# A Continuous Story

Hongye Wu

# TRANSITIONAL MORPHOLOGIES
# IN THE ITALIAN COMTEMPORTARY CITY

The Case of Mazzini, Rimini:
In-line Urban Fabric Regeneration

**Master Thesis//** Transitional morphologies in the Italian contemporary city. The case of Mazzini, Rimini: In-line urban fabric regeneration

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**ABSTRACT**

The thesis is essentially divided into two parts. The first part generally defines the field of interest, underlining the topic of this thesis, "the link between urban form and urban codes" and "the regeneration of historic center", concerning the case of Rimini. It draws up an overview of the Italian city Rimini in the history and at present by a collective work of articles, mapping, and photography. The second part consists of four chapters after a general introduction. Following the first part, a series of topics in the field of architecture and urban studies have been concerned, such as the regeneration of isolated city centers, urban morphology, urban codes, and urban experience. In the meanwhile, this thesis inquires the question of how we will live together, especially in the post-pandemic period. The first chapter "Preface: In-line Urban Fabric Regeneration", it is a series of literature review, theoretically explores a series of critical studies of scholars, especially on urban codes and urban environment. The second chapter, "Cases: Typology of Growth in Building" analyzes several architectural references, referring to the concept of dynamic growth in height, and the regeneration of the neighborhood in collective spaces. The third chapter, "The Continuous Story of Dynamic Growth", is the design project part. The project takes one street and in-line buildings in Mazzini as the main case study, defining the concept of dynamic growth as the method of dialogue between streets and buildings, promoting a more livable, enjoyable, adaptable, sustainable community in the future. The final chapter attempts to draw a broader view on other parts of the city Rimini which has the same characters, in-line urban fabric, as Mazzini area, and even more on any other places beyond the city Rimini.

**Key words:** urban regeneration, urban codes, urban fabric, morphology, dynamic growth, skyline

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# PART.1

# TRANSITIONAL MORPHOLOGIES IN THE ITALIAN COMTEMPORTARY CITY. THE CASE OF RIMINI

PART.1

# 00 INTRO-DUCTION

**Through the diachronic study of the form and rules that order the built and the cartographic reworking, it is possible to create a catalogue of operational guidelines.**

## FIELD OF INTEREST

The study investigates the links between form and urban rule in the contemporary Italian city, concerning the case of Rimini. The study consists of analysing the historical settlement system to form the cognitive framework of the General Urban Plan of Rimini. The analysis is conducted in a morphological-transitional manner or formulate guidelines for urban transformation.

The city understood as a complex evolutionary system that changes continuously over time. As ***Stephen Marshall (2008)*** argues, "the plan of a city - like the plan of an ongoing chess game - is a snapshot of an ever-changing process. Two cities - or two games of chess - may have different distributions of pieces. Still, these distributions often have a systematic local relationship, which gives them a recognisable order". This concept denotes the changing character of the city over time. It introduces a distributive and formal structure that organises the elements that make up the urbanised space ***(Caniggia, 1979)***. The deepening of the relationships between elements, especially in urban sectors capable of documenting important seasons for the city's evolution, makes it possible to develop scenarios for future development. Thus, the participation of the present in the spaces of the existing city makes the civic and design value of the historical heritage understandable and accessible.

In this context, Rimini assumes a paradigmatic role in observing the evolutionary cycles of the existing city. Therefore, through the diachronic study of the form and rules that order the built and the cartographic reworking, it is possible to create a catalogue of operational guidelines (codes). The operating procedures allow the triggering of urban regeneration mechanisms. They respond to local needs with a view to exporting and generalising design practices.



**This thesis presents a collection of documents. Starting from the global analysis of the urban fabric of the city of Rimini, four specific areas (Fig.1-4: 1 Cavour, 2 Tiberio, 3 Mazzini, and 4 San Giovanni) have been identified in which to simulate a series of urban projects. The design project is carried out in educational and academic settings to show possible actions in specific contexts. Thus, the simulations allow generalising the detailed reasoning and extending them to the rest of the urban fabric with the same morpho-typological characteristics.**

Fig.1-4, Map of Study Areas in Rimini, Google Earth Pro (2021)

## ONGOING RESEARCH AND METHODOLOGY

In the last ten years, the significance of urban codes has been placed in the foreground, both for their use to reform buildings and their value as new tools to shape the future ***(Talen, 2012)***. Urban codes, or the governance tools for administrations that allow cities to be generated and regenerated, reveal a profound relationship with the urban form, which can be studied thanks to the paradigm of transition morphologies. Investigating transition means looking at urban morphologies as a process.

Transitional urban morphologies are an operational conceptual tool for analysing the urban form of contemporary cities in their historical development, up to their present reality, and also looking at their possible future configurations of urban planning and design ***(Trisciuoglio et al., 2021)***.

The development of a new generation of urban planning rules requires a deep and critical understanding of the mechanisms of evolution of form and the analysis of the effects of the regulations on the built environment. Evolution is the lens through which city development can and must be understood ***(Marshall, 2008)***.

This page presents the first analysis of the historic core of the city of Rimini. Through the redesign of the Roman structure, of the Renaissance elements and the Gregorian Cadastre of 1811, it is possible to understand the permanences and the permutations of the urban morphology of Rimini. Numerous in-depth studies and considerations can be conducted by superimposing the different layers obtained from interpreting the maps and historical documents. Therefore, the aim is to understand the formal mechanisms of origin and modification of the urban fabric to build project reasoning consistent with the context.

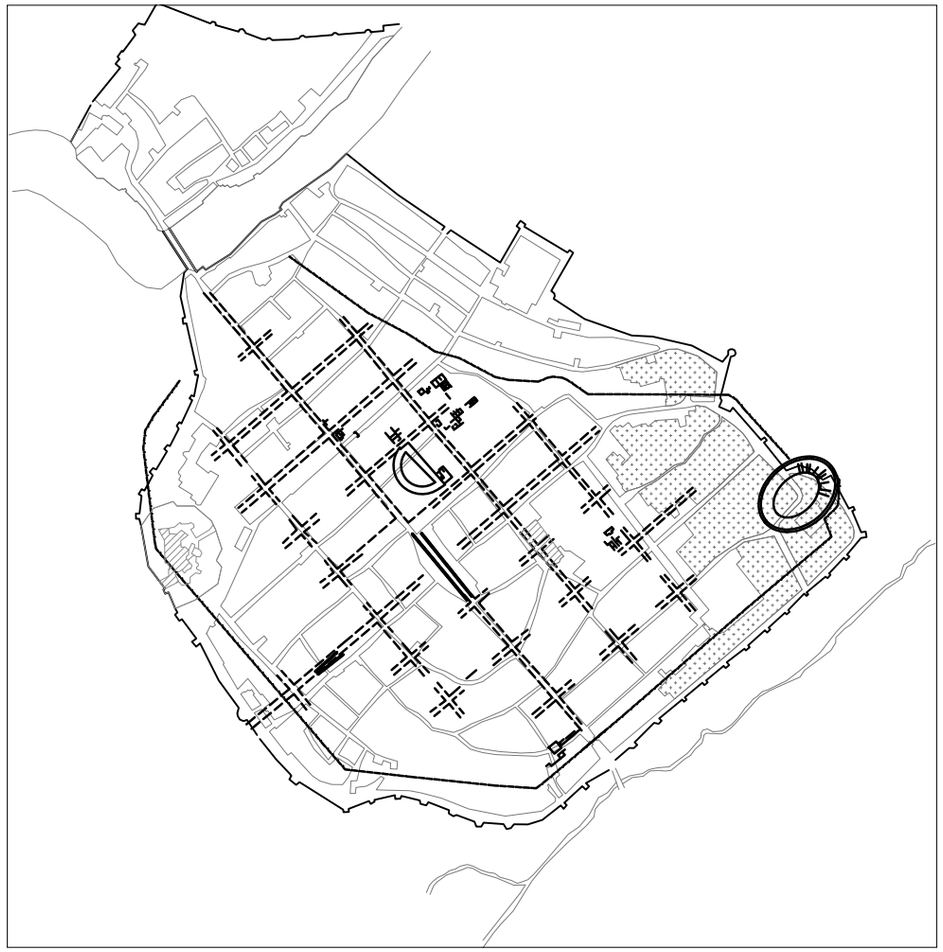


Fig.5-8, Superposition of Roman matrix on Gregorian Cadastre of 1811, Rimini, Martina Crapolicchio (2020)

**This sub-chapter showcases the urban fabric of the historic center and the distribution of different typologies in the city Rimini.**

### General Plan: Morphological Homogenous Catagories

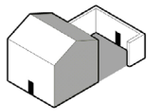
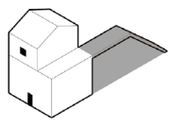
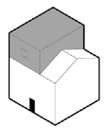
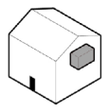
The collection of original maps and reworkings documents the main elements that combine to define the character and structure of four emblematic areas, chosen as representative archetypes of morphotypological ensembles.

This operation helps to study the city based on the elements that compose it and define intervention strategies in a localised manner to trigger regeneration mechanisms of the entire urban fabric. This approach allows collecting the evidence of the analysis to formulate generalisable principles. Furthermore, it is possible to elaborate other questions relating to urban morphology in the planning, design and conservation of Rimini's historical centre.

The four morphologically homogeneous areas (1 Cavour, 2 Tiberio, 3 Mazzini, and 4 San Giovanni) are presented here. Each region corresponds to a graphic pattern and a precise urban morphological characteristic.

The diagram on the next page represents the constructed surface of each morphological category. A diagram illustrating the framing of the regulatory guidelines is presented on the next page.


Fig.9-13, Typological Map of Historic Center Rimini, Liqiuzi Guo (2021)

| STUDY AREA | ICON | IF | YOU CAN | ADVANTAGES |
|---|---|---|---|---|
| CAVOUR<br>Acupuncture |  | There are condition of: **compact building fabric with stratifications.** | Rethink urban space to allow porosity through:<br>- Interventions on voids system<br>- Interventions on facades' surface (Echo)<br>- Interventions on roofs' surface (Echo)<br>**Promoters: private OWNERS.** | Discount on environmental taxes;<br>Adding volumes or/and surfaces in percentage. |
| TIBERIO<br>Up & Down Strategy |  | There are condition of: **compact margin tissue, compared with canal port or different heights.** | Recover cubage through:<br>- Augmenting surfaces or volumes (even served by footbridges and aerial walk paths)<br>- Allowing temporary (years) occupation of private open spaces by the municipality to realise public spaces and gardens<br>**Promoters: private OWNERS.** | Adding volumes or/and surfaces in percentage. |
| MAZZINI<br>Dynamic Growth |  | There are condition of: **ribbon disposition / in-line urban fabric of the outer village attested on roads.** | Recover cubage through:<br>- Augmenting surfaces or volumes partially or entirely involving the buildings' shape in plan.<br>**Promoters: private OWNERS.** | Adding volumes or/and surfaces in percentage. |
| SAN GIOVANNI<br>Air-Rights |  | There are condition of: **tall buildings and ribbon disposition in urban fabric along the roads.** | Recover cubage through:<br>- Augmenting surfaces or volumes partially or entirely involving the sides of the buildings according to stakeholders.<br>**Promoters: private OWNERS agreement.** | Adding volumes or/and surfaces in percentage. |

# 01

# OVER-VIEW

RIMINI BETWEEN FORM AND NORM

# UNDERSTANDING RIMINI

This chapter showcases a collection of articles about the history, monuments, city development and the current regulations of RImini.

**Rimini, which can be described as the split town, owning to its geographic, cultural, economic and politic reasons.**

**THE SPLIT TOWN** / by Wu Hongye

## I. Beach resort, a great turning point of city development

One of the most essential turning points in the history of Rimini was that the seaside resort gradually developed, since then, people's attention shifted from the original core of the city which centered on piazza Tre Martiri to the coastal area to the east of the city.

In **1843**, precisely under the Papal Government, Rimini officially inaugurated its **first beach resort** that became the Riviera Romagnola afterwards. The geographical boundaries of Rimini's beach resort extend from the mouth of the Rhine River up to the promontory of San Bartolo, but most of all, Rimini develops the tourist vocation along the Adriatic coast. The development of the first beach resort in Rimini was followed by the construction of the Kursaal and the hydrotherapy resort, in response to a new trend among the aristocracy and the upper middle class, who appreciated sea-bathing for its therapeutic properties. After the Second World War, many beach resorts arise in the area from Riccione to Milano Marittima and **since the '50s**, the seaside is full of areas devoted to bathing. Along with Milano Marittima, Rimini became famous throughout Europe as major tourist destination. **In the '60s,** Rimini and the Riviera Romagnola were finally recognized as leading touristic locations. Nowadays, people has already been associated with Rimini's bathing history since the first bathing establishment was founded in 1843.

In recently ten years, Rimini has made an excellent effort in terms of environmental renewal and restoration. Devoting to promote a more enjoyable and sustainable city, Rimini municipality built many leisure green parks, especially the new **Sea Park**: 16 kilometers of waterfronts, from Torre Pedrera to Miramare,


Fig.14, Beach resort in Rimini, Rimini, Wen Yee Tan (2021)


Fig.15, Beach resort in Rimini, Rimini, Wen Yee Tan (2021)

**Ma ecco: non riesco a considerare Rimini un fatto oggettivo... E' piuttosto, e soltanto, una dimensione della memoria. Rimini: cos'è? E' una dimensione della memoria (una memoria, tra l'altro, inventata, adulterata, manomessa) su cui ho speculato tanto che è nato in me una sorta di imbarazzo (Fellini, 1971).**

completely free of metal sheet and asphalt and transformed into islands and roads dedicated to greenery, nature and the quality of the sea.

In Rimini, tourists from Europe and all around the world would like to flock to the **seaside** for vacation, especially during the summer vacation, while the original historic center of the city is gradually forgotten. In fact, the hitstoric center is full of important **memories** of the past, the memories of the people and the memories of stone (e.g. architecture, city walls, arches, etc). Cinemas, theaters, castles, cafes, museums, piazza, streets, and alleys, all of them, have both tangible and intangible memories which deserve to be preserved and continued in their own special forms.

## II. To be continue, a city of memory

Federico Fellini once wrote, "I can not consider Rimini as an objective fact. It is rather, a dimension of my memory… What is Rimini? It is a dimension of memory (a memory that in any case has been invented, adulterated, violated) on which I have speculated so much that I developed a kind of embarrassment ***(Fellini, 1971)***."

Rimini, thus, for Federico Fellini, is not an objective fact, but primarily a facet of his **memory**. Although Fellini never shot a film in Rimini, Rimini as his memory is always existing in his films, recreated and memorized in some ways. The town of Rimini


Fig.16, Fellini is Everywhere, Rimini, Hongye Wu (2021)

**Pensare a Rimini. Rimini: una parola fatta di aste, di soldatini in fila. Non riesco a oggettivare. Rimini è un pastrocchio, confuso, pauroso, tenero, con questo grande respiro, questo vuoto aperto del mare; lì la nostalgia si fa più limpida, specie il mare d'inverno, le creste bianche, il gran vento, come l'ho visto la prima volta... Infatti, quando mi trovo a Rimini, vengo sempre aggredito da fantasmi già archiviati, sistemati (Fellini, 1971).**

truly becomes an island, in Fellini's idiosyncratic recreation, which represents a private place, protected by the see, and where the individual can freely keep his or her most secret dreams ***(Gieri, 1995)***. Ostia, Rome, where Fellini shot "I Vitelloni", as Fellini describes, is more Rimini than the real Rimini. The place re-proposes Rimini in a theatrical, scenographic and, therefore, harmless way ***(Fellini, 1971)***. In the movie "I Vitelloni", Rimini truly becomes an island, that is, a total universe where each one of the five protagonists progressively undergoes gradual unmasking so as to expose his empty inner life, which is metaphorically paralleled by a vacuous social existence ***(Gieri, 1995)***.

"It looks like an American city. But who wants the American city?", the Rimini people said while they were watching the model of the future Rimini which proposed by the Americans after the WWII. Rimini was almost destroyed entirely by horrible bombs during the WWII. After the war, the Americans had promised to rebuild everything at their own expense. Then, Rimini becomes a word which is made up of auctions, of toy soldiers lined up. For Fellini, he can not objectify Rimini. Rimini is a mess, confused, fearful, tender, with its great breath, its open emptiness of the sea; nostalgia becomes clearer there, especially the sea in winter, the white crests, the great wind, as he saw it the first time... In fact, when he is in



Fig.17, Park in Castel Sismondo, Rimini, Hongye Wu (2021)


Fig.18, Park in Castel Sismondo, Rimini, Hongye Wu (2021)

**Ricordo che ebbi una reazione infantile. Quello spettacolo mi pareva un oltraggio sproporzionato. Ma come, non c'è più il Politeama, non c'è più quell'albero, la casa, il quartiere, il caffè, la scuola! Mi pareva che avesse dovuto frenarli il rispetto per certe cose. Sta bene, è la guerra: ma perché distruggere proprio tutto? (Fellini, 1971)**

Rimini, he is always attacked by ghosts already archived, settled ***(Fellini, 1971)***. Again, the Rimini which from Fellini's childhood did not exist anymore, but Fellini recreates and invents it in his films in his own way.

**In recent years**, local municipality has been working hard to enhance historical urban places with a **strong identity** starting with the redevelopment of the historic centre with the renovation and reopening of the Fulgor cinema, which is perhaps the most famous cinema in the world, the reconstruction of the Amintore Galli Theatre linked to the unitary redesign and reorganization of Piazza Malatesta up to the Malatesta Castle, the inauguration of the new PART Museum of Contemporary Art. The creation of new public spaces, street furniture, green areas, as part of a coordinated and organic design, in close connection with the other ongoing contracts aimed at creating new cultural engines, such as a series of **exhibition of Fellini** will be inaugurated on August of 2021, including the Fellini Museum which located in the recent renovated Castle and some open-air exhibitions which will be showed in the newly organized Piazza Malatesta in front of the Fellini Museum. Obviously, Fellini has already became a symbol, an icon of Rimini.

A city of memory or a memory of someone?
So what is Rimini for you?  And, how the city Rimini will be in the future?



Fig.19, Newly Piazza Malatesta Under Construction, Rimini, Hongye Wu (2021)

Fig.20, Newly Piazza Malatesta Under Construction, Rimini, Hongye Wu (2021)

Fig.21, Piazza Sull'Acqua, Rimini, Hongye Wu (2021)

Fig.22, Piazza Sull'Acqua, Rimini, Hongye Wu (2021)



**A city of memory or a memory of someone?**
**So what is Rimini for you?**
**And, how the city Rimini will be in the future?**

### III. Multiple identities, today's Rimini

It is not necessary to redefine the identity of historic city center of Rimini but what has to be done is that to grow the original identities and in the meantime to dig out profound ingredients such as disappearing tradition, demands of residents which not only have been deeply hiding in the history, during the fast urban development but also which are going to be increasingly needed in nowadays' constantly changed world such as post-pandemic era which is being faced by the individual, groups, cities, countries and the whole world (*different dimensions of needs). Different dimensions of needs, for example, the individual considers only a single house, the group may consider how a community could be, the city takes a bigger view into account, and so on.

Overall, Rimini is an attractive city with rich culture, profound history, great artificial green parks, and stunning natural landscape from hills and sea, however, all these characters as if they are separate fragments floating on the water island. In this sense, Rimini as a **spilt town** has being seen today. One of the main influence factors is the location of **the railway**. The railway exactly right splits the city into two parts, the new town along the seaside with thousands of villa, hotels, hostels, B&B on the northeast side, while the other, the city historic center, is isolated totally on the other side. At the beginning, one of the main purposes of the planning of the railway is to bring convenience to the tourists who want to go the beach. However, it is also the main factor that weakens tourists' attention to the meaningful city center. Furthermore, apart from those important buildings for the city itself, most the residential buildings are being neglected. For example, residents renovated their house themselves in an interesting informal way or in a creative and adaptive way.

Therefore, although there is no perfect city, regenerations in several aspects will give benefits to transform the city of Rimini into a more completive, coherent, livable place and to promote its sustainable development.

Fig.23, Self-renovated Residential Building, Rimini, Hongye Wu (2021)


Fig.24, Self-renovated Residential Building, Rimini, Hongye Wu (2021)

**Rimini was founded by the Romans in 268 BC. Throughout Roman times, Rimini was a key communications link between the north and south of the peninsula.**

**THE CORE OF THE TOWN** / by Guo Liqiuzi

**I. The historical center_Cardo-decumanic_Rome**

The historic center of Rimini is surrounded by walls built by Malatesta and bounded by **the Marecchia and Ausa rivers**. The center has a unique regular urban structure of Roman origins, based on a typical Roman square mesh. Each town has two main roads, **cardus maximus** and **decumanus maximus**. One faces north-south and the other faces east-west. The town is divided into four areas by two orthogonal roads, which is based on colonial needs. The intersection of the roads is a large Piazza in the center of the town, called the **Forum**. It is used for markets and conferences. It has shops and offices on three sides, and government offices on the other.

In Adimario Adimari's plan for Rimini, a square mesh plan was adopted, with military barriers on the north and south sides coincident with the two bridges on the Ausa river. The city is surrounded by a moat and city wall, showing its strategic significance. This reflects the urban structure of the Roman period.

The urban layout, of the **Cardo-decumanic** type, is oriented from north-west to south-east and from north-east to south-west, unlike what happens for the territorial network. not only of orientation but of connection, [...], that characterizes the practical-empirical attitude of the Roman urban planners in the organization of inhabited centers. The reference to a predetermined model, the quadripartite orthogonal city, is conducted and applied, here as elsewhere, without any rigidity, historicized in relation to human and geographical pre-existences, corrected from time to time according to certain objectives. (RIMINI. Laterza. 1982).

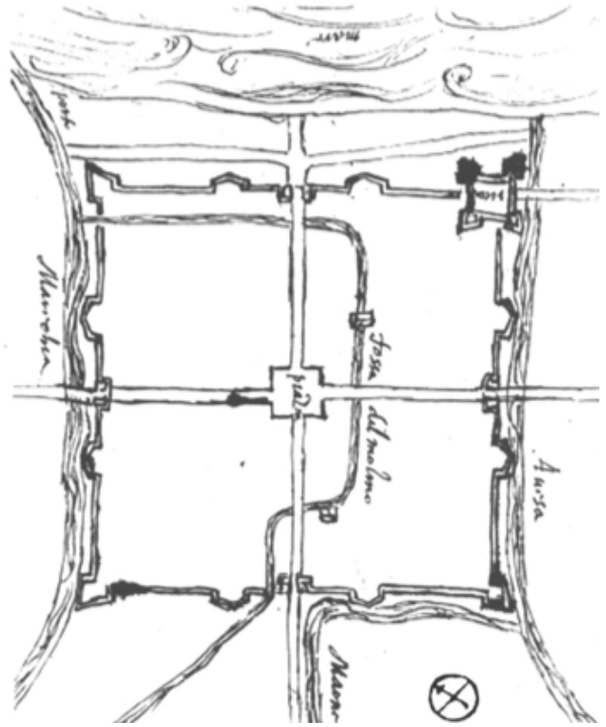


Fig.25, Drawing for the restructuring, regularization and expansion of Rimini, Rimini, Gobbi, G., Sica, P. (1982)

**During the Renaissance, Rimini benefited from the the house of Malatesta.**

In rimini, the city walls surround the urban space orthogonal to the street grid. At the intersection of cardus maximus and decumanus maximus, corresponding to the current Piazza Tre Martiri, was the Forum, the core of public life and commercial transactions. Roman emperors erected monuments such as the Arch of Augustus and the Tiberius Bridge to mark the beginning and the end of the Decumanus of Rimini.

**II. The historical center_House of Malatesta_Renaissance**

**Malatesta Temple**, which is the most important site in Rimini, first example of the Italian Renaissance; designed by Leon Battista Alberti. **Castel Sismondo**, designed by Filippo Brunelleschi, is the symbol of Sigismondo Pandolfo Malatesta strength and power. **Piazza Cavour** (**Piazza Della Fontana**) is the main medieval square. **Piazza Malatesta**, formerly joined to Piazza Cavour, overlooked by the cathedral and the castle. Piazza Malatesta takes its name from the castle of Sigismondo Pandolfo Malatesta, lord of Rimini from 1432 to 1468, which combines the celebratory intent with the defensive need. The fortress stood out for the might of its towers and walls with escarpments, for the wide moat, for the grandeur of the keep.

The early medieval city was organised as a dense knot of functions and activities contracted around a square (Piazza Della Fontana) (Fig.4.) where the religious and civil powers had their headquarters. During the municipal age of Rimini, it did not undergo significant morphological changes. Punctual interventions are carried out on prestigious ecclesiastical and political buildings. Unlike other municipal city-states, Rimini does not present expansion in multiple phases since the complete circle of the **Aurelian walls**, and the cardo-decumanic layout dictate the morphological development and function as an urban generating structure. (Crapolicchio, 2020)

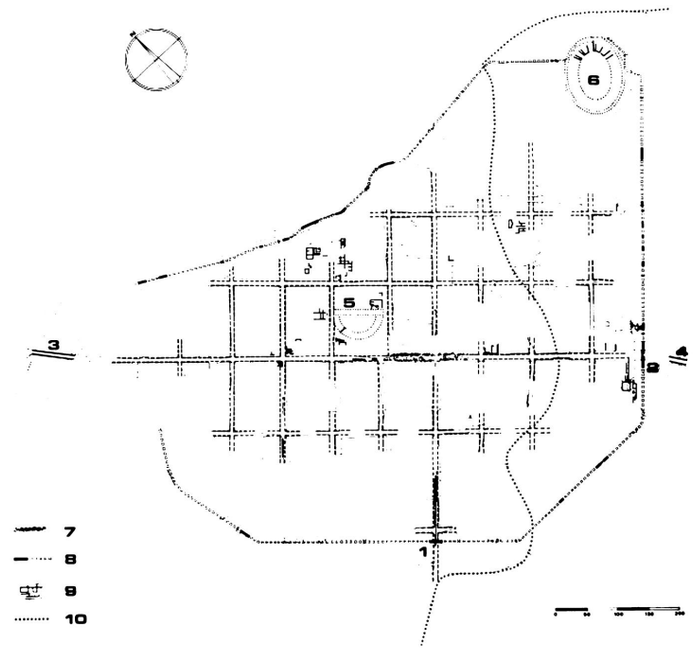



Fig.26, Map of Roman Rimini,Rimini, Gobbi, G., Sica, P. (1982)
1.Porta Montanara; 2.Arch of Augustus; 3.Bridge of Tiberius; 4. Bridge over the Ausa; 5. Theater; 6. Amphitheater; 7. Remains of the road pavement; 8. Aurelian walls (findings and presumed route); 9, Significant findings of masonry, mossic structures, etc; 10.Percorso della Fossa Patara

Fig.27, Piazza Tre Martiri, Rimini, Gobbi, G., Sica, P. (1982)

Fig.28, Piazza Cavour (Piazza Della Fontana), Rimini, Gobbi, G., Sica, P. (1982)

**In the 19th century, Rimini was one of the most active cities on the revolutionary front. During the World War II, the city was the scene of numerous clashes and bombings.**

**III. The historical center_19th Century**

By the end of the 19th century, Rimini left the enclosure of the city wall and began to expand to the northeast. **North-East Town Plan (1906)** (Fig.5.) is the first expansion plan of the city in the area between the old center and the Marina. a large checkerboard layout, completed in two stages between 1907 and 1929.

**IV. The historical center_current status**

In ancient times, city walls were used by builders to protect themselves. In modern times, people need more connectivity. Therefore, the city wall is slowly disappearing from people' s sight. After several explosions and wars, many ancient city walls and monuments have been completely destroyed or only left some relics. Some of this relics has been integrated with people's lives.

A Roman theatre was built in the first block east of the Forum. This building represents a pivotal point in the observation of Rimini's urban stratification as it remained incorporated into the residential fabric in the early medieval phase of decay and rebuilding of the city. To the south of the Theater is the Lettimi Palace, whose history can be traced back to the Renaissance period. It was destroyed during World War II, and the remains are still preserved, with some broken walls, doors and windows. The ground and walls have been occupied by plants. Seen from the street, it looks like a green wall, blending with the city. (Fig.6.)

The building fabric is defaced and undone in many places with the degradation of some monumental buildings. The latter are stripped of their materials and erased from the visible shape of the city. The amphitheatre is part of these ruins, of which only a few ruined arches covered with plants remain, more similar to natural cavities than to architectural works. As a result, the countryside returned to take possession of the urban space through areas that were wild or planted with vegetable gardens. (Fig.7.)

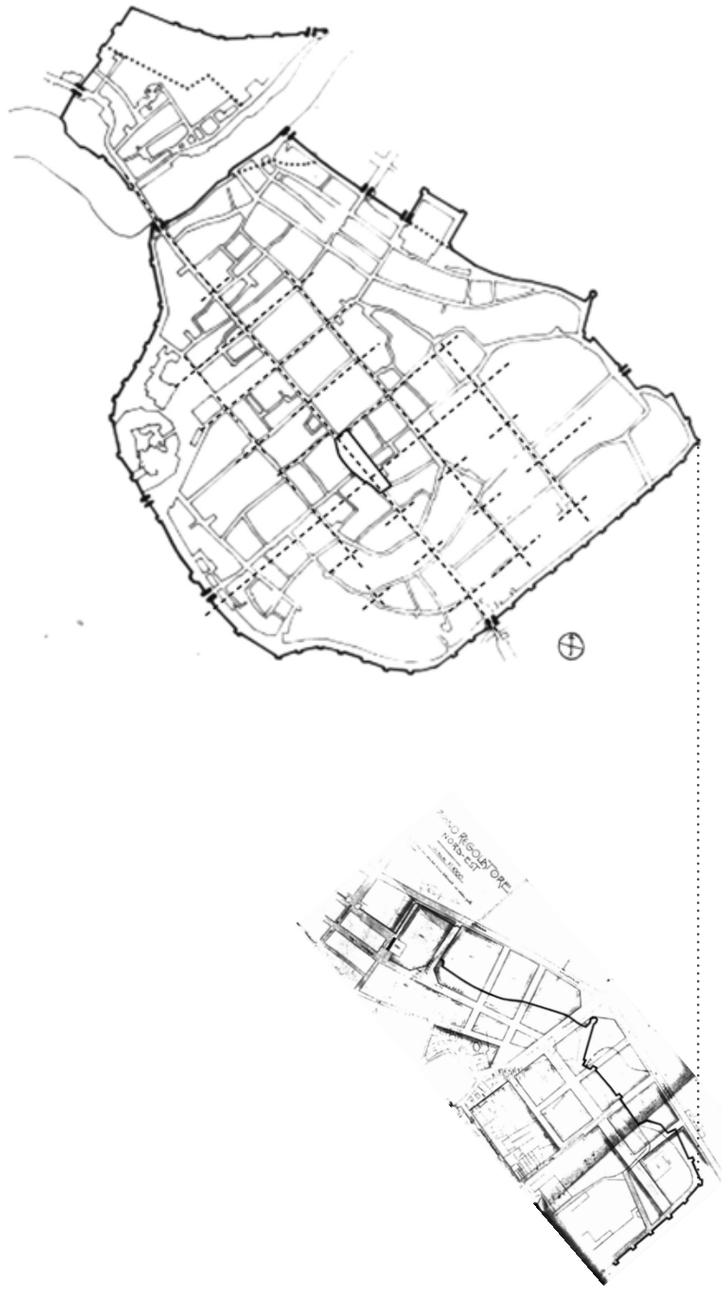


Fig.29, Piaro Regulator Northeast (1906), Rimini, Gobbi, G., Sica, P. (1982)

**IV. The historic center_debate_1965~1975**

De Carlo argues that "the ancient center has value only if its constructions and forms can still be used (including, of course, the contemplative / aesthetic use) by a contemporary community: otherwise it has no value"; consequently, "the purpose of an urban intervention on the historic center cannot be that of its block in its present state nor that of its reintegration to a pre-existing state, but it can only be its revitalization".

According to De Carlo, first of all it is necessary to verify the contemporary use of the historic city, to involve citizens in interpreting the needs of the community, to intervene to adapt the historic city to the social, economic and cultural needs of the community; it is therefore necessary to have the ability to listen, but also the ability to choose.

Rimini clearly bears the signs of the events that have profoundly altered it in the last 50 years, and currently does not present a unitary historical fabric: there are important monuments, some shreds of minor connective tissue, but also parts that are decidedly and definitively upset and irrecoverable. De Carlo has noticed that citizens intensely use the historical environment, appropriating and manipulating it to adapt it to current needs; what guarantees this link between the community and the historical environment are not the fabrics or the rare monuments, but the scale, the spatial relationships between the building plot and the city community: the conservation of this scale, and the intensity of the relationships that is related to it, will be the problem that the Plan will have to solve and guarantee, together with the preservation of the surviving historical values.



Fig.30, Lettimi Palace & Theatre, Rimini, Gobbi, G., Sica, P. (1982)

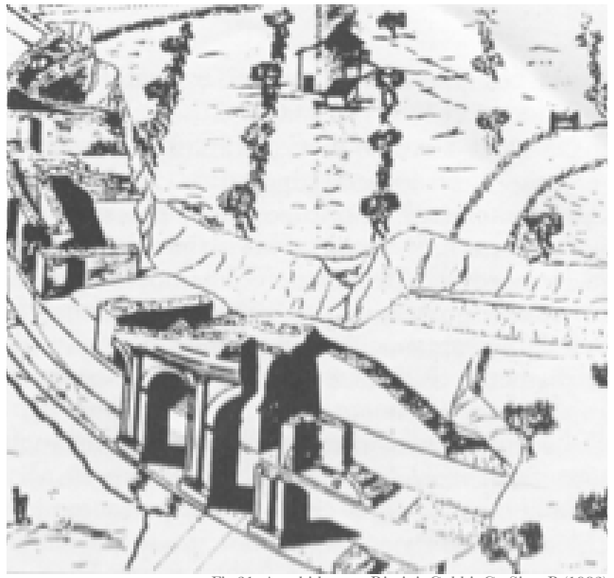


Fig.31, Amphitheatre, Rimini, Gobbi, G., Sica, P. (1982)

**Rimini – where margin (border & edge) of the old city still remains and visible in most parts of the city and it plays an important role even in the current days.**

**ON THE MARGIN** / by Tan Wen Yee

**I. River & Monument**

Rimini is a city that sprawls along the Adriatic Sea, on the coast between the **rivers Marecchia** (the ancient Ariminus) and **Ausa** (ancient Aprusa). The Marecchia river runs through its valley and the plain in a very large riverbed and, after confluence with the Ausa, it flows into the Adriatic sea through a deviator between San Giuliano Mare and Rivabella, while the ancient riverbed is used in its last section as the city's harbour. The Marecchia, usually with little water flow, was subjected to periodic, destructive floods near its mouth, where the riverbed became narrow after various bends: for this reason it was deviated north. Ausa creek, which was the eastern limit of Rimini for many centuries, was deviated as well after World War II, and its original riverbed was filled and turned into an urban park.

**Ponte di Tiberio** is one of the important monuments in Rimini, situated on river Marecchia, the construction begun under Emperor Augustus in 14 AD, as the inscription on the internal parapets recalls, and completed under Tiberius in 21. Built in Istria stone, the bridge consists of five arches that rest on massive pillars with breakwater spurs set at an oblique angle with respect to the bridge's axis in order to follow the current. The bridge's structure on the other hand, rests on a practical system of wooden poles. Until today, it still **connects the city centre to Borgo San Giuliano**- which was once a humble neighbourhood inhabited by fishermen and offers an exciting glimpse into the past. It is a village with total immersion in Fellini's Rimini where murals with characters and scenes from the most important Fellini films are reproduced on the walls of the village, it then leads to the consular roads - Via Emilia and Via Popilia that lead north, and it is currently opens only for **pedestrian and light vehicular circulation**.

Fig.32, From Ponte di Tiberio to Borgo San Giuliano, Rimini, Wen Yee Tan (2021)

## II. Rimini Riverside Development

The current Rimini has an extensive parks system that includes a series of **large urban parks**, created along the old riverbeds of Marecchia and Ausa. Neighbourhood parks, gardens and tree-lined boulevards were largely incorporated in the recent city development.

Being Rimini's largest and most spectacular park-**Marecchia Park** that also known as XXV Aprile Park is located right in the heart of the city centre and is perfect for a stroll or some relaxation on the edge of the beautiful town square overlooking the water Piazza sull'Acqua. Built at the foot of the Ponte di Tiberio, where the ancient Marecchia River once flowed (before being diverted in the 1930s), **Piazza Sull'acqua** is the public place redeveloped in 2017-2018 that surrounds it. It is the terminal part towards the sea of the Marecchia Park and the ideal place for the realization of cultural and spectacular events in a frame of absolutely unique naturalistic and architectural beauty. Many activities and few markets were held in the new piazza since its opening, the spacious venue and well-designed public area helped to attract the citizens to utilize this place. From Piazza Sull'Acquathat overlooks the reservoir of the old river Marecchia, the Ponte di Tiberio, stands immobile and steady, showing the city all its beauty. A new floating walkway connects the left and right docks of the ancient port facing the bridge, is considered one of the most beautiful in the world.

Nearby, the **Archaeological Park "Le pietre raccontano"** offers the chance to discover the long history of the bridge with a long walk on foot just an inch from the water and offers a panoramic terrace towards the Marecchia park that will leave the users breathless.



Fig.33, Piazza Sull'Acqua, Rimini, Wen Yee Tan (2021)

Fig.34, Flower market on Piazza Sull'Acqua, Rimini, Wen Yee Tan (2021)

## III. Past and Present of the City Wall System

Rimini's city walls were built by Malatesta, it was divided since the Middle Ages in four districts (Rioni): Cittadella, Clodio, Pomposo and Montecavallo. The boundaries of these districts are not known, but it is assumed that they followed the current Corso d'Augusto, Via Garibaldi, and Via Gambalunga. Additionally, the ancient coastline was situated much farther inland than today's, it gradually shifted outward over centuries and the new land was developed throughout the 20th century.

The **city walls,** with its towers and gates, and the castle constituted for centuries as an **important defensive system** for city life under many aspects, such as the protection from external dangers, an essential element of the urban planning and control over trade with the surrounding area.

Rimini had a city wall since its foundation (268 BC). In the third century AD, a new fortified system was built which remained operational for a long time, until the Middle Ages, when new military requirements required the construction of a **new fortified circle.**

**Castel Sismondo**, wanted by Sigismondo Pandolfo Malatesta as a noble residence and fortress at the same time, crowned the Malatesta defensive system by connecting to the city walls.

As military techniques and political conditions changed, between the end of the eighteenth century and the mid- nineteenth century, almost all the city gates were **demolished and replaced** by customs barriers, further destruction occurred in the twentieth century, when the urban expansion crossed the ancient and now obsolete limit of the walls. There are a total of 4 city gates of old Rimini which still exist today and outside of the city walls, there are f**our boroughs (Borghi)- Borgo San Giuliano, Borgo San Giovanni, Borgo Sant'Andrea (or Borgo Mazzini) and Borgo Marina**,which were entirely incorporated to the city by the urban sprawl in early 20th century.



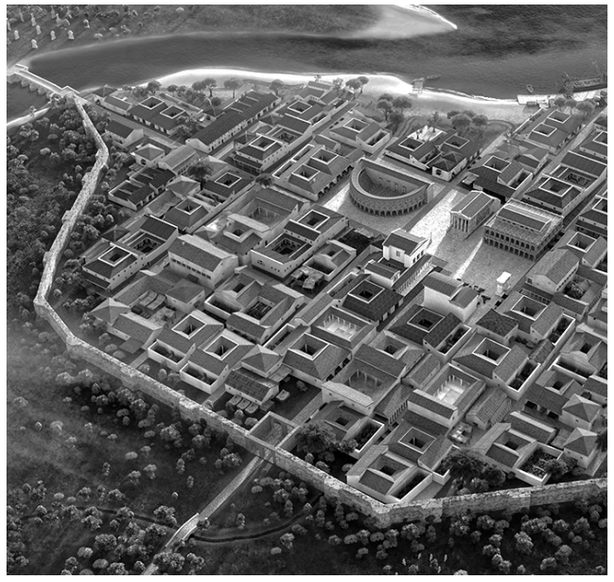


Fig.35, Rimini with ancient city wall system, Arimini Caput Viarum

Fig.36, Rimini with ancient city wall system, Arimini Caput Viarum

**City Gate 1 - Arco di Augusto**

The triumphal Arch of Augusto (Arco di Augusto) is the **oldest preserved arch in northern Italy**, and it is also one of the main attractions in the old town of Rimini. It marks the entrance to the city for those coming from the Flaminia, the route traced by the consul Flaminio in 220 B.C. to connect Rome to Rimini. Being a city gate and honorary arch, Arco di Augusto was erected in 27 B.C. by the will of the Senate in celebration of Octavianus Augustus, as manifested by the inscription placed above the arch. The Arch is located on the South side of the old town, then it was a **city gate** and was built into the **defensive walls** of the city, marking a main road in Rimini. Sitting just outside the largest entrance to the city where the majestic Arco d'Augusto stands, there is Borgo San Giovanni. This neighbourhood historically developed around the end stretch of the Via Flaminia, and reminants of its past remain to this day, such as its lively and welcoming streets packed with bars and quaint shops.

**City Gate 2 – Porta Galliana**

Porta Galliana is a city gate that was built in the thirteenth century to **connect the city with the port area** along the Marecchia river. It was part of the defensive walls due to the enlargement of the city in the Frederick era (13th century). It replaced another door **moved slightly further** into the city. Currently, the area is undergoing construction for the recovery and redevelopment of the area, that aims to enhance the city gate and the fact that the historical-archaeological area that can be visited and accessible to all visitors and the desire to restore an ancient artefact as it is the only medieval - Renaissance city gate that is still usable, and largely recoverable, existing in Rimini.

**City Gate 3– Porta di Sant'Andrea**

The Montanara Gate, also called the "Porta di Sant'Andrea", is the only example in northern Italy of an **urban gate** of the **Sellian age**. Dates back to the first century BC, it was also part of a general reorganization of the city's defensive walls attributed to Sulla. From 1400 to 1809, it was the only access point to the



Fig.37, View of Arco di Augusto from San Giovanni, Rimini, Hongye Wu (2021)

Fig.38, Porta Galliana, Municipality of Rimini

city of Rimini from the mountain. The rounded arch, in blocks of sandstone, was one of the two entrances of the door that allowed access to the city for those coming from via Arezzo, along the Marecchia valley. The double archway facilitated traffic, channeling the path out of Ariminum , through the cardo maximus, and the one in entrance, in parallel passages. In the first centuries AD, the arch facing north was buffered and the door, thus resized to a single arch, continued to mark the entrance to the city until the Second World War. It is the **Roman monument** that suffered the greatest damage during the **bombings of the Second World War**, despite having been protected with sandbags. In 1949, when the war was over, the ministry established that the gate had **no monumental value and ordered its dismantling**. It was rebuilt in the courtyard of the Diocese of Rimini. However, in 2003, it was then relocated to its original position, at the extremity of the Cardine Massimo of the old Roman city.

Outside the city walls (near Porta Montanara) is where Borgo Sant'Andrea (Borgo Mazzini) located, this district was once home to the Foro Boario and is now a beautiful neighbourhood lined with beautiful green parks. The long road to Covignano also begins here and runs from the old town into the hills, offering splendid views of the Adriatic along the way.

**City Gate 4– Porta Gervasona**

The Porta Gervasona or Portello belonged to the **defensive system of the Malatesta Walls**, which flank it and surround the whole village of S. Giuliano and date back to the 15th century. It can be reached from the promenade that winds from the Ponte dei Mille to the small church entitled 'Madonna della Scala'. Continuing along via Madonna della Scala, the remains of the walls and towers with the passages still accessible.

**IV. The Current Status**

In recent years, this **dynamic city** has seen the completion of a participatory **urban regeneration plan** that has radically and permanently innovated the city. Rimini's city council has been investing and planning a lot of redevelopment activities for the riverside urban parks and even to rebuild the ancient wall or integrating them into the new functionality of space today. It helps not only to promote tourism but at the same time, to bring the **balance between the old and new** memories that is still intact in the city.



Fig.39, Porta di Sant'Andrea, Rimini Turismo

Fig.40, Porta di Gervasona, Rimini Turismo

**The presence of the tall building in a compact inline urban fabric, reasons and relations with the urban fabric.**

## ALIENS IN THE URBAN FABRIC OUTSIDE OF THE WALL / by Dai Wanping

### I. The urban fabric outside the wall

Outside the historical center surrounded by city walls, which is another mark of history, connecting the new and the old urban fabric. The main streets of the ancient urban structure of Rome extend to the land beyond the city walls and become the main roads outside the historical center, the Cardo and decumanic. Among them, the main street of San Givanni originates from the Flaminia and connects the city and Rome. The urban fabric of the city center is full of voids and arranged compactly. Even though the city wall separates the center from the periphery, the traditional urban fabric does not totaly disappear and it continues with the buildings that grew along the central axis. The unique thing is that several buildings with completely different ratios of length, height and width that suddenly appear on the periphery is particularly eye-catching and the high-rise building is even ten meters away from the neighbouring building. At the same time, the side of the tall building is exposing. Some buildings are even without any decoration and windows, which show a blank façade. Those independent huge buildings occupy the blocks and become the protagonist. Most of them seem to be abandoned by history and are out of place, and some of them are connected with the surrounding historical buildings to form a strong contrast.The skyline of the whole street is like jagged teeth. Why do buildings here take on a unique shape? They seem to be the last struggle in the process of urban transformation. Leaving this area to the south, the texture of the historic center is completely broken. People no longer gather in an apartment and share a courtyard.

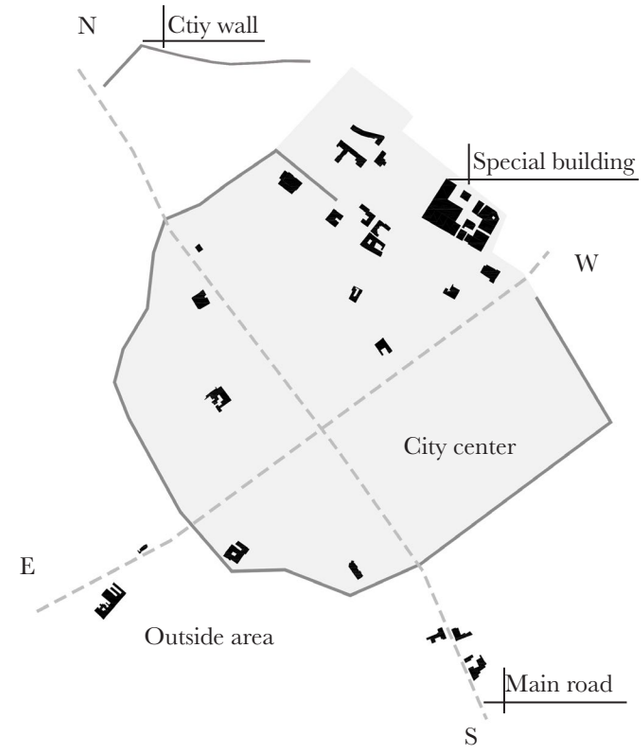



Fig.41, The Historical Center and Outside, Wanping Dai (2021)

The density of buildings begins to decline. Instead, they choose to own their villas and build fences to divide their domain. There are more high-rise buildings by the sea, and the distance between the buildings is gradually widening.

It can be observed from the figure 2 that the fabric of the city center and its exterior has changed. The periphery area has become a transitional area connecting the historic center and the new fabric. Besides, the historical fabric and the geometric form of the sites make the urban fabric more complex nowadays. Places like San Giovanni and Mazzini have a more substantial historical mark, and all thanks to the preservation of the church and the historical urban fabric for centuries, it becomes its unshakable element.

**II. The formation of the aliens**

There were several attempts to trace the appearance of these **alien buildings**. From the 19th-century city plan, the main road leading to the waterfront marks its opening to the sea. Before that, around the historic center, the urban fabric of the old city continues. However, in 1912, Rimini began to focus on coastal planning, ushered in the most crucial turning point, and began to develop into the tourism industry, providing cost-effective villas and rental houses for the nobility and middle class. Also, due to the Second World War, some historical buildings were destroyed, which accelerated the construction of the urban image based on mass tourism***(Grazia Gobbi*** , ***Paolo Sica, 1982)***. Thus, the periphery historical center became a testimony of a turning point.

Figure 3 shows Rimini's plan in 1882. The coastal area was planned to be developed. The empty space was divided into a chessboard layout, since then, the city's development has moved in this direction. The substantial opening of the ancient city indicated on the map is towards the sea, with the establishment of the railway station. Above all, with the connecting axis to the bathing establishment, at a scale hitherto unknown to the

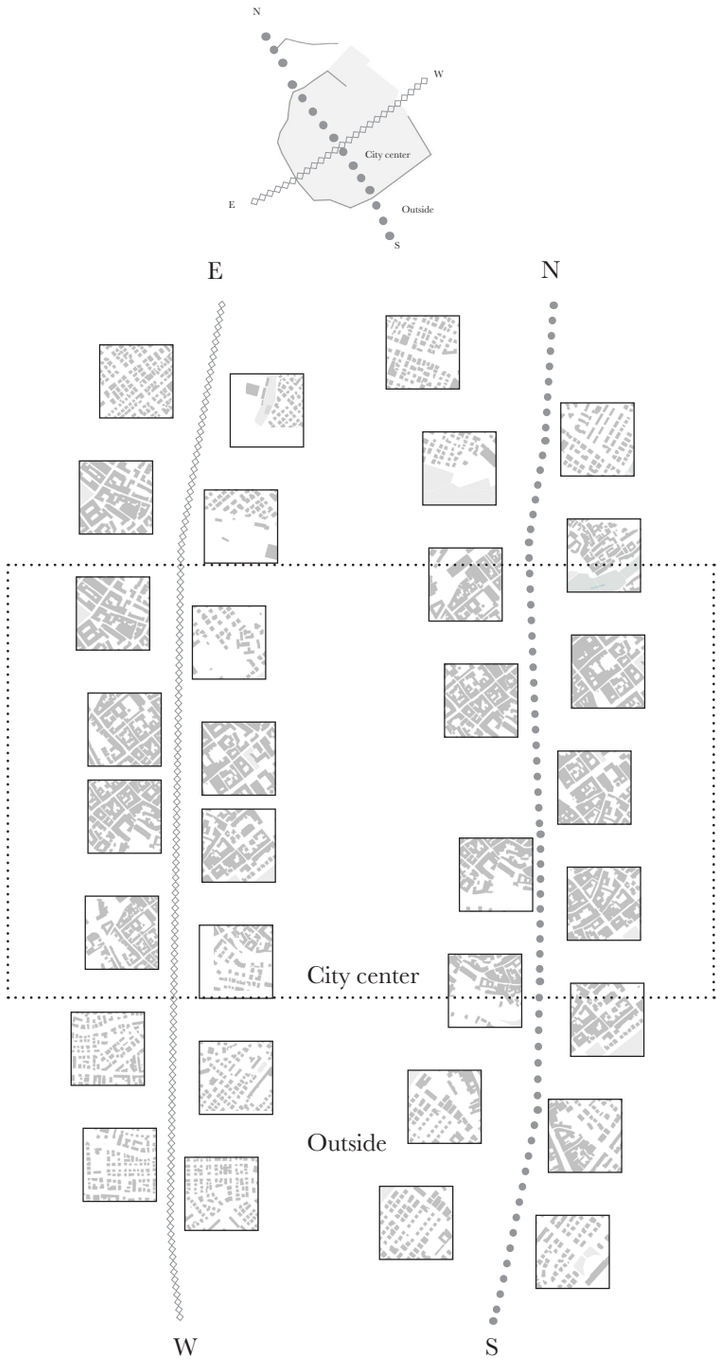



Fig.42, Changing of the Urban Fabric Along the Main Road, Wanping Dai (2021)

intramural city. The same field depicted on the map, in which the ancient city is no longer the center of gravity of the representation, clearly denounces the different involvement of the territory in the city's life. The new weight was assumed by the "Marina," albeit documented at the beginning of urbanization, but felt like a pole of convergence of new urban interests ***(Grazia Gobbi, Paolo Sica, 1982).***

There is no way to judge from the vertical direction when these high-rise buildings appeared. However, it could be speculated that under this unsaturated expansion, the periphery of the historic center is transforming. The evolution of the city urgently needs more housing space and population to support Rimini's industry. This rapid demand has led people to seek more space outside the historic center. Coupled with the impact of post-disaster reconstruction factors, the target is locked in partially destroyed residential buildings. These buildings have been rebuilt and integrated with the characteristics of modern architecture, aiming to provide people with more economical housing. Therefore, the city we see today continues the old texture but with few appearances of high rising buildings. From the plans of those alien buildings today, it appears that they are of the same type as the neighboring buildings. However, Rimini divided the blank area with a checkerboard layout ***(Crapolicchio, 2021).*** Many villas in the remaining regions aim to provide the middle class with the private territory for vacation and leisure differences in the urban texture. These alien buildings are the energy supply in this process. The fabric of the historic center continues, but the height presents differently.

This phenomenon is considered as the degradation of traditional urban centers. For instance, since Rimini began to expand outward with the development model of the historical center, the buildings' plan remains the traditional Italian typologies: The ground floor is for shops, and the rest are for residences, sharing a public area as a transportation connection. A building

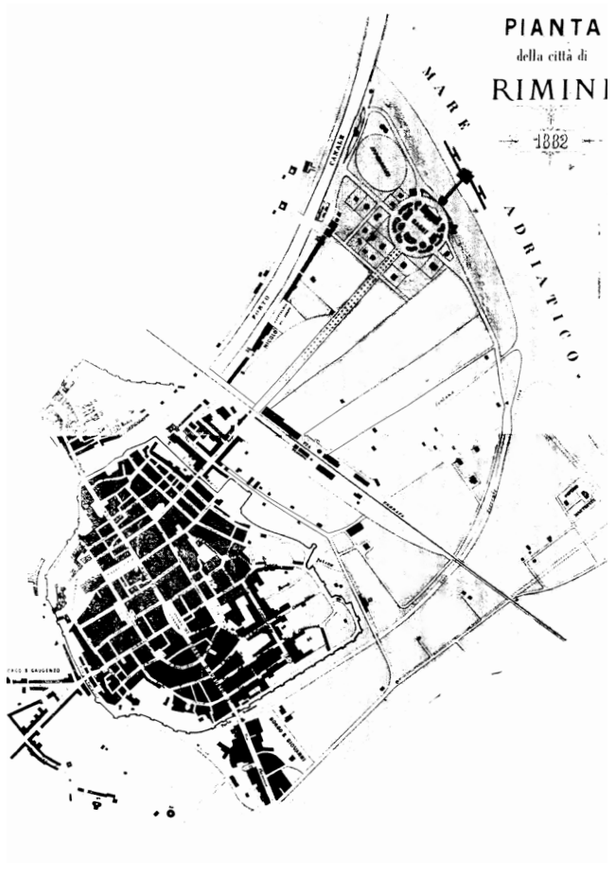



Fig.43, Plan in 1882, retrive from Gobbi, G., Sica, P. (1982), redraw by Dai Wanping (2021)

usually comprises four households with one staircase, so the aspect ratio often does not deviate from the average. In the periphery of the historical center, the ground level has not changed much. Still, there are usually more or fewer differences in building facades and heights, which is proof of the transitional phase of the historical center in the process of degradation. What's more, the degradation of the city is not only manifested in the characteristics of the building, it could cause a series of influences, reflected in the economy, culture, population, urban form, etc., and these factors, in turn, affect the city's construction. For example, with the expansion of the coast, the population is constantly migrating from the old historical center, leading to the disintegration of the social structure of the historical center. In addition, due to insufficient capacity and financial support, there has been a transformation for purely commercial purposes or a lack of precise positioning to solve the current dilemma. The characteristics of these alien buildings in Rimini reflect in the density and the facade (high buildings with blank walls).

**III. About future**

Interventions will be carried out at this node connecting the historic center. When the need to restore the historic center arise, following questions should be considered :
1. Since there are many blank walls in Rimini, to repair the defects in the urban texture, what intervention should be implemented to integrate these buildings into the urban texture better?
2. How to deal with environmental problems, streets, and courtyards?
3.How to re-attract people to the city center by intervening in the plot?

These issues play a crucial role in urban regeneration. In future interventions, Rimini aspires to take on a new look and provide people with a new development idea through the intervention of these aliens. Therefore, by studying the reasons for the emergence of these aliens buildings, can clear understand of the responsibilities on urban regeneration and tracing the roots. It aims to provide people with an ideal utopia and restore their cherished historic center.


Fig.44, Building Outside the Wall, Wanping Dai (2021)

# Rimini, and urban regeneration. From the Regional Law n.20 of 24/03/2000 to the Regional Law n. 24 of 21/12/2017 to refer to Urban Planning Building Regulations currently in force, pending the future Piano Urbanistico Generale PUG

**PANORAMA ON THE CURRENT RULES** / by Alessia Portigliatti Pomeri

Urban regeneration must guarantee a valid usability of public spaces and affirm the environmental sustainability of the transformations. Historic centers fall within these contexts as they can be affected by particular and widespread forms of decay as well as abandoned areas. To promote and combine their urban and energy adaptation, a system of rules, incentives and agreements between public and private actors is necessary.
On urban and energy regeneration at national and regional level, work is still in progress and the regulations are partial and not yet organically defined.

## I. Regional Law of Emilia Romagna

With adoption of the Emilia-Romagna Regional Urban Planning Law no. 20 of 24/3/2000, the government of the territory is profoundly innovated in content and forms, regulating the relations between territorial and local authorities on urban planning according to the principles of subsidiarity and cooperation between bodies, environmental and territorial sustainability, simplification of procedures and planning tools.

The Piani Regolatori Comunali are modified in their characteristics and procedures, separating their contents into three new general planning tools:

Piani Strutturali Comunali (PSC), Piani Operativi Comunali (POC) and Regolamenti Urbanistici Edilizi (RUE). The contents of the municipal planning remain unchanged, but are organized separately and structured with three different degrees of definition of the choices and contents of the planning: each of the three municipal urban planning tools will be a necessary condition to define a complete planning discipline and the integration of their contents will in fact constitute a “Piano Urbanistico Comunale" with rules and forecasts for the planning of the municipal territory.

Fig.45, Orthophoto map of Rimini,Google Earth Pro (2021)

**General Planning Tools**

The RUE (Regolamento Urbanistico Edilizio) contains the related regulatory and regulatory aspects construction activity and health and hygiene aspects; it is configured as the union of the Building Regulations and a part of the Norme Tecniche di Attuazione of the past Regulatory Plans and regulates the interventions in the consolidated area and in the rural area.

The rules of the RUE apply to the entire municipal territory, are valid indefinitely and serve to clarify the urban planning and implementation terms of the PSC and the POC and the building terms and the typological and hygienic characteristics of direct building interventions. It brings together the municipal provisions relating to the urban and building profile: the Regulation is strictly connected to the provisions of the Structural Plan and in fact contains the discipline to carry out, through the authorization title alone, the transformation interventions permitted by the Structural Plan itself in the consolidated urban territory. and in the agricultural territory, interventions on heritage existing building, completion, maintenance and modernization interventions of technological systems and urbanization in existing production areas.

In the areas to be redeveloped, the interventions of new settlement, urban restructuring and environmental redevelopment are programmed by the POC (Piano Operativo Comunale), within the limits defined by the PSC (Piano Strutturale Comunale), which defines specific contents, methods and terms and implement upon approval of an Piano Urbanistico Attuativo extended to an entire sector defined by the POC, or to part of it as defined by the POC itself.



Fig.46, Sea park, Piazzale Kennedy, Alessia Portigliatti Pomeri (2021)

Fig.47, Piazza Cavour, Historical center, Alessia Portigliatti Pomeri (2021)

**II. Analysis of RUE Categories**

From the Regional Law n° 24/2017 to the formation process of the Piano Urbanistico Generale (PUG)

Following an initial phase of experimentation of the Regional Law n. 20 of 24/3/2000, LR 6/2009 'Government and solidarity redevelopment of the territory' has made further changes aimed at defining criteria for streamlining and simplifying procedures with objectives of reducing land consumption, urban redevelopment, incentives for inter-municipal planning in particular strengthens the objective of redeveloping the existing building heritage (also providing for appropriate urban planning incentives) and the role of the Provincial Territorial Coordination Plan (PTCP) "by explicitly assigning it the task of establishing the conditions and limits on the consumption of non-urbanized land as well as the requirements of territorial sustainability and municipal urban planning forecasts which entail significant effects that go beyond the administrative boundaries of each entity ".

LR 20/2000 and the subsequent LR 6/2009 were an opportunity to identify and evaluate "good practices" of transformation of the territory, unfortunately, perhaps traditional planning prevailed over the culture of urban design and the assessment of the sustainability of building transformations for the recovery of urban spaces.

With art. 7 ter added by art. 16 of the L.R. 6 July 2009 n. 6, later integrated with the addition of paragraphs 3 bis and 3 ter by art. 30 of the L.R. 18 July 2014 n. 17, the ways in which urban planning can pursue the objective of promoting the qualification and functional recovery of the heritage are identified
existing building, in compliance with the regulations relating to buildings of historical-architectural, cultural and testimonial value and in line with the historical, landscape, environmental and urbanistic characteristics of the areas where such buildings are located.



The law provides that urban planning establishes "volumetric incentives for:

a) promote urban redevelopment, also through building interventions that qualify urban fabrics and, at the same time, discourage settlement spread and land consumption;
b) achieve a significant improvement in the energy efficiency of buildings, with the full application of the energy performance requirements of buildings and energy systems;
c) incentivize the implementation of seismic adaptation or improvement interventions, in application of the technical regulations for constructions;
d) promote the elimination of architectural barriers;
e) ensure compliance with the health and hygiene requirements of the inhabited areas and living and working rooms, as well as the requirements relating to plant safety, fire prevention and construction site safety;
f) carry out the simplification and speed of the authorization procedures, while ensuring that the necessary checks are carried out on projects and works in progress
of work and on those made ".

This article is very interesting as it provides not only for the possibility of recognizing surface incentives outside the dimension of the Plan, but also exceptions to the distances provided for by Ministerial Decree 1444/1968. Any volumetric incentives recognized for the intervention can be realized with the raising of the original building, also notwithstanding Articles 7, 8 and 9 of Ministerial Decree no. 1444 of 1968, as well as with out-of-shape expansion of the original building where the minimum distances between buildings or those from pre-existing buildings in front, if smaller, are still respected.

Finally, it is specified, with paragraph 3, that these provisions "prevail over the various forecasts on building density, on the height of buildings and on the distances between buildings provided for by the municipal urban planning tools".

There are also some subsequent changes that were made to Regional Law 20/2000 by Regional Law 15/2013 in favor of a shared and integrated vision of the building regulations and respect for environmental constraints deriving from superordinate planning: for example, changes have been introduced to the Article 19 (Carta unica del territorio) of Regional Law 20/2000 with the introduction of Article 3-bis (and subsequent ones) which states that "in order to ensure the certainty of the urban and territorial regulations in force and of the constraints on the territory and, consequently, simplify the presentation and control of building permits and any other activity to verify the compliance of the planned transformation interventions, the Municipalities equip themselves with a specific cognitive tool, called "Table of constraints", in which all the constraints and prescriptions that preclude, limit or condition the use or transformation of the territory, deriving further that by the urban planning tools in force, by the laws, by the superordinate, general or sectoral plans, or by the administrative acts of affixing protection restrictions. This deed is accompanied by a specific document, called "Form of constraints", which reports for each constraint or prescription, a summary indication of its content and the deed from which it derives. "

On 1 January 2018, Regional Law no. 24 of 21 December 2017 entitled "Regional discipline on the protection and use of the territory", becomes the new urban planning law of Emilia-Romagna. It sees among its main objectives the reduction of urban planning forecasts and the introduction of the principle of land use with zero balance, new devices for urban regeneration and the redevelopment of buildings, the protection of the territory and respect for legality.

In particular, the regulation of land consumption provided for in the law, which establishes a ceiling on new settlement expansions, is set at an additional 3% compared to the current urbanization and to be saturated until 2050. It provides for the PUG (Piano Urbanistico Generale) Single Municipal Plan which replaces PSC RUE and POC.



The Piano Urbanistico Comunale has the obligation to devote all the attention, choices and tools to the existing settlement system, to the rapidly evolving demographic and social structure, to the morphology and environment of the built city, and to the vast and complex scope of the portions of territory "compromised" by urbanization, to be completely rethought and redesigned. The new characteristics and requirements thus become those of resilience, that is, the ability of the urban organism to adapt to environmental and social challenges and also to react positively to traumatic emergencies; the study of urban metabolism, aimed at creating or strengthening virtuous circuits in the use of resources and in the growth of well-being (circular economy); of the transformability of urban fabrics, to make them participate in a new design in which the social dimension of public and private spaces represents the guideline for generating a condition of quality of life and sustainability of choices.

The formation of a Piano Urbanistico Generale is still in progress, therefore reference is made to the regulatory instrument in force.
Below is an excerpt of the rules of the Rue concerning the area of the historic center. Articles 48, 49 and 50 regulate possible interventions on buildings located in the historic center.

Below are the articles present in the RUE that regulate the historic center.

TITOLO II – CLASSIFICAZIONE AMBITI E DISCIPLINA INTERVENTI EDILIZI DIRETTI
CAPO 9 – CITTA' STORICA ED EDIFICI TUTELATI ESTERNI

Art. 48 - Disposizioni generali
1. Le disposizioni del presente Capo disciplinano gli interventi ammissibili nella Città Storica (ambito ACS), nonché quelli effettuabili sugli edifici soggetti a tutela in quanto riconosciuti di interesse storico architettonico o di pregio storico-culturale e testimoniale, collocati in altri ambiti del territorio comunale.
2. Per gli edifici soggetti a tutela esterni alla Città Storica, le disposizioni riguardanti la categoria d'intervento del presente Capo prevalgono su quelle dell'ambito specifico in cui ricadono.
3. Costituisce la Città Storica la porzione di territorio individuata dal PSC ai sensi dell'art. A-7, comma 1, della L.R. 20/2000 s.m.i..
4. Le norme del presente Capo, in relazione al controllo qualitativo degli interventi sugli edifici e sugli spazi esterni, vanno integrate con le disposizioni dei successivi Capi 16 e 17, nonché con le prescrizioni di cui all'art. 9 comma 3 in relazione alla SP.
5. La disciplina particolareggiata riguardante la Città Storica è costituita:
• dalla Tav. 2-3 del RUE: "Città Storica: categorie di tutela e unità di intervento. Funzioni pubbliche e
di interesse pubblico";
• dalle norme del RUE;
• dalle Tavole dei Vincoli e dalle Schede allegate;
6. Le prescrizioni previste nei successivi articoli, si integrano con le modalità di intervento di cui al precedente Capo 4 richiamate in ogni categoria di tutela, ed in caso di contrasto prevalgono su di esse.
7. Qualora la rappresentazione planimetrica di un edificio non corrisponda a quella reale, dovrà essere applicata ugualmente la categoria di intervento indicata in cartografia.
Qualora nella particella catastale sussista unicamente un edificio non classificato, dovranno applicarsi le modalità MO, MS, RRC.



8. Nell'ambito della zona omogenea A gli interventi di RE seguono la disciplina del D.P.R. 38=710 s.m.i..

Nel suddetto ambito, in conformità all'art. 5.1, punto 8 del PSC, laddove consentita la modalità RE per gli edifici di categoria C1, C2 e D, non sottoposti a tutela di cui al D.Lgs. 42/2004 s.m.i., è consentita la demolizione e ricostruzione, qualificata RE, senza incrementare la sagoma planovolumetrica del fabbricato esistente, entro il limite del sedime originario con modifica dei prospetti e delle sue caratteristiche planivolumetriche e tipologiche. Negli edifici tutelati sparsi, laddove consentita la modalità RE per gli edifici di categoria C1 e C2, non sottoposti a tutela di cui al D.Lgs. 42/2004 s.m.i., è prescritto il mantenimento della sagoma e del sedime esistenti, fatta salva la sola deroga al sedime ai sensi dell'art. 8 comma 5.

Per gli edifici di categoria C2 inoltre, la ricostruzione delle porzioni mancanti dovrà rispettare quanto indicato al successivo art. 49.
9. Fatte salve le possibilità di ricostruzione, da valutarsi secondo i casi per i fabbricati individuati nelle unità di intervento speciali di cui all'art. 5.1 comma 13 del PSC con la categoria A e C2, nonché gli interventi ricostruttivi concessi dal precedente art.8 comma 4, con RE è inoltre ammessa la possibilità di ricostruzione del volume di edifici parzialmente crollati precedentemente alla data del 29/03/2011, ai sensi dell'Allegato all'art. 9, lettera f), della L.R. 15/2013 s.m.i., a condizione che l'intervento sia esteso e sottoscritto a tutti gli aventi titolo dell'intera UMI di appartenenza.
10. Per i corpi accessori individuati in cartografia con apposita simbologia, è consentito l'intervento RE nel rispetto delle seguenti condizioni:
• mantenimento della SU e/o della SA preesistenti;
• H max: ml. 2,50;
• distanze tra pareti finestrate: almeno ml. 3,00;
• distanze da strade e spazi pubblici: almeno ml. 3,00;
• distanze dai confini di proprietà: Codice Civile.

11. La tutela delle aperture esterne prevista nei successivi articoli non riguarda i lucernai posti sulle falde di copertura, per i quali si rimanda alle prescrizioni dei successivi artt. 91 e 122 secondo i casi.
12. Nei fabbricati esistenti a destinazione residenziale per almeno il 51% di SC, fermo restando le possibilità di deroga ai sensi dell'art. 7.5 del D.M. 236/1989 s.m.i., è consentita l'installazione di ascensori/piattaforme elevatrici interni, nel rispetto dell'art. 8.1.12 e 8.1.13 del citato D.M., contestualmente alla riduzione delle rampe scale esistenti, a condizione che la larghezza di tali rampe non sia inferiore a cm. 80 e che l'intervento complessivo non comporti la demolizione (anche parziale) del fabbricato. In caso di dimostrata impossibilità strutturale, l'ascensore potrà essere installato anche con dimensioni inferiori a quanto previsto dai menzionati art. 8.1.12 e 8.1.13.
Nei fabbricati di categoria A e B non è ammessa la riduzione delle rampe scale esistenti.
13. Nel territorio urbanizzato, oltre all'applicabilità dell'art. 9 L. 122/1989, compatibilmente con i criteri di tutela riportati nel presente Capo e per le destinazioni non residenziali, è consentita la realizzazione di un solo piano interrato ad uso parcheggi P3, anche parzialmente o totalmente fuori sedime, indipendentemente dalla categoria di tutela prevista, solo contestualmente ad interventi di tipo conservativo.
Alla fine dei lavori dovrà essere prodotto atto trascritto di asservimento all'uso a garage. Tali interventi sono soggetti a Permesso di Costruire.
14. In tutte le categorie di tutela è ammessa la realizzazione di soppalchi anche con aumento di C.U..
15. La coibentazione delle facciate esterne degli edifici ricadenti nella Città Storica (ambito ACS), nonché in quelli tutelati esterni, è consentita solo sugli edifici ricadenti nelle categorie di tutela C e D, per le quali è consentita la modalità di intervento RE alle seguenti prescrizioni:
• negli edifici ricadenti nella Città Storica non sarà consentito installare la coibentazione sulle facciate
poste a confine con gli spazi pubblici e su quelle che determinano una cortina edilizia continua;
• negli edifici esterni alla Città Storica non sarà consentito installare la coibentazione sulle facciate,
poste a confine con gli spazi pubblici, che determinano una cortina edilizia continua.



Art. 49 - Categorie di tutela
1. I tipi di intervento definiti al precedente Capo 4 da integrarsi con le DTA di cui all'art. 9 bis, sono applicabili nel rispetto delle finalità e delle modalità di intervento indicate per ciascuna categoria e sottocategoria di tutela. Gli interventi che non rispettino le prescrizioni di conservazione o il ripristino
degli elementi di cui all'art. 49 comma 3 lett e) e comma 4 lett e), saranno sottoposti alla valutazione della CQAP anche con richiesta preventiva.
2. Categoria A (ovvero "restauro scientifico"): comprende le unità edilizie che hanno assunto rilevante importanza nel contesto urbano territoriale per specifici pregi o caratteri architettonici o artistici.
Gli interventi su tali unità edilizie sono da qualificarsi come operazioni storico-critiche, condotte con metodo scientifico, nel rispetto degli elementi tipologici, formali e strutturali, e sono dirette alla conservazione e alla valorizzazione dell'unità edilizia, rendendone possibile un uso adeguato alle intrinseche caratteristiche.
All'interno di tale categoria sono comprese anche ville o palazzi storici con parco; per tali complessi la documentazione storica e l'analisi storico-critica dovrà essere effettuata non solo per le costruzioni ma anche per il parco e l'assetto vegetazionale.
Nel rispetto di quanto disciplinato dal successivo Capo 17 sono ammessi i seguenti interventi: RS, così come definito dal punto c) dell'Allegato all'art. 9 della L.R. 15/2013 s.m.i., da integrarsi con le DTA di cui all'art. 9 bis.
Gli interventi edilizi di RS, nel rispetto della ricostruzione filologica dell'intero fabbricato e/o unità immobiliare, devono mantenere invariato la dimensione e posizione delle aperture esterne, comprese le aperture di logge e portici; inoltre è consentito il ripristino delle aperture originarie e/o l'eliminazione di quelle incongrue, nonché, nei fronti non prospicienti gli spazi pubblici, la creazione di nuove aperture
o l'adeguamento di quelle esistenti per esigenze igienico-sanitarie e di accessibilità, purché non venga alterata l'unitarietà del prospetto e degli elementi di composizione architettonica. Per gli interventi riguardanti le facciate esterne, il rilievo ed il progetto dovranno essere estesi all'intera facciata interessata.

3. Categoria B: comprende le unità edilizie di interesse storico architettonico o di pregio storico culturale e testimoniale non già ricomprese nella categoria A, che hanno complessivamente o prevalentemente conservato i caratteri tipologici, strutturali e morfologici originari.
Gli interventi edilizi devono avere le finalità sotto riportate.
a) Valorizzazione degli aspetti architettonici originali, mediante:
• il restauro finalizzato al recupero degli elementi significativi dei fronti; è prescritto inoltre il mantenimento delle aperture esistenti ed è comunque consentito il ripristino delle aperture originarie e/o l'eliminazione di quelle incongrue, nonché, nei fronti non prospicienti gli spazi pubblici, la creazione di nuove aperture o l'adeguamento di quelle esistenti per esigenze igienico-sanitarie e di accessibilità, purché non venga alterata l'unitarietà del prospetto e degli elementi di composizione architettonica;
• il restauro ed il ripristino degli ambienti interni qualora sussistano elementi di documentata importanza.
b) Il consolidamento strutturale ai fini del miglioramento/adeguamento sismico, con eventuale sostituzione delle parti non recuperabili, senza modificare la posizione dei seguenti elementi: murature portanti sia interne che esterne, solai, volte, scale principali originarie, tetto con ripristino del manto di copertura;
c) Obbligo di demolizione delle superfetazioni qualora l'intervento sul fabbricato principale ecceda le opere di MS;
d) L'inserimento degli impianti tecnologici e igienico-sanitari essenziali nel rispetto dei criteri di cui ai commi precedenti;
e) La conservazione o il ripristino di elementi morfologici e di finitura congruenti con la tipologia originaria (colori, infissi e chiusure, rivestimenti, manto di copertura, comignoli, elementi decorativi, ecc.).
Nel rispetto di quanto disciplinato dal successivo Capo 17, da integrarsi con le condizioni di cui sopra,
sono ammessi i seguenti interventi: MO, MS, RRC.



4. Categoria C - Unità edilizie storiche parzialmente alterate e recuperabili
Sottocategoria C1: comprende le unità edilizie di pregio storico culturale o testimoniale in mediocre o cattivo stato di conservazione ovvero parzialmente alterate rispetto all'impianto e ai caratteri morfologici originari, che possono tuttavia essere recuperate come parte integrante del patrimonio edilizio storico.
Per gli edifici assoggettati a vincolo di cui al D.Lgs. 42/2004 s.m.i. e/o a RRC nelle Tavole dei Vincoli e Schede allegate, gli interventi edilizi, devono avere le finalità sotto riportate.
a) Valorizzazione degli aspetti architettonici mediante:
• il restauro finalizzato al recupero degli elementi significativi dei fronti o la loro modifica con caratteristiche coeve all'epoca dell'edificio; verso gli spazi pubblici è prescritto inoltre il mantenimento delle aperture esistenti; nei fronti non prospicienti gli spazi pubblici, è ammissibile la creazione di nuove aperture o l'adeguamento di quelle esistenti per esigenze igienico-sanitarie e di accessibilità, purché non venga alterata l'unitarietà del prospetto e degli elementi di composizione architettonica;
• la conservazione o ripristino degli ambienti interni qualora sussistano elementi di documentata importanza; sono consentiti adeguamenti delle altezze interne degli ambienti, con mantenimento delle quote delle finestre e della linea di gronda, fermo restando la conservazione in sito di eventuali solai voltati.
b) Il consolidamento strutturale ai fini del miglioramento/adeguamento sismico, esteso a larghe parti
dell'edificio.
c) Obbligo di demolizione delle superfetazioni, per i soli fabbricati esclusi dalla modalità RE, qualora l'intervento sul fabbricato principale ecceda le opere di MS.
d) L'inserimento degli impianti tecnologici ed igienico-sanitari essenziali nel rispetto dei criteri di cui ai commi precedenti.
e) La conservazione o il ripristino di elementi morfologici e di finitura congruenti con la tipologia originaria (colori, infissi e chiusure, rivestimenti, manto di copertura, comignoli, elementi decorativi, ecc.).
Nel rispetto di quanto disciplinato dal successivo Capo 17 da integrarsi con le condizioni di cui sopra sono ammessi i seguenti interventi: MO, MS, RRC.
Per gli edifici non assoggettati a vincolo di cui al D.Lgs. 42/2004 s.m.i. e/o a RRC nelle Tavole dei Vincoli e Schede allegate denominate Vin 2.1 a), Vin 2.1 b) e Vin 2.1 c), è inoltre ammesso l'intervento RE con i limiti di cui all'art. 48 comma 8.

Sottocategoria C2: riguarda le unità edilizie fatiscenti, totalmente o parzialmente demolite o fortemente alterate, di cui sia possibile reperire adeguata documentazione della loro organizzazione tipologica originaria.
Gli interventi edilizi devono avere la finalità di ripristinare, a seconda del contesto, l'omogeneità e continuità del tessuto edilizio storico o la compiutezza del complesso storico-architettonico di cui l'edificio faceva parte, ovvero l'assetto paesaggistico, attraverso una riedificazione congruente con i caratteri tipologici e morfologici originari.
Nel rispetto di quanto disciplinato dal successivo Capo 17 da integrarsi con le condizioni di cui sopra sono ammessi i seguenti interventi: MO, MS, RRC, RE.
Sottocategoria C3: comprende le unità fondiarie e gli spazi pubblici storicamente non edificati, che testimoniano l'assetto storico dell'insediamento e la sua evoluzione, da conservare o ripristinare.
Comprende inoltre le aree nelle quali è prescritto il recupero e la valorizzazione delle risorse storico archeologiche.
Gli interventi devono avere la finalità di valorizzare gli spazi e i manufatti diversi che li arredano, di demolire gli eventuali edifici ovvero manufatti incongrui esistenti e realizzare opere capaci di concorrere alla riorganizzazione funzionale e formale delle aree e degli spazi liberi. L'intervento può comprendere la realizzazione di: costruzioni interrate; manufatti di servizio urbano o di arredo urbano (fontane, fioriere, lapidi, panchine, contenitori rifiuti, pavimentazioni, ecc.); infrastrutture tecnologiche a rete.
Negli spazi pubblici e nei percorsi non edificati di interesse storico si applicano le norme generali relative alla conservazione, recupero e valorizzazione degli spazi urbani storici di cui al successivo Capo 17.
Nel rispetto di quanto disciplinato dal medesimo Capo sono ammessi i seguenti interventi: RAL.



5. Categoria D - Unità edilizie fortemente trasformate o moderne nella città storica
Sottocategoria D1: riguarda le unità edilizie della città storica che, pur non presentando caratteristiche di pregio storico-architettonico, o essendo costruzioni e ricostruzioni moderne, sono tuttavia compatibili e congruenti con l'impianto urbanistico e con i caratteri morfologici del tessuto storico, e sono quindi da consolidare nel loro rapporto con il contesto.
Nel rispetto di quanto disciplinato dal successivo Capo 17 sono ammessi i seguenti interventi: MO, MS, RRC, RE.
Sottocategoria D2: riguarda unità edilizie, di epoca recente, la cui costruzione ha modificato l'impianto del tessuto storico in modo irreversibile, introducendovi un assetto planivolumetrico difforme, e che tuttavia sono da considerarsi consolidate nel loro assetto odierno.
Nel rispetto di quanto disciplinato dal successivo Capo 17 sono ammessi i seguenti interventi: MO, MS, RRC, RE.
Sottocategoria D3: riguarda immobili di norma di epoca recente, con caratteristiche planivolumetriche, tipologiche o morfologiche scarsamente compatibili o dequalificanti rispetto al contesto del centro storico, o la cui permanenza nelle forme attuali non consente la valorizzazione degli elementi di pregio storico-architettonico o testimoniale del contesto.
Nel rispetto di quanto disciplinato dal successivo Capo 17 sono ammessi i seguenti interventi: MO, MS, RRC, RE, DR a parità di volume e H max preesistente.
Sottocategoria D4: riguarda corpi di fabbrica o manufatti incongrui, di norma di epoca recente, la cui permanenza impedisce la valorizzazione di risorse storiche o archeologiche primarie.
Nel rispetto di quanto disciplinato dal successivo Capo 17 sono ammessi i seguenti interventi: MO, MS, demolizione.

6. Unità di intervento speciali attuabili tramite POC. Le unità di intervento speciali individuate nella tavola 2 del RUE con numeri progressivi riguardano immobili o complessi di immobili per i quali il PSC auspica una organica riprogettazione per perseguire la messa in valore di risorse storiche o archeologiche presenti, ovvero recuperare situazioni di disordine edilizio, anche attraverso interventi di ristrutturazione urbanistica di cui alla L.R. 15/2013 s.m.i., con la riconfigurazione o la demolizione di corpi edilizi di epoca recente che hanno modificato e degradato l'impianto storico, e la ridefinizione di un nuovo assetto degli spazi aperti.
Nelle more della previsione del POC, secondo gli obiettivi definiti dal PSC, sui singoli edifici esistenti, sono ammissibili i tipi di intervento secondo la categoria di tutela attribuita a ciascuno di essi nella tavola 2.
Sugli edifici esistenti classificati D2, ritenendo la loro riqualificazione un intervento di interesse pubblico, oltre alle modalità previste al precedente comma 5, è ammessa la sostituzione urbana attuabile con intervento di DR a parità di volume e H max preesistente, subordinata al rilascio di PdCC.
6 bis. Per la UMI 13 denominata "Resti del Convento di S.Francesco e Mercato Coperto", per la sola porzione del Mercato Coperto, fatto salvo il vincolo di cui al D.Lgs. 42/2004 e smi presente
sull'immobile, valgono le seguenti disposizioni:
• l'intervento di recupero dell'edificio può essere eseguito tramite RE o DR a parità di volume;
• H max quella preesistente;
• D1= 5 ,00 ml;
• mantenimento degli allineamenti esistenti su Via Michele Rosa; sono ammissibili eventuali modifiche rispetto al profilo del fabbricato esistente prospiciente Via Castelfidardo finalizzate alla creazione di aree e spazi pubblici;
• tipi d'uso ammissibili: centro commerciale di vicinato costituito dagli spazi adibiti all'uso mercato pubblico, unità ad uso b1.1 e una sola unità ad uso b1.2.a.
Le dotazioni standard pubblico, ai sensi dell'art. 5.1.2 lettera c) della D.C.R. 1253/1999 s.m.i., non sono dovute; le dotazioni di parcheggio pertinenziali sono dovute e monetizzabili con i criteri di riduzione previsti dalla D.C.C. 208/2011 per la sola funzione b1.2.a, ai sensi dell'art. 5.2.5 lettera b) della D.C.R. 1253/1999 s.m.i, mentre non sono dovute per le restanti porzioni di fabbricato.



7. Le specifiche descritte per gli interventi edilizi di RS e RRC riportate nei precedenti commi 2 e 3 non risultano prescrittive per gli edifici vincolati ai sensi dell'art. 10 comma 3 del D.Lgs. 42/2004 s.m.i., in quanto, ai sensi dell'art. 2.14 del PSC, il rilascio dell'autorizzazione della competente Soprintendenza è ritenuta integrativa della categoria d'intervento assegnata all'edificio riportata nella tavola 2-3 di RUE.
Le modalità di intervento dovranno comunque rispettare le disposizioni contenute nell'art. 3 comma 1 lettera c) del D.P.R. 380/2001 s.m.i. e quelle alle lettere c) e d) dell'allegato all'art. 9 comma 1 della L.R. 15/2013 s.m.i..

Art. 50 - Tipi d'uso ammessi e condizioni
1. Tipi d'uso ammessi: a1, a2, b1.1, b1.2, b3.1, b3.2, b4, b6, c1, c2, c3, c4, c5, c6, c7, e1, e2 (per i soli ostelli).
Gli edifici con uso in essere "e1" non possono mutare destinazione, salvo che attraverso interventi programmati nel POC.
È esclusa l'apertura di nuovi sportelli bancari; è sempre ammesso l'ampliamento degli sportelli bancari esistenti ai piani superiori al piano terra.
Sugli edifici individuati con apposito grafismo nella Tavola 2-3, corrispondenti al Polo Funzionale Universitario, indicato all'art. 5.6 del PSC, sono ammesse tutte le destinazioni d'uso coerenti e complementari con la funzione principale universitaria, quali ad esempio: attività culturali, formative, ricreative, sportive, convitti, studentati, collegi, seminari, mense.
2. Nella Città Storica, le unità immobiliari poste al piano terreno in affaccio alle strade individuate come strade commerciali nella Tav. 2-3 del RUE che abbiano destinazione d'uso in atto b1.1, b1.2, b4, sono ammesse variazioni esclusivamente fra questi tipi d'uso.
3. Nella Città Storica, i locali posti al piano seminterrato o interrato, qualora rispettino i requisiti igienico sanitari e di sicurezza, possono anche essere utilizzati come estensione di attività commerciali, artigianali, studi professionali e pubblici esercizi poste ai piani soprastanti.
4. Negli edifici tutelati esterni alla Città Storica, le destinazioni d'uso consentite sono quelle ammesse nell'ambito in cui l'edificio ricade, ai sensi del presente Titolo II.

With reference to the articles that regulate historic centers, we can also refer to CHAPTER 17 and CHAPTER 23..

The rules of Chapter 17 are specific for all buildings falling within the historic city and for all buildings falling within the remaining territory recognized as having historical-architectural value by the PSC or recognized as having historical-architectural and testimonial value by the RUE.

Art. 101 - Disposizioni generali
Art. 102 - Materiali ed elementi costruttivi
Art. 103 - Strutture portanti orizzontali
Art. 104 – Coperture
Art. 105 - Elementi decorativi e facciate
Art. 106 - Infissi esterni
Art. 107 - Manufatti tecnologici
Art. 108 – Recinzioni

The rules of Chapter 23 are made up of several articles, the one that interests us standard photovoltaic systems.

Art. 126 - Localizzazione degli impianti fotovoltaici



Another reference to consider is Article 6 bis in CHAPTER 1 which deals with energy redevelopment and improvement of the energy performance of buildings subject to building intervention.

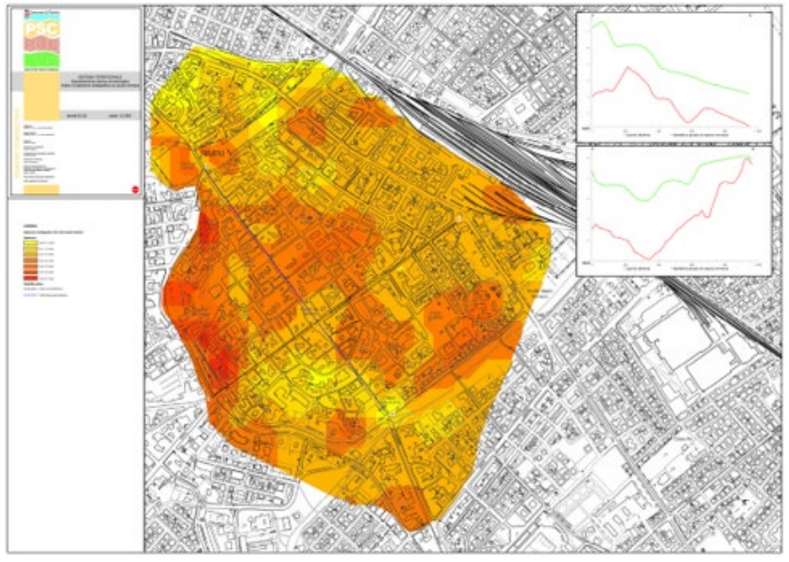
CAPO 1 – DISPOSIZIONI GENERALI

Art. 6 bis - Interventi di qualificazione e sostenibilità
1. Al fine di migliorare le prestazioni energetiche degli edifici oggetto di intervento edilizio è necessario garantire il rispetto dei requisiti minimi di prestazione energetica, in funzione della tipologia d'intervento, in conformità alla D.G.R. 967/2015 s.m.i. e alla D.G.R. 1383/2020 s.m.i..
2. Per interventi volti ad incrementare i valori minimi obbligatori definiti al comma 1, in applicazione del 2 comma, lettera b) dell'art. 7 ter della L.R. 20/2000 s.m.i., il RUE definisce nel Titolo II, gli incrementi di volume e superficie in funzione del tipo d'intervento secondo disciplina d'ambito.
Ulteriori incentivi in termini di volume e superficie sono concessi nel Titolo II per interventi finalizzati al complessivo perseguimento degli obiettivi di interesse pubblico ai sensi del 2 comma, lettere c), d), e) dell'art. 7 ter della L.R. 20/2000 s.m.i. .
Sono ammissibili, con l'obiettivo di favorire la qualificazione e il recupero funzionale del patrimonio edilizio esistente, le seguenti modalità di intervento:
- RE di demolizione e ricostruzione totale comprensiva dell'incentivo volumetrico, con deroghe alle
distanze D1, D2 e D3 in conformità alle condizioni di cui all'art. 2bis del D.P.R. 380/2001 s.m.i. e all'art. 10ter della L.R. 15/2013 s.m.i., nonché alle altezze ed alla SC secondo disciplina d'ambito;
- RE conservativa e contestuale intervento di AM con deroghe alle distanze D1 e D2, nonché alle altezze ed alla SC secondo disciplina d'ambito;
- DR con deroghe alle distanze D1, D2 e D3 in conformità alle condizioni di cui art. 2bis del D.P.R. 380/2001 s.m.i. e all'art. 10ter della L.R. 15/2013 s.m.i, nonché alle altezze ed alla SC secondo disciplina d'ambito.
Tali incentivi, come disciplinati nel Titolo II, sono a loro volta alternativi e non cumulabili con quelli concessi in applicazione dei commi 3 e 4 seguenti.

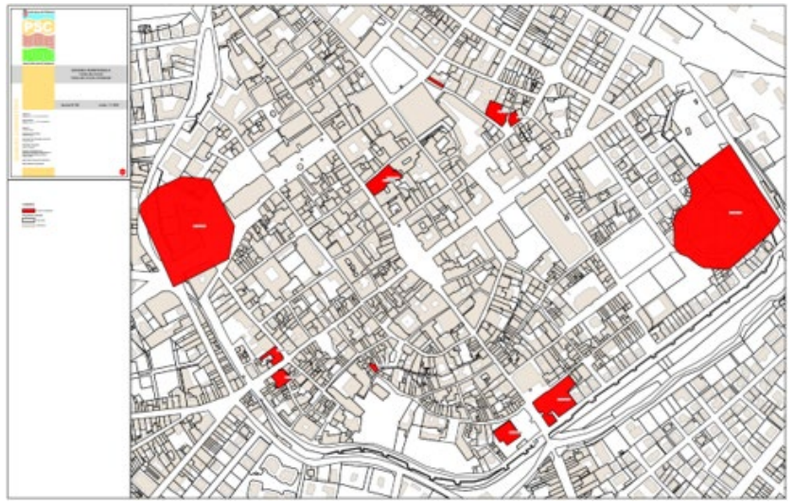
3. Per favorire interventi ecosostenibili e biocompatibili, inoltre, il “Regolamento delle misure volontarie di bioedilizia”, come specificato dalle successive circolari applicative, prevede incentivi calibrati in base alla qualità progettuale. Tali incentivi, come indicato nel Titolo II, sono a loro volta alternativi e non
cumulabili con quelli concessi in applicazione del comma precedente e seguente.
4. Il medesimo Titolo II stabilisce forme diverse di incentivazione e deroghe ai sensi dell’art. 5, comma 3 della citata D.G.R. 1383/2020 s.m.i., da considerarsi alternative e non cumulabili con quanto previsto dai commi precedenti.
4 bis. Nel territorio urbanizzato e per i fabbricati con destinazione residenziale, con intervento RE conservativa è consentita la contestuale realizzazione di interrati ad uso parcheggio, nei limiti e alle condizioni di cui all’art. 9 della L. 122/1989 s.m.i..
Nel territorio urbanizzato negli interventi comportanti l’integrale demolizione e ricostruzione di fabbricati con destinazioni compatibili, è ammissibile l’incentivo volumetrico per la realizzazione di interrati ad uso parcheggio nei limiti e alle condizioni di cui all’art. 2 della L. 122/1989 s.m.i. e nelle
quantità prescritte al successivo art. 40, comma 1; tale incentivo, nelle more della formazione del P.U.G., ai sensi dell’art. 7 comma 4 lettere a) e b) della L.R. 24/2017 s.m.i. e allo scopo di promuovere l’attivazione dei processi di rigenerazione urbana, è cumulabile con quelli concessi in applicazione dei commi precedenti.
Lo stesso incentivo volumetrico è applicabile, con le modalità di intervento di RE ricostruttiva, nell'ambito del Centro Storico e sugli edifici tutelati sparsi in territorio urbanizzato.
5. In merito all’applicazione delle norme in materia di bioedilizia valgono le seguenti prescrizioni:
• i P.P. approvati e convenzionati in data precedente all’adozione del RUE, o durante il periodo di
salvaguardia, sono regolati dalle NTA dei rispettivi piani che hanno ancora come riferimento il P.R.G. previgente (parametri edilizi ed urbanistici compresi), in tal caso non sarà necessario
procedere ad una verifica delle dotazioni di standard urbanistici assentiti;
• i P.U.A. approvati e convenzionati in fase transitoria, in attesa del primo POC, potranno beneficiare degli incentivi edilizi previsti dal comma 2 dell’art. 1.3 del “Regolamento delle misure volontarie di bioedilizia”, incrementando le quote di dotazioni di standard proporzionalmente alle maggiori quantità di superfici realizzate



Fig.48, Cavour district view , Google Earth Pro (2021)

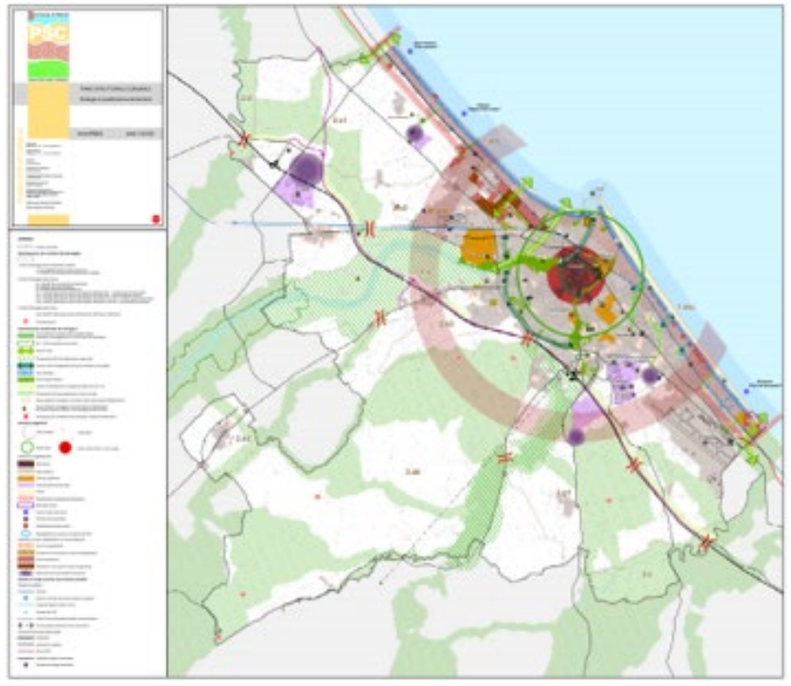


SISTEMA TERRITORIALE
Inquadramento storico archeologico
Indice di spessore stratigrafico su quota romana
Tavola C.1.3
Approvazione con delibera di C.C.n.15 del 15/03/2016

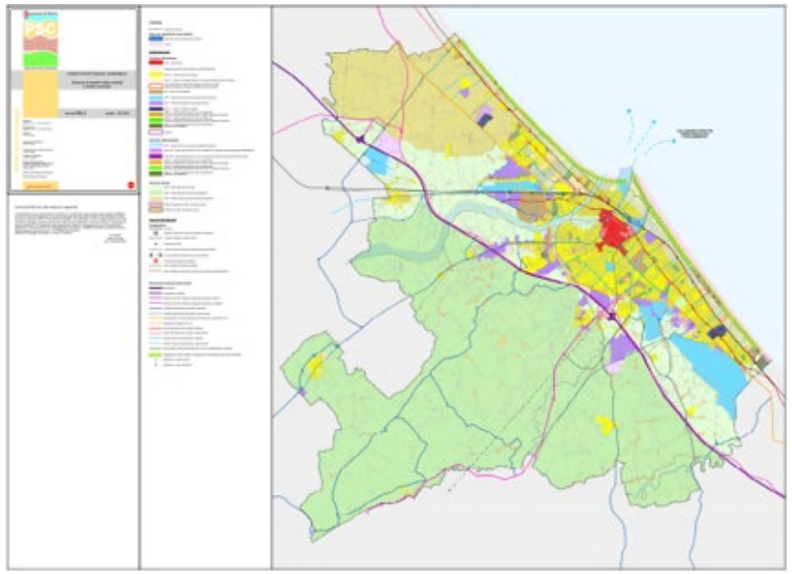


SISTEMA TERRITORIALE
Carta dei vincoli
Carta dei vincoli ministeriali
Tavola C.1.5
Approvazione con delibera di C.C.n.15 del 15/03/2016

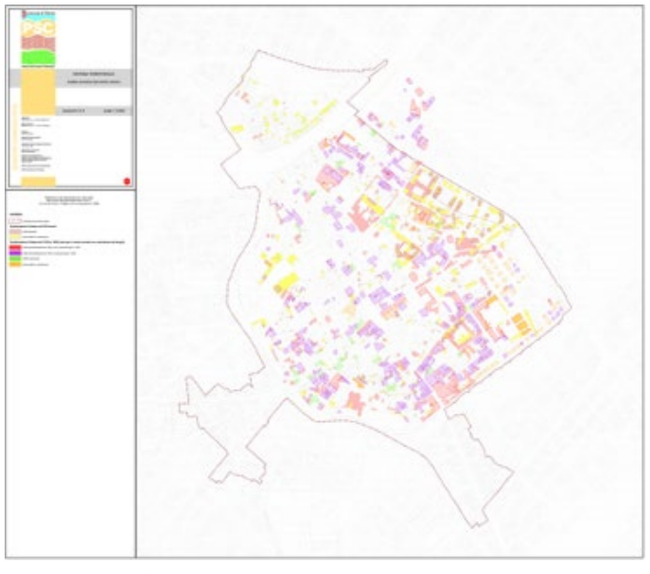




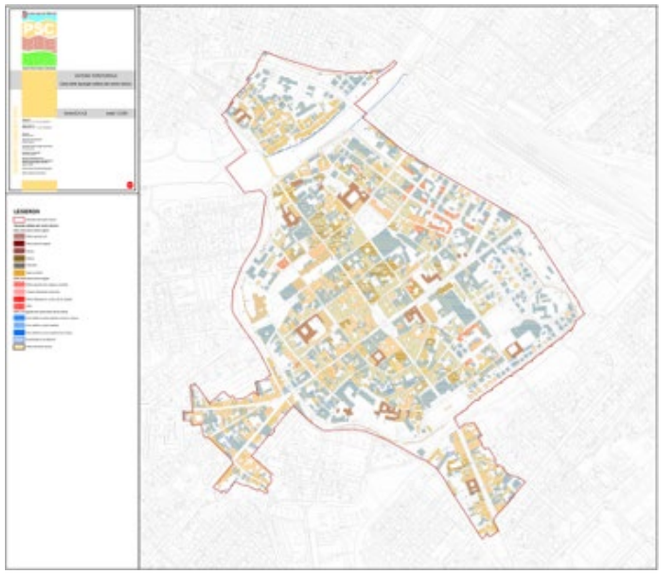
PIANO STRUTTURALE COMUNALE
Strategie di qualificazione del territorio
Tavola PSC.2
Approvazione con delibera di C.C.n.15 del 15/03/2016



PIANO STRUTTURALE COMUNALE
Schema di assetto della mobilità e ambiti normativi
Tavola PSC.3
Stesura dicembre 2019

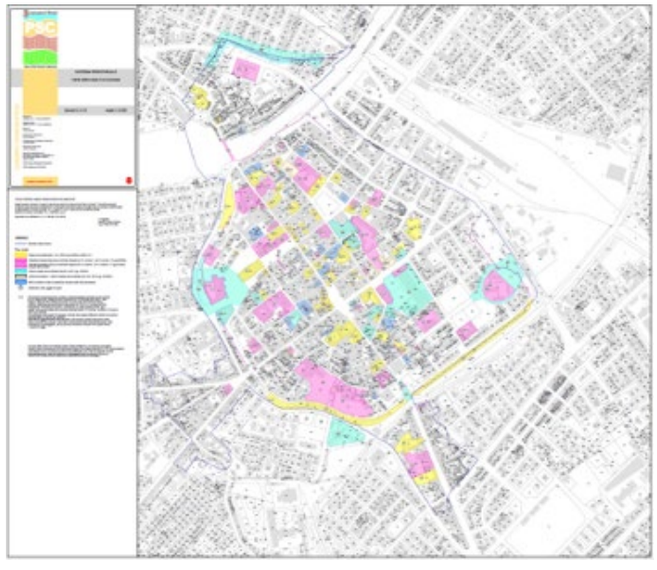


SISTEMA TERRITORIALE
Analisi evolutiva del centro storico
Tavola C.1.1.1
Approvata con delibera di C.C n. 15 del 15/03/2016



SISTEMA TERRITORIALE
Carta delle tipologie edilizie del centro storico
Tavola C.1.1.2
Approvata con delibera di C.C n. 15 del 15/03/2016





SISTEMA TERRITORIALE
Carta della tutela monumentale
Tavola C.1.1.4
stesura novembre 2019

Città Storica: categorie di tutela e unità di intervento. Funzioni pubbliche e di interesse pubblico.
Tavola RUE.2-3
stesura dicembre 2019

02

# ICONO-GRAPHIC

APPARATUS

# THE TRANSITIONAL FORM OF RIMINI

This chapter showcases transitional maps of Rimini, ranging from the years of 1800-1990. The analysis of maps are carried out to focus mainly on the changes of city from different times, ranging from road system, city walls, and zoning.


Fig.49, Historical Map 1811, Gobbi, G., Sica, P. (1982)


Fig.50, Analysis of Transitional form of Rimini Historical Map 1811, Hongye Wu (2021)

Fig.51, Historical Map 1912, Gobbi, G., Sica, P. (1982)

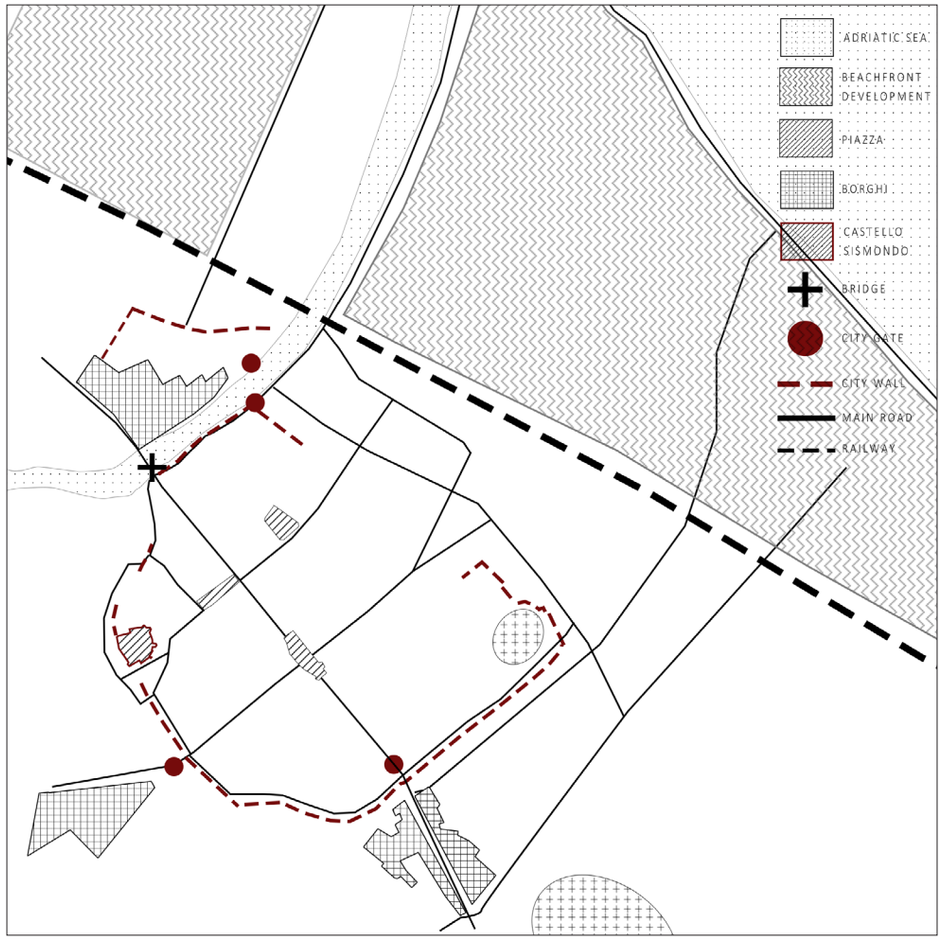



Fig.52, Analysis of Transitional form of Rimini Historical Map 1912, Wanping Dai (2021)

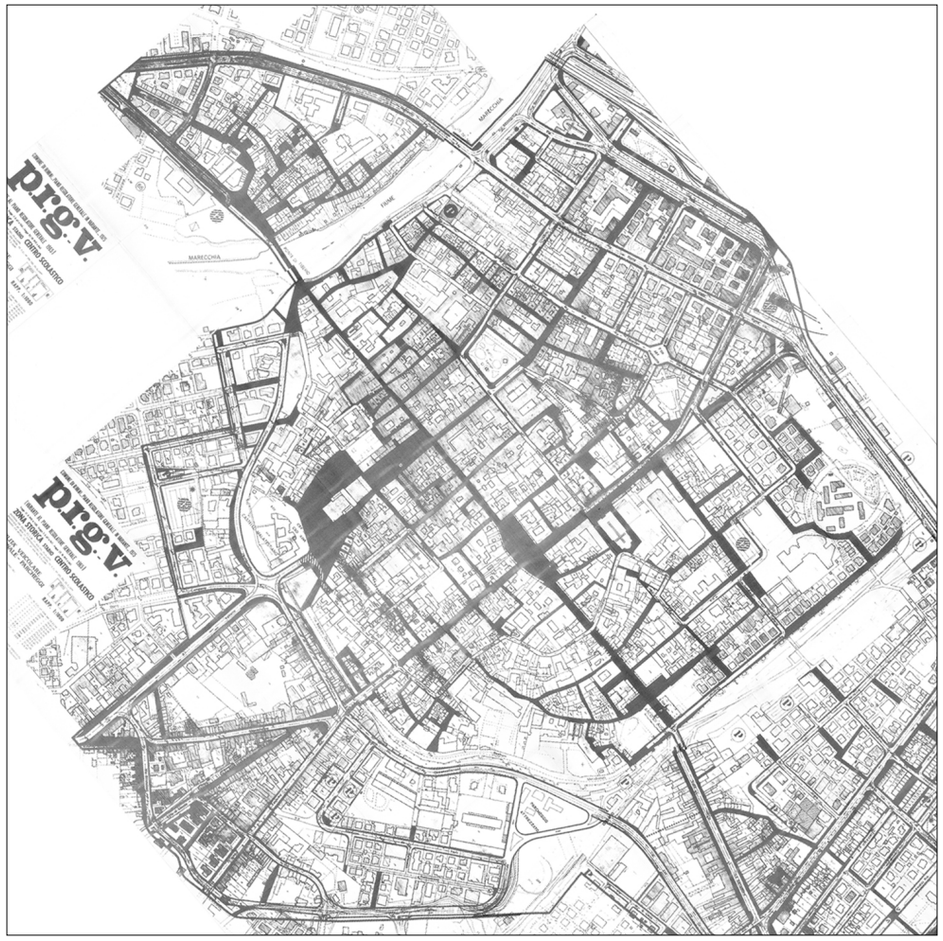



Fig.53, Historical Map 1975, Municipality of Rimini

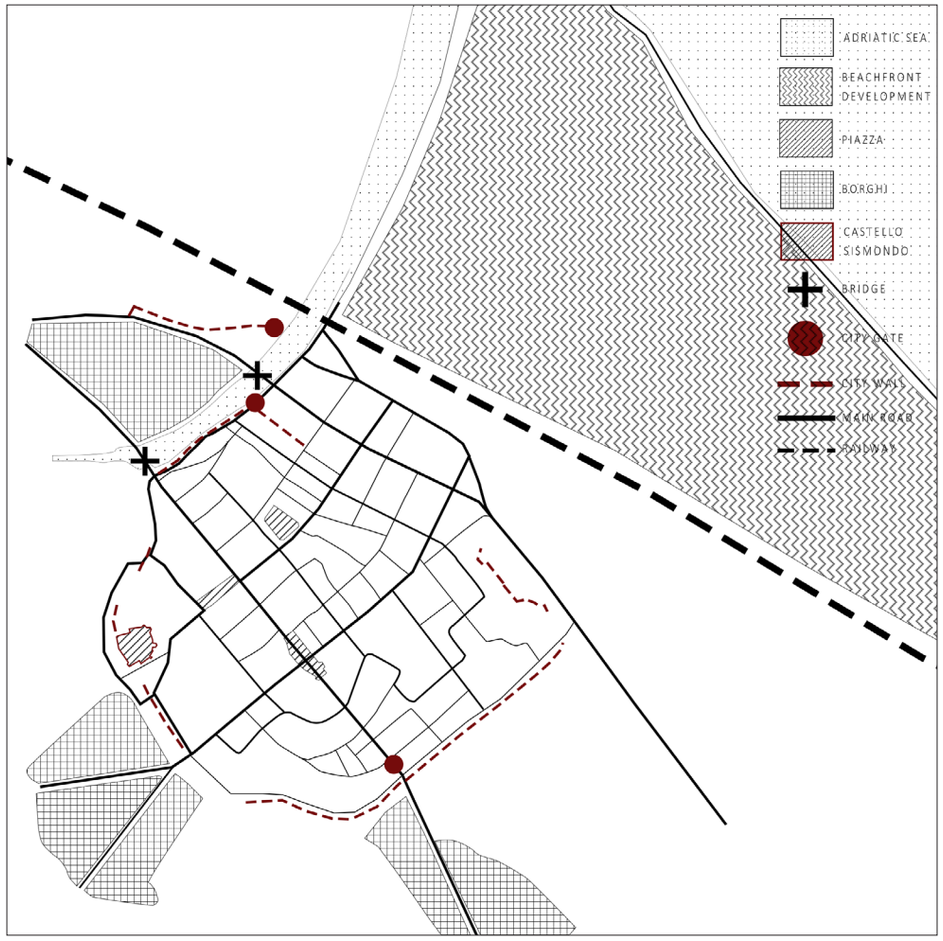



Fig.54, Analysis of Transitional form of Rimini Historical Map 1975, Liqiuzi Guo (2021)

Fig.55, Historical Map 1990, Municipality of Rimini, Prof. Arch. Leonardo Benevolo

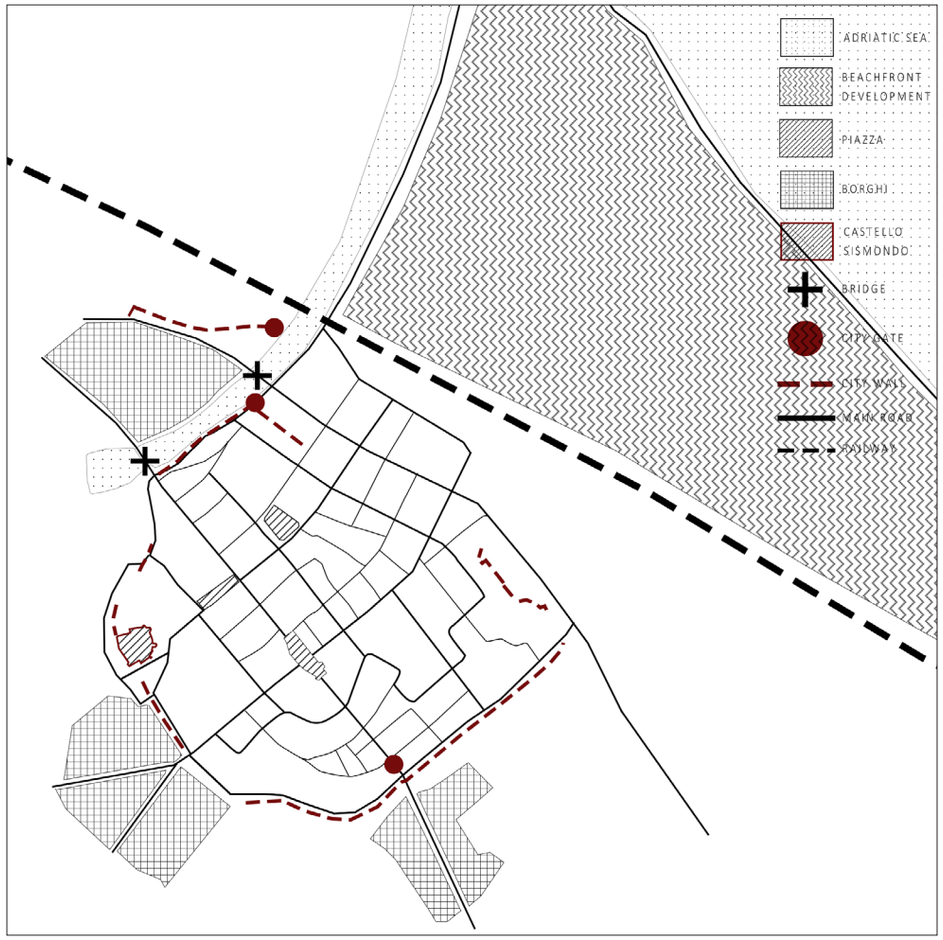



Fig.56, Analysis of Transitional form of Rimini Historical Map 1990, Wen Yee Tan (2021)

# THE ATLAS OF PICTURES OF RIMINI

This chapter is consists of a series of pictures taken on site Cavour, Tiberio, Mazzini, San Giovanni to showcase the atmosphere, street and urban life, and architecture of Rimini.

**CAVOUR/** by Hongye Wu

**CAVOUR/** by Hongye Wu



**CAVOUR/** by Alessia Protigliatti Pomeri


P.A.R.T


Piazza Cavour






saimaraghi&vigano
saimaraghi&

**CAVOUR/** by Alessia Protigliatti Pomeri



Wine & Cocktail


via galli

**CAVOUR/** by Hongye Wu

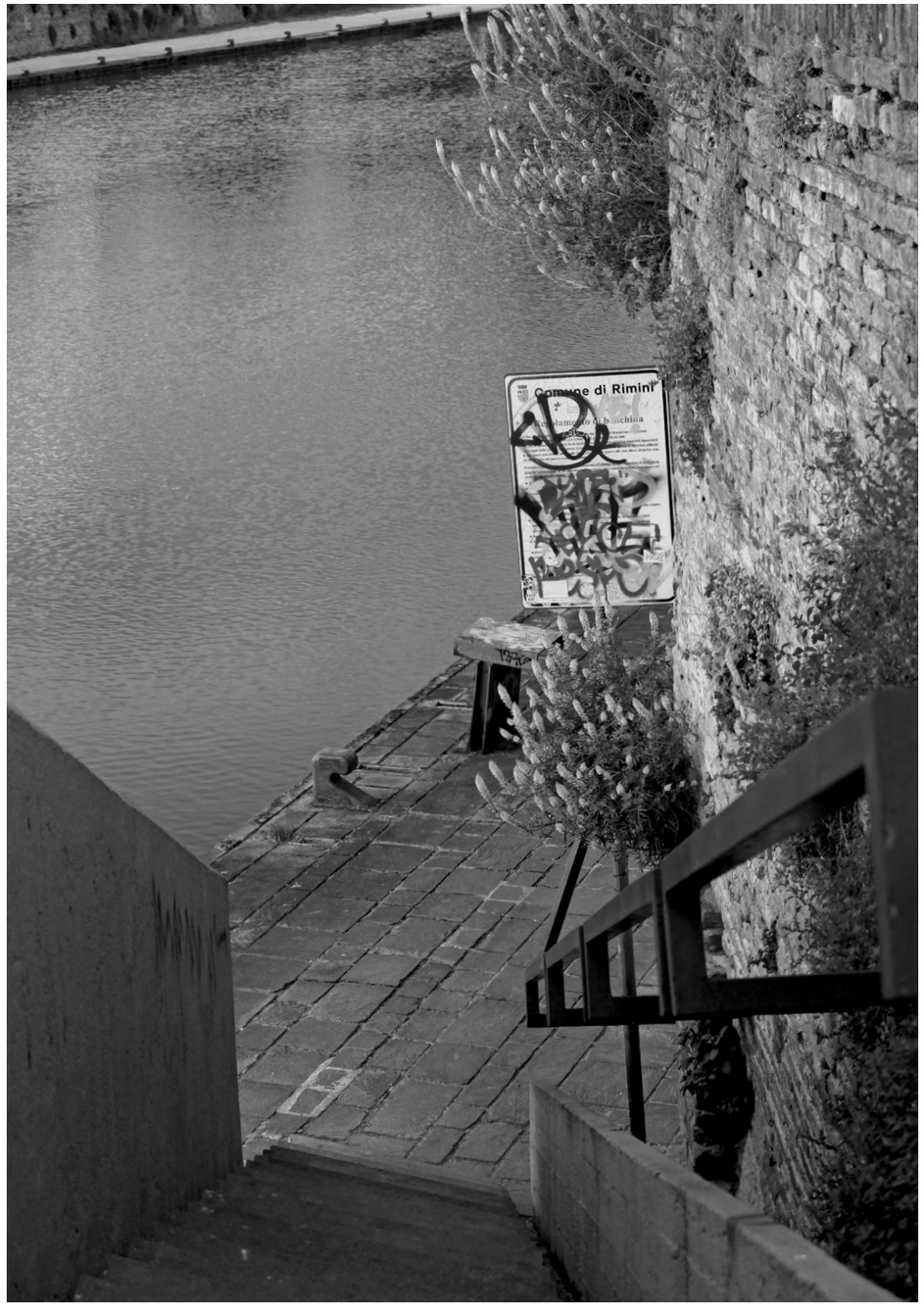
**CAVOUR/** by Hongye Wu

**TIBERIO/** by Wen Yee Tan

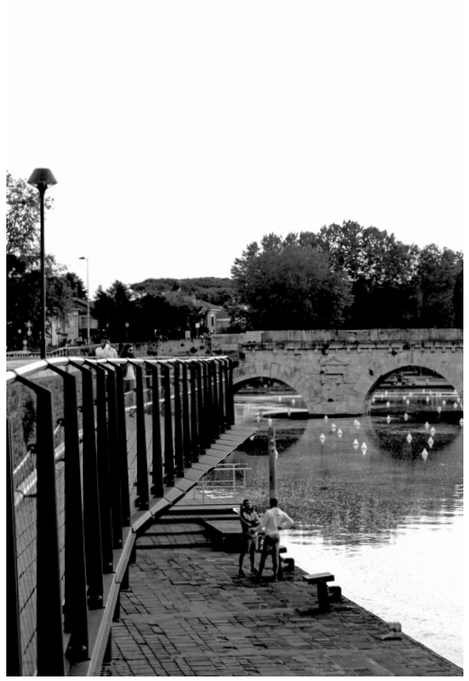
**TIBERIO/** by Wen Yee Tan

**TIBERIO/** by Wen Yee Tan

**TIBERIO/** by Wen Yee Tan




**TIBERIO/** by Wen Yee Tan

**TIBERIO/** by Wen Yee Tan


**TIBERIO/** by Wen Yee Tan


Fig. 41. Mazzini, Rmini, Hongye Wu (2021)

**MAZZINI /** by Hongye Wu





LA FRUTTA e LA VERDURA DI ALE
passo carrabile


LA FRUTTA e LA VERDURA DI ALE
49
47
passo carrabile

**MAZZINI /** by Hongye Wu

**MAZZINI /** by Hongye Wu



RIVIERABANCA
credito cooperativo


RIVIERABANCA
credito cooperativo


65


65
63

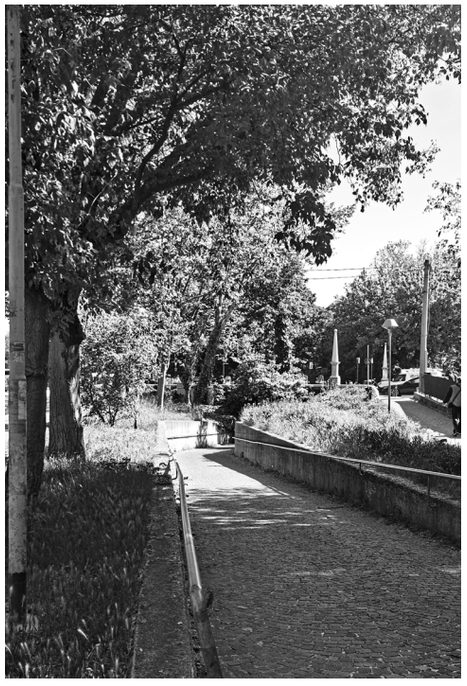
**MAZZINI** / by Hongye Wu

**SAN GIOVANNI/** by Wanping Dai

**SAN GIOVANNI/** by Wanping Dai

**SAN GIOVANNI/** by Wanping Dai

**SAN GIOVANNI/** by Wanping Dai

**SAN GIOVANNI/** by Wanping Dai


**SAN GIOVANNI/** by Wanping Dai


**SAN GIOVANNI/** by Wanping Dai

# PART.2

# TRANSITIONAL MORPHOLOGIES IN THE ITALIAN COMTEMPORTARY CITY. THE CASE OF RIMINI MAZZINI

PART.2

## INTRODUCTION

Humans have occupied 75% of non-ice land because of mining and agriculture, industrialization, and urban growth. A healthy and active city is full of different opportunities, attracting more and more people from rural places or even other countries moving in, visiting, studying, working, and living. In this sense, what cities contain are more complex and controversial. The increasing demand for urban densification is transforming and blurring the boundary and relation between the urban and the rural. In order to satisfy humans' needs, to meet the consumption of daily life and production of human beings, human beings extract natural resources indefinitely. Human impact on the environment includes land degradation, forest loss, many species that have become extinct or near extinction, biodiversity decline and ecosystem destruction, etc. In this context, some keywords are increasingly used and applied to architectural and urban design and construction, such as local, natural, reuse, recycle, sustainable, low embodied energy, etc. Architects and planners should consider things from design and planning to production, building process, maintenance, and until to the end of life.

Therefore, decision-making process is inevitably more and more complicated. During all these processes, as architects and urban planners, what becomes essentially is that how to take people's feelings in the building and the city into consideration properly in this new urban era nowadays, and how to reduce the impact on the environment as much as possible. It is undeniable that human beings cannot expect new technologies to bring dramatic improvements to the environment. However, it is true that the better way is to change the way people live which accelerates the rate of sickness of the planet,  it is hard, but every single action in daily life is crucial to make a positive change for the future. Moreover, learning how to live with nature is a fundamental point for the future. Living with nature means not only to consume but also to protect it and to grow up with it. Only when the majority know how nature (plants, earth, waterbody, etc) grows so that it is better to know how to live with them and make good use of the natural materials.

In this sense, architects and urban planners can guide public participation and play an important role of raising low-carbon awareness in society. For example, working on how to regulate the design and construction of buildings and cities by rules. Fundamentally, every place has its own laws and regulations ranging from countries in general to local municipalities in more specific and detailed aspects. In urban planning, the concept of FBCs (formed-based codes) has been developed to regulate the design of cities with rules about building at the beginning of the 21st century. Different from codes, laws, or regulations, FBCs contains three attributes: 1. Significant enforceability; 2. The intent to prescribe the public realm, often by regulating private building; 3. The direct or in direct production of "time-tested forms of urbanism" ***(Form-Based Codes Institute, 2021)***. There is a difference between FBCs and codes/ laws/ regulation in relation with urban form. FBCs effects urban form directly, while others are indirectly ***(Talen, 2009)***. By studying urban design codes (or FBCs), the main purpose of this thesis is trying to respond the question by providing design strategies: How to lead and promote residents themselves to build their own houses and communities by codes?

Furthermore, with the fast-growth urban development, many fundamental aspects of urban daily life are easily neglected,  such as human-scale experience, the feelings of people, the rights of people, and so on. In other words, the increasingly everyday needs, both physical and psychological, of people are demanded urgently. Specially, psychological restoration, which involves the renewal of physical, psychological, and/ or social resources diminished in ongoing efforts to meet everyday demands ***(Hartig, 2004)***. Another purpose is to explore how to regenerate the neighborhood in a relation with the historic center. More specially, the regeneration of the in-line fabric formed neighborhood as the main topic, including the design of the dynamic growth of in-line buildings in height and develop the codes of adaptive extension. In the meanwhile, consider psychological restoration and its attributes in the neighborhood.

# 03

# PRE-FACE

IN-LINE URBAN FABRIC
REGENERATION

# CODING AND ITS CHALLENGE

Starting from the definition of Form-based Code, the first subchapter tries to enter the disourse of urban codes or as it called Form-based Code, and its debate: between freedom and coercoin.

**Form-Based Code (or FBCs)**
**/fôrm-bāsed kōd/**
**noun**
**FBCs are also sometimes known as urban design codes or typological codes.**

## I. Coding, design by rules

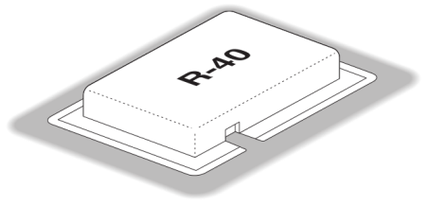
In urban planning, the concept of FBCs (formed-based codes) has been developed to regulate the design of cities with rules about building at the beginning of the 21st century. The Form-Based Codes Institute, a nonprofit group, which was founded in 2004, provides the following definition:

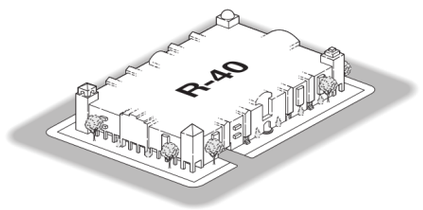
A form-based code is a land development regulation that fosters predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. A form-based code is a regulation, not a mere guideline, adopted into city, town, or county law. A form-based code offers a powerful alternative to conventional zoning regulation […] Form-based codes address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks […] Not to be confused with design guidelines or general statements of policy, form-based codes are regulatory, not advisory. They are drafted to implement a community plan. They try to achieve a community vision based on time-tested forms of urbanism. Ultimately, a form-based code is a tool; the quality of development outcomes depends on the quality and objectives of the community plan that a code implements ***(Form-Based Codes Institute, 2021)***.

Five main elements of Form-Based Codes:
1.Regulating Plan; 2. Public Standards; 3. Building Standards; 4. Administration; 5. Definitions

Additional Optional Elements:
1.Architectural Standards; 2. Environment Resource Standards; 3. Landscaping Standards; 4. Annotation; 5. Signage Standards

**· Conventional Zoning**
Density use, FAR (floor area ratio), setbacks, parking requirements, maximum building heights specified




**· Zoning Design Guidelines**
Conventional zoning requirements, plus frequency of openings and surface articulation specified

**· Form-Based Codes**
Street and building types (or mix of types), build-to lines, number of floors, and percentage of built site frontage specified.

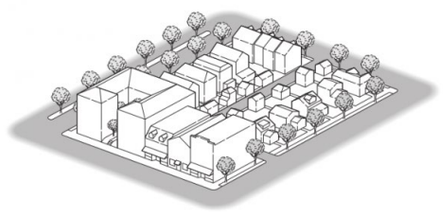


Fig.1, The definitions of Conventional Zoing, Zoning Design Guidelines, and Form-Based Codes, FBCs institute (1997)



There is a significant difference between FBCs and other types of regulations (and/ or standards, rules, codes, laws, etc.) in relation with urban form. FBCs effects urban form directly, while others are indirectly ***(Talen, 2009)***. Different from other types of rules, guidelines, laws, and regulations, all of which play essential roles in city form, FBCs contains three attributes: 1. Significant enforceability; 2. The intent to prescribe the public realm, often by regulating private building; 3. The direct or in direct production of "time-tested forms of urbanism" ***(Form-Based Codes Institute, 2021)***.

With regard to the last criterion, the ***Form-Based Codes Institute (2006)*** advocates codes that shape public realm "to invite pedestrian use and social interaction" and produce "walkable, identifiable neighborhoods that provide for daily needs." Such codes produce the streets, squares, and other public spaces that make up the public realm. Historically, they often did so by ensuring the production of a building wall that could adequately define the public real, typically with a unified and consistent building frontage ***(Talen, 2009)***. Codes have always been subject to change by constantly changed developing situations of cities. In Rome, when tall buildings made narrow streets dark, Julius Caesar reduced allowable building heights. Widespread European support for wide streets was replaced in the 19th century by the view that wide streets were unhealthy, creating wind and dust ***(Kostof, 1992, p.206)***. Rules also often applied to only a few desired. The Codes of medieval cities, for example, required that some streets would be wide enough for clear passage, and protected the public square, but left the remainder of the city unconstrained ***(Talen, 2009***). In the long history, the city changes constantly, also as it is considered in Anthropocene which is a new geological era recently defined. Also, whether human-being nor non human-beings all have to face the Post-Covid period nowadays. In this context, it is worth to explore some kind of urban issues, such as How the city will transform in face of this complicated new era. And others relating to daily life: how human beings should react with and live in the new normal. Today's codes are more complex and difficult to implement than their predecessors. Modern FBCs require community participation and visioning to create consensus, whereas in previous historical periods such agreement was taken for granted and many aspects of urban form were dictated by technological and other constrains ***(Talen, 2009)***.

Thus, public participation is a more and more important role in decision-making process (specifically code-making process). Moreover, it is a key linkage with the period of before, during and after implementation. Modern code reformer aim to help

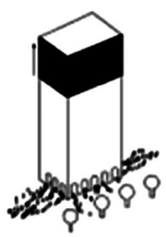
**Such as Freedom & Coercion [FAC], Rules and Freedoms [RF], Transition Zoning [TZ], Short Blocks [SB], Pedestrian Streets [PS], Neighbor, and Height Difference Max [HDM]. These rules, which are abstracted and extracted from actual cities, are discussed and concluded in the book Grand Urban Rule.**

communities uncover shared attitudes toward urban form by engaging the public in the code-making process. It is more clear that, as the book Form-Based Code ***(Parolek, Parolek, & Crawford, 2008)*** stresses the importance of public participation, which calls for a community visioning process as a key source of code content. In short, it means meaningful public participation in code-making process is required.

**II. An ongoing coding challenge: between freedom and coercion**

There is a fundamental character of the idea of freedom: the freedom from something, not the freedom toward something ***(Hayek, 1960)***. Freedom is the absence of coercion [FAC]. As Friedrich von Hayek states, the fact of the definition of freedom actually is that freedom is essential in order to allow space for the unanticipated and the unpredictable; we desire freedom because we have learned to expect from it opportunities to realize many of our objectives ***(Hayek, 1960)***. Inspired by F. A. Hayek, this kind of understanding of freedom is a good opportunity to expect something that is both desirable and unpredictable, and is also can be a motivation for developing the idea of freedom as a fixed component of an urban development and planning discourse. The freedom contained in a rule consist precisely in that





Pedestrain Streets **[PS]**: Streets used principally by pedestrains are classified as Class I, Class II and Green Streets. Adjacent buildings that contribute to enhancing the quality of such streets may thereby earn utilization bonuses. Requirements vary according to the street's classification.

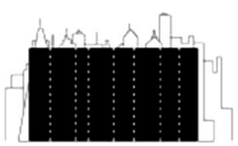
Short Blocks **[SB]**: Block lengths shall be short.

Transition Zoning **[TZ]**: Special regulations apply to the boundaries of these zones.

Fig.2-4, Urban Rules, Grand Urban Rules, Alex Lehnerer (2014)

Height Difference Max **[HDM]**: Height differences between individual buildings are highly desirable, but at the smae time an excessively strong contrast between neighboring structures detracts from a district's physical coherence. For this reason, neighboring buildings shall not differ in height by more than 50% of their total heights.


Neighobr **[NH]**: Designated as a neighbor is whoever or whatever lies directly along the edge of the building lot. This definition remains in force until it is supplanted by a new one.



Skyline Wall **[BS]**: High-rises built around the same time and motivated by speculation tend to be similar in appearance and size. When they stand alongside one another, the effect is of a homogenous wall of buildings. It is a task of the planning authorities to adopt appropriate measures designed to counterart this tendency.

Fig.5-7, Urban Rules, Grand Urban Rules, Alex Lehnerer (2014)



which it does not specify. A conscious lack of specificity becomes a design necessity ***(Lehnerer, 2014)***. Therefore, freedom in the realm of urban developing and planning have to be specified. Basically, working with rules is a traditional methodology of urban developing and planning. This attempt also permits the adjustment to the degree of freedom, or in other words, to the degree of compulsion. “Consensus will have to be balanced with flexibility.” The same discourse also discussed by E. Talen. There is a continuing tension between infusing aesthetic goals into the planning process, and coding prescribed forms. One is about infiltrating a process with design sensibilities, the other about hardwiring a specific physical goal. One allows multiple interpretations, the other constrains responses in order to achieve redetermined outcomes ***(Talen, 2009)***. One approach to resolving this dilemma is to code only the most essential elements. Codes can be all-controlling or they can stipulate a few key principle and, from there, “let it go” ***(Jacobs, 2002. p. 139)***. History provides ample evidence that a few simple rules can lead to desired urban forms while making adaptation less cumbersome […] Code reformers must wonder whether it will be possible to guide urban form in desirable way by focusing on small, incremental changes, given that big developers and large-scale developments often have the greatest influence. Thus, there is ongoing disagreement over the degree to which incremental changes can or should be regulated. ***Jane Jacobs (1961)*** expressed “ great wonder” at the intricate order that cities exhibited because of the countless freedoms available to urban dwells.

By far the greater proportion of regulations rein in the form of unwritten conventions, customs, norms, maxims, and traditions. They change over time, some disappear and are replaced by new ones ***(Lehnerer, 2014)***. It is reasonable and understandable, as it mentioned before, with the constantly changed world. Regulations change along with the developing cities to catch up with its increasingly growing demands. As it is complicated to answer the question what makes a city, also, it is hard to make it clear that whether regulations make the city or the city makes the regulations. They both do develop at the same time in a more adaptive way. Nowadays urban codes extracted from the reality and then reapply and adapt to the other cities as what FBCs Institution did.

# STREETS AND NEIGHBOURHOOD

As a continuty, this subchapter specificly tries to explore street standards, tracing the shared street concept or "Woornerf" as it more well known. And it brings out the power and the limitation of standards.

Simple standards for street width and alignment have an enormous impact on the way neighborhoods look, feel, and work. As the Form-Based Codes Institute (2006) advocates that, codes shape public realm "to invite pedestrian use and social interaction" and produce "walkable, identifiable neighborhoods that provide for daily needs." In the following, the article will interpret the shared street concept or "Woonerf" as it well known, which was a popular street transforming concept in Europe, and enter its main principles and characteristics.

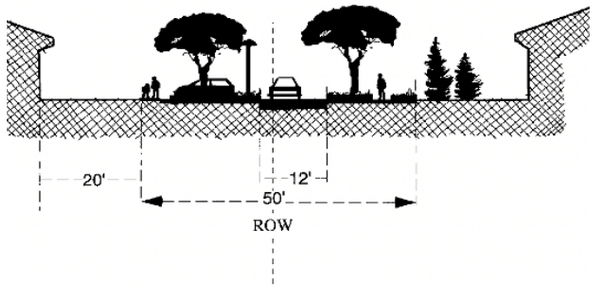
**I. The shared street**

Most of streets respond for fast speed from one location to another. Different from this kind of street, residential streets should serve many functions beyond vehicular access. They are more like spaces serve social activities including children's playing, adult recreation, considering the needs for residents' living experience. Therefore, a livable and better residential street should be designed for all of these activities.

Rooting back to 1963, the shared street concept published in England by a road engineer as well as an architect Colin Buchanan and the Traffic in Towns team. In 1959 the Ministry of Transportation commissioned Buchanan to investigate the issue of improving urban transport. Buchanan was able to see the conflict between providing for easy traffic flow and the destruction of the residential and architectural fabric of the street. Shared streets make the street space a mixed-use public domain for a variety of activities like playing, talking, relaxing, watching, or gardening. ***(Southworth, M. & Ben-Joseph, E., 1997)***.

While the development of cities focuses on improving traffic mobility, it has gradually neglected people's demand for safety and comfort walking on the streets. To address this problem, shared streets that can integrate traditional street life and traffic mobility are getting more attention as pedestrian-friendly development. The shared street aims to ensure pedestrian safety in the roads and reduce the dominance of vehicles by allocating all road elements in the same road layer. In the shared street, pedestrians and vehicles share the same space, which is designed for slow traffic and espeically for play and social interaction.

**Shared street**




**Traditional residential street**

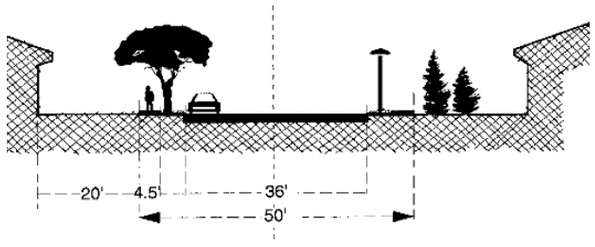



Fig.8, Shared street and typical street sections, Streets and the Shaping of Town and CitiesEran Ben-Joseph (1997)



In the shared street, pedestrians and vehicles share the same space, which is designed for slow traffic and espeically for playing and social interaction.

**Shared street plan**

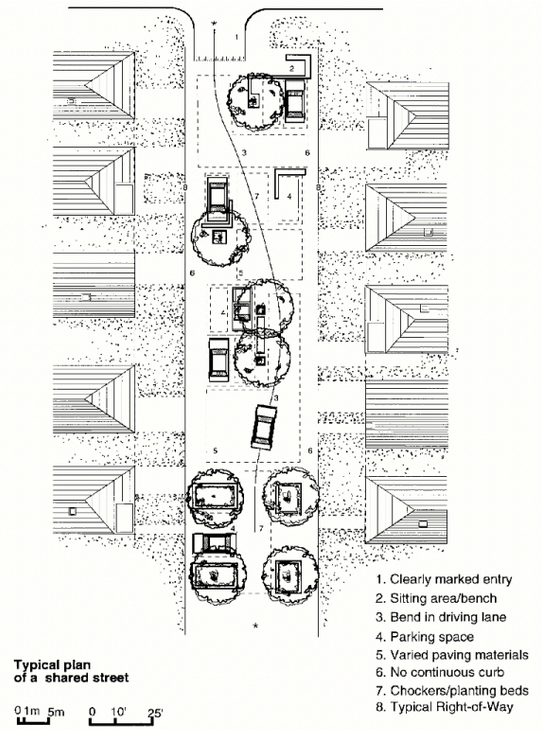



Fig.9, Shared street plan, Streets and the Shaping of Town and Cities, Eran Ben-Joseph (1997)

**Woonerf**
**/ˈʋoːnɛrf/**
**The word, of Dutch origin, literally translates as "living yard" or "residential grounds". A woonerf is a residential street where pedestrians, motor vehicles, and bicycles share the street at slow, safe speeds for all participants involved.**

**II. Delft experience: Woonerf concept**

The concept of the shared street gained popularity in Europe and has been applied in several countries, most notably in the Netherlands, where it was first developed and constructed. Niek De Boer, professor of urban planning at Delft University of Technology and the University of Emmen, inspired by Buchanan's theoretical concepts. He saw there is a possible solution for overcoming the contradiction between streets as places for children's play as well as car use. In 1969, the Municipality of Delft, which was considering redesigning and upgrading road surfaces in inner-city locations, decided to implement De Boer's ideas in some of the lower-income neighborhoods where more child play areas were urgently needed, but which lacked places for playing. De Boer renamed the street a "woonerf" or "residential yard". He designed streets with some features of the garden which force drivers to consider other road users. Moreover, with resident participation, the design integrated sidewalks and roadways into one surface, creating the impression of a yard. Trees, benches, and small front gardens further enhanced the space ***(Southworth, M. & Ben-Joseph, E., 1997)***.

Woonerf is about quality of life rather than speed of life. A woonerf-designed street has no division between cars and people, forcing cars to drive at a slower pace. Street furniture might be placed in the street and areas for community play are encouraged. It is as if a neighborhood suddenly gets a gigantic front yard, increasing social opportunities while creating an efficient use of space.



Although this is a Dutch concept, it is also open to interpretation. It is meant to reflect a culture's own needs and designs. Basically, it must have a clear entrance so that cars entering are aware that they must slow down. Parking should also be provided – just not everywhere. The street itself should not have more than 100 cars going through at peak times. Cars are the exception, rather than the rule.

The first set of minimum design standards and traffic regulations for the Woonerf was adopted and legalized by the Dutch government in 1976. A brief excerpt from Traffic Regulations for the Woonerf, translated from Dutch, illustrates their innovative and rigorous nature:

• A rticle 88a RVV
Pedestrians may use the full width of the highway within an area defined as a " Woonerf "; playing on the roadway is also permitted.
• Article 88b RVV
Drivers within a " Woonerf " may not drive faster than at a walking pace (about 15 km/h). They must make allowance for the possible presence of pedestrians, including children at play, unmarked objects and irregularities in the road surface, and the alignment of the roadway. Under Article 44 of the Dutch traffic code, motorized traffic in a woonerf or "recreation area" is restricted to walking pace.

The Delft experience was a success. Soon afterwards, the shared street (Woonerf) concept became accepted and established through guidelines and regulations in the Netherlands (1976)) and then in many other countries: Germany (1976), England (1977), Sweden and Denmark (1977), France (1979), Japan (1979), Israel (1981), and Switzerland (1982). By 1990 over 3,500 shared streets had been constructed in the Netherlands and Germany, more than 300 in Japan, and 600 in Israel. The concept's popularity was such that in new residential areas it became the major type of residential street ***(Southworth, M. & Ben-Joseph, E., 1997)***.

**“ We should raise our sights for the moment. What could a residential street — a street on which our children are brought up, adults live, and old people spend their last days — what could such a street be like? ”**
**— Donald Appleyard, Livable Streets , 1981**

### III. Design characteristics of shared streets (or Wonnerf)

Shared streets integrate pedestrian activity and vehicular movement on one shared surface. In this approach the street has first and foremost the functions of a residence, a playground, and a meeting area. It has the additional functions of carrying access traffic and providing parking spaces, but is not designed for intentional through traffic. The unified street system is fully adaptable to any residential street setting and to various physical shapes. Looking at the evolution of the form since its inception, several design characteristics are typical ***(Southworth, M. & Ben-Joseph, E., 1997)***:

• It is a residential, public space.
• Through traffic is discouraged.
• Paved space is shared by pedestrians and cars, with pedestrians having priority over the entire street. Walking and playing are allowed everywhere.
• It can be a single street, a square (or other form), or a combination of connected spaces.
• Its entrances are clearly marked.
• There are no conventional, straight stretches of pavement with raised curbs, and the pavement (carriageway) and sidewalk (footway) are not rigidly demarcated.
• Car speed and movement are restricted by physical barriers and deviations, bends, and undulations.
• Residents have automobile access to their dwelling fronts.
• The area has extensive landscaping and street furnishings.

In short, there are four main visible principles of Woonerf: visible entrances (the signs), physical barriers, shared and paved space, landscaping and street (see fig.10).


Fig.10, One of the first Woonerven

Fig.11-12. Shared steets in Israel and Tokyo, Streets and the Shaping of Town and Cities, Eran Ben-Joseph (1997)



These principles and physical characteristics can be applied to any configuration. In new housing developments the system allows for a departure from traditional linear streets to other configurations. Many new town developments in Japan and Israel use the shared streets as their basic design layout (Fig.11-12), with most residential streets being shared streets that branch off a main collector. Both pedestrians and drivers reach the clusters of houses across a shared undemarcated surface. This arrangement freed designers to develop new spatial patterns, unconstrained by the regularity of linear streets ***(Southworth, M. & Ben-Joseph, E., 1997)***.

**IV. The social benefits**

1) Interaction
More than transportation channels, streets are places suited for pedestrian interaction, where people choose to pause and socialize. They are especially supportive of children's activities, providing more play options and social contact within a safe home-base territory. Research indicates that as people spend more time on the street, the chances for social interaction also increase. This is particularly true for children's play. Children stayed longer, and without adult supervision, and play became more complex ***(Southworth, M. & Ben-Joseph, E., 1997)***.

2) Safety
Between 88 and 100 percent of the residents said they were willing to maintain the public planting beds within the streets, and almost 50 percent said they were actually doing so. And over 20 percent fewer accidents in shared streets and over 50 percent fewer severe accidents compared with standard residential streets ***(Southworth, M. & Ben-Joseph, E., 1997)***. The groups that benefit the most are pedestrians, children, and cyclists. Why the shared street could benefit the safety of the neighborhood? For one reason, the use of different colors and the vibrations of the blocks make drivers slow down, in addition to reducing the distance required for a complete stop when compared with asphalt paving. And for another reason, the shared street gives the most priority to non-drivers. The shared street layout establishes a pedestrian orientation by giving pedestrians primary rights; the driver is the intruder and is forced to realize he/she is entering a zone where the pedestrian has preeminent privileges. The motorist then recognizes the probability of sudden conflicts and exercises particular caution.

**Residential streets serve many functions beyond vehicular access—they are settings for social activity including children's play and adult recreation, the framework for pedestrian and bicycle circulation, and the space that provides an entry to homes. They should be designed for all of these activities.**
**— Eran Ben-Joseph**

### V. The power and the limitation of standards

Standards for design and engineering assure a minimum level of quality and performance, as in many plans and construction standards designed to protect living beings' health and safety. The residential environment is being shaped in major ways by standards which are no longer questioned and have become part of a rigid framework that is hardly to change. The problem arises when standards intended for health and safety overstep their bounds and lose a grounding for specific observation and evaluation in local level. This is what has happened with residential street standards today. In local level, it is a call for a more grounded regulation based the analysis and evaluation, rather than a basic national standard, on the actual situation for the specific area. It is undeniable that simple standards for street width and alignment have an enormous impact on the way neighborhoods look, feel, and work.

Andres Duany, an American architect as well as an urban planner, once states that "the street, which is the public realm of America, is now a barrier to community life." Streets nowadays is more a space for speed, and more a container for cars. Restoring a human scale to residential streets can benefit all, from the residents, to the developer, to the local authority. Developers would find that shared streets create an attractive public environment, thereby increasing the sales potential. Initiatives by manufacturers can further reduce installation costs and prompt developers to adopt the change. Cities and towns would then enjoy a durable street system that involves residents with their streets and would therefore have fewer maintenance problems, as well as better traffic safety and control.



We must look at streets as complex community settings that serve a variety of functions—not simply as channels for moving traffic and emergency vehicles. Streets are also environments used for walking, bicycling, and jogging, for socializing, and for children's play. They are the staging spaces for community interaction and neighborhood development. Therefore, the design of the street requires an understanding of social behavior, architectural and urban design, landscape architecture, and general planning ***(Southworth, M. & Ben-Joseph, E., 1997)***.

The strong power of standards also is the limitation. The problem is, while standards can of course help prevent the worst conditions, they can also stifle creativity and inhibit adaptation to local situations. What began as visionary design with valid motivations has often evolved into a rigid, overengineered approach. Once they are established, it is too easy to apply standards automatically.

# RESTORATIVE ENVIRONMENT

The shared street aims to ensure pedestrian safety in and to improve the quality of living. While, it is fundamental to discover what exactly affects people's feeling when walking around in built urban areas.

The final subchapter will firstly address on the Attention Restoration Theory and then highlight the ingredients relate to psychological restoration likelihood and try to find out how these attributes affect psychological restoration.

## What is restoration?
## What can we benefit from the nature?
## How to built the restorative built environment?

Early planners promoted a theory of systematized planning ***(Talen, 2009)***, while they failed to extend the system to physical design. Urban form languished under a coding approach (zoning) that paid little attention to the quality of urban form. However, modern code reformers believe that by using codes can achieve a better sense of place. In this sense, the standards of shared streets could be a good example. The concept of the shared street aims to ensure pedestrian safety in the roads and more essentially to improve the quality of living. While, in order to be more precise, it is fundamental to discover what exactly affects people's feeling when walking around in built urban areas and to understand how features of the built urban environment might affect psychological restoration. The final subchapter will firstly address on the Attention Restoration Theory and then highlight the ingredients (physical attributes of built environment) relate to psychological restoration likelihood and try to find out how these attributes affect psychological restoration.

The increasing density of people living in urban areas nowadays, and it is an unavoidable reality. Densification may offer some ecological advantages, such as better possibilities for residents to rely on collective transportation instead of private cars. At the same time, densification may increase people's exposure to noise and crowding, just as the amount of urban green spaces and other outdoor opportunities for restorative experiences diminish ***(van den Berg et al., 2007; Nordh et al., 2009)***. A healthy and active city is full of different opportunities, attracting more and more people from rural places or even other countries moving in, visiting, studying, working, and living. In this sense, what cities contain are more complex and controversial. The increasing demand for urban densification is transforming and blurring the boundary

**Have you ever been having a rough day or feeling down but found yourself pleasantly distracted by a beautiful scene?**

and relation between the urban and the rural. Furthermore, with the fast-growth urban development, many fundamental aspects of urban daily life are easily neglected, such as human-scale experience, the feelings of people, the rights of people, and so on.

With increasing urban densification, built environments that can promote restoration will become more important. Well-designed residential streetscapes might support restoration, but little research has considered the physical attributes that matter in this context ***(P.J. Lindal & T. Hartig, 2013)***. For this purpose, ***P.J. Lindal and T. Hartig (2013)*** attempted to shed light on physical attributes of the urban residential environment that can influence possibilities for restoration. They did tests and analysis by systematically manipulating attributes of blocks of buildings along a residential street as shown in computer-generated images. The physical attributes in focus are the number of turns in the buildings silhouette (the roofline silhouette), the amount of facade ornamentation (details) and building height (number of floors). The study of ***P.J. Lindal and T. Hartig (2013)*** provides guidance for the design of more psychologically sustainable urban residential environment. It considers how specific physical attributes of urban residential streetscapes might be varied through design to enhance possibilities for restorative experiences.

The natural world is often depicted as a restorative environment that replenishes one's resources, while busy, crowded urban environments have often been considered attention and energy drains (although not always—busy cities can be excellent places to find inspiration and energy when in the right frame of mind). Although these beliefs were long held as simply opinions and personal views, the last few decades have seen some empirical work on the idea that natural environments can restore and rejuvenate us, boost our attention, and keep us healthier.



**The valuable role of nature: contributing to overcoming mental fatigue and improving our ability to focus and direct our attention effectively.**

## I. Attention restoration theory

Restoration is a popular topic within environmental psychology, a field of psychology that intertwines with environmental disciplines to explore the dynamic connections between individuals and their surroundings. One important interaction between individual and environment is the restoration of our attention, our energy, and ourselves by experiencing or viewing nature ***(Clay, 2001)***. Restoration has come into focus in research on environment, behavior and design because of its significance for adaptation and health. Without sufficient restoration, conditions of resource inadequacy may become chronic, and this can entail negative consequences for effective functioning, well-being, and health ***(Hartig, 2007)***. This is the reason why nowadays scholars draw more attention on restoration when facing the constantly changed world today. The increasingly everyday needs, both physical and psychological, of people are demanded urgently. Specially, psychological restoration, which involves the renewal of physical, psychological, and/ or social resources diminished in ongoing efforts to meet everyday demands ***(Hartig, 2004)***.

Attention Restoration Theory, or ART, proposes that exposure to nature is not only enjoyable but can also help people improve focus and ability to concentrate. This theory was developed and popularized by Stephen and Rachel Kaplan in the late 1980s and early 1990s, a time period characterized by rapid technological advancement and ever-increasing indoor entertainment. How could the environment help human restore, relax, and rejuvenate? To mitigate attentional fatigue, Attention Restoration Theory (ART) ***(Kaplan & Kaplan, 1989 ; Kaplan, 1995)*** proposes that people can benefit from entering situations characterized by four restorative qualities. According to ART, there are four key components that characterize a restorative environment:

1. Being away involves a sense of distance from daily routines and the projects that require directed mental activity. It refers to the sense of being separate and apart from one's usual thoughts and concerns. An individual does not have to be physically away to satisfy this component, but it can certainly be helpful.

2. Fascination refers to an effortless form of attention engaged by the features of the environment or exploration of the environment.

3. Extent refers to the scope for involvement with the environment as well as the degree of coherence and order in the environment; the person should be able to explore without getting lost or confused. It means that the environment does not have any unusual or unexpected features, and you feel comfortable and at ease in the environment.

4. Compatibility refers to the degree to which the environment supports the person's activities; it concerns the match between what the person wants to do, can do, and must do. It is all about feeling enjoyment and congruence in your environment. To be restorative, an environment must be one in which the individual chooses to be out of intrinsic motivation and personal preference.

To understand how features of the built urban environment might affect psychological restoration, the study of P.J. Lindal and T. Hartig (2013) draws on the ART ***(Kaplan & Kaplan, 1989 ; Kaplan, 1995)***. The theory is concerned with a capacity to direct attention, which is a cognitive resource required for effective functioning in contemporary urban societies. People commonly rely on this resource in daily life, as in performing paid work, way finding, and monitoring the behavior of others. When exercised over time, the inhibitory mechanism on which directed attention depends is assumed to become fatigued. This attentional fatigue can entail a variety of problems, such as ineffective work performance, failure to pick up important cues on appropriate behavior, and increased irritability ***(P.J. Lindal and T. Hartig, 2013)***. ***P.J. Lindal and T. Hartig (2013)*** assume that being away and fascination are influenced by physical attributes of the environment, and that they in turn affect a person' s judgments about the likelihood of restoration in an environment that the person could choose to pass through. Also, ***Stamps (1999, 2005a)*** concluded that research suggests that these attributes indirectly affect preferences through their effects on two perceptual variables, complexity and enclosure.



## II. Perceived complexity, preference and perceived enclosure

Complexity has been defined variously as the number of elements present in a scene (e.g. Kaplan, & Kaplan, 1982) and more particularly as the "noticeable difference" between elements ***(Rapoport & Hawkes, 1970, p. 109)***. ***Stamps (1999)*** pointed out that terms used to describe complexity in the urban environment, such as visual richness and diversity, are vague, and he considered low-level geometrical concepts to be more appropriate for representing complexity in design. Such concepts can be applied to the silhouette and surface features that affect the level of complexity perceived in a building façade. ***Stamps (1999)*** claimed that both silhouette and surface features reliably influence visual preference through perceptions of complexity. ***Stamps (1999)*** compared preferences for building façades with different shapes and concluded that façades with five turns were preferred over those with four turns. Although in this latter study Stamps did not formally test whether perceptions of complexity mediated the relationship between number of turns in the silhouette and preference, the pattern of relationships seen across the studies indicates that this is a plausible model ***(P.J. Lindal and T. Hartig, 2013)***. In the meanwhile, many studies have assessed people's preferences for different built urban environments. Preference is strongly associated with judgments of restoration likelihood, at least for some categories of environments, such as urban parks ***(Nordh et al., 2009)***.

A sense of enclosure in the urban environment can be generated with unbroken blocks of buildings, which represent the " walls " of an outdoor room in which streets and sidewalks represent the "floor" and the sky is the "ceiling " ***(Ewing & Hardy, 2009)***. ***Stamps (2005a)*** found a strong correlation between the percentage of vertical solid surfaces that hindered visual and locomotive permeability (e.g., a brick wall) and ratings of enclosure. From the different findings, drawn from numerous studies, it can be inferred that the height of a continuous block of buildings along a street, together with the height of buildings at the distal end of the street, will affect the sense of enclosure ***(P.J. Lindal and T. Hartig, 2013)***.

**III. Three physical attributes of the urban environment**

1. The number of turns in the buildings silhouette
2. The amount of facade ornamentation
3. Building height (number of floors)

The height of buildings along a street increases a sense of enclosure, and that the sense of enclosure is related to environmental preferences, though the direction of the relationship depends on whether enclosure is in the lower range or in the upper range. Given that preferences for residential streetscapes are related to the possibility for restoration, we expect that judgments of restoration likelihood are also sensitive to physical attributes that affect the degree of enclosure. This expectation is reinforced by the results of a study on restorative quality in urban spaces by ***Galindo and Hidalgo (2005)***. They found that openness (which can imply lower enclosure) was positively associated with being away and fascination, which we expect to positively affect judgments of restoration likelihood. Thus, we expect that physical attributes which increase enclosure within the middle-to upper-range, such as building height, negatively affect judgments of the likelihood of restoration, via their negative effects on perceptions of being away and fascination ***(P.J. Lindal & T. Hartig, 2013)***.

The results of the study of ***P.J. Lindal and T. Hartig (2013)*** indicate that
1. Greater building height affected restoration likelihood negatively.
2. Higher buildings reduced the sense of being away, which in turn reduced the expectation that restoration would take place.
3. Fascination did not significantly mediate the relationship between building height and restoration likelihood. Although the higher buildings increased the number of elements to notice, after adjustment for entropy building height did not of itself do more to engage fascination.

***P.J. Lindal and T. Hartig (2013)*** claim that the results affirm that densely built urban residential settings need not lack restorative quality, and that the design of the built environment can play a significant role in affecting perceptions regarding possibilities for restoration. Such information is needed in the effort to create urban environments that are sustainable in social and psychological terms as well as in ecological terms.

# 04

# REFE-RENCES

TYPOLOGY OF GROWTH IN BUILDING

**House Na** / Tokyo, Japan

Architects: Sou Fujimoto Architects
Area: 85 m²
Year: 2012

1) The intriguing point of a tree is that these places are not hermetically isolated but are connected to one another in its unique relativity;

2) The house acts as both a single room and a collection of rooms.

The architect Sou Fujimoto states, “The white steel-frame structure itself shares no resemblance to a tree. Yet the life lived and the moments experienced in this space is a contemporary adaptation of the richness once experienced by the ancient predecessors from the time when they inhabited trees. Such is an existence between city, architecture, furniture and the body, and is equally between nature and artificiality.”



Fig.13, Street View of House Na, Sou Fujimoto (2021)

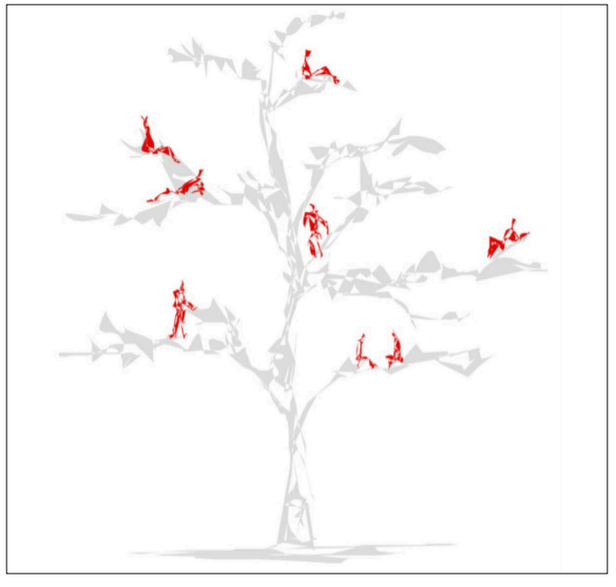


Fig.14, The Concept of House Na, Sou Fujimoto (2021)

**Daita2019 House** / Tokyo, Japan

Architects: Suzuko Yamada Architects
Area: 138 m²
Year: 2019

**Reconfigurable house with permanent scaffolding**

1) An assemblage of 34 windows of different sizes and sashes, rendered alternately in wood, steel or aluminum;

2) A spiral staircase is strategically integrated into the steel pipe system to allow the garden's fruit trees to be pruned and harvested at different heights;

3) The scaffolding also allows the house to be continually expanded and reconfigured, as additional elements such as bannisters or rails for drying clothes can be added simply by clamping or unclamping different pipes ;

4)The flexibility allowed the owners to transform a studio in the semi-basement, which originally designed for the owner's video production work, into a shared family office for working from home during the coronavirus pandemic.



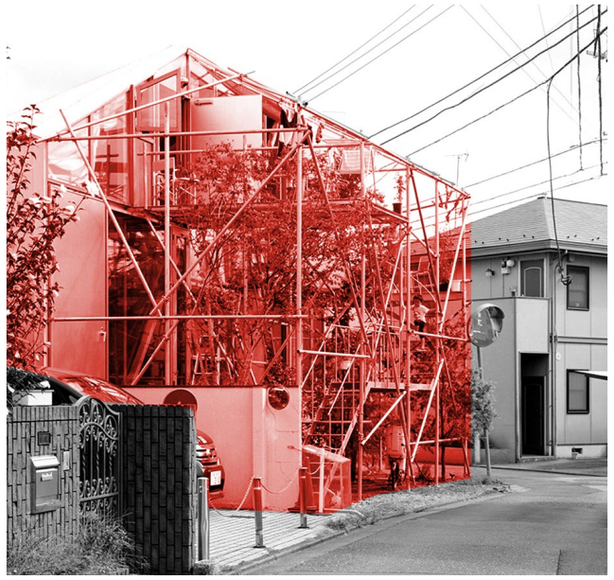


Fig.15, Street View of Daita2019, Suzuko Yamada Architects (2021)

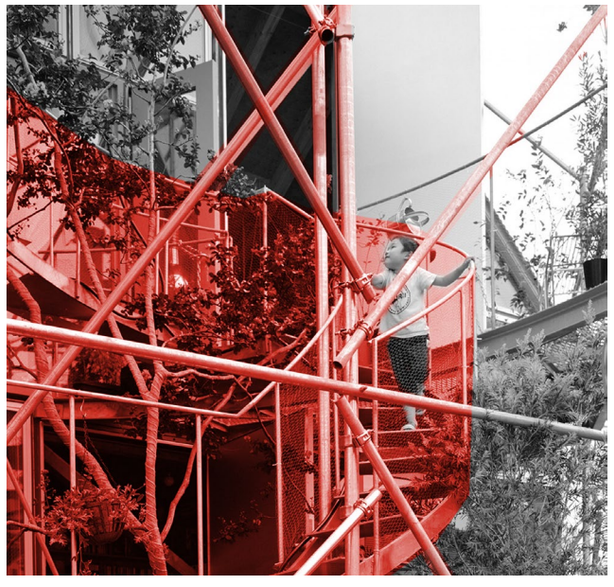


Fig.16, Scaffolding, Suzuko Yamada Architects (2021)

**3 BOX, DEMOCRATIC HOUSES** / Paris, France

Architects: Malka Architecture
Area: 180 m²
Year: 2016

1) A green housing 40% below the real estate market price;

2) Built without any nuisance in workshops, in extremely short time thanks to our patented panels and unique technique of prefabrication;

3) Theses energy plus houses are modular systems that may extend, regarding to the users needs;

4) Building on top of the roofs is not only an ecological and economical solution, it's working against the urban sprawl that kills the social link. It's also a contemporary way to discover new perspectives of the city, a new Paris above the horizon.



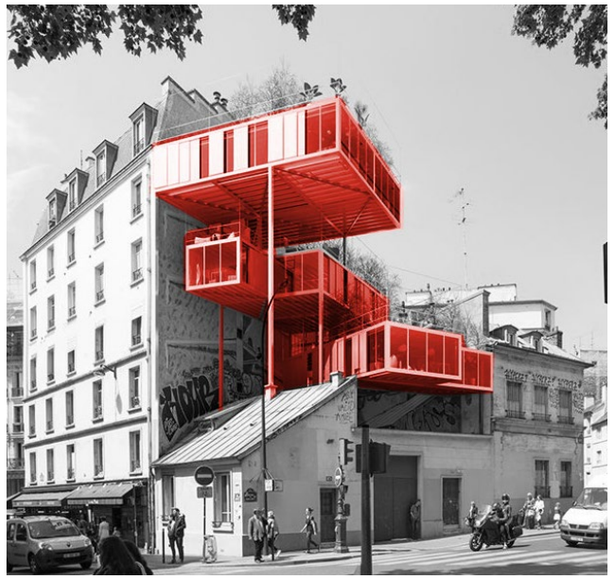


Fig.17, Street View of 3BOX, Malka Architecture (2021)

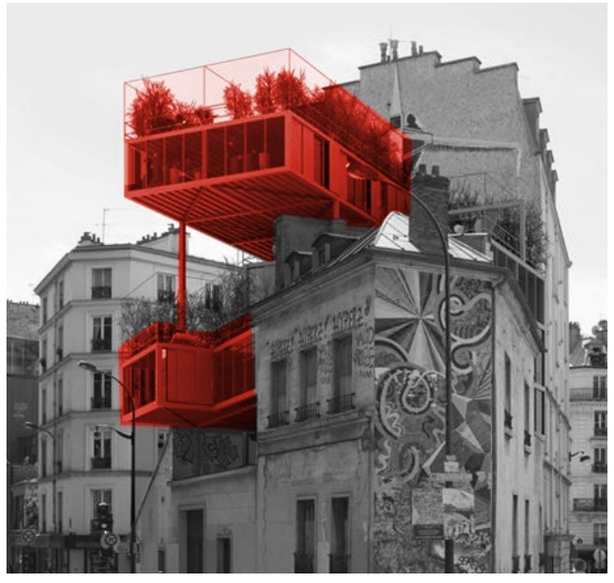


Fig.18, Street View of 3BOX, Malka Architecture (2021)

**The renovation of a Brussels typical**
**Terraced-House** / Schaerbeek, Belgium

Architects: Edouard Brunet, François Martens
Area: 225 m²
Year: 2015

1) Originally inhabited by a single family, the house appeared too big and difficult to take care of after the children grew up and left. The owner of the house then decided to sell the last two floors to a friend;

2) The architectural project consists in renovating and turning the existing single family terraced house into a building of two separate flats.



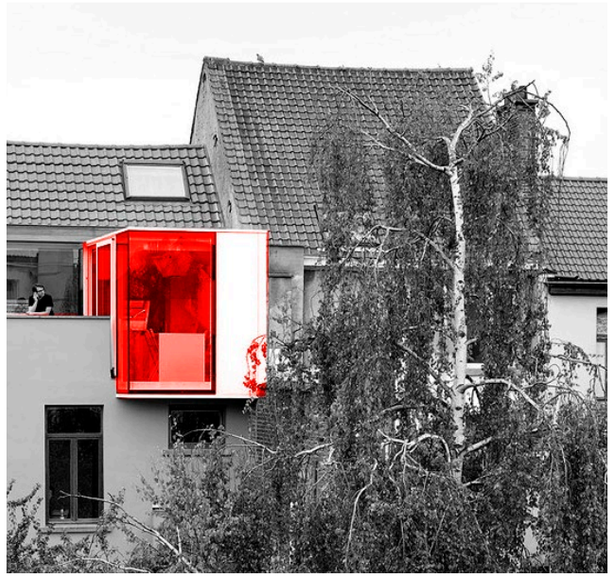


Fig.19, The Renovation of a Brussels Typical Terraced-House, Edouard Brunet, François Martens (2021)

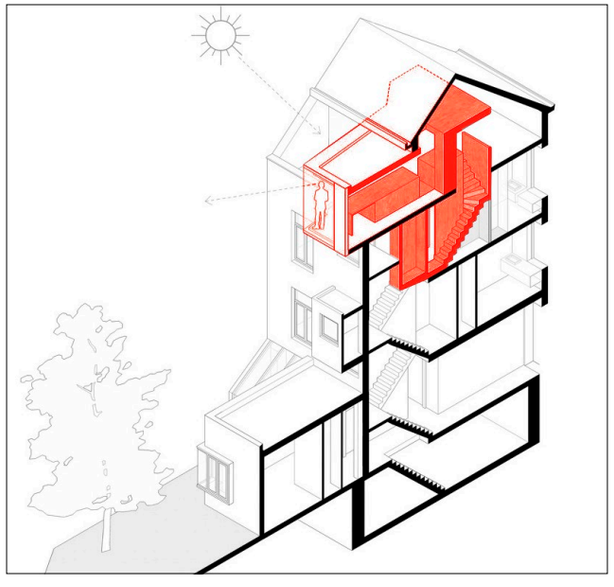


Fig.20, Section of the Renovation of a Brussels Typical Terraced-House, Edouard Brunet, François Martens (2021)

# 05

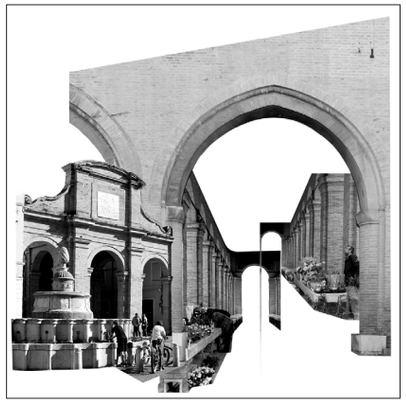
# POSSI-BILITY

A CONTINUOUS STORY

# CITY OBSERVATION: SITE ANALYSIS

This chapter showcases  a series of diagrams including typological maps, architectural drawings on the specific site Mazzini Rimini through deep city observation and field survey, which indicates the current status of Mazzini neighourhood.

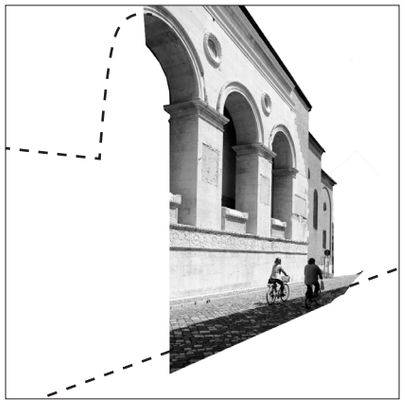
1 Piazza Tre Martiri



2 Piazza Cavour

3 Arco D'Augusto


Collages, Mapping and Morphological Map in Rimini (Italy), Author (2021)



4 Temple Malatestiano

5 Castel Sismondo

6 Tiberio Bridge

## LANDMARK
Church of Saint Gaudentlus

Catholic church
PIazza Giuseppe Mazzini:
gathering, drinking, eating
Surrounded by commercials:
bars, restaurants, stores

## RESEARCH AREA
Mazzini, Rimini

Main function:
residential area, housing
Urban tissue:
In-line urban fabric
Characteristics:
quiet, livable, traditional

## ABANDONED BUILDING
Unknown Building Cluster

Abandoned settings' potential:
to be designed as a mulit-use center
for community.
Exhibition, concert, market, meeting,
film festival, etc.

Fig.21-23, An Aerial View of Research Area Mazzini Rimini,
Google Earth Pro, Author (2021)

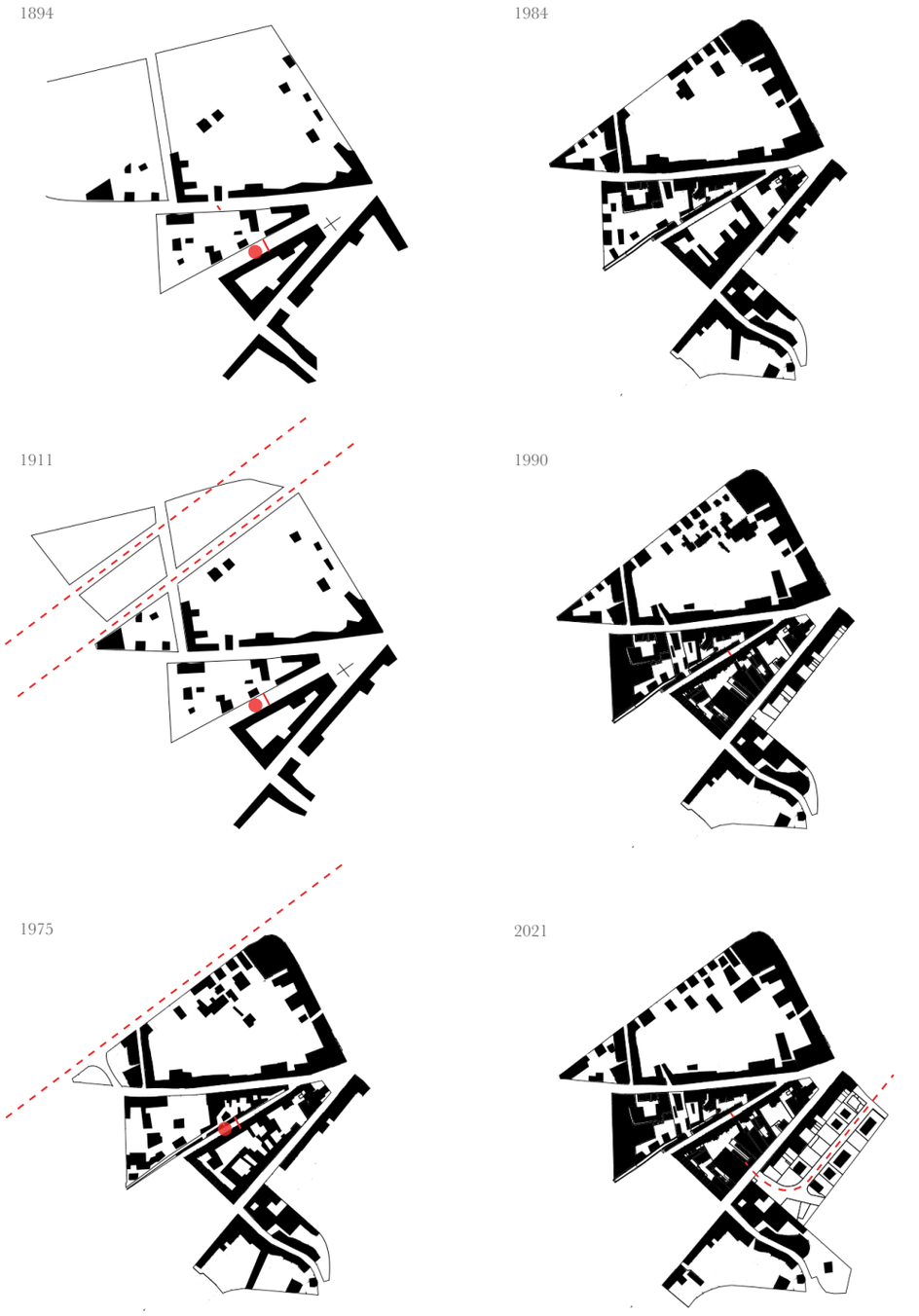
## The Transitional Form of Mazzini Rimini

*Between 1890' - 2020'*

Dating from 1894, the transitional maps show that the urban tissues in Mazzini changed six times from the 1890s' to 2020s', especially from 1894 to 1911; the most significant development was that two new routes passed through the north blocks. However, at the same time, the land use -for residential use- never changes.

More specially, the road (via Lavatoio), highlighted with a red circle, was narrowed with a group of buildings along the street in 1975.






The Change in Build Form of Mazzini Rimini Between 1890' - 2020', Author (2021)



**Research area//**

The resarch site Mazzini located on the west edge of Rimini's historic center. It takes 5 minutes for walking to Pizza Tre Martire (the core). To get to the research area, while walking along the commercial street from the core until the end then passing through Porta Montanara (as the red point ● shows), you can always see the church stands there.

**In-line urban fabric//**

It shows a significant building pattern - inline urban fabric, which is a line of two or three-storey- buildings setting along the street. It is a very quiet residential area with some commerical stores (e.g. restaurants, bars, hair salon, groceries, etc) on the ground floor in some streets.

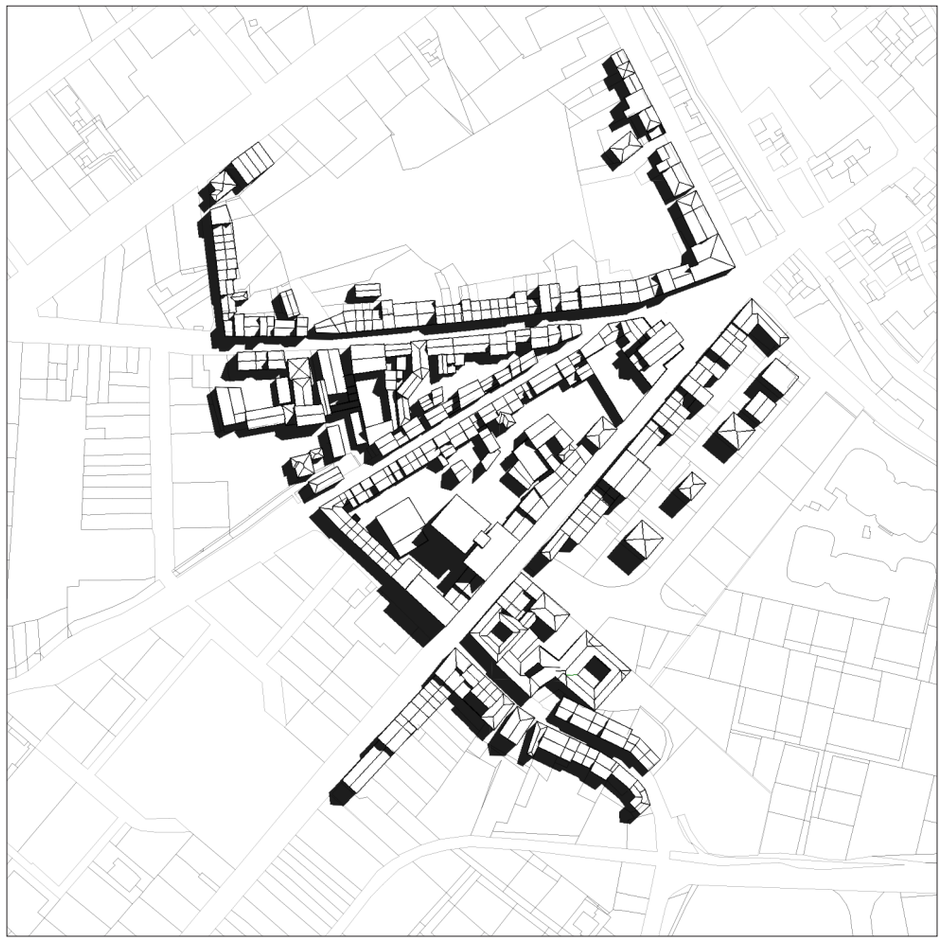
**Courtyard & the voids//**

The couryards inside the block surrounded by the buildings which set along the street. Some for car parking, some are empty, some are limited, some are useful for recreation in the future after the intervention. There are several visible entrance (›) opening to the outside, not private.

**Road system//**

The traffic condition around the site is quite well. The streets are not very busy in the whole day, rarely having traffic jams. especially for street I and street II. The problem is that these two streets are lack of lane for pedestrains and cyclists. Later then the current status of street will be explored more deeply.

**Roof Plan of Mazzini Rimini**



Roof Plan 1: 5000, Author (2021)



**Typological Map of Mazzini Rimini**

Groundfloor Plan 1: 5000, Author (2021)

## Streets in Mazzini Rimini

City Gate

One-way streets

Two-way streets

Two-way bicycle lanes

Parking areas

Streets in Mazzini Rimini, Author (2021)

**One-way streets** applied on the most streets in Mazzini. Directing traffic one way is a method of expediting traffic flow from congested streets and at the same time maintaining the quality of street life for local residents. However, only one street consists of bike lanes. The spaces for car parking are mainly set along the streets and in a huge parking lot in the north of the site.

## Axonometry of Mazzini Rimini


1
Special urban fabric
Historic building:
Church of Saint Gaudentlus

2
Tall building urban fabric
Over three-storey residential
buildings

3
Single building urban fabric
villas

4
In-line urban fabric
Impact ribbon conposition of
residential buildings

5
Abandoned urban fabric
Abandoned Buildings

Axonometry diagram of current status and building patterns in Mazzini Rimini, Author (2021)

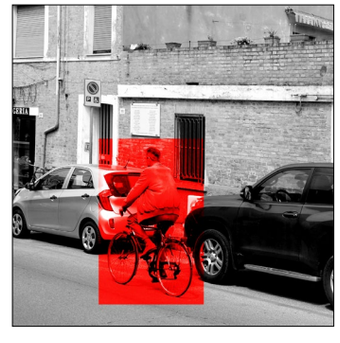
Cities and neighbourhoods that maximize mix and increase the connections between people and things are thought to be more vibrant and healthy. Strategies for increasing connectivity are based on the view that the built environment has the effect of constraining or promoting passive contact. These connections vary in scale and involve different types of routes and spaces – public and private, residential and non-residential, storefront and sidewalk. A focus on street connections draws attention to the size and shape of blocks, which have a significant impact on the corresponding patterns of movement.
— Emily Talen (2014)

**Street Observation**

1. Rooftop renovation
2. Sitting in front of the house
3. Walking with dog
4. Riding on the road



sidewalk
cycle lane
leisure space
self-intervention
in need



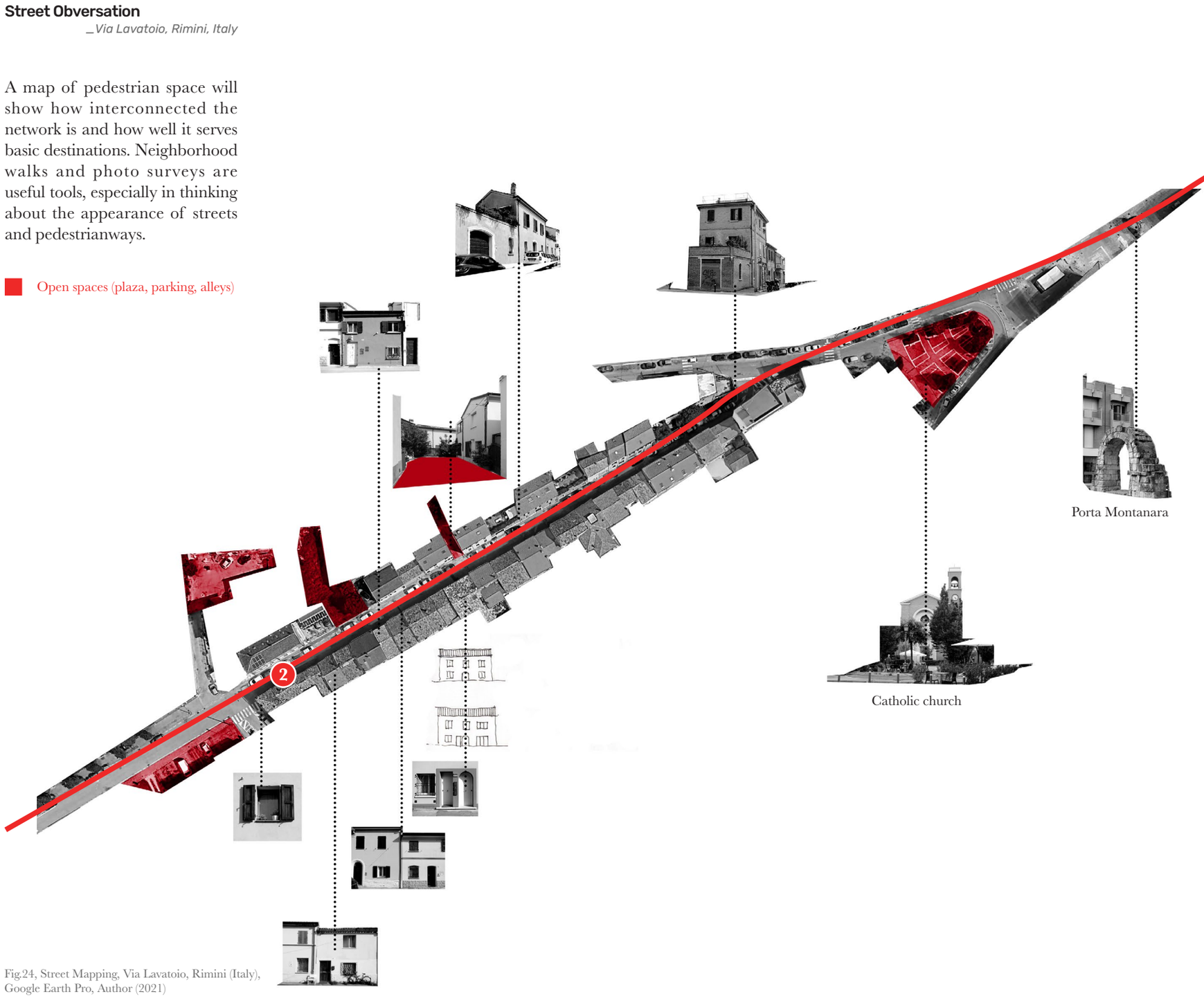
Street Observation, Author (2021)

**Street Obversation**

*_Via Lavatoio, Rimini, Italy*

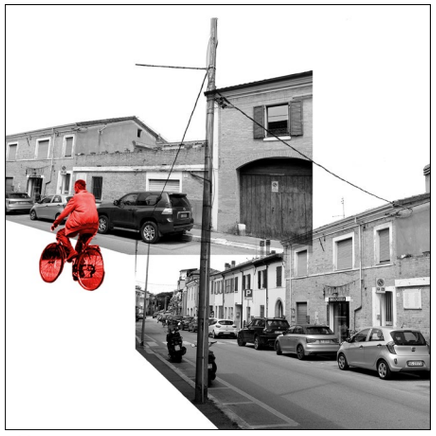
A map of pedestrian space will show how interconnected the network is and how well it serves basic destinations. Neighborhood walks and photo surveys are useful tools, especially in thinking about the appearance of streets and pedestrianways.

Open spaces (plaza, parking, alleys)




Porta Montanara

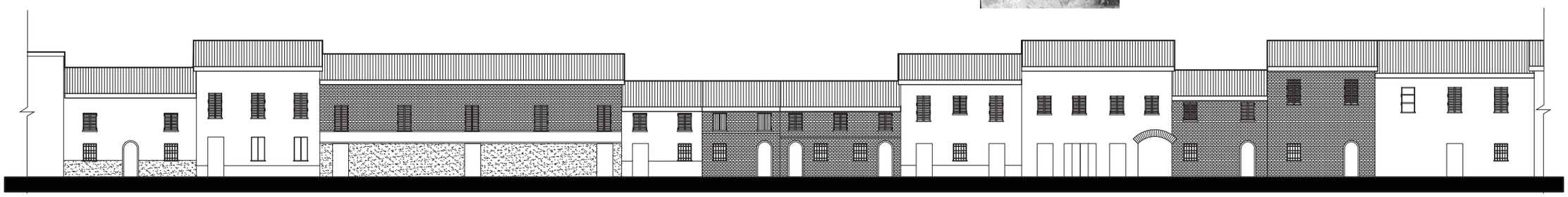
Catholic church

1 Street View

2 Street View

Fig.24, Street Mapping, Via Lavatoio, Rimini (Italy), Google Earth Pro, Author (2021)



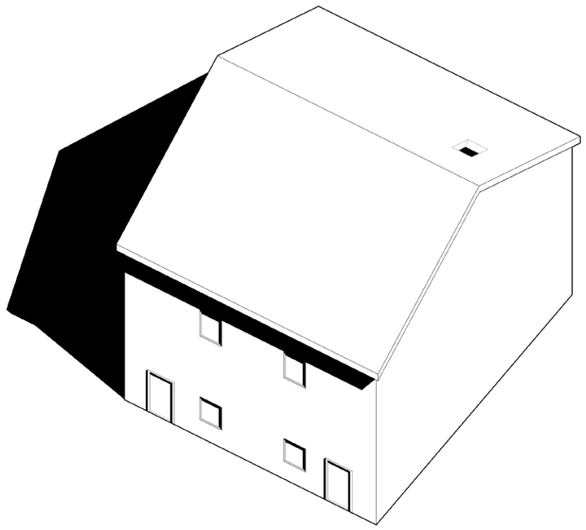
Facade of Via Lavatoio_1: 450, Rimini, Author (2021)

Street Observation: via Lavatoio, Rimini, Author (2021)

The man who is driving the electric car in the photo asked me "Come sono nella tua foto? Sto bene?" ("How I look in the photo? Do I look good?")

He is a very friendly gentleman who first starts the conversation I did not expect. After helping him placed the wooden slab for conneting the level difference between the street level and the ground floor, I had a short conversation with him and his wife. From the conversation, I knew that he has a problem with his leg so he need that small electric ride recently.


Facade of Via Lavatoio_1: 450, Rimini, Author (2021)



Most of the buildings are two-storey residential houses with different colors. The colors and ornaments represent every unique charactristic of each house.

So this is the house where the man and his family live as shows in black (Fig.25). From the conversation I got to know that the other part of the building is much bigger with two-storey, which is owned by others.

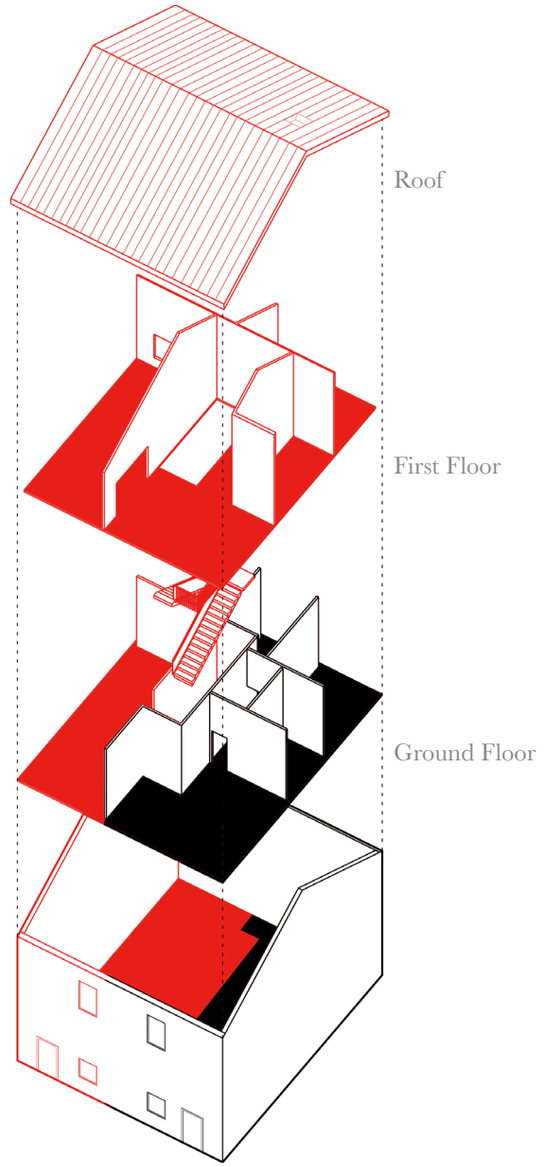



Fig.25, Diagram of Explosion View of a Visited Building, Author (2021)

**Strengths**

· Close to tourist attractions (e.g. culture heritages)
· Short-time getting to  the core (e.g. Piazza Tre Martiri)
· Quiet residential area

**Weakness**

· Lack of green spaces
· Unorganized spaces in courtyards
· Lack of bike lanes
· Low quality of walking & riding experience
(because of narrow street with car parking)
· Degraded building elements & facades

**Opportunities**

· High requirements for urban planning
· Improve walking and riding experience
· Improve space quality for the age and children
· Regenerate buildings in height
· Renovate building facades along streets
· Add greenery providing a more comfort environment
· Increase the value of land use (e.g. different time)

**Threats**

· Hard to promote residents to renovate the buildings themselves
· Sum up the codes for the regeneration of in-line fabric

Street View, Rimini (Italy), Author (2021)

# SKYLINE AND DYNAMIC GROWTH

This chapter showcases the design strategy on the specific site Mazzini Rimini, indicating the design concept to regenerate the neighbourhood Mazzini. Concerning the shared street concept and psychological restoration likelihood, the street will be regenerated in a way which considers urban living experience.

**Mazzini Neighbourhood Regeneration**

· To promote the quiet, beautiful, livable environment of Mazzini neighborhood.

· To promote the interests of locals, by increasing the levels of the buildings. The skyline will change year by year, because of inhabitants' self intervention.

· To improve enjoyable walking experience, pedestrain and bicycle path should be define and temporary leisure spaces along the street, alley could be added.

· To promote locals' action, to create the possibility of connection, cooperation within the neighborhood, between inhabitants.

In order to keep the personality of every single building, give people a blank paper (a structural frame), letting them decide what to do on the paper, but the framework firstly has to be set as guidelines, and principals as the procedure for introducing them how to build their new spaces.

**Strategies**: 1 an adaptive module system; 2 self-built: decided by locals; 3 flexibility: assembly & reassembly easily.

**Proposals**: 1 light-weight structure; 2 accessible & sustainable materials

**Material:**
- structure: timber, metal
- components: timber, metal, glass

**Imagine an urban square as a habitat, or local 'environment' created to satisfy human needs. It could be a tranquil formal setting, like London's Fitzroy Square, framed by fine buildings, with people strolling by or sitting beneath the shady trees. Or it could be a hectic bustling space in a rapidly developing country, where people are walking, talking, bustling, trading, cooking, eating, sleeping. All urban life is here: a whole mixture of 'land uses' contained in a single 'urban room'.**
***— Marshall, S. (2005)***

### The Urban Room

We all live in the smae room which called the urban room. The sky is the ceiling. Each floor presented by the layer of the soil, water body, vegetals, built area, and unbuilt area. Living in the urban area, each person plays a essential and unique role. There are entertainers, vendors, city servicemen, order maintainers, etc. Furthermore, there are much more non-human beings living together with us. Owing to all, the urban space is enriched, the urban life does exist.

Since 2019, the outbreak of Covid-19, coronavirus has altered the atmosphere (both look and feeling) of the cities. Life has returned to (or has to be back to) normal gradually after a long period of lockdown when the pandemic is slowing down. However, the fact is that the pandemic is still going on, the virus is still continue to roil our society and the urban life has been changed, therefore, now we are facing the time of "the new normal", or the post-pandemic. The constantly changed world are constantly challenging urban experience. Human has to change the way of living, to some extend, in order to keep pace with the fast changing world. In this sence, the question how we will live together (same as the theme of La Biennale Architecture 2021) especially in post-pandemic period inquires not only the ways on how we live but also how we live with other living beings. Thinking of the relation with human and nature, there is much difference between how we live in the nature and how we live with nature. We are a part of nature. The urban room contains natures both natural and artificial. How do we live in the urban room?



**Local roads must provide access to houses but prevent traffic from coming through.**
**— Christopher Alexander, A Pattern Language, p.261**

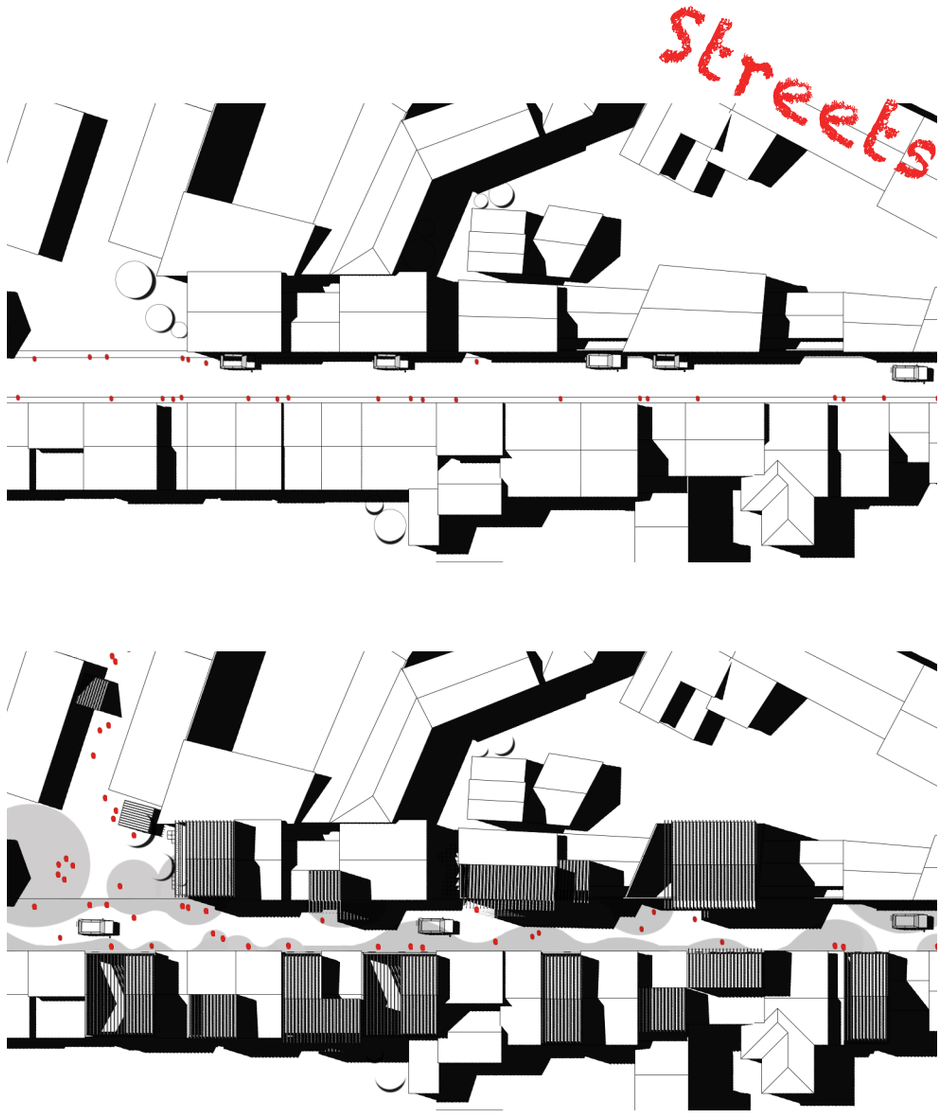



Fig.26, Comparison of Street Intervention Before and After (partical street plan in Mazzini, Rimini), Author (2021)

Coronavirus is a warning. It reminds us the limitation of our planet's tolerance. It seems let us slow down. Althought globalization has brought benefits, it has also caused many irreversible environmental impacts on the planet. During the Covid-19 pandemic, many cities limit cars and give more street spaces to public like pedestrian, visitors, and also give restaurants more spaces to host seats in open air and so on. In Edinburgh's Old Town, Cockburn Street has been closed to cars since July 2020 to give residents, visitors, and restaurants more space to socially distance during the coronavirus pandemic. Restaurants have taken over Dyckman Street in northern Manhattan, which has been temporarily closed to cars. Pedestrianization in environmental aspect will help to reduce $CO_2$ emission by private cars significantly, however, many people complain that it is not beneficial for residents, and also it creates more traffic. Pedestrianization does not mean to close anything to cars, while it should mean to open streets for a more livable and equitable cities. The concept of shared street has quite a forward looking. It maintains the city's traffic flow and in the same time, it improves people's safty and recreation. Not only squares but residential streets are spaces for gathering, playing and strolling. They can be free, open, and active.

A site visit in Rimini Italy took place in April 2021. The street survey found that there is no height level difference and pavement difference with vehicle and pedestrain/ cycle lane, and even worse there is no significant visible lane for pedestrain and cyclists in some streets. The streets are rarely with greenery. Inspired by the concept of the shared street or "Wonnerf", the intervention could be implemented on street as the street plan (Fig.26) shows. The painted pavement will slow down the car speed psychologically. Plants, temporary installations and furnitures for leisure use will be placed. After the intervention, walking and riding in residential streets will be more freely and enjoyable instead of being limited on the side of road. In the mainwhile, driving is still allowed but pays more attention to non-drivers. There is another discover essentially should be considered into the design project. During the visit, I met a resident who was driving his small electric ride home. Because of the height difference (about 20 cm) between street level and ground floor level, he must place a wooden panel for connecting as a bridge (a slope) so that he can drive into house afterwards. It is not difficult for normal people but it is a trouble for him because he got surgery on legs recently. This is a mirco observation but if the intervention takes it into consideration, it will mean a lot to make a change in life for disable people.



### The Skyline and Dynamic Growth

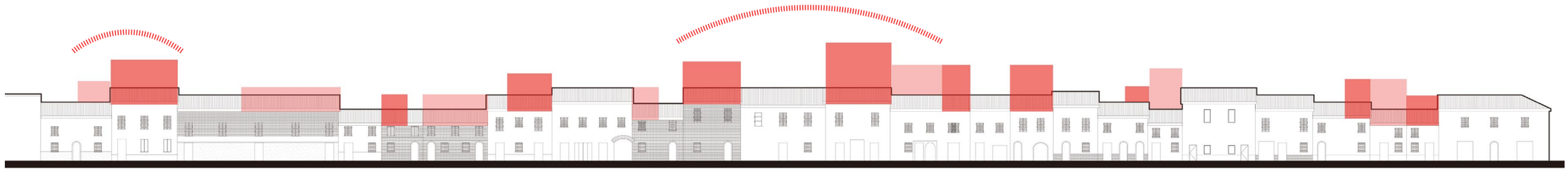
As already introduced in the first part of this thesis, the city center has been forgotten easily for a long time after the seashore development especially in summer days. In the past years, Rimini municipality has done a lot efforts to improve the city center's appearence through investing many public facilities and city parks but has not done any intervention on buildings, especially for residential buildings. Nowadays, local government tends to promote local residents to do intervention themselves. Therefore, it may draw some specific questions: How to regenerate the isolated center? And for this thesis's research purpose, how to regenerate the in-line urban fabric in height? And how to promote self-intervention? How is it possible to regenerate the city through urban codes?

It is undeniable that not only the outdoor space is more crucial than ever before but flexible interior spaces are current urgently needed. Flexible, temporary installations and spaces are more and more in need recent years especially when the pandemic has been roiling the world. The project will promote an adaptive module system for extension on building height. Locals can build, reassemble and disassemble the module by themselves according to their demands. Prefabricated units made from local materials can be found in market. After disassembling, the unit can be saled to neighours or returned to the market. The maximum height rising is three-storey. Each building could be one floor heigher than the buildings by side. The intervention will be take place by individuals, which means the number of floors and modules will be decided by the owners, therefore, the skyline will change dynamically year by year.

# Skyline in developing

in X years

in 2X years



in 3X year

The Concept of Dynamic Growth in Height, Author (2021)

**STRATETIES FOR ADAPTABLE EXTENSION**

"Add a Room to Your House!"

# Buildings

**· Benefit**
- for original family self-use (6_section)
- for renting: a new family/ single use (9_section)

**· Room Function**
- top roof garden
- playground
- bedroom
- living room
- balcony
- study room

**· Self-use**
- 1, 6: add one room
- 2: add one entire storey
- 3, 5: add two rooms
- 7, 8: add two more

**· Renting**
with new entrance
- 4: for couple use
- 9: for single use

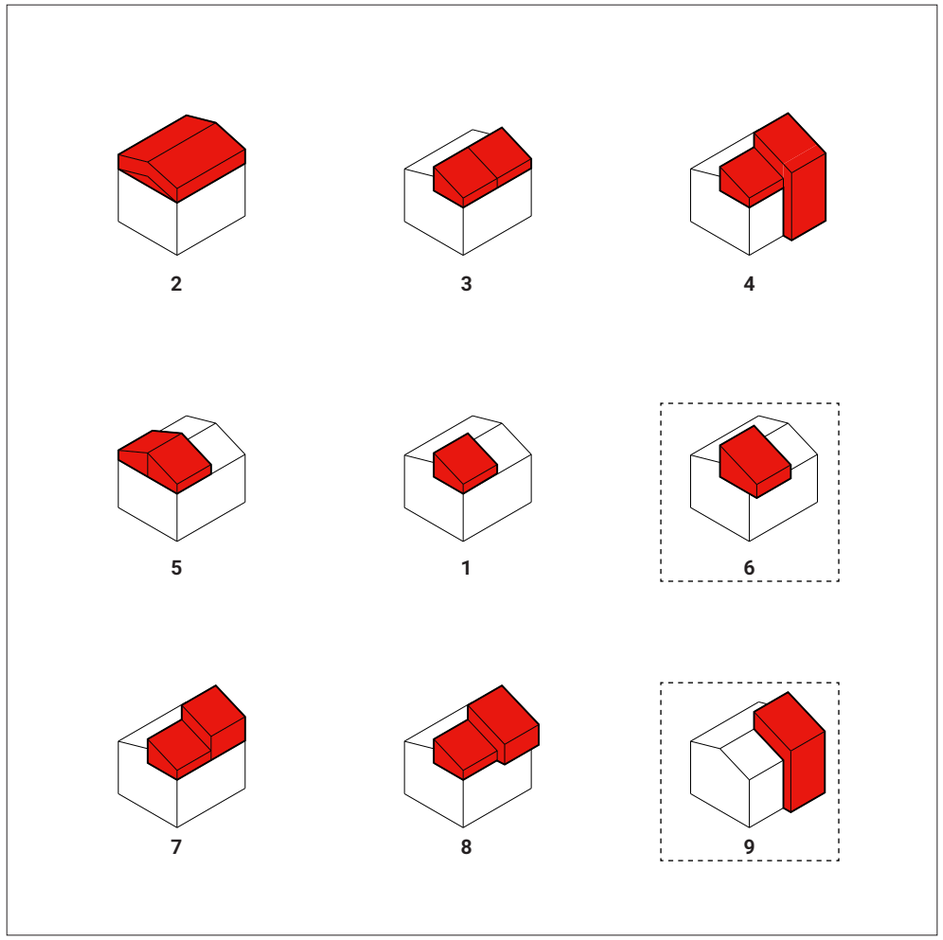
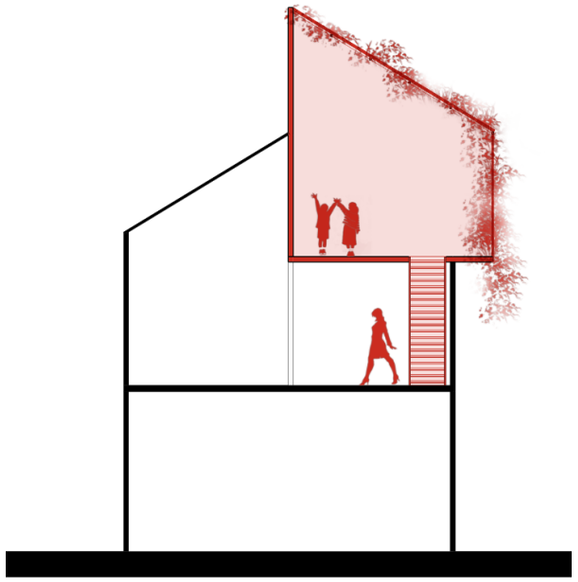



Diagram of Intervention Design Strategy, Author (2021)

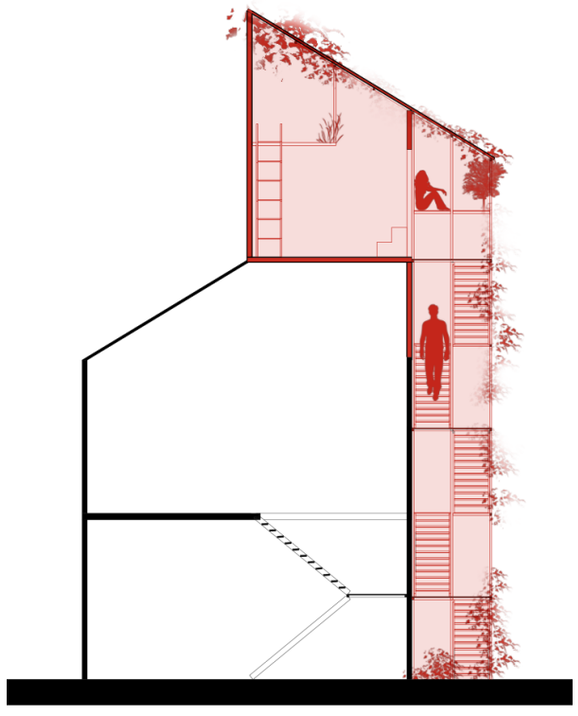
6



Section of Sample n.6, Author (2021)

Fig. 27, Street View of Sample n.6, Google Earth Pro, Author (2021)

9



Section of Sample n.9, Author (2021)

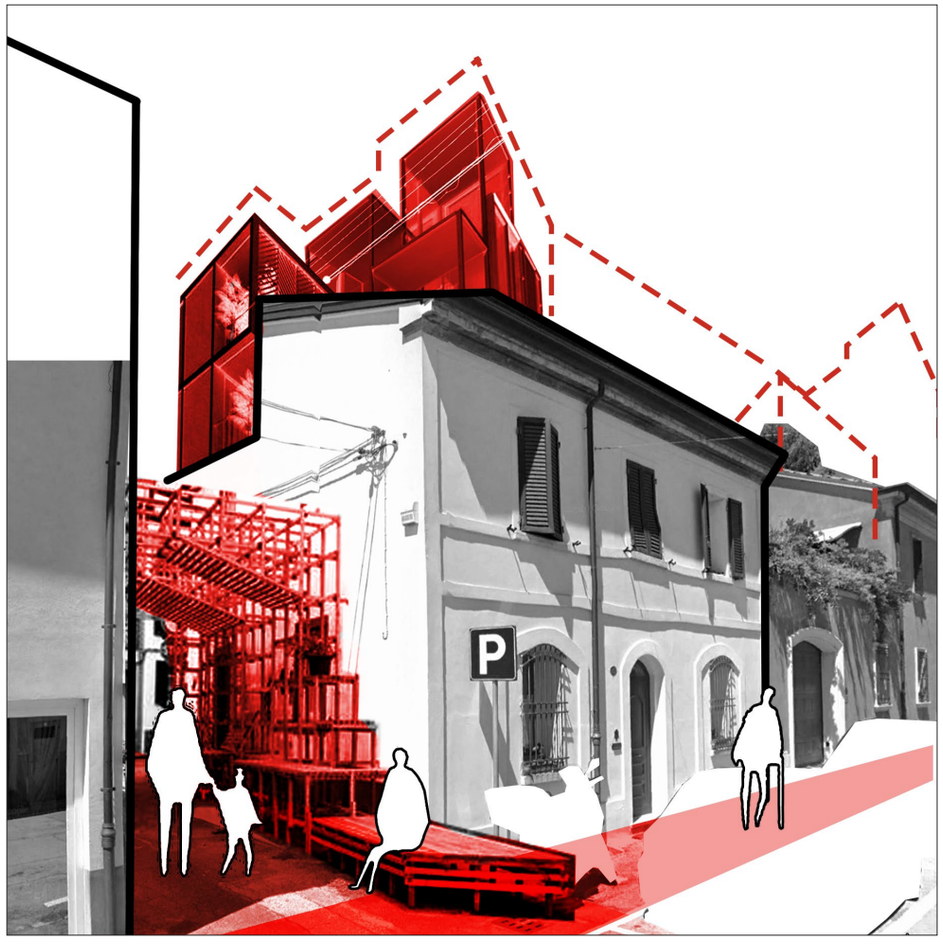



Fig. 28, Street View of Sample n.9, Google Earth Pro, Author (2021)

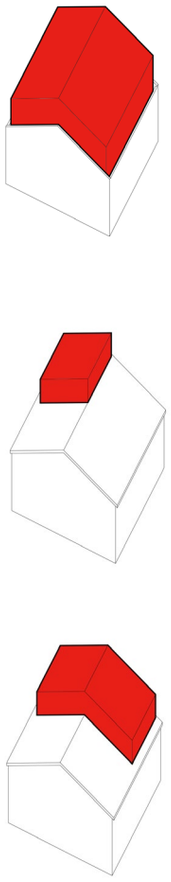
# A CONTINOUS STORY: "ADDING A ROOM TO YOUR HOME"

This chapter goes into the design project for regenerating the neighourhood  in Rimini Mazzini, presenting by a collection of architectural drawings with four themes: "How it grows: An adaptive module system", "Developing simulations in progress", "Skyline in developing", and "Dynamic growth in height".

# How it grows?

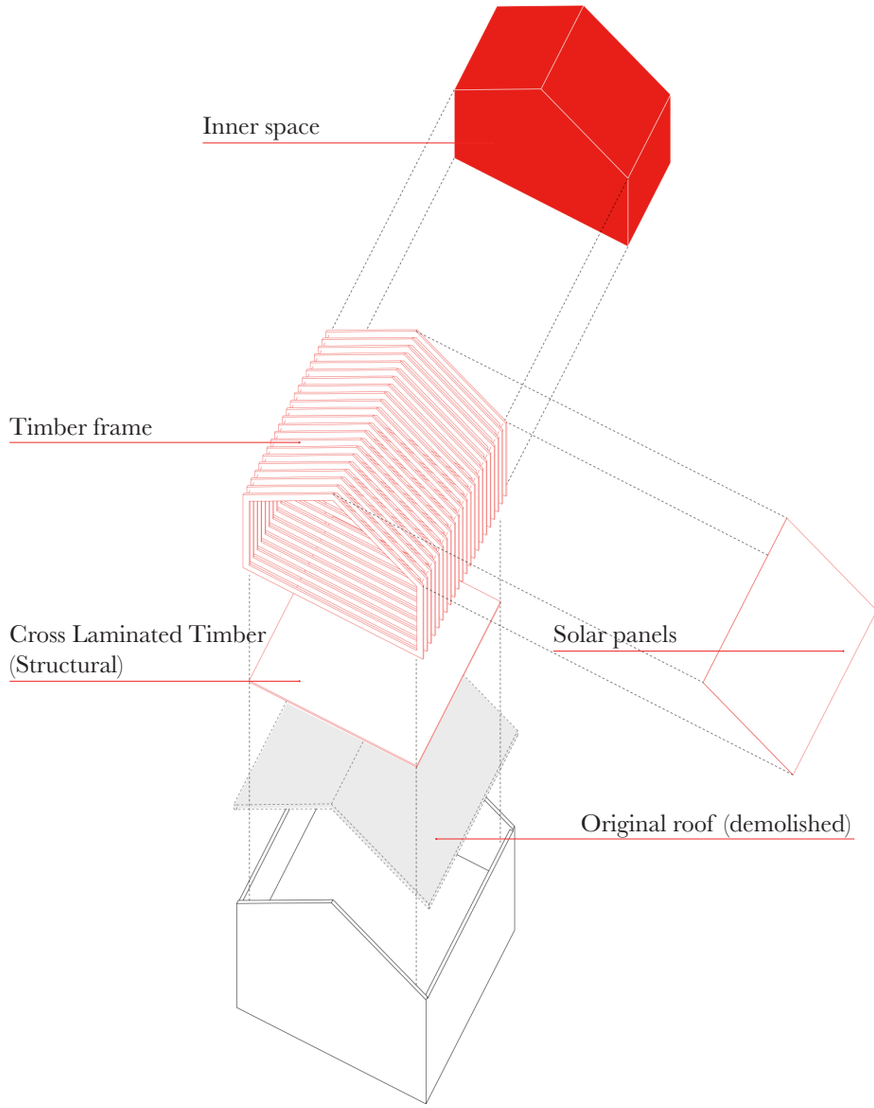
Sketch of the Concept of Dynamic Growth in Height, Author (2021)

# An adaptive module system





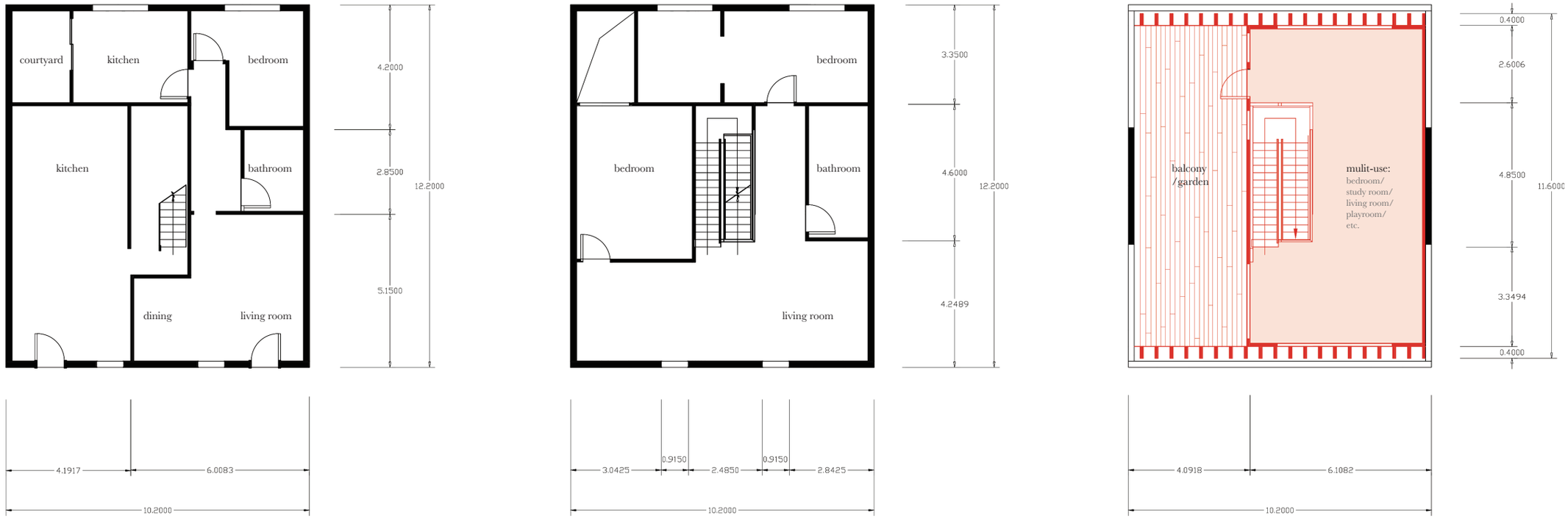
Module Assembly, Author (2021)



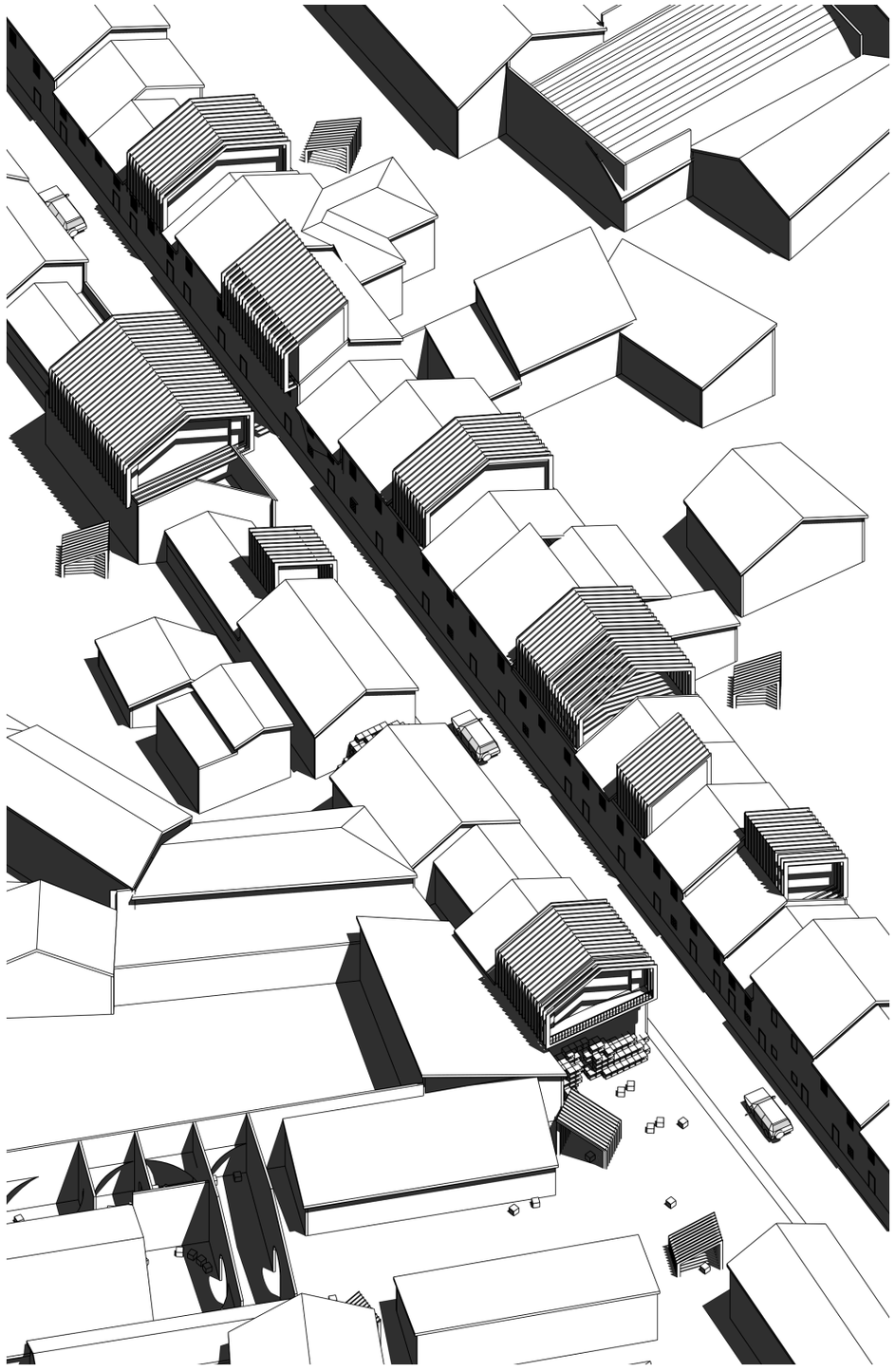

Explosion Diagram, Author (2021)

## Floor Plan

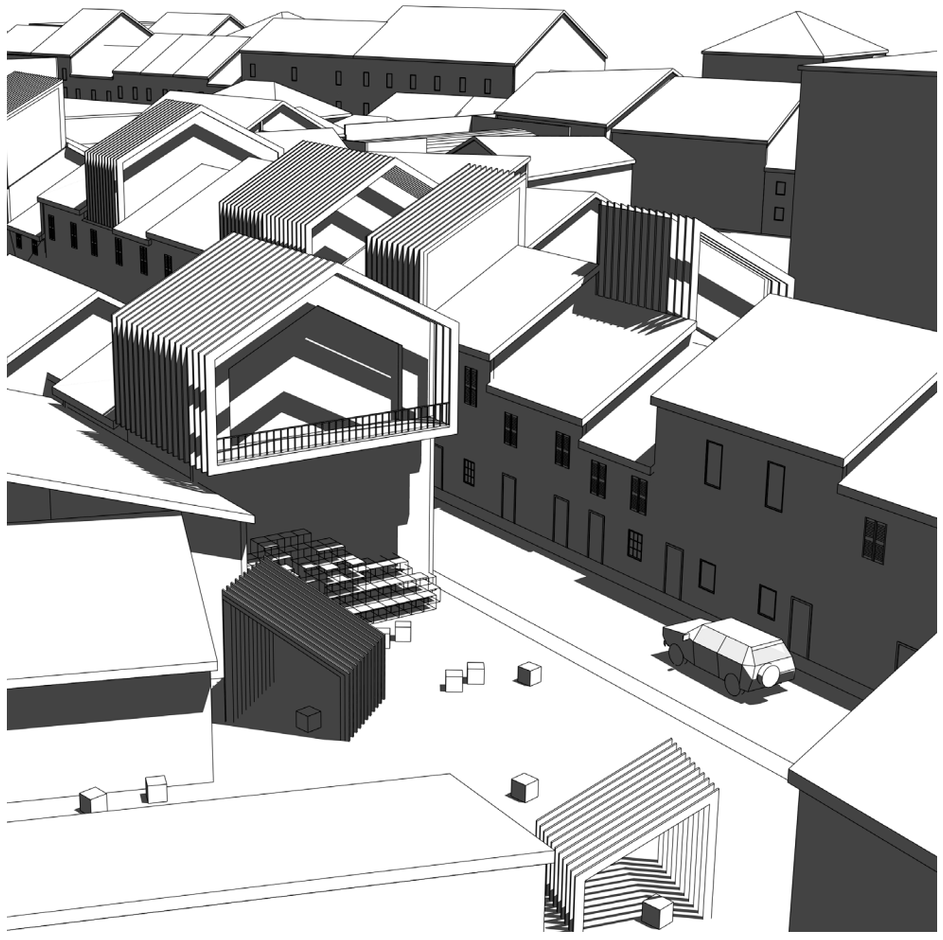
*_Original and additional floors*



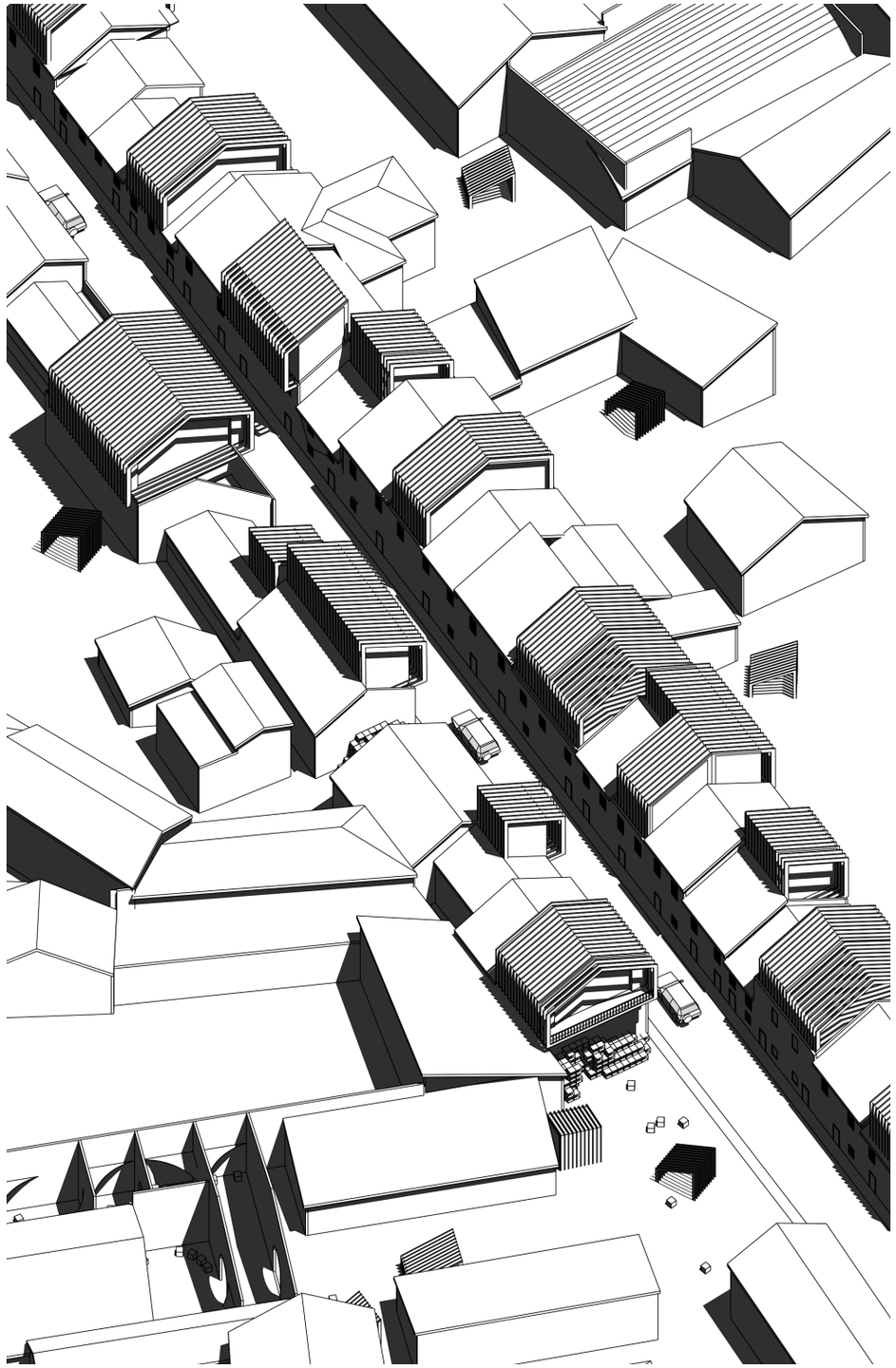

Floor Plan (from left to right: ground floor,1st floor, 2nd floor), Author (2021)



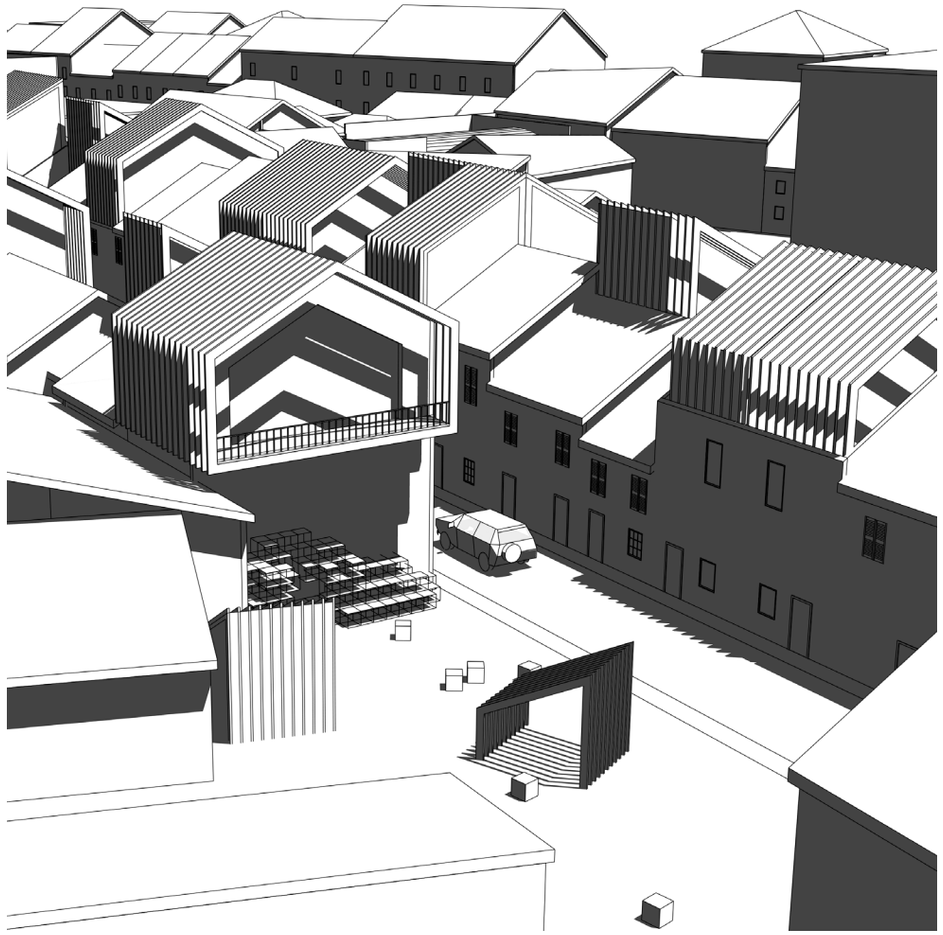
# Developing simulation in 5 years



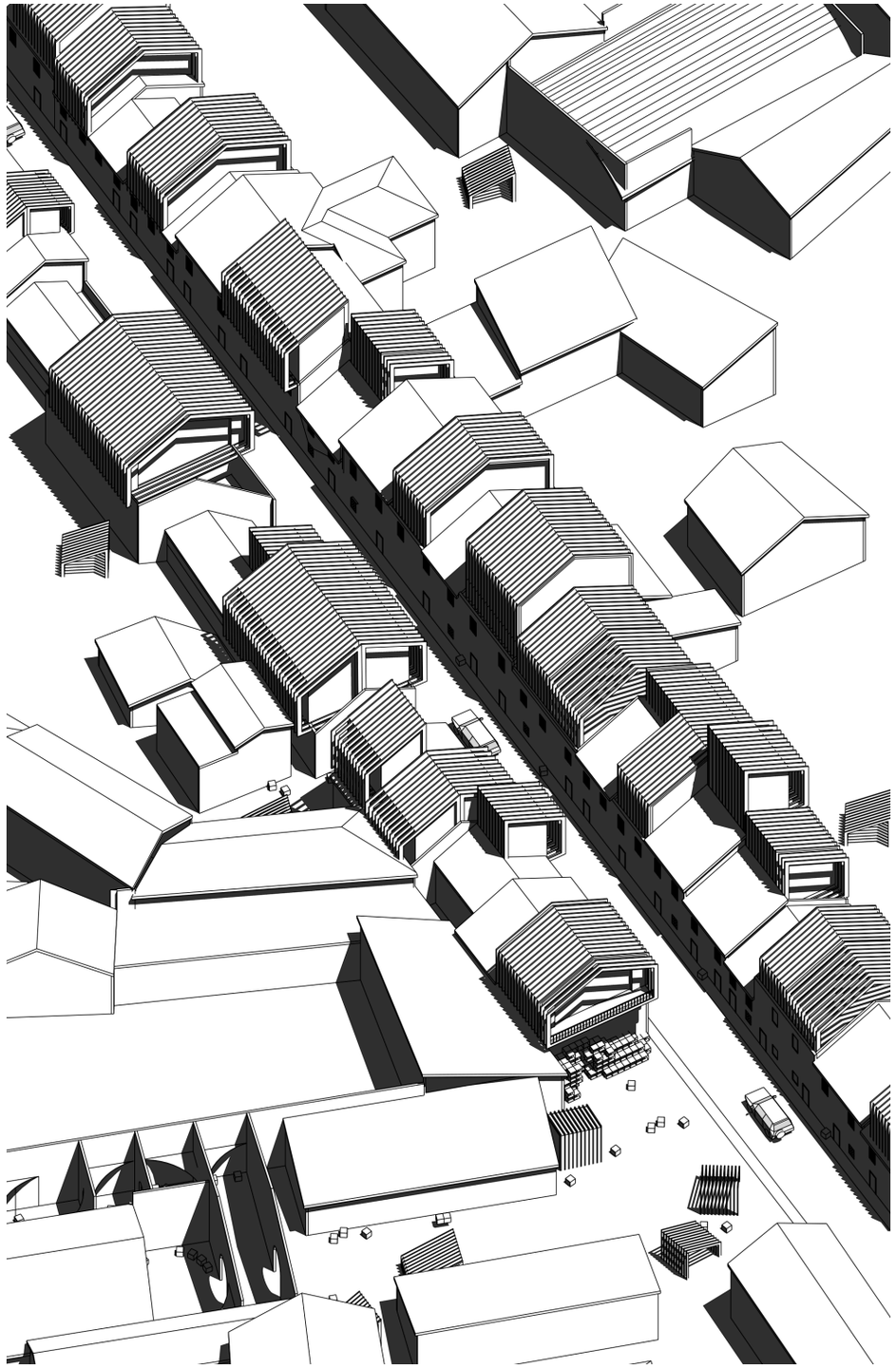
Axonometric and prespective views of development simulation in 5 years, Author (2021)



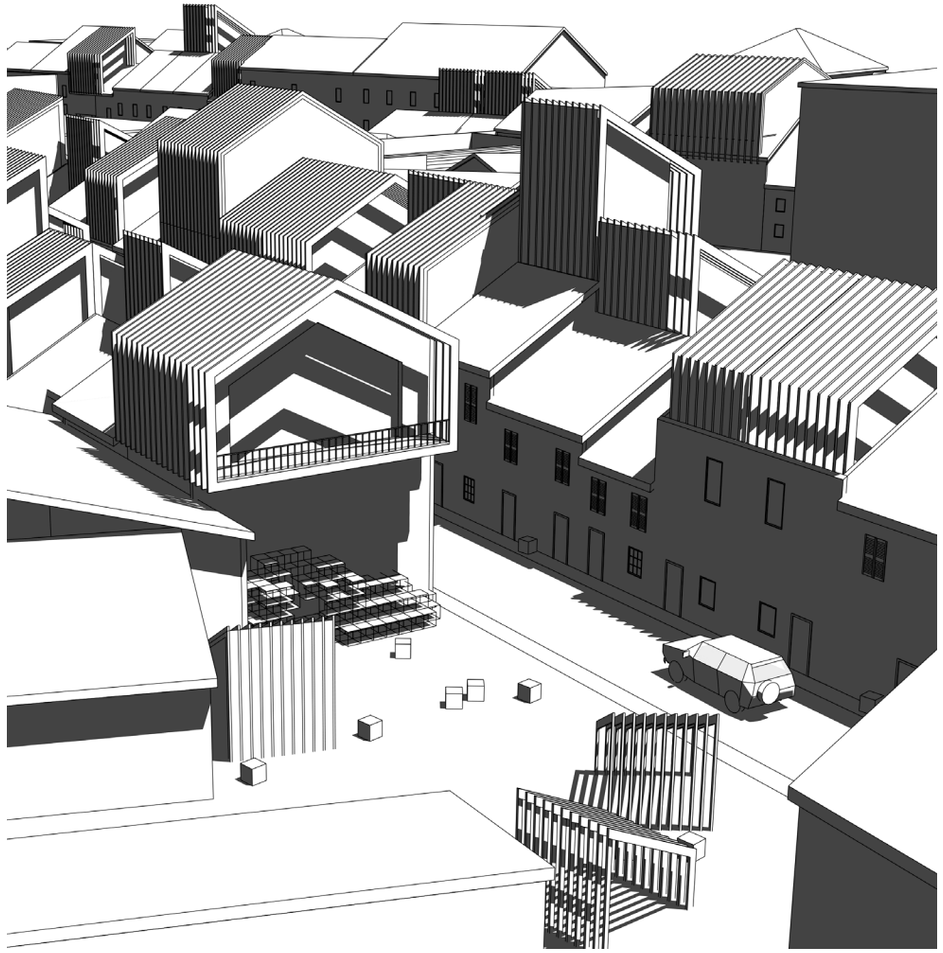
# Developing simulation in 10 years



Axonometric and prespective views of development simulation in 10 years, Author (2021)

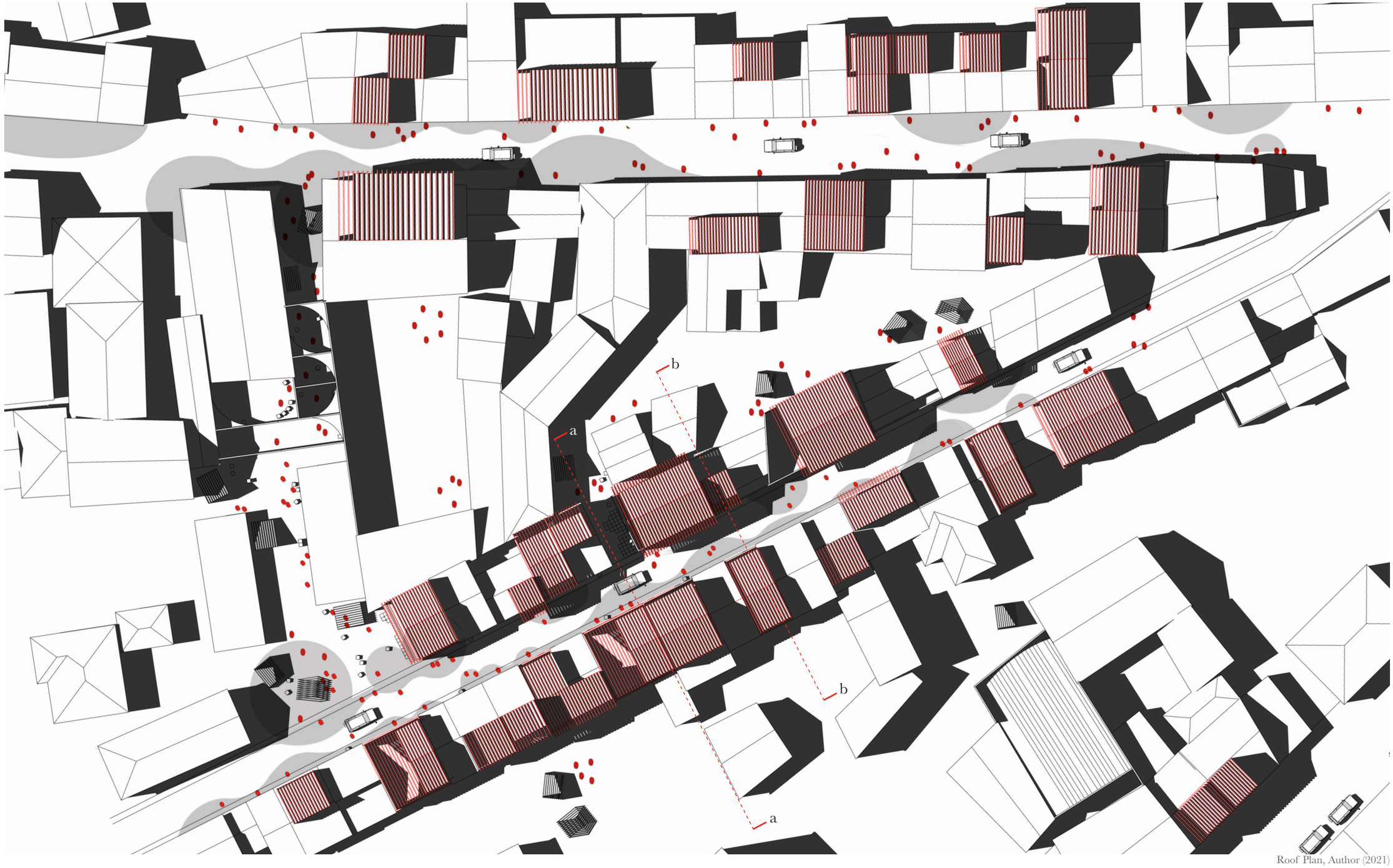


# Developing simulation in 15 years



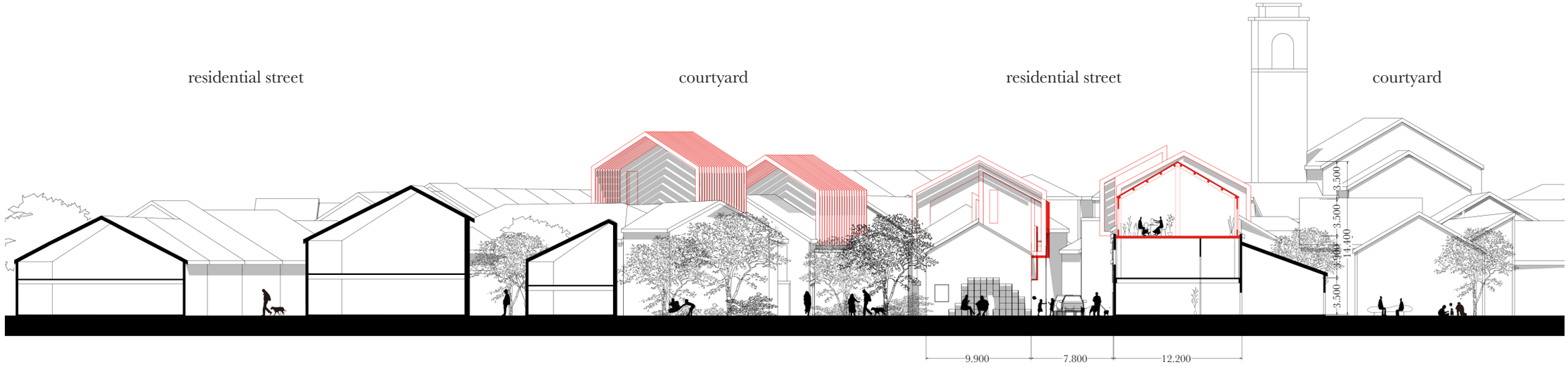
Axonometric and prespective views of development simulation in 15 years, Author (2021)

Roof Plan  of Mazzini Rimini after Intervention

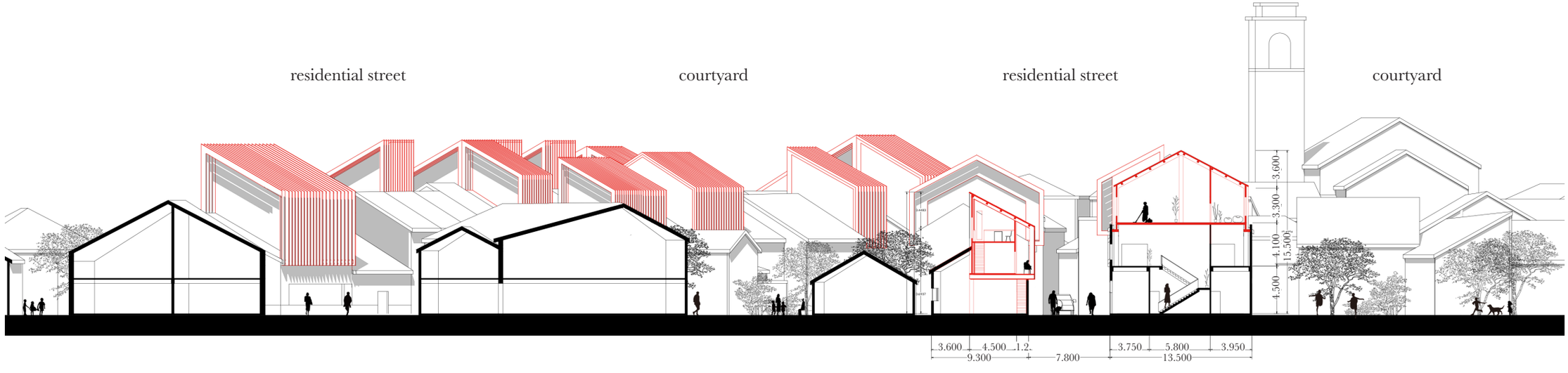



Roof Plan, Author (2021)

## Street Sections of Mazzini Rimini after Intervention




Cross Section a-a (1:300)), Author (2021)

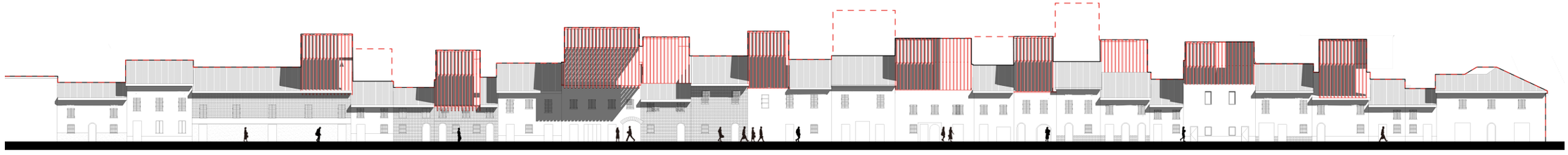



Cross Section b-b (1:300)), Author (2021)

Skyline in developing

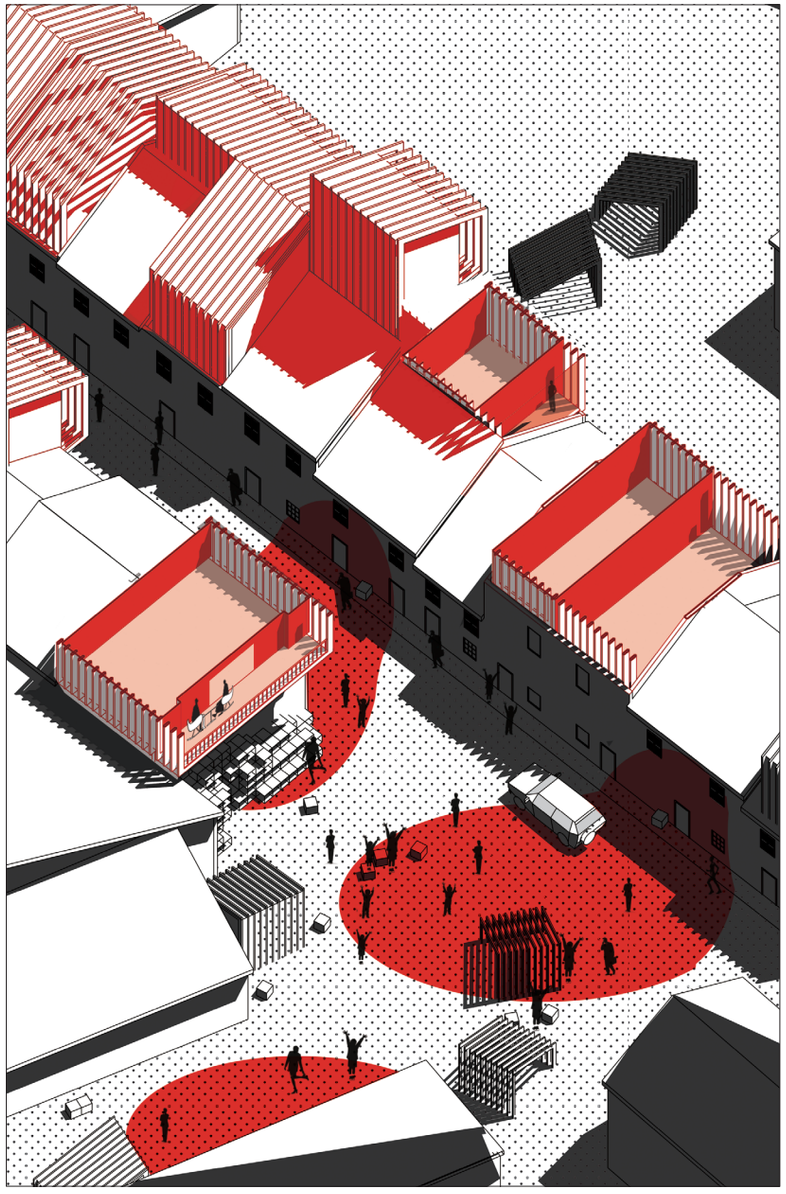
in 5 years

in 10 years



in 15 year

Elevation on Street Via Lavatoio (1:500), Author (2021)

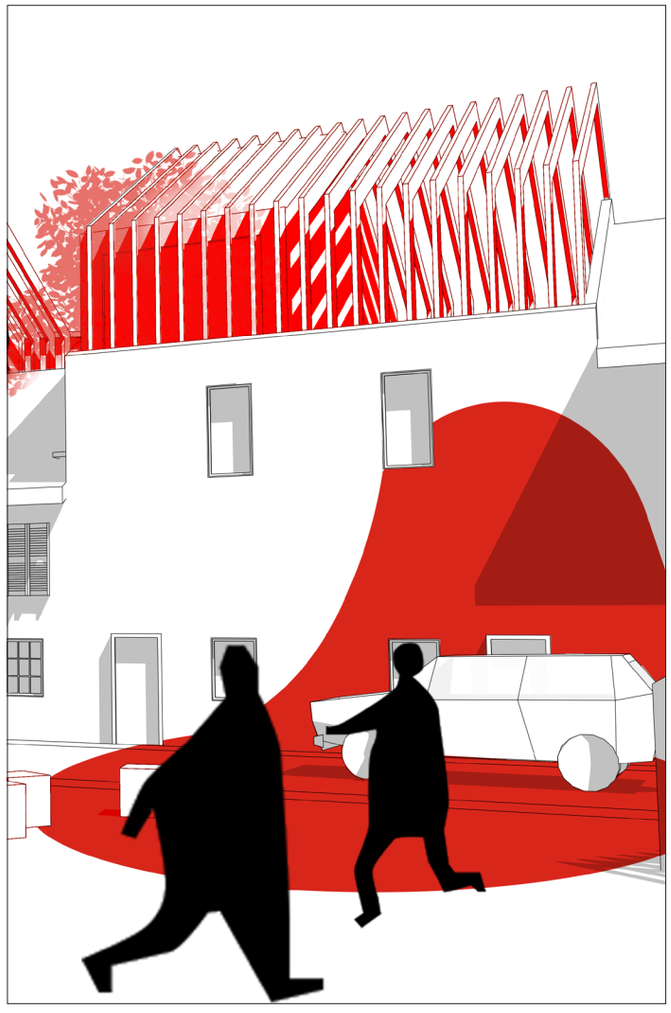


Axonometric viewof extensioons, Author (2021)

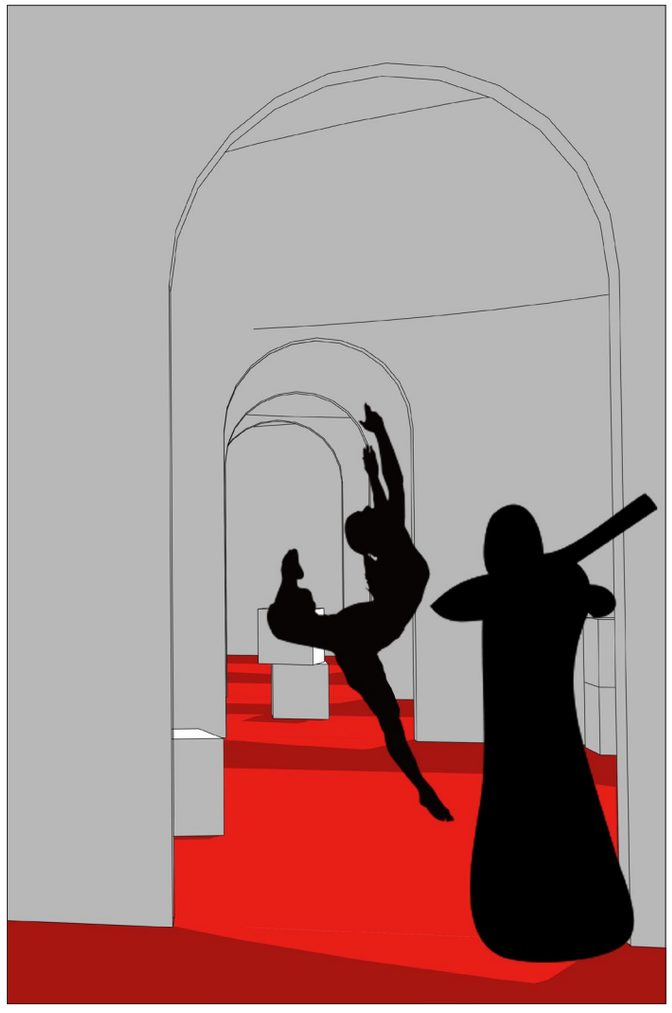
Axonometric view of the multi-use center, Author (2021)

A View of Alley, Author (2021)

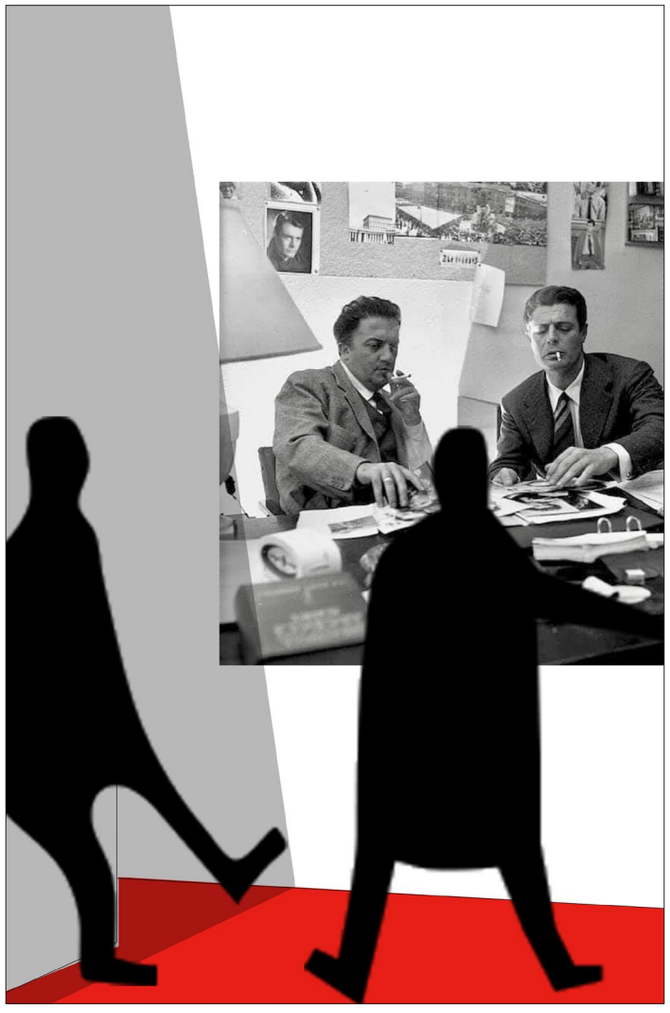
A View of Street, Author (2021)



A View of Street, Author (2021)



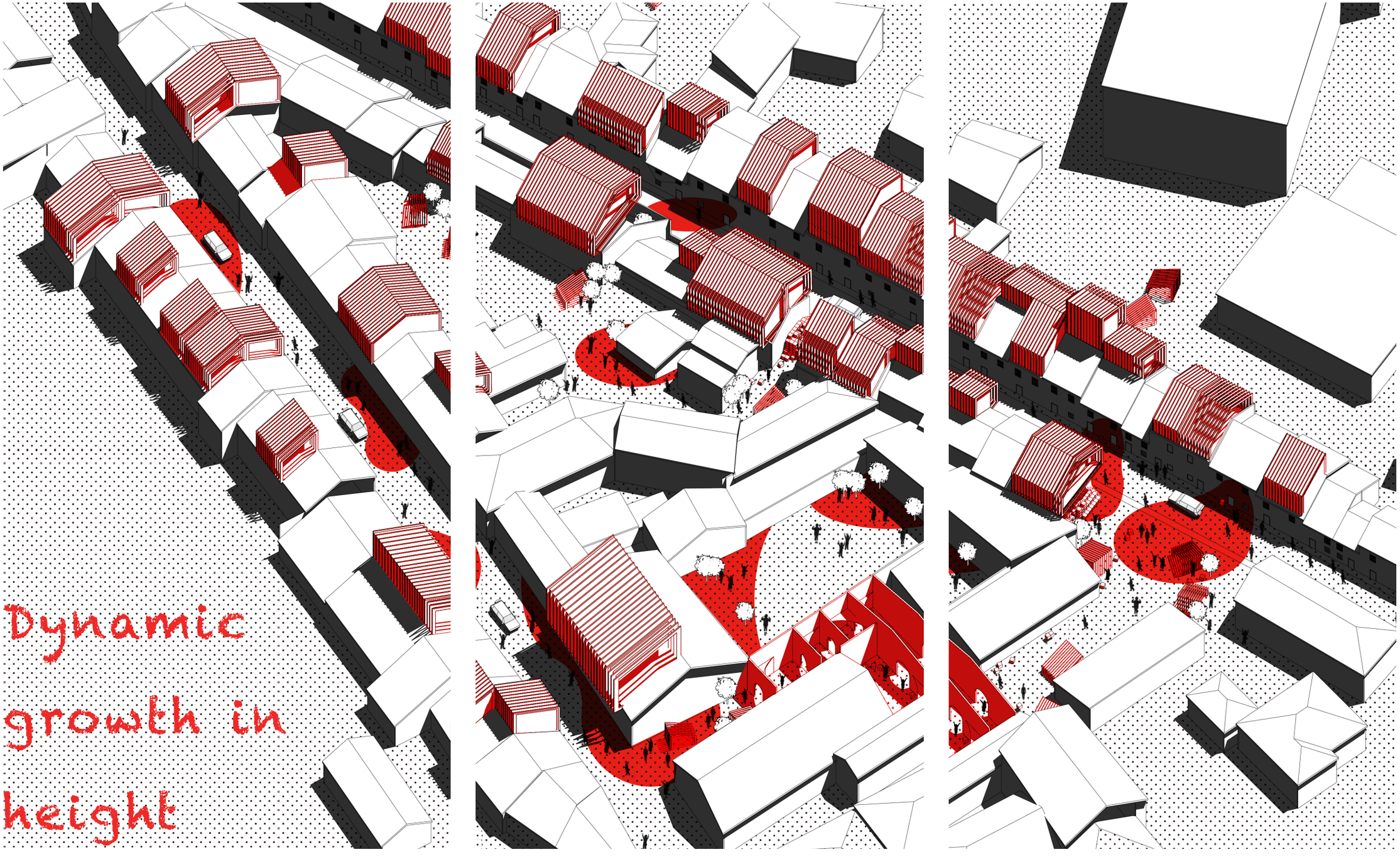
The Center as a Concert Hall, Author (2021)



The Center as an Exhibition Place, Author (2021)

The Center as an Exhibition Place, Author (2021)

## Axonometry of Mazzini Rimini after Intervention




Axonometric View of Mazzini after Intervention, Author (2021)

# 06

# CON-CLUSION

BEYOND RIMINI MAZZINI

## CONCLUSION

In recent years, the significance of urban codes has been brought into sharp focus, either as instruments suitable for urban adaptive regeneration, or as new tools for shaping the future ***(Talen, E., 2012)***. Every city changes constantly, and the city is understood as a complex and dynamic system. Simultaneously, codes have always been subject to change by this constantly changed developing situations of cities. Paralleling this fact, a form-based code offers an alternative to conventional regulation and tries to achieve a community vision based on time-tested forms of urbanism. It seems to call for the adaptivity of the rules adopting in the developing cities to catch up with its increasingly growing demands. Laws, rules and norms which are limited efficiency in time: they begin to produce their effects from a specific moment and cease to produce them in another moment. On the contrary, urban coding assigns time a prescriptive value, putting urban forms in a predictive perspective ***(Trisciuoglio et al., 2021)***.

The purpose of the group of work (collaborating with other four projects) is trying to investigate the links between form and urban rule (coding) in the contemporary Italian city, concerning the case of Rimini (Italy). For observing and analyzing the form of the city, mapping is an essential tool applied in this thesis. As a collective work, the first part of this thesis, therefore, consists of a series of mapping analyzing the transitional urban morphologies of Rimini to understand the city Rimini from the past better. Mapping is indeed a helpful methodology for the understanding of urban dynamics. As a medium, mapping allows us to represent transitional morphologies and understand how the city is made and how it mutates ***(Trisciuoglio et al., 2021)***. The main aim of reading urban transition in time is discovering the "laws of continuity within a transformation process". In this sense, representing urban transition means to define a reading method of the transformation process inside the city with mapping as an operative tool ***(Trisciuoglio et al., 2021)***. For example, the group of maps of the transitional form of Rimini from the years between 1800 to 1990, showing the significant changes during the time, such as the railway

development, the decline of the city wall,  the development of the seashore and the outer villages. Furthermore, the historic center has been isolated because of the location of the railway splitting the town and the sea shore's attraction. From this point of view, with mapping, it is better to read the city in history and understand how it exists at present.

When looking into the urban environment, the streets, in this case, a map of pedestrian space will show how interconnected the network is and how well it serves primary destinations. Neighborhood walks and photo surveys are valuable tools, especially in thinking about the appearance of streets and pedestrian ways. Walking and looking at places, especially those ordinary places not popularized where the urban life is actually taking place, are the main observation activities (or as methods) during the field survey. Also, Google Map and Google Earth Pro are significant tools for researching and observing, and understanding the city Rimini, especially when the most of time of this project was during the pandemic (Covid-19). All the results of observation are practical and fundamental materials for analyzing and the design later then.

A transitional-morphologies-lead urban coding can: mapping urban space, mapping "urban time" and adopting overall the operative tool of new cartographies, able to re-sort its contents adopting innovative diagrammatic methods, looking at the perspective of parametric morphologic design ***(Trisciuoglio et al., 2021)***. The possible crossover between urban morphology and urban coding could be tested in the Italian historical centers nowadays, which present a compact urban fabric and many questions not yet defined by urban planning. The new urban transitional code for the historical center of Rimini (Italy), for example, focuses on the formal classification of fabric and the provision of rules that consider the urban formal evolution ***(Trisciuoglio et al., 2021)***. In this sense, more specifically, the primary purpose of the thesis is to regenerate the in-line urban fabric in height, concerning the case of Mazzini Rimini (Part 2). However, there is no interest in buildings' height in typological maps that show urban fabrics and urban patterns ***(Trisciuoglio et al., 2021)***. The main reason may be related to the difficulty of showing the building height in traditional maps (typological maps) and it is meaningless. Therefore, in this case, a series of architectural drawings such as elevations, perspective, and axonometric drawings, presents the simulation of the developing process in building height year by year. The second part of this thesis consists of a related literature study, site analysis, and a design project. Through the design approach, in the end, the thesis attempts to look up the possibility of regenerating in-line urban fabric by codes.



Beyond the main research area Mazzini, there are a numerous streets consisting of in-line urban fabric in the city Rimini. The following diagram (Fig.29) in the next pages shows other six areas presenting the same urban form as Mazzini's. All these urban tissues can be reached on the edge of Rimini's historic center with the main use of housing. Height differences between individual buildings are highly desirable, but at the smae time an excessively strong contrast between neighboring structures detracts from a district's physical coherence ***(Lehnerer, Alex.,2014)***. In this case, also concerning the ralevant attributes of the restorative environment, greater building height affected restoration likelihood negatively. And higher buildings reduced the sense of being away, which in turn reduced the expectation that restoration would take place ***(Lindal, Pall J, & Hartig, Terry., 2013).*** In this case, the maximum height rising is three-storey, and each building could be one floor heigher than its neighbors. The simulations on building height adopt to six zones will be present in the following (Fig.30-35). From the street point of view, most of streets in these six zones are one-way residential streets with similar characters, except for in Zone IV (San Giovanni), therefore, the codes of residential streets (Fig.26) can be adopted to these areas but adaptively, such as painted pavement, temporary installation, street furniture (could use the module same as the installation), greenery.

All in all, this project is a simulation, a prediction based on transitional urban morphologies analysis for the future through the design approach. There are still some limitations that the design project could not overcome. Most of all, the importance of public participation has to be emphasized. The community visioning process is a crucial source of code content so that meaningful public participation in the code-making process is required, especially when the project's promoter is residents and private owners. Preserving the memory of the ciy is also the same way to carry on the memory of the generations. Anyhow, the city changes dynamically, but the story of the city, of people, always continues.

1 Zone I

2 Zone II

3 Zone III


Fig.29, Mapping and Morphological Map in Rimini (Italy), Author (2021)

4 Zone IV

5 Zone V

6 Zone VI

1 Zone I

2 Zone II

3 Zone III

Fig.30-32, Simulations in Zone I-III, Author (2021)

Beyond Mazzini

Rimini

4 Zone IV

5 Zone V

6 Zone VI

Fig.33-35, Simulations in Zone IV-VI, Author (2021)

Beyond Mazzini

Rimini

# 07

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**Regeneration** might be considered as a **complex** process able to preserve **memory**, to improve **physical** and **social** dimensions of declining areas, but also suitable to generate **new values**, grasping local changes and global **dynamics**, considering the form of the city as provisional, **not forever** defined, in one word:

**"transitional"**

*(Trisciuoglio et al., 2021).*