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morphology

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COASTAL STRIP. STUDIES FOR THE CONSTRUCTION OF AN ANALYTICAL AND OPERATIONAL METHOD THROUGH TRANSITIONAL MORPHOLOGY.

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ABSTRACT

The geographical boundaries of a territory define its characteristics, identity and development over time. The Italian east coast appears to be a homogeneous place both from a geographical and urban point of view. This territory can be read as an urban continuum that develops on the Adriatic coast. The coastline is followed in parallel by the railway infrastructures and the highway that divide the beach from the historic centres of the cities overlooking the sea. Furthermore, the rivers, generated by the Apennines, flow into the sea, creating a vertical pattern to the coastline. The succession of this landscape makes heaps of repeated. This research tries to extract a piece of the «Adriatic city» to read its evolution over time. The study conducted on the city of Rimini aims to build an analytical and operational method for urban projects. The primary tool for identifying recurring shapes and specificities is the map. The cartography translates and underlines the changes and the permanence of the territory. The theoretical background of the research is expressed not only by the studies on the urban continuum of the Adriatic coast but above all by the investigation methods of Italian's type-morphological school.

INTRODUCTION: READING THE ADRIATIC CITY

The Italian Adriatic coastal territory has been the subject of several types of research from the 1990s onwards. The interest in the topic emerged in the Abruzzo and Marche universities. Projects, workshops, graduation theses, doctoral theses and numerous publications have been developed in these locations. The themes assumed concern almost urban, industrial heritage and geomorphology studies of places. The main peculiarity is the explicit recognition of both design practices and morphological recurrences that extend over the entire coast.

The term *Adriatic city* usually refers to a long linear conurbation that crosses, with endless ways, five Italian regions: Veneto, Emilia-Romagna, Marche, Abruzzo and Molise. It is a coastal alignment whose the main characteristic does not derive from relations with the hinterland, which is in some cases very intense, but from the features of the coastal strip (Bianchetti, 2002). From this definition emerges the repetitive character not only of the coastal landscape but also of the built space. The Adriatic coast looks like a world in which buildings, interchanges, single-family houses, vegetable gardens, avenues to the sea, bathing establishments, discos, hotels, shop windows appear in abundant quantities. The specific artefacts alternate as predefined elementary typologies, conventional forms which, isolated from the context to which they belong, make themselves exportable and modular elsewhere to demonstrate their general validity. The other character of generality is expressed by the background on which the individual pieces are embedded. The typically Adriatic geographical context outlined by recurring physical elements. It has addressed the settlement forms and offer itself as cornerstones of possible reconfiguration experiments on the architectural and urban scale (Coccia, 2014). Expressly, the integration of the elements in the territory is guaranteed by the typological relationship between object and context. Another aspect is the recurrence of some architectural solutions in this specific topographic configuration. This typicality makes some elements interchangeable in a homogeneous

geographical context, demonstrating the existence of a settled principle that goes beyond the architectural connotation of the individual artefacts.

A look at the Adriatic city can arouse different interpretive readings. A possible reading refers to the shape of the city, the open-mindedness and indifference to the rules by the natural landscape where it was built. Another study could mainly criticise the loss of the unitary idea of the city recognisable through the identity of the shapes which defined the common spaces (the square, the church, the streets on the ridge). A further reading is the social economy of the city that considers the infrastructure as the basis of the dynamic and widespread city development along the coast. The coastal agglomerations are set around the survival systems: energy, economy, mobility. The motorway and the railway along the coast have been the reason for linear, continuous city development (Ottone, 2011). Lastly, a possible interpretation refers to the relationship between the number of buildings, quality and population density. The continuous coastal city offers the possibility to think about the seasonality of the occupation of houses, tourist structures and beaches. Inside the diversity of possible analyses, it is necessary to identify a test field. The case study thus becomes a container of analogies and specificities that allow general and particular considerations. The extraction of a piece from the continuous city allows, therefore, to read the urban space, interpret it and make considerations on the possible future development of the entire territory.

Rimini represents the densest city on the northern border of the coastal strip (ISTAT, 2019). Furthermore, morphologically it is a city divided in two by the railway. The two parts distinguish the coastal city from the historical Roman one. For these characteristics, it seems to be an introductory case study to perform a morphological-type reading through time.

RIMINI: URBAN HISTORY

The first human settlements of Rimini date back to the Paleolithic. The Romans, much later, considered the geographical position of Rimini strategic. Located at the point where the Apennine system meets the Adriatic Sea, this position determines a hinging point which represented, on the one hand, the end of the Apennine mountain ranges and on the other the passage of the coastal road leading to the Po valley. Therefore, an ambivalent position of defence and attack, as well as a port due to its strategic position close to the Adriatic coast (as well as a geographical and political border between peninsular and continental Italy). The Marecchia and Alusa rivers surround the foundation site.The road grid (*centuriation*) is based on the typical Roman square mesh which constituted blocks (*insulae*) of different sizes. The *cardo-decumanic* urban structure is oriented from north-west to south-east (Gobbi, Sica, 1982). The Roman settlement has *opus quadratum* walls that surrounded the urban space orthogonal to the street grid. At the intersection of the principal axes was the open space of the Roman market (*Forum*), which overlooked a series of public buildings. A Roman theatre was built in the first block west of the Forum. This building represents a key 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. The typology of the theatre is unusual, it was a hybrid between the canonical and the embankment type amphitheatre (fig.1).

After the fall of the Roman Empire, the barbarian raids and the Gothic-Byzantine struggles, the city of Rimini changes in appearance. The building fabric was defaced and undone in many places with the degradation of some monumental buildings. The early medieval town was organised as a dense knot of functions and activities contracted around a square (*Piazza Della Fontana*) where the

religious and civil powers had their headquarters. After the death of Frederick II, Rimini manages to maintain control over the countryside also thanks to the presence of feudal lords. Among these lords there were the Malatesta family, who consolidated power over the countryside and increased their real estate possessions within the walls. Between 1288 and 1295 the question of Malatesta hegemony was decided. After the mid-thirteenth century, the Malatesta's became vicars of Rimini carrying out a policy of capillary control of local power, providing for the urbanisation of rural areas entrusting them to feudal families loyal to them and carrying out a strategy of dynastic alliances with illustrious families of other cities. For over a century, the architecture of the city remained virtually unchanged except for the renovation works at the port on the Marecchia river and ordinary maintenance works on the walls and road paving. The settlement, in 1432, of Sigismondo Malatesta, is crucial for the city of Rimini both from a political-military point of view and a cultural and artistic point of view. Its dominion leaves indelible traces in the morphology of the town, albeit in the form of two monuments interpreted more as a break than as a connection of the building fabric. The Sismondo Castle and the Malatesta temple are both grafted onto pre-existing buildings. However, they represented Malatesta power differently. The first symbolised absolute dynastic power with defensive characteristics referable to the early Middle Ages. The second was instead the demonstration of a renewed culture.

Furthermore, if the castle imposed itself with austerity on the city, the temple expressed a greater and experimental degree of compositional and linguistic complexity. The temple, designed by Gian Battista Alberti, referred to the great works of Roman classicism. Alberti alluded to characters present in the Rimini urban context (such as the Tiberius Bridge over the Marecchia River and the Arch of Augustus). Although these two monumental works changed the composition of the fabric structure of Rimini, there was no urban renewal (fig.1).

The reconstruction of the urban history of Rimini is necessary for establishing a methodological and cartographic starting point. By identifying almost unchanged historical matrices, it can make it possible to create reference points for the analysis of the type-morphological change of the urban fabric over time.
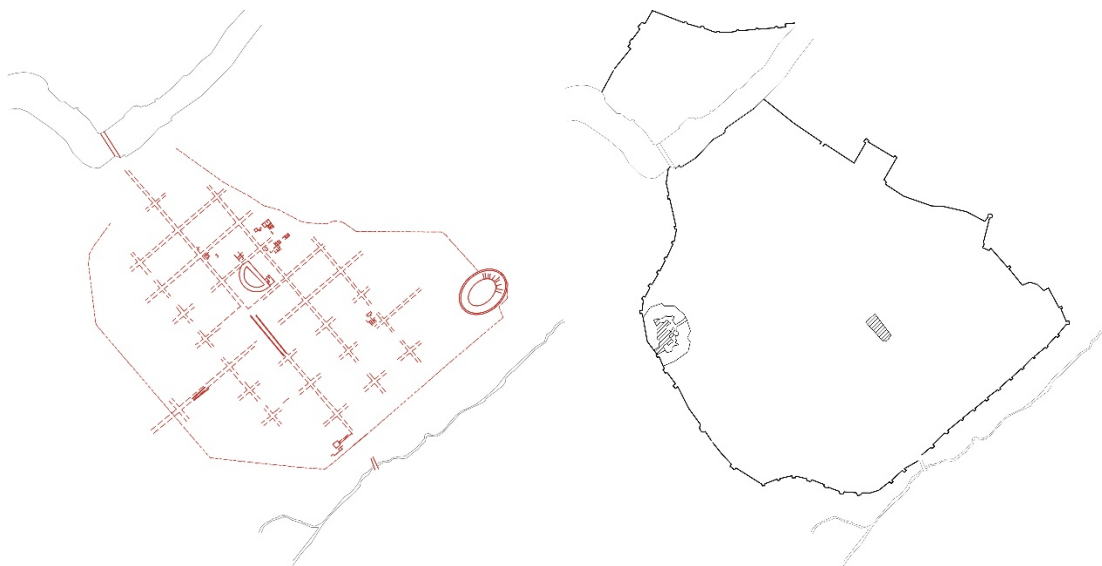

Figure 1. Roman and Renaissance matrix of the city of Rimini

TRANSITIONAL MORPHOLOGY APPROACH

Identifying matrices and developments does not just mean "why" and "how" today's complexity has been achieved. However, it is above all to understand the way to dissolve this complexity, to make its components perceptible (Caniggia, Maffei, 1979). The study is conducted through four steps:

1. The survey of Catasto Gregoriano as starting point cartography (1811);
2. Reconstruction of the planning during the 20th century and the ambivalent city;
3. Identification of pilot areas through a type-morphological analysis with the transitional morphology approach;
4. Drafting of urban sewing intervention lines through coding devices.

In the taxonomy of evolution, "transitional morphologies" are the linking phenomena between the past and the future. Studying transitional morphologies of urban centers or of anthropic landscapes means understanding the development of human settlements and not only describing them in a sharp historical time (Bao, Trisciuoglio, 2018). In the case of Rimini, having a transitional approach means, first of all, identifying the starting point of the analysis. The decisive moment for the city is Napoleonic domination, which will trigger an urban transformation in an almost unchanged context for over three centuries.

When the morphological structure of the Rimini changes most, the first rigorous testimony of topographic map is drawn up (Gobbi, Sica, 1982). The French reign marks a decisive moment for the city, which without substantial modifications, had remained almost unchanged for about three centuries. The map (*Catasto Gragoriano*, 1811) shows the urban and real estate situation of the city for the first time. This abstraction allows for the first time to grasp a new and comprehensive type of urban identity based on the proper ways of the nineteenth-century land registers. The map identifies some typological elements according to a representation methodology similar to that of Nolli (fig.2).
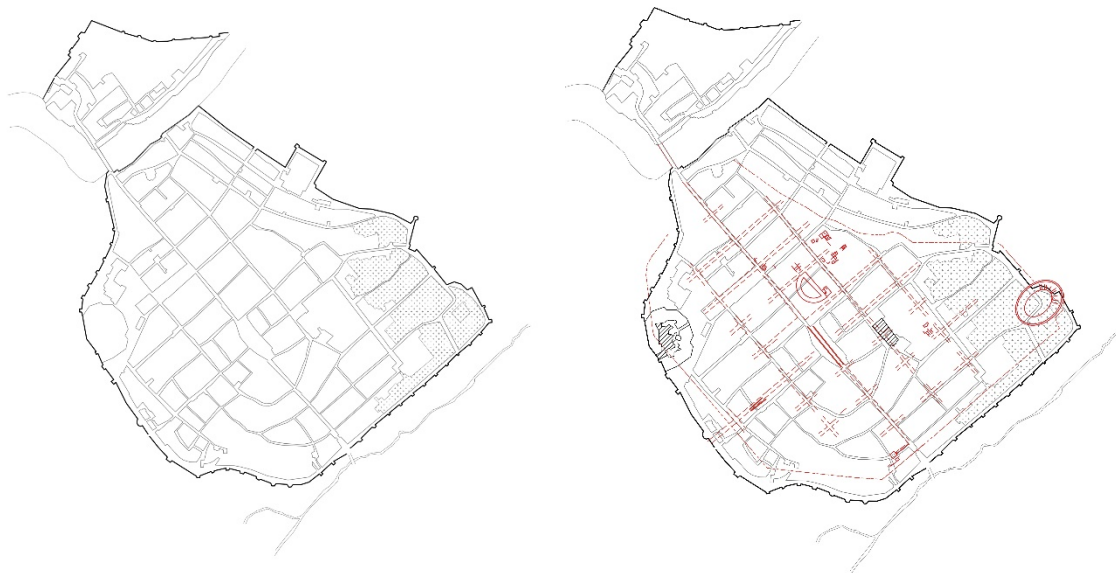

Figure 2. Reworking of the Gregorian Cadastre of 1811 and superposition of the previous matrices.

Reading the cartography allows a widespread knowledge of the building fabric. The map shows the evident traces of the original plant. The Roman layout is still reflected in the chessboard of the blocks included between the ancient *cardo* and *decumanus* and their parallels (fig.2). Towards the

end of the 19th century, Rimini left the walls of the eighteenth-century city. The «Plan of Rimini» in 1882 allows us to read the transformations of the urban organism during seventy years. The extramural municipal formations in the hinterland and the first avenues towards the sea are noted. This is the first sign of a dual transformation of the city which will develop into two parts separated by the railway. The two parts, as well as different uses and densities, have different matrices and building types.

The first town plan of Rimini was drawn up in 1912 by the engineer Saffi. The project, focuses on planning towards the coast, in addition to documenting the expansion of the city inland (with Mazzini and San Giovanni villages). Based on this interest in maritime development, programs, sewage and infrastructural devices are drawn up, and building lots arranged in a checkerboard pattern are prepared. Besides, the plan includes the construction of a large racecourse with public housing in the south-east area (Copioli, 1982).

However, the strategy marks a conceptual turning point in the development of Rimini tourism, from the noble tourism of small villas to the middle-class tourism of boarding houses and rental houses. During the fascist regime, there were other planning attempts aimed at overcoming the previous plan. However, there were no significant upheavals, if not for the growing building speculation to the detriment of the coastal part of the city. After the Second World War, Rimini suffered severe consequences, with 35% of the buildings destroyed, 40% severely damaged and 23% damaged. The reconstruction, which in part hastily erases part of Rimini's history, accelerates the construction of the new image of the city based on mass tourism. After more than a century of expansion towards the coast and specific projects for the tourism sector, the municipality of Rimini turns its gaze to a part of the city not considered until that moment, the historic centre. The master plan of 1965 had the objective of contrasting and reducing land and urban rent and increasing the supply of city services. The municipal territory was divided into functional areas, the areas of historical and environmental interest were identified, and the infrastructural structure was modified (Tomasetti, 2012).

After the approval of the plan, Giancarlo De Carlo was involved in making changes to the program just approved. Despite the substantial changes to the previous plan based on the elimination of the bipolarity between the historic centre and the business centre and the revision of the road system, De Carlo's proposal met with opposition. There were years of debate and hesitation; the changes were never approved. The controversies arising from the De Carlo affair and the 1965 plan led to an interest in the historic core of the city after almost twenty years. Critical are the studies conducted by the architect Preger in the eighties (fig.3). His typological analyses led to the discovery of the traces of the Roman amphitheatre in a block of the centre, as well as to the functional study and the deterioration of the buildings. These studies show a complete picture of the Rimini situation near the end of the twentieth century, as well as a general classification of the historic fabric. The last decade of the twentieth century, Leonardo Benevolo drew up the new General Town Plan of the city. This plan, also studied in a classificatory and functional way, is the basis of the recent Municipal Structural Plan that is in force today.
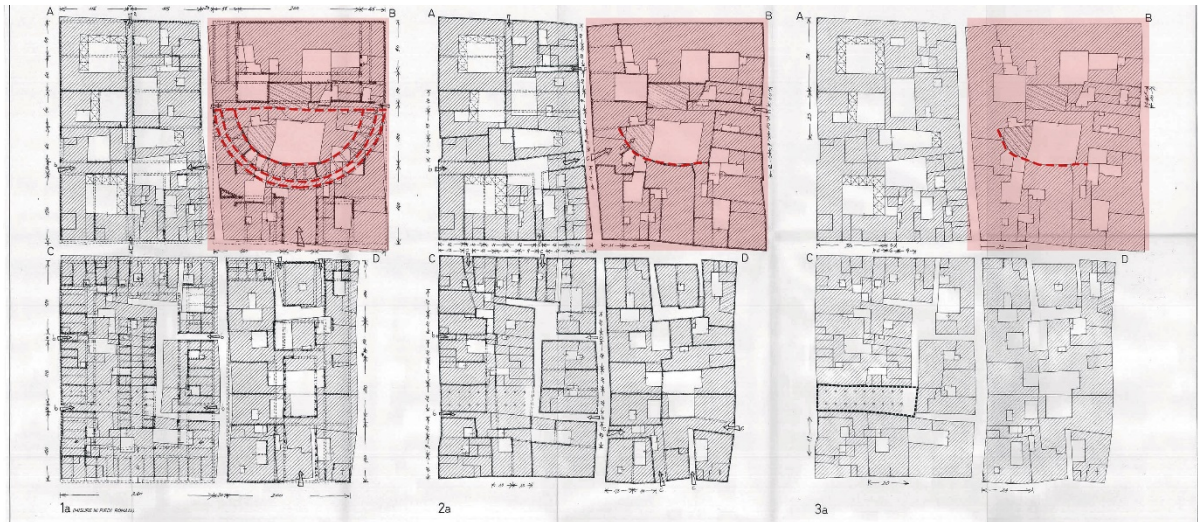
Figure 3. From the studies carried out in 1988 by the architect Edoardo Preger and from the municipal cartography of 1956, it was possible to identify the internal morphology of the block between Corso d'Augusto, Via Mentana, Via del Tempio Malatestiano and Via Giordano Bruno, the regular curvature of a section of the cave and to reconnect a portion of brick masonry, identified as one of the radial walls of the theatre.

OUTCOMES OF THE TYPO-MORPHOLOGICAL READING

Rimini today presents itself as a multi-purpose city. It is possible to identify, both based on historical urban analysis and current maps, different urban fabrics and a series of building typologies. This identification operation allows conciliating the urban present without disregarding the previous stratification.

Figure 4. Map of Rimini today with the identification of 5 samples of urban morphologies.

The five morphologies identified (block, open block, ribbon disposition, free composition, coastal alignment) serve as a sample that can be extended to the remaining urban fabric, which has the same characteristics (fig.4). The same reasoning was carried out for the three types identified so far (courtyard house, the house in line and urban villa). The following diagram (fig. 5) shows the preliminary and cross-analysis of the Rimini type-morphology. This type of studies will be deepened to recreate a study operating for the future development of the coastal city.
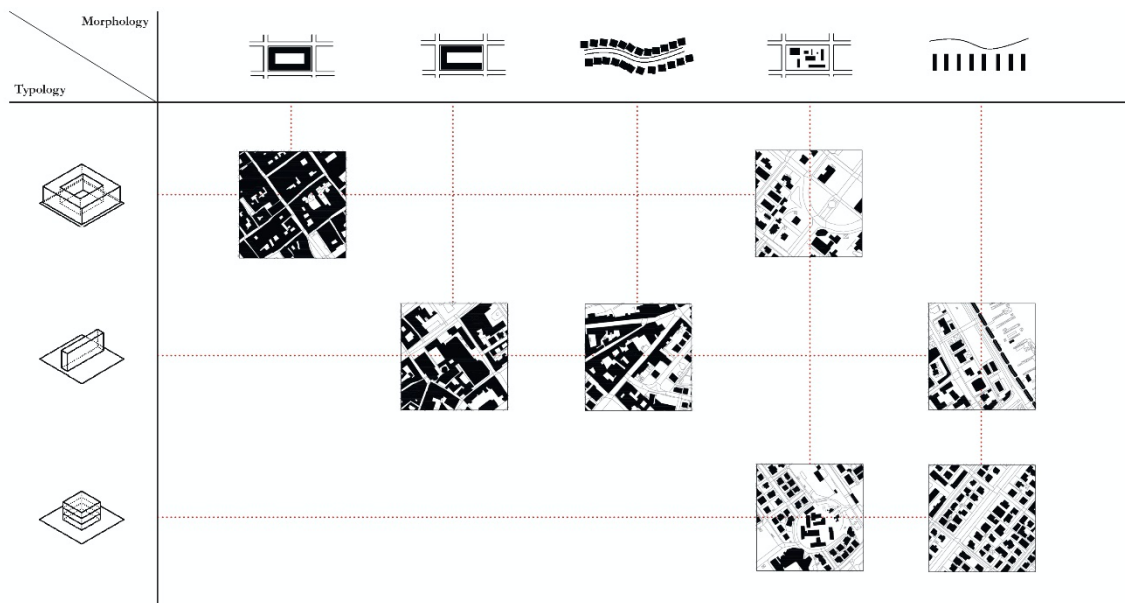
Figure 5. Cross-analysis of the Rimini type-morphology.

The cartography translates and underlines the changes and the permanence of the territory. The theoretical background of the research is expressed not only by the studies on the urban continuum of the Adriatic coast but above all by the investigation methods of Italian's type-morphological school. The procedure takes the type-morphological theories of the Italian school as the primary analysis tool. The Muratorian Operating Studies and the Caniggian Anthropic Structures (together with the Basic Building Readings) are therefore the backgrounds for the classification of characters (or types), the identification of models (or structures) and the graphic and conceptual transposition of the changes over time. The type-morphological approach of the Italian school investigates the training processes of the city and the territory, or the fact that each anthropic form is the result of a process of progressive organic association by parts. Decomposing the components to analyse them, while taking into account their substantial unity, is a constitutive operation of this study. Two other non-secondary aspects are time and the project, closely related to each other. Time, understood as a vector of formal anthropic changes and the project recognised as decisive operations (Maretto, 1980). It is possible to affirm that reading the reconstruction of training processes, leads to a proposable project of reality since the overall connections between the components are guaranteed by the homogeneity of a system derived from historical developments.

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