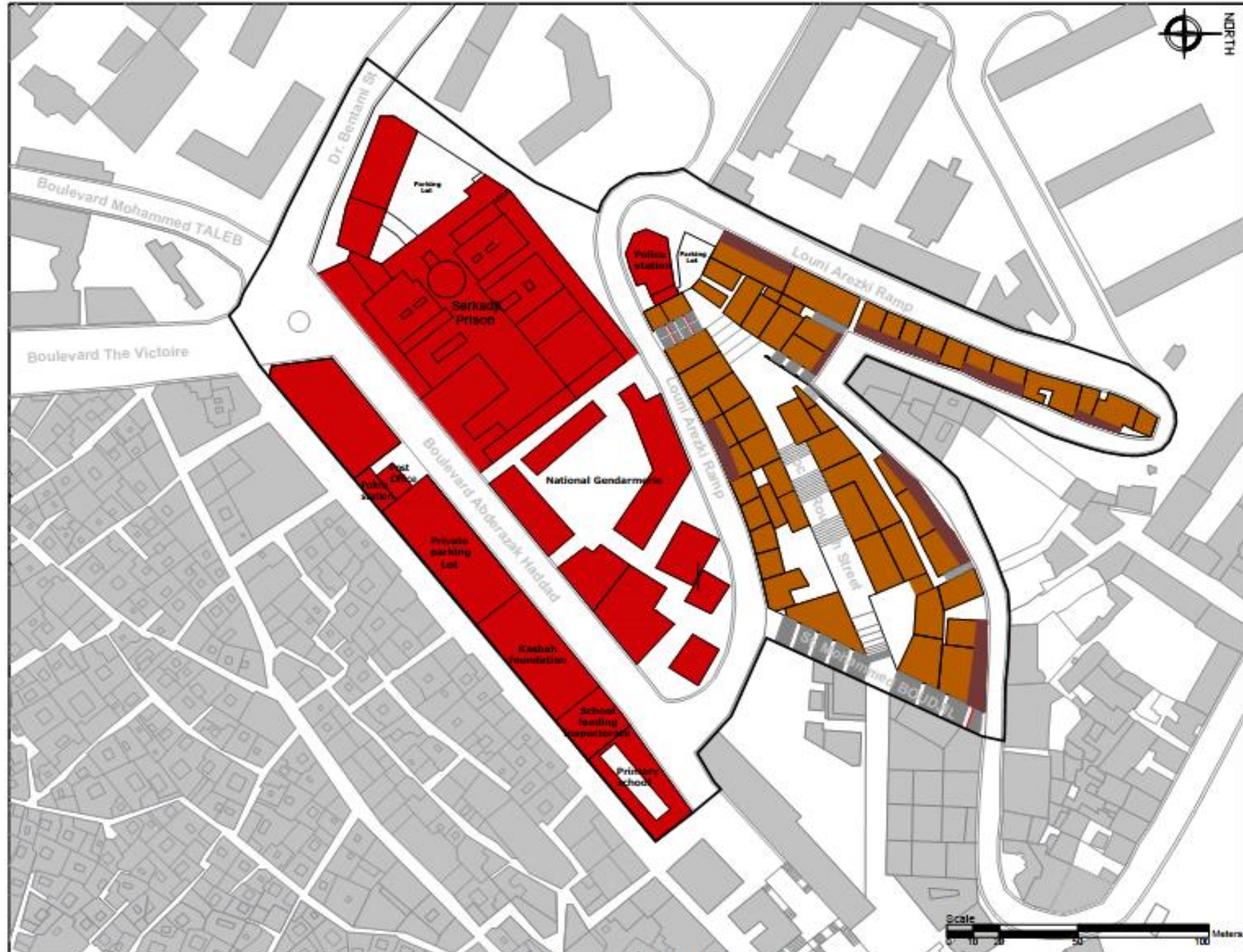
Central Prison, Serkadji.
Source: Algérie Presse Service



Shops along Louni Arezki Street
Source: Photographed by the author, 2020



Shops along Louni Arezki Street
Source: Photographed by the author, 2020



Relevance area plan of the intervention area
Source: Created by the author based on the cadastral plan of the area

- Equipement
- Housing
- Trade
- Intervention area limits

SYNCHRONIC READING

Intervention area: building state



A 4 floors building in a good state along Louni Arezki Street
Source: Photographed by the author, 2020



A 4 floors building in a good state along Louni Arezki Street
Source: Photographed by the author, 2020



A 3 floors building in a bad state along Houcine ROUBENH Street
Source: Photographed by the author, 2020



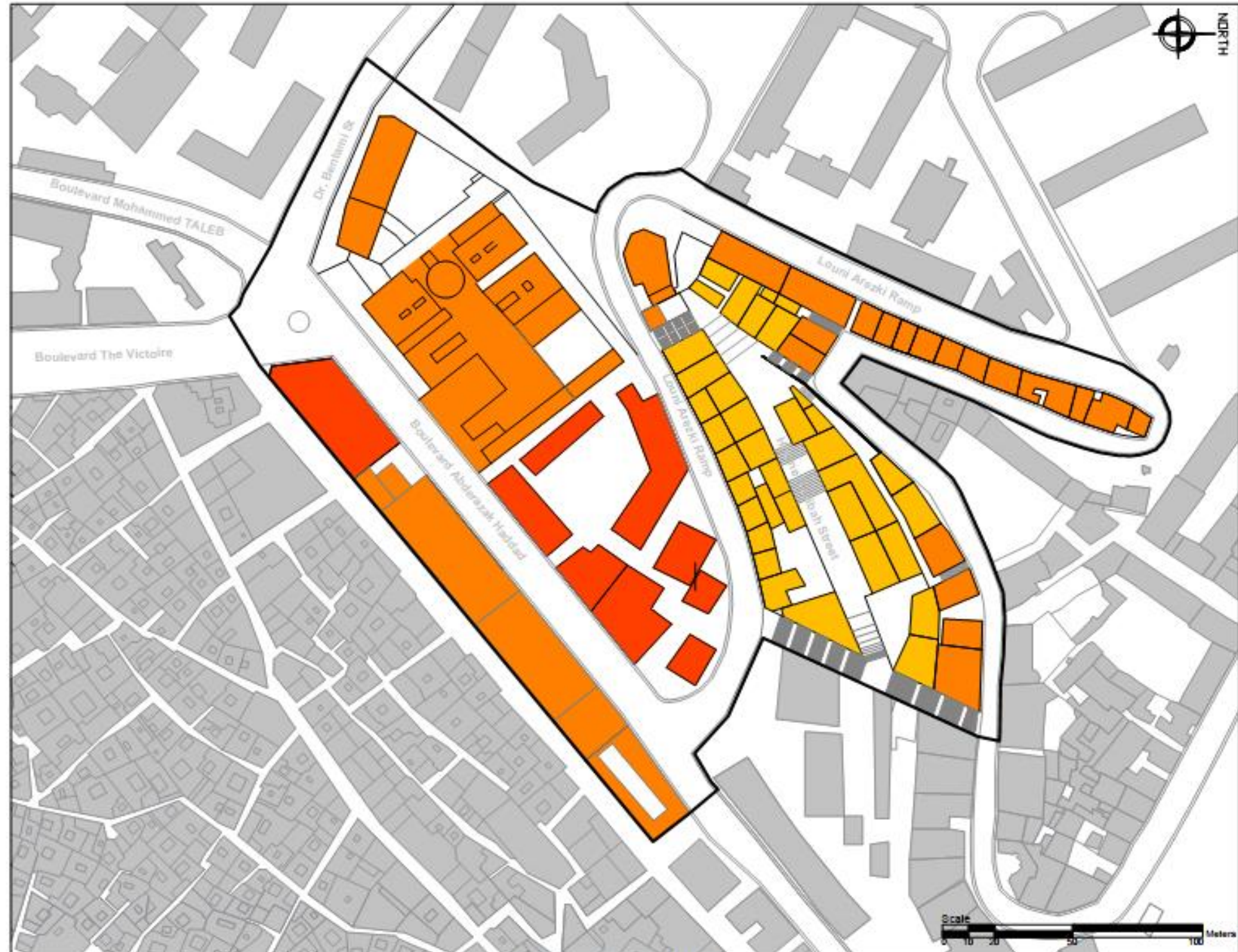
A 2 floors building in a very bad state along Houcine ROUBENH Street
Source: Photographed by the author, 2020



One floor buildings in a bad state along Houcine ROUBENH Street
Source: Facebook page (Rampe Valée)



A 4 floors building in a good state along Louni Arezki Street but with no esthetic value
Source: Photographed by the author, 2020



Buildings' state plan of the intervention area
Source: Created by the author based on the cadastral plan of the area

- Very good state
- Good state
- Bad state
- Intervention area limits

SYNCHRONIC READING

Intervention are: urban renewal interventions used

Intervention type	Justification
Maintaining	Building in good conditions, with no to barely any fissures in structure as well as the facades
Rehabilitation	Buildings in a slight deteriorated condition (facade and structure), which requires some improvements to maintain their esthetic value.
Restoration	Classified buildings such as Serkadji, with a historic and esthetic value.
Demolition	Building in sever degradation, poor conditions in terms of the facade and structure, no esthetic value and precarious housing.
Revalorization	Louni Aruzki ramp and Abderazak Haddad boulevard that lost their value over time, require regeneration due to their historic value.



Maintained building
Source: Photographed by the author, 2020



Building to be rehabilitated
Source: Photographed by the author, 2020



Building to be demolished
Source: photographed by the author, 2020



Maintained building
Source: Photographed by the author, 2020



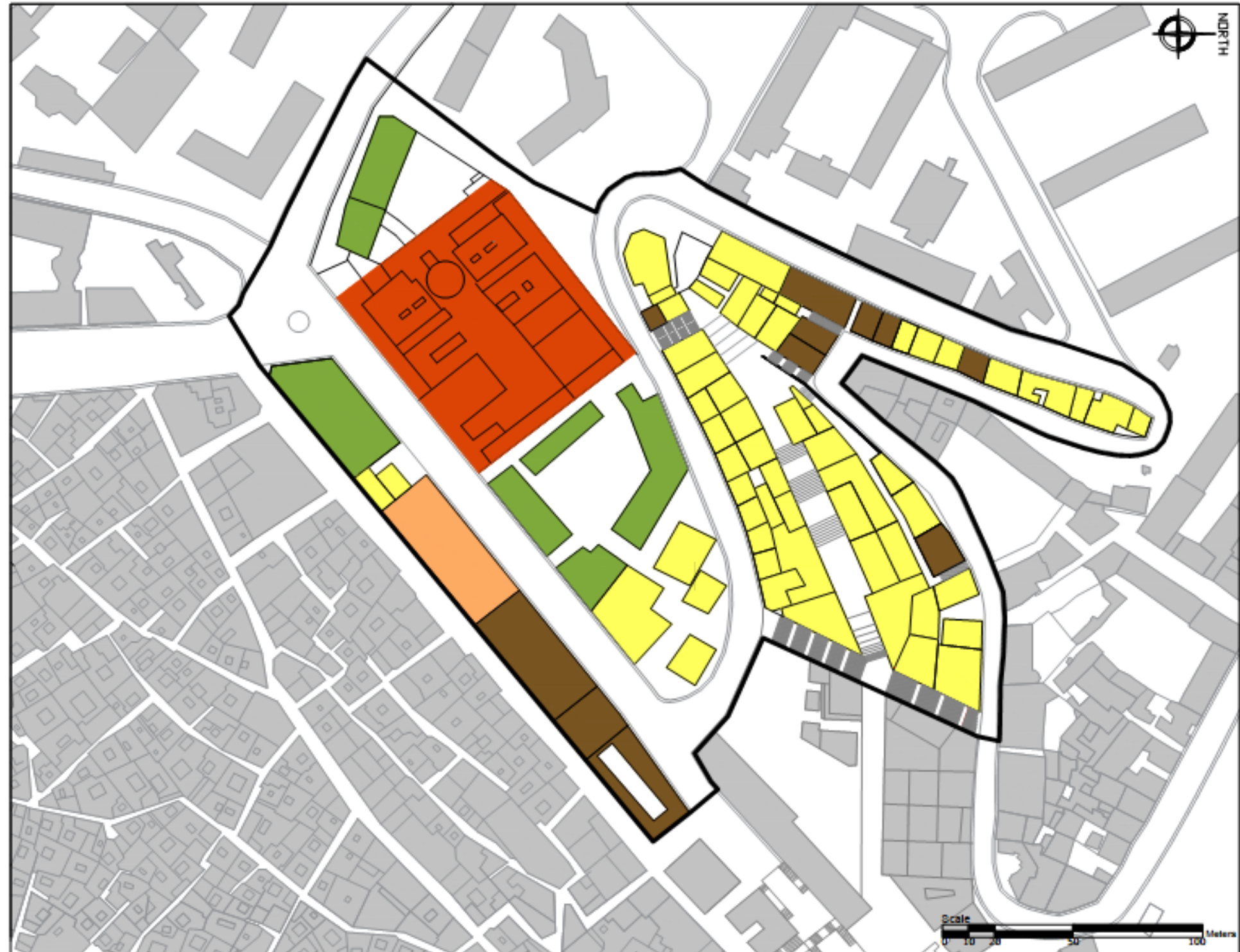
Building to be demolished
Source: Photographed by the author, 2020



Building to be rehabilitated
Source: Photographed by the author, 2020

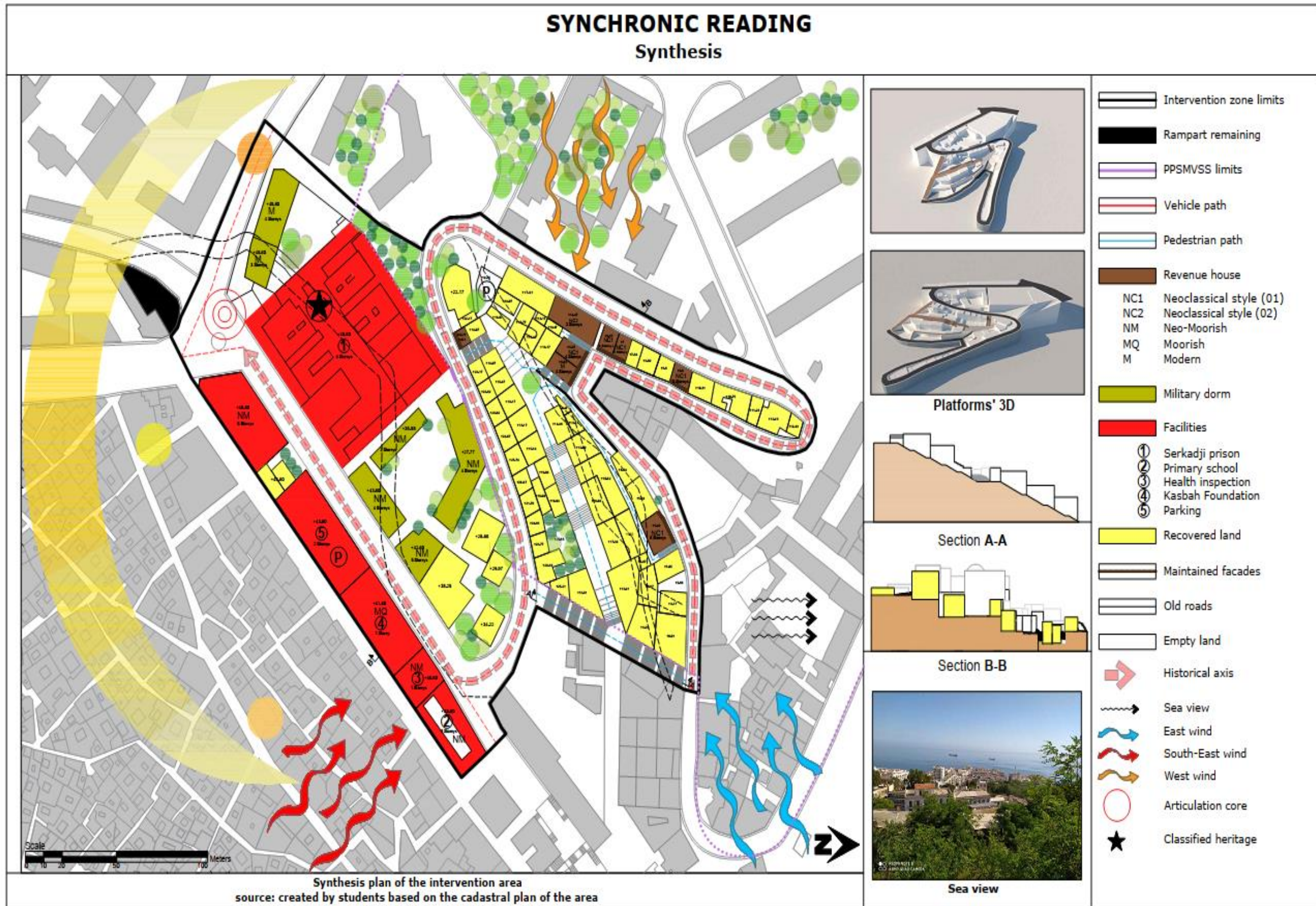


Building to be restored: Serkadji Prison
Source: Photographed by the author, 2020

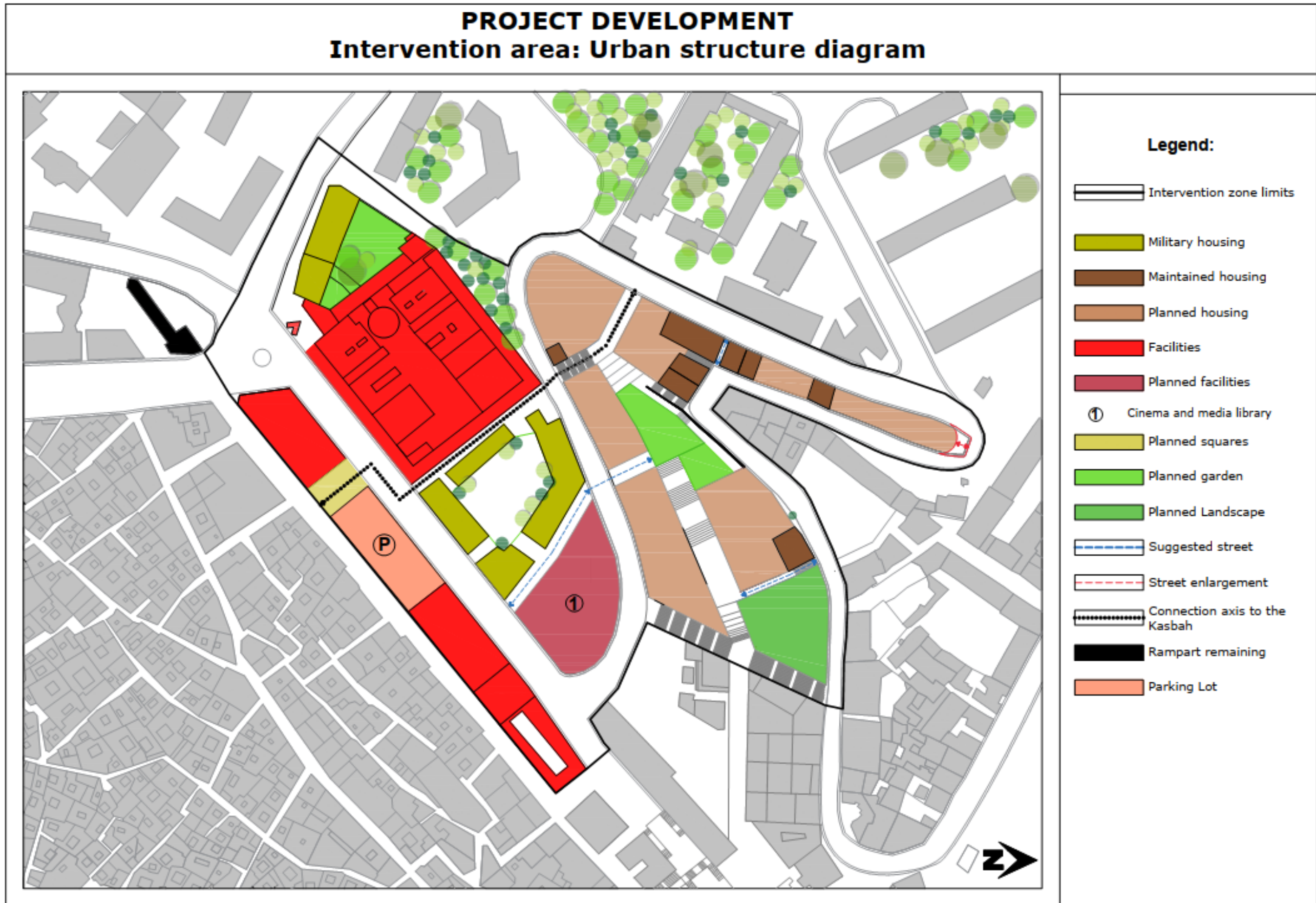


Plan of the urban renewal operations used in the intervention area
Source: created by the author based on the cadastral plan of the area

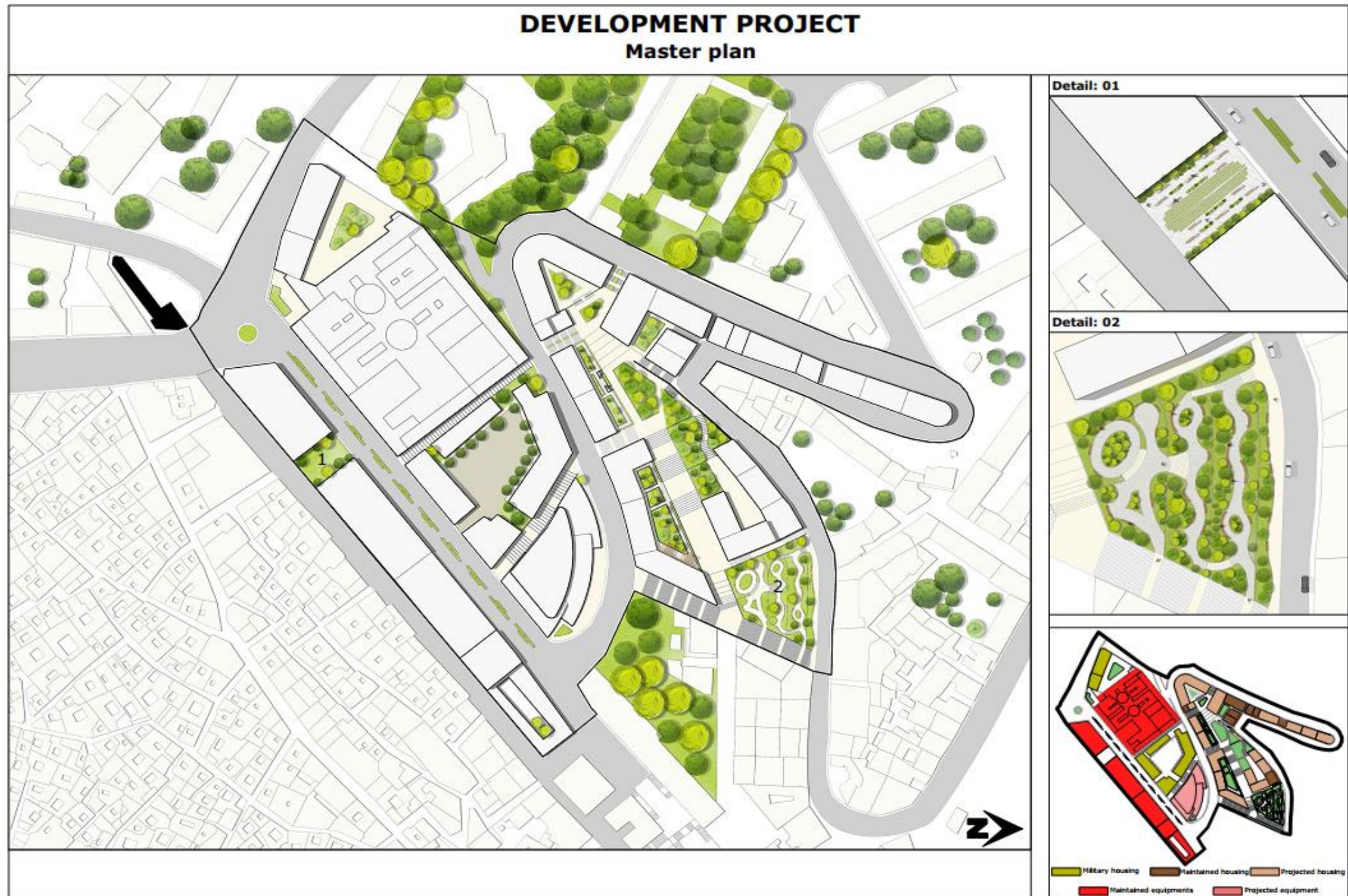
Demolition
 Rehabilitation
 Maintained
 Restoration
 Conversion
 Intervention area limits



Board 37 Synchronic reading: Synthesis



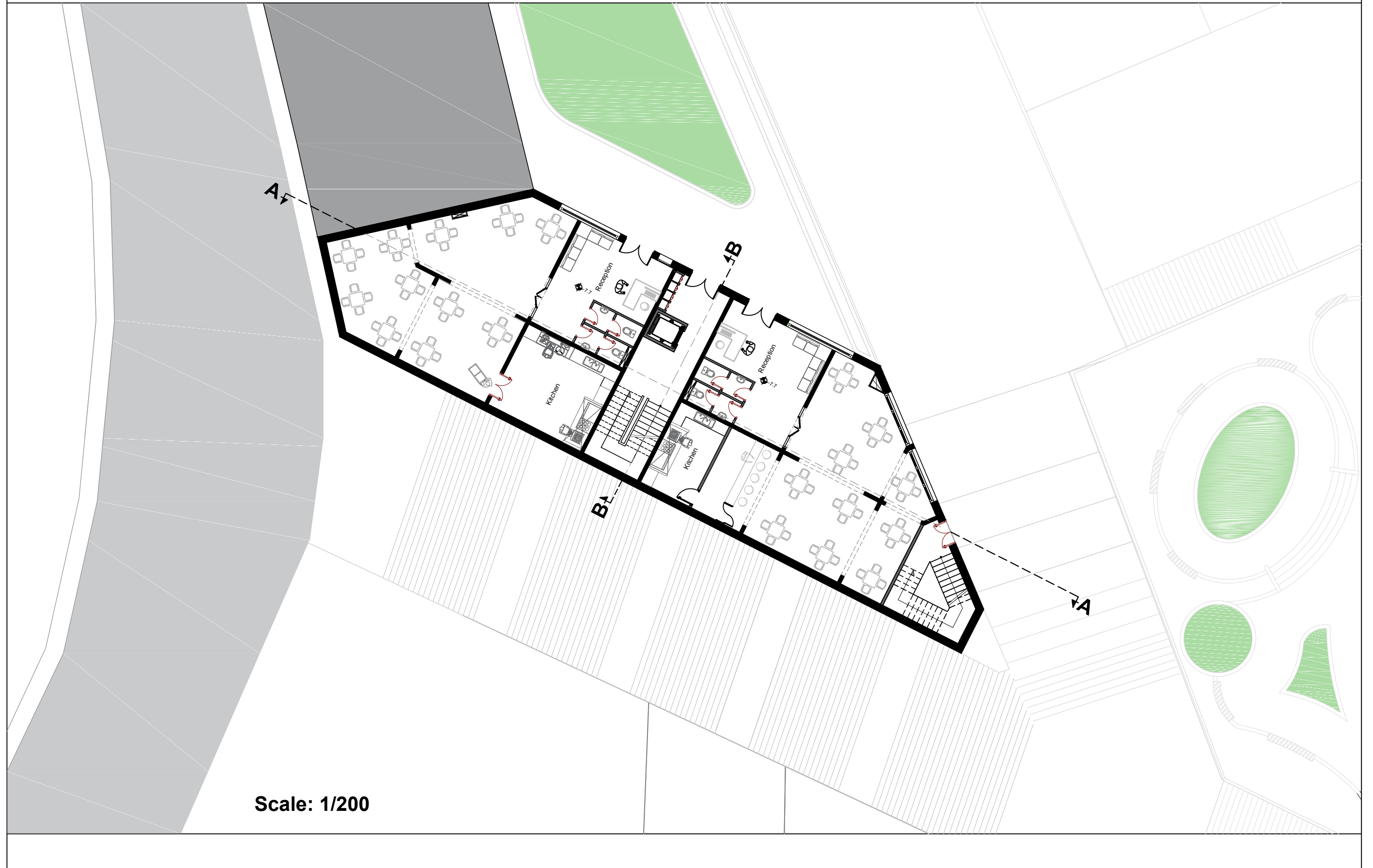
Board 38 Urban structure diagram of the intervention area



Board 39 Intervention area: Master plan

THE PROJECT

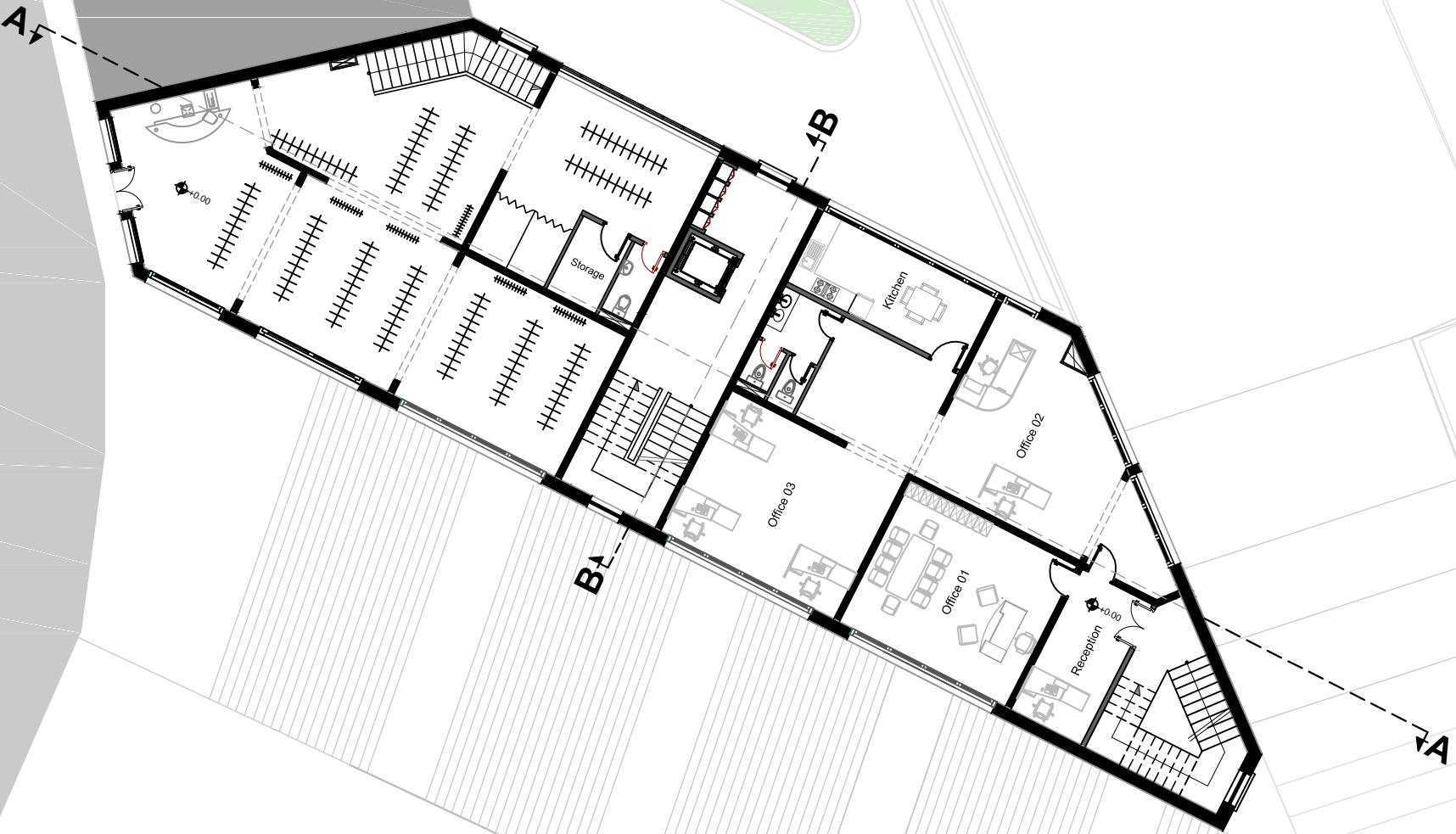
First level plan (Trade)



Scale: 1/200

THE PROJECT

Third level plan (Trade and services)



Scale: 1/200

THE PROJECT

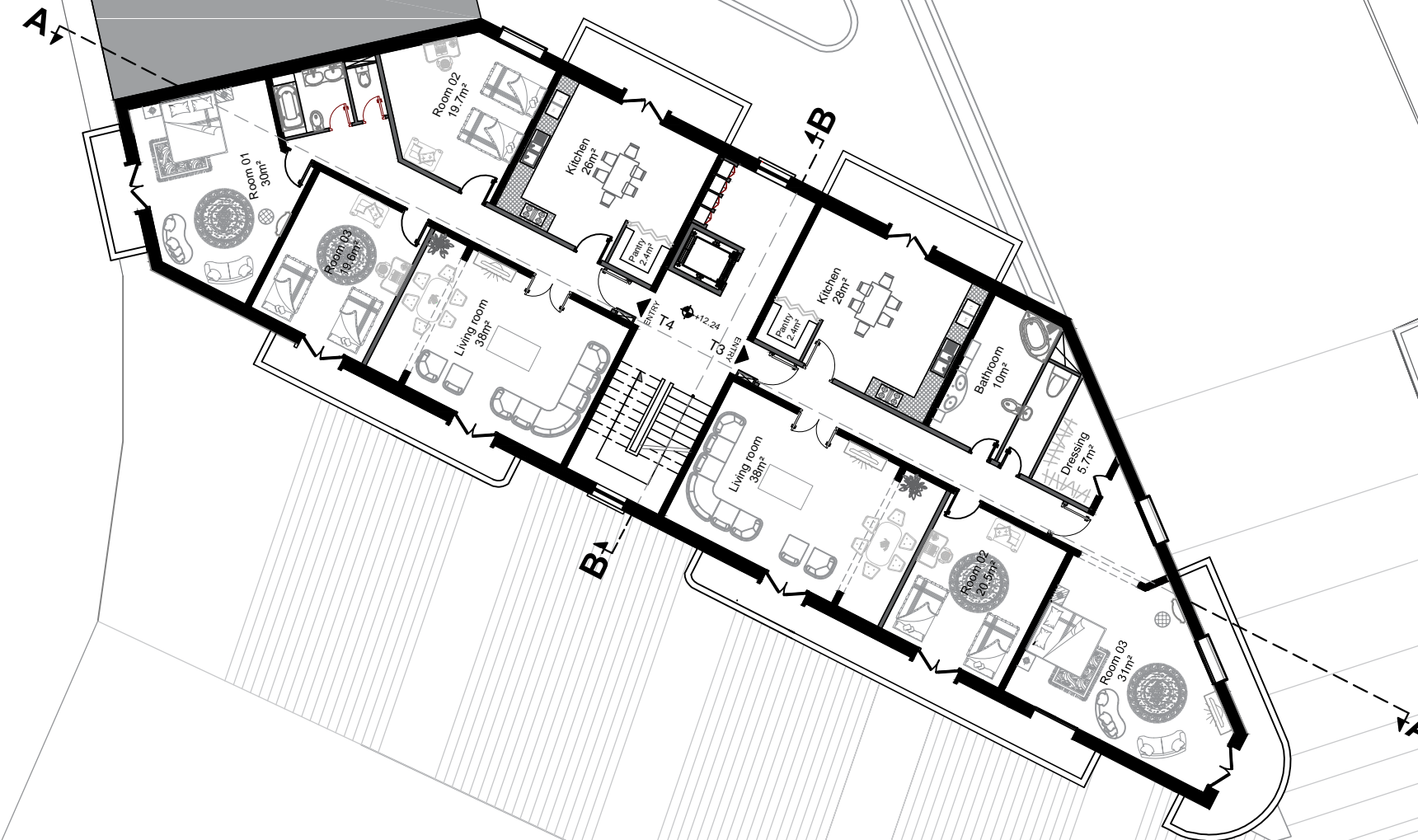
Fourth level plan



Scale: 1/200

THE PROJECT

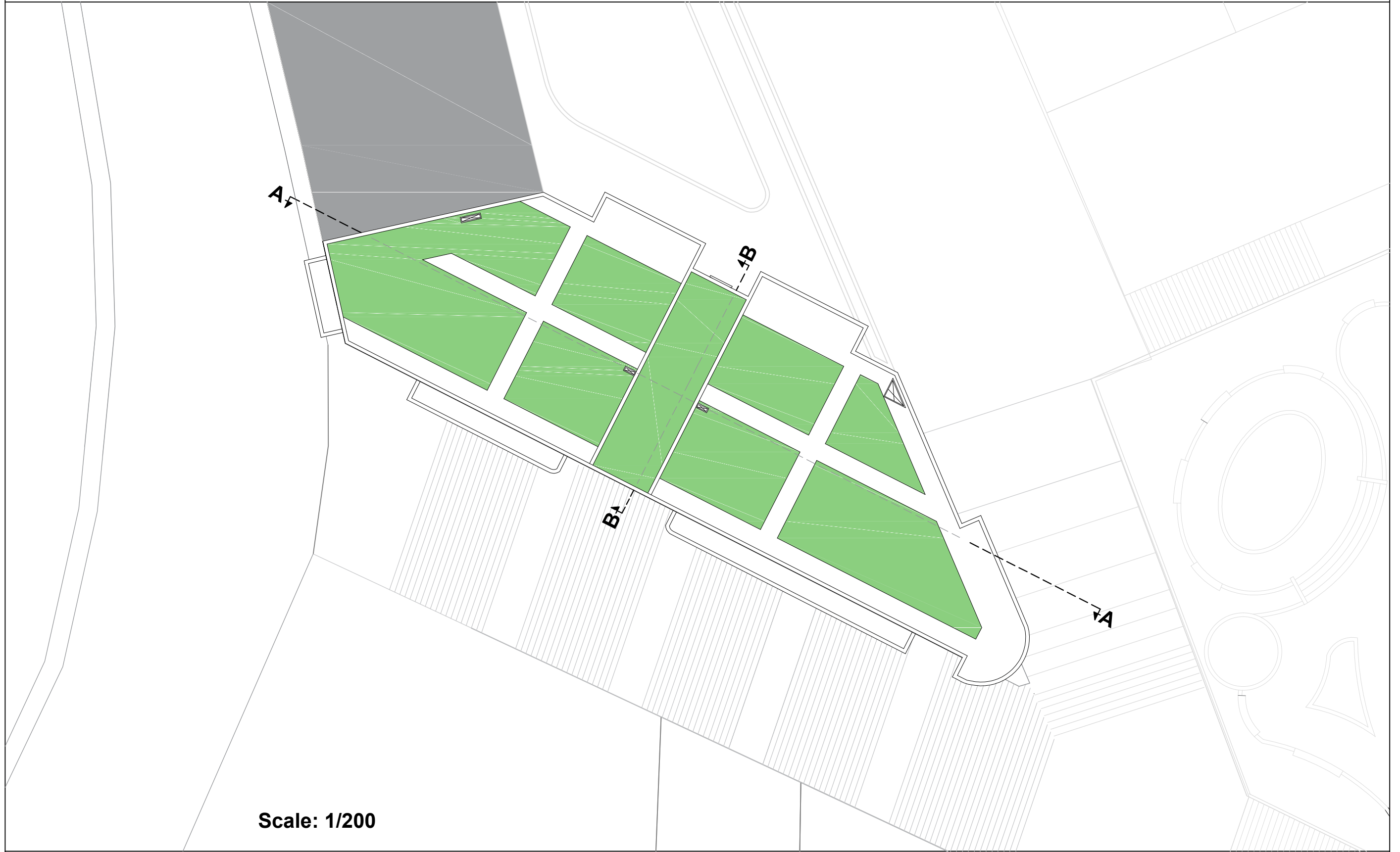
Last level plan (Housing)



Scale: 1/200

THE PROJECT

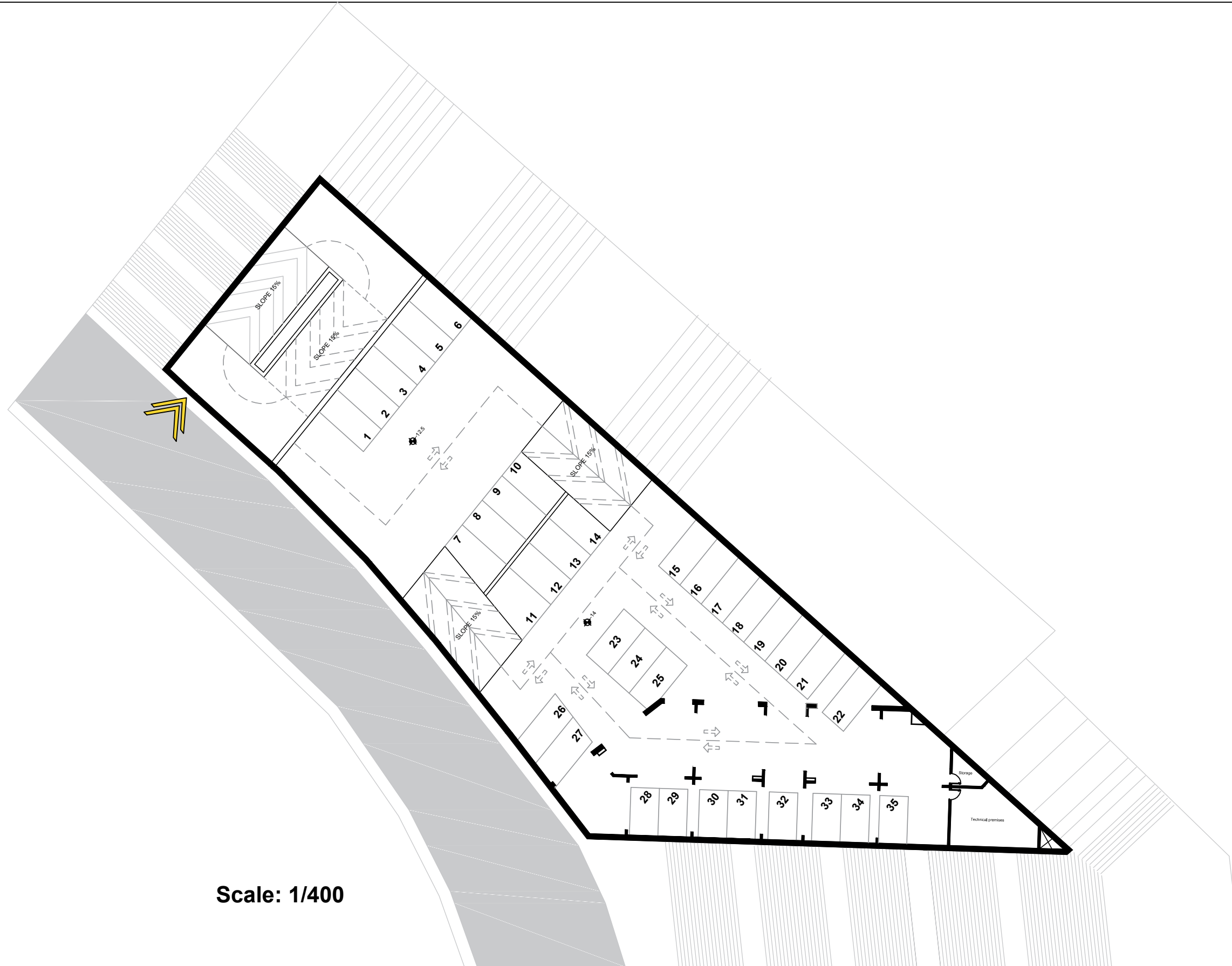
Roof level plan



Scale: 1/200

THE PROJECT

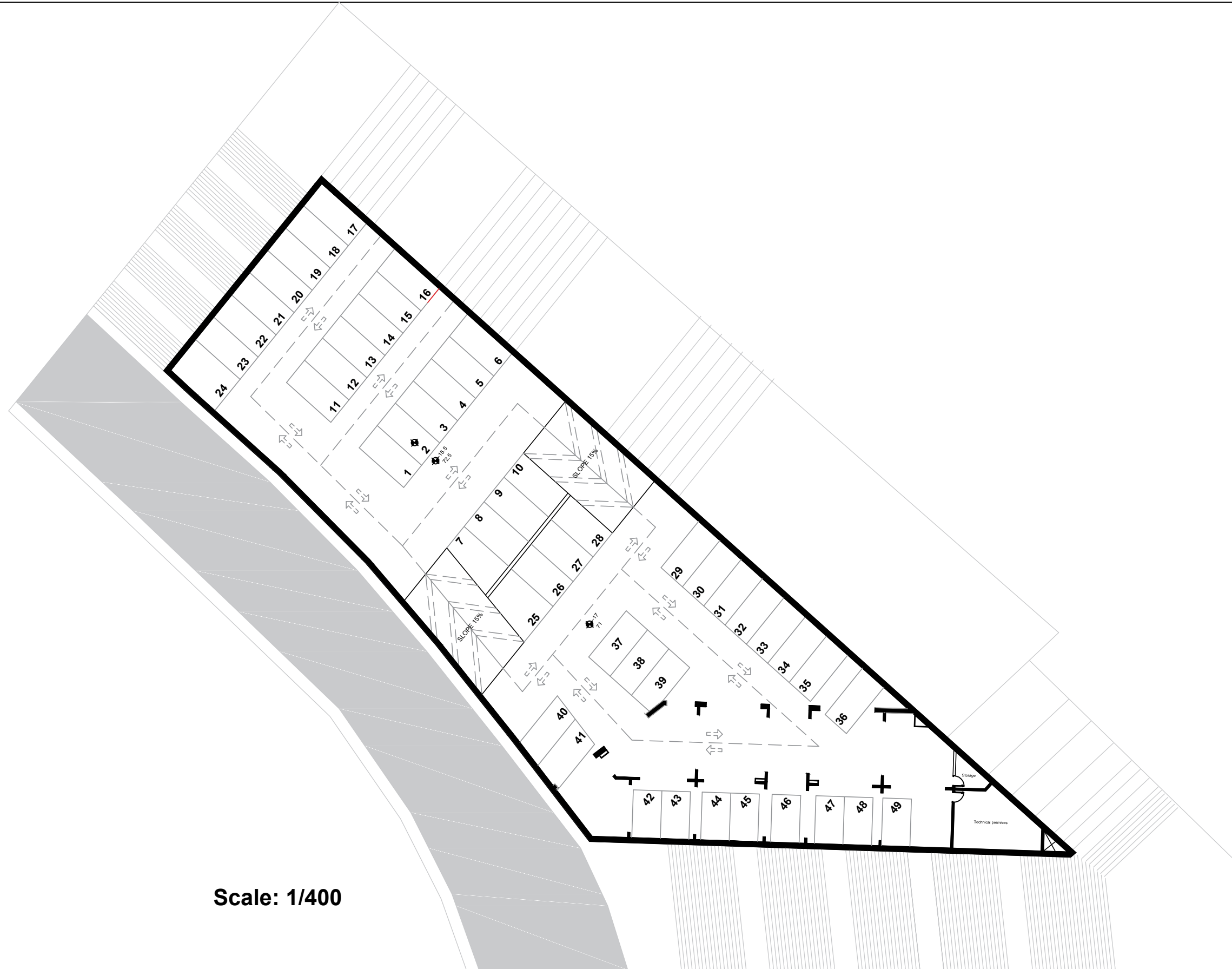
Underground parking (first and second level)



Scale: 1/400

THE PROJECT

Underground parking (third and fourth level)

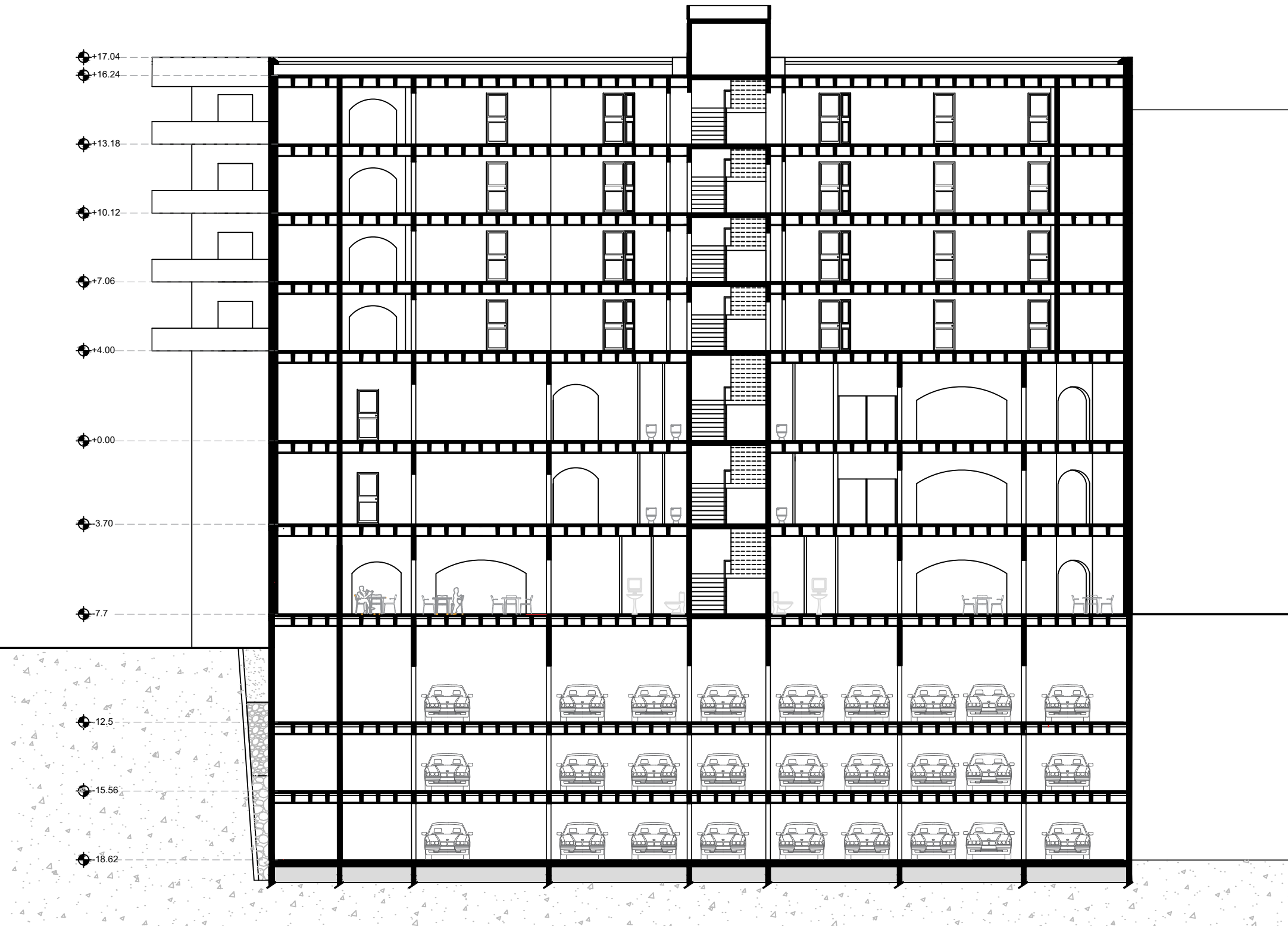


Scale: 1/400



THE PROJECT

Sections

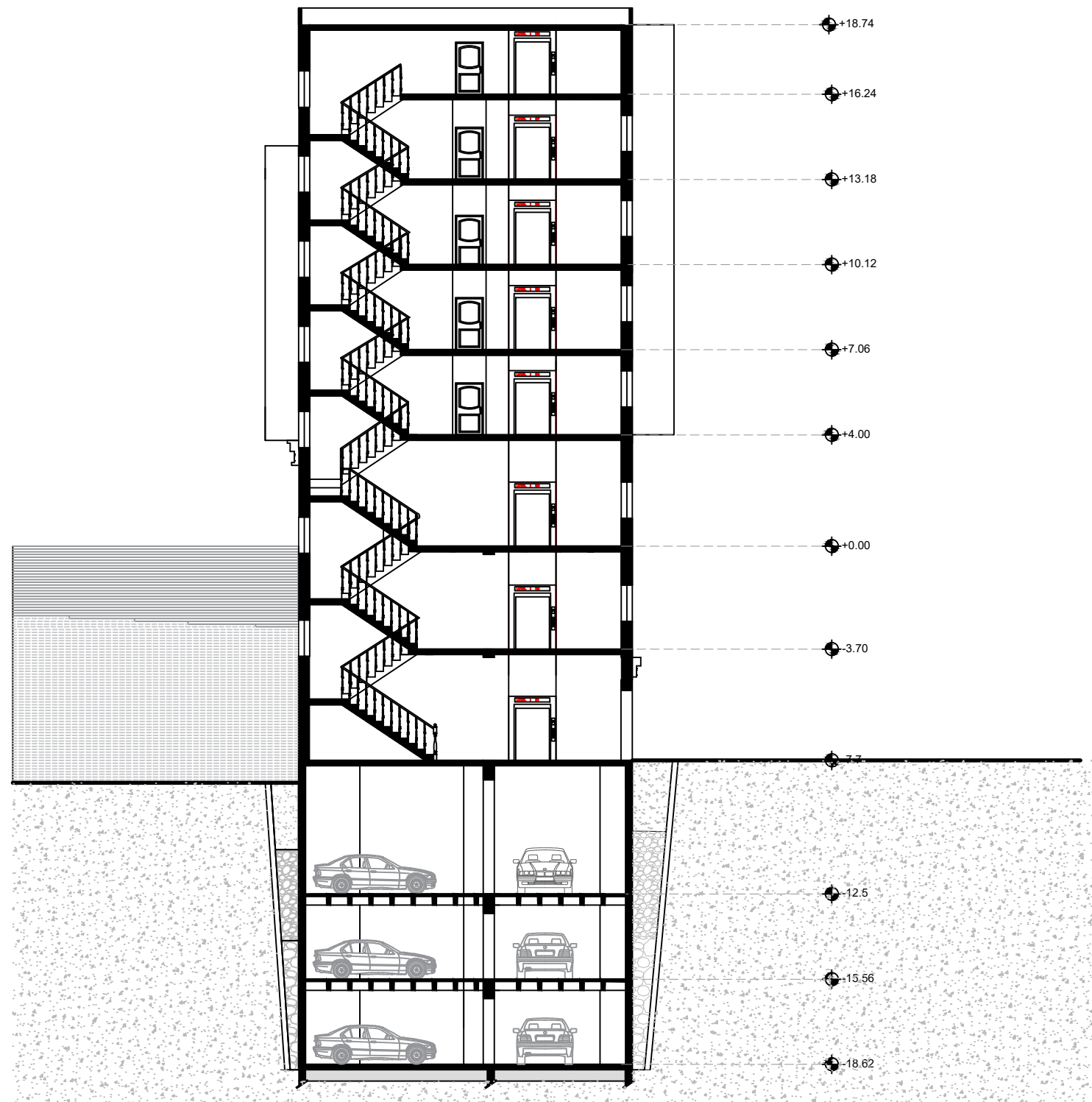


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Section A-A

THE PROJECT

Sections



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Section B-B

CHAPTER

04

GENERAL CONCLUSION

IV General conclusion

Algeria owns a rich and varied architectural and urban heritage, demonstrated in the north by ancient medinas and in the south by the magnificent ksour. Unfortunately, this distinguished heritage is under the threat of degradation and ruin due to natural causes, but mostly due to the mistreatment and neglect, causing it to gradually lose its appeal and value. Our XIX-XX century's cities are dealing with the same issues due to the same causes, offering unsuitable housing and severely affecting the quality of life.

The degradation issue of our historic centers is further worsening in Algiers's Kasbah, some of its buildings have already fallen to disrepair and some are at the verge of ruin, endangering its inhabitants and environment. This heritage became a closed neighborhood and hidden by the XIX-XX century's fabric which resulted in losing its connection with the rest of the city.

The concept of urban renewal refers to a set of actions aimed at upgrading certain urban areas to improve the living environment, it addresses urban problems while preserving the cultural heritage. Integrating sustainable development and environmental approaches (HQE²R and AEU) with urban renewal is essential, to assure a better and healthier living quality for the inhabitants while preserving the natural resources.

By using the Typo-Morphology approach as a method of analysis, we were able to understand the formation and transformation progress of the XIX-XX century's urban fabric and the history behind it, witnessing the different applied architectural styles in the city. The approach illustrated the identity of the urban fabric which guided and inspired us in integrating the development and architectural project according to it, in order to enhance and preserve this identity.

Our work has focused on the problematic of the historical centers, more particularly on the Kasbah's surroundings by testing our hypotheses, which emphasized the integration of sustainable development along with the urban renewal approach. We came to a conclusion that urban renewal is the ideal approach to treat the kasbah's surroundings while preserving their identity and reinforce the value of the historic center and its articulation with the city, and that's through the various operation (rehabilitation, renovation, restoration) to improve and enhance the neighborhood's image, the creation of new functions to regulate the economic concerns and guarantee new jobs, as well as creating spatial and visual openings to the Kasbah along with attracting facilities and green spaces to reinforce the social interactions.

Algiers's neighborhoods are suffering from mistreatments and neglect, we consider urban renewal as a second chance for the inhabitants to have better living quality.

Working during a pandemic had its challenges, especially working on the site which was nearly impossible due to the lockdown, it effected the process of our work in many ways, in

addition to the lack of communication due to the slow internet connection. Because of the hard work we managed to overcome the hardships and successfully completing our work. Finally, to conclude, we aspire to continue the hard work and achieve more to benefit our generation and inspire future generations

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