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Book of Proceedings

the time^{of} streets

INCISIONS
OVERLAPS
AND
RHYTHMS

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City Street⁵

The time of streets:

incisions, overlaps and rhythms

Book of Proceedings

EDITION

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Table of Contents

COMMITTEES	10
INTRODUCTION	
The Time of Streets	13
 1 STREET REPRESENTATION: THEORIES AND PRACTICES	 17
Imago or Forma Urbis? The representation of the street by the sea	19
Francesca Dal Cin Cristiana Valente Monteiro	
‘You will be made most welcome’: Belfast’s small evangelical halls.	41
Kevin Miller Ian Montgomery Catherine O’Hara	
The street and the block: Reading the transition in Rimini, Italy	71
Martina Crapolicchio	
The street as a layer representing transitional processes	93
Rossella Gugliotta	
Street colours for orderly settlement image	111
Matej Nikši	
Walks through the painted street: Some examples of translations between painting and architecture	129
Alfons Tornero Dacasa	
 2 STREET MOBILITY: CURRENT AND FUTURE TRENDS	 155
The search for the identity of the Polish street – the role of cross-section of streets as the fundamental factor in the perception of urban space	157
Rafał Mazur	
Strategic, tactical urbanism for street Pedestrianization:	
A comparative study of streets in south Asian city	175
Karthikeyan B Karan Barpete	
Mobility revolution: We make the future	
– Carless mobility in rural areas	195
Lola Meyer Maik Kiesler	

In-Between Public and Private Space: An Analysis of Commercial Street: The Case of Hayat Sokağ/ (Life Street), Ankara, Turkey	217
Didem Turk Bercem Kaya	

Street as a space for agreements and social transformation: the legacy of São Paulo Municipal Management 2013/2016	237
Fábio Mariz Gonçalves	

Elements and Typology of Community Space on The Example of European Cities	253
Mia Crnić Ilka Čerpes	

3 | ON STREETS: RESEARCH TOOLS AND METHODOLOGIES 279

Cartography of Urban Scenic Spaces in Valparaíso	281
Andrés Garcés, Paula Olmedo	

Form-less Street? Case of Housing Estate	303
Liudmila Slivinskaya Lizaveta Chepikava	

Streetspace allocation – new tools and methods, with a Lisbon application	323
Paulo Anciaes José Pinheiro Sandra Somsen Inês Henriques	

Phoenix Poblenu: A Toolkit to Promote Urban Vibrancy Using Morphological Metrics	335
Stefania-Maria KousoulaSinay Coskun-Gokalp Simone GrassoAngelos Chronis	

Measuring the space quality of streets in the context of open public space in the city center: The example of Belgrade, Serbia	355
Aleksandra Djukic Jelena Maric Branislav Antonic	

Legibility vs. readability – Examining elements of new methodology in between transport planning and pedestrian behaviour	373
Nikola Mitrović Aleksandra Djukić	

Beirut ARTitecture: Tactically reanimating urban public spaces for a sustainable and just future using Art and Technology – Part 1	393
Sd. Eliesh Rajeh Samir	

Appropriation and perception as demand indicators in places of great social interaction	415
Isabela Sollero Lemos Katia Canova	

4 | THE LIFE OF STREET: COLLECTIVE MEMORIES AND MULTIPLE RHYTHMS 433

Transport as a public space: criminalisation and daily experience of women in Mexico City and Beirut	435
Carla Filipe Christine Mady	

Constructing contested spaces of the public: Exploring published photos from the streets near occupied Taksim square of 2013	449
Kalliopi (Kallia) Fysaraki	

Negotiating a Place in the City, Street practices in Beirut during Emergent Times	469
Roula El-Khoury Rachelle Saliba	

The “straw route” reconnecting widespread rural heritage in Cerro al Volturmo: strategies for inner areas	485
Giovangiuseppe Vannelli Angela D'Agostino Melina Di Tuoro	

The Chinese “Streetscape” as a social and linguistic space	507
Federico Madaro Marco Trisciuglio	

Mapping temporary collective appropriations in the streets of Guayaquil’s informal neighbourhoods	531
Xavier Méndez Abad Hans Leinfelder Yves Schoonjans	

The city as a scenario. Streets, squares, and churches in Barcelona	549
Alba Arboix-Alió Josep Maria Pons-Poblet	

5 | STREET ADAPTATION: URBAN TRANSFORMATIONS AND (A)TEMPORAL NEEDS 571

Modifications in the rigid grid-plan and its streetscapes on the edge of New York City	573
Gitte Schreurs	

Framing urban autopoiesis: street as a track for multiple adaptive cycles	591
Luca Maricchiolo	

Continuity and innovation in the Avenue des Champs-Élysées project	617
Giovanni Battista Cocco Andrea Manca	

From tramway-line to park – mapping the process of an urban transformation	643
Saskia Gribling	

Around and about motorways’ nodes. Enhancing the relationship among infrastructure and crossed territories	659
Elena Fontanella Andrea Gritti	

City Streets and Linear Cities: More Than Just a Line	681
Andreas L. Savvides Kyriaki Erakleous	

– a road to understand the city and the territory	697
Daniel Vale	

Not So Terra Firma	715
George Newlands	

Italian railways of the 20th century: from un-planned obsolescence to re-use. Eco-logical infrastructures between architectures, cities, and territories	739
Angela D'Agostino Giuseppe D'Ascoli	

Sundays in Avenida Paulista: a car-free open space for people in São Paulo	757
Camila Motoike Paim Fábio Mariz Gonçalves	

Street Life Adapting to Pandemic Lockdown Temporalities – Reflections in the Context of Greek Cities	779
Charis Christodoulou	

6 | THE FORM OF STREETS: INTERPRETING AND DESIGNING 797

Street AC (after COVID): Lagos as a case study for the Academia	799
Pedro Belo Ravara	

“Rua”: Heritage and Identity. Case study: “Rua do Salitre” street, Lisbon	821
Lucinda Oliveira Caetano José Luís Crespo	

The role of historical streets in the urban development of the city of Piacenza	837
Pasquale Mei	

Street Overlaps: Decoding Lisbon Thresholds	851
Youri Spaninks-Amaro João Silva Leite	

About the urban and architectural of the city: Designing the in Porto	871
Ângela Brandão Moreira Maria José Casanova Carla Garrido de Oliveira	

Reading local streets through an analysis of overlapping public-private interfaces	891
Antoine Zammit Alexandra Abela	

Designing ordinary public space, between revealed potential and public stance. The case of Viale Ottavio Mai in Turin	915
Massimo Crotti Claudio Germak Ilaria Tonti Janet Hetman	

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The street and the block

Reading the transition in Rimini, Italy

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Abstract

“An urban block is defined as that part of the city formed by three half-counties with a marginal building on each street and typical hierarchies between the formative routes (matrix route, building layout route and connecting route)”. Starting from Gianfranco Caniggia and Gianluigi Maffei in *Lettura dell’edilizia di base*, it is possible to define the object of the study in the context of the Italian historical centre urban regeneration: four urban blocks in Rimini’s compact fabric. The main formal character that defines this urban structure is the buildings’ conformation and road network surrounding and crossing the block. The study’s sample selection belongs to the four blocks’ narrative capacity with the rest of the town, for their stratification and mixture of different urban typologies. For these reasons, it is possible to reflect on the logical-expressive complementarity of two orders of characters: open/closed and compact/porous. Building/road relationships define the block within the urban environment and the hierarchy of the paths. The specific problems of the block in the urban context emerges as these relationships change. Subsequently, the permanences and permutations of this particular morpho-typological structure become evident. This research aims to analyse the transition of four blocks to trigger urban regeneration mechanisms.

Keywords

Block, street, urban morphology, urban rule

Reading for understanding

The simple construction of a building, the occupation of a space, and the demarcation of property constitute decisive actions for the urban environment, both for the individual and the community. It is a question of organising space to allow living conditions appropriate to the

place and time in which one acts: it is the process of transforming the territory, its buildings and the life that will develop around them. Each era of urban expansion has had its conception of the good city, its process and standards for city building¹.

Urbanisation takes place in a precise context, not only environmental and territorial but also social, of technical knowledge, specific to a particular area and a certain period. This means that the building methods differ according to the places and periods in which they occur. However, the actions of each time are closely connected to the previous ones, now imprinted in the spatial organisation. These actions remain in the artefacts and are of absolute importance since they constitute the references and models followed in the past, which are necessary as a source of knowledge and continue to serve as a model today². These references are made simultaneously at the urban and building scale, crossing the use and organisation of empty and built space.

By grasping the primordial relationship between site and settlement, the reading of its current form, the physical structure that constitutes it and the functions that are attributed to it are implemented. Reading the urban environment is concealed by the stratifications of man's works and by the modifications brought about by natural events or by the succession of regulatory and implementation provisions. From the concept of evolution for understanding urban dynamics comes Stephen Marshall's definition of a lens for looking at the city. Marshall argues: "the plan of a city – like the plan of a chess game in progress – is a snapshot of an evolving process. Two cities – or two chess games – may have different distributions of pieces, but these distributions often have a systematic local relationship, which gives them a recognisable order"³.

Based on this vision of the city and the way urban spaces are studied, this contribution focuses on analysing the urban form of the Italian historical centre with the purpose of modifying the existing rules to

1 Eran Ben-Joseph and Michael Southworth, *Streets and the Shaping of Towns and Cities* (Island Press, first edition McGraw-Hill, 2003).

2 Giuseppe Strappa, (1995) *Unità dell'organismo architettonico. Note sulla formazione e trasformazione dei caratteri degli edifici* (edizioni Dedalo:Bari, 1995).

3 Stephen Marshall, *Cities, Design and Evolution* (Routledge: London, New York, 2008), 186.

allow regeneration⁴. The reading of the urban form bases its approach on the typological investigation of the diachronic recomposition in phases⁵. Using a diachronic approach allows understanding of the connection between the network of settlements and the territory and how this original structure was transformed through innovations that introduced new factors and new settlement models⁶. Based on these arguments, the transitional morphological approach highlights three principles (belonging to the Italian school of urban morphology⁷) that can be useful to modify the system of urban rules and renew the connection between the activities of studying form through the mapping of urban realities, and planning, through the definition of rules. First, existing anthropic structures result from a process based on diachronic and diatopic mutation⁸. Secondly, urban structures establish changing relationships with each other⁶. Thirdly, the structure and character of a city are the results of permanences and permutations at various levels⁹. Consequently, the road system represents one of the leading models to read and understand the urban structure of the contemporary city. Therefore, a key element in shaping cities has been ideas of what the street network should be since streets are a public framework that structures urban tissues and city life¹⁰.

4 This research stems from the request of the Municipality of Rimini (Italy) to provide a preliminary study of the urban form of the historical centre for the formation of the cognitive framework of the new General Urban Plan. The municipality goals were to foster private investment raising building capacity of the historical core; to preserve the local identity strengthening typo-morphological pattern.

5 The diachronic recomposition in phases refers to the method used by Saverio Muratori in *Studi per una operante storia urbana di Venezia* (1959), where the author reconstructs the urban development of Venice in phases, tracing the permanences within the urban fabric.

6 Marco Trisciuoglio, Michela Barosio, Martina Crapolicchio, Rossella Gugliotta, Ana Ricchiardi, Zeynep Tulumen, "TRANSITIONAL MORPHOLOGIES. Urban forms: generation and regeneration processes. An agenda", *Sustainability* 13, no.11 (2021), 6233.

7 Reference is made to the urban design-oriented studies on Venice by Saverio Muratori, on Como by Gianfranco Caniggia and on Turin by Augusto Cavallari-Murat.

8 Gian Luigi Maffei, Mattia Maffei, *Lettura dell'edilizia speciale*, (Alinea: Firenze, 2011).

9 Gianfranco Caniggia, *Strutture dello spazio antropico. Studi e note*, (Alinea: Firenze, 1975).

10 Eran Ben-Joseph and Michael Southworth, *Streets and the Shaping of Towns and Cities*, 2003.

This framework of studies raises some fundamental questions for the approach to the regeneration of the contemporary city. First, how to read the structure of the contemporary city in order to understand its evolution? How can the analysis of the road network and built patterns suggest an urban design? Third, how to regenerate the contemporary city by understanding the relationship between settlement and territory? Using as a model the studies conducted by Saverio Muratori on Venice, by Gianfranco Caniggia on Como¹¹, but above all the analyses for the Bologna and Palermo Master Plans conducted by Pier Luigi Cervellati, this study aims to answer the fundamental questions by analysing the historical centre of an Italian city, applying the same principles as the reference studies. The analysis of Rimini's historical centre (Fig. 1) allows two essential considerations. Firstly, to analyse the historical urban fabric, it is possible to use consolidated notions belonging to the Italian school of morphology. Secondly, the need to respond to practical requirements dictated by the new urban planning law of the Emilia Romagna region¹², which imposes the simplification of regulations to encourage urban regeneration. Considering these two assumptions, the reading of the structure of the historical centre is an essential operation for the knowledge of urban materials (Fig.2).

Rimini as a laboratory

The methodology adopted for the study of Rimini's urban form, also discussed with the Municipality, consists of four main steps. First, the

11 In this regard, see the Report of the Plan of Rules within the Territorial Government Plan of the City of Como. In particular, part 8.1 (from page 539-583) in which there are the critical reflections on the issue of the historical centre. Reference to the link: https://www.comune.como.it/export/sites/default/it/doc/pgt/piano-delle-regole/relazione-piano-delle-regole/x0.8.1xPgtPianoRegoleComo_Pagine_539_583.pdf

12 Reference is made to the regional law of Emilia Romagna 21 December 2017, n. 24. The Italian regulatory system for territorial government is 'cascading', which means that a regional regulation coordinates the municipal norms and dictates the directives for territorial development. With this law passed in 2017 by the Emilia Romagna region (in which Rimini is located), it orders to simplify the regulatory apparatus of territorial government, bringing together municipal plans (Municipal Structural Plan, Operational Coordination Plan and Building Regulations) into a single General Urban Plan by 2023. To achieve this goal, the Municipality of Rimini has started the preliminary study shown in this article.



Fig.1 – Orthophoto of Rimini nowadays. In this picture, it is possible to recognise the historical centre in the middle, bordered to the north and south by watercourses, to the east by the railway line and to the west, the line of the ancient walls (now a road) is discernible. Source: open-access geographic tool with reworkings by the Author, 2022.)

analysis of the morphological patterns of the city and the formal transition of the historical core. Secondly, the identification of formal clusters within the urban fabric. Thirdly, the study of a sample for each cluster (through morpho-typological analysis) with a design simulation. Finally, the definition of regulatory guidelines to enable the increase of building capacity. The preliminary operation to the analysis of the urban fabric of Rimini is that of equipping oneself with the tools and techniques necessary to realise the complexity of the urban landscape. First, it is necessary to recognise that the visible aspect of the urban environment is the result of processes that are very different from each other in terms of logic and origins and that these processes intersect and overlap, leaving traces, albeit minimal, without any solution of continuity, defining the territory as a palimpsest that is gradually reworked¹³. These processes represent an urban scenario in which the transformations are hardly reversible and whose sum constitutes the fixed territorial capital, the principle and the constraint for the regeneration operations. In order to set operational goals on urban tissues, it is necessary to clearly define a certain number of elements that compose the urban structures of the historic centre. First, the structuring elements that are the components of the urban environment almost unchanged that constitute the identity of the historic centre can be identified with the street pattern and with the hydrography and natural elements. In this category, of primary relevance is the street layout of the Roman matrix (Fig. 3) since it persists in the urban structure together with the wall layout, which has now mostly disappeared, marking a clear-cut caesura between the historic and 'expansion' fabric. Secondly, settlement systems, i.e. urban agglomerations, interdependent on structural elements and respond to internal rules. Morphological clusters are part of the settlement systems, defining a collage of areas characterised by specific densities, plant structures and prevalence of building types.

On the basis of the concepts just mentioned, this research proposes the identification of five morphological clusters in Rimini's historical

13 André Corboz "*The Land as Palimpsest*", *Sage Journal* 31 no. 121 (March 1983), 12–34.



Fig.2 - Map of Rimini with streets and infrastructures highlighted in the historical centre of Rimini. In grey, the river. Source: Author, 2022.)

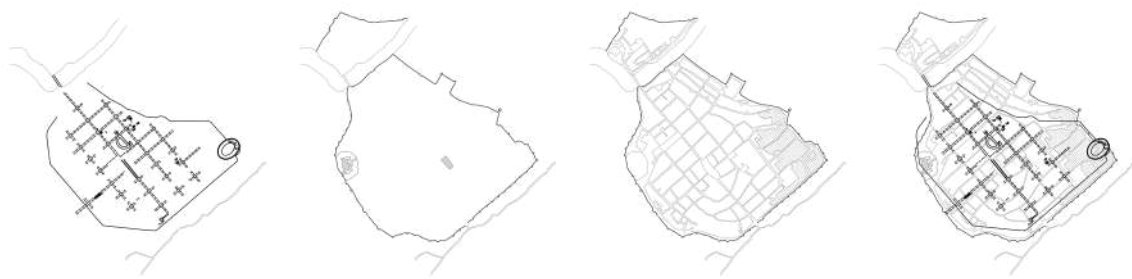


Fig.3 – Map of Rimini in its morphological development: Roman settlement, Renaissance additions, Gregorian Cadastre of 1811, overlapping maps. This image shows how the road structure of the early Roman settlement persists in the modern and contemporary structure of the city of Rimini. Source: Author, 2022.



Fig.4 – Morphological clusters in the historic centre of Rimini. Source: Author, 2022

city centre: compact fabric with blocks and stratifications, compact fabric with the presence of special buildings, fringe fabric with height differences, fabric with buildings arranged in a line, fabric with buildings arranged in line with the presence of units extraneous to the urban environment (Fig. 4). Studying the compact urban fabric with blocks and stratifications represents an opportunity to understand the relationship between the form of the city and the street. In the following paragraph, the urban shape of the four central blocks of the city of Rimini is studied through its evolution and its relationship with the hierarchy of the roads.

Dichotomies and links between open/closed and compact/porous

In this section, the analytical part of the research is presented. In particular, the sample of a morphological cluster (compact urban fabric with blocks and stratifications) is shown. The discussion is developed according to the following points: description of the study object (location and form), study of the relationship between the block and streets, design hypothesis linked to the concept of urban porosity.

The four blocks under analysis (Fig. 5) are located between two urban poles: *Piazza Cavour* and *Piazza Tre Martiri*. The polarity of the squares derives from the historical stratifications that, over time, have consolidated their attractive role as centres of commerce (such as the old Forum in Roman times, now *Piazza Tre Martiri*) or centres of power (such as *Piazza della Fontana* in mediaeval times, now *Piazza Cavour*). The presence of the two attractive poles, which were formed at the same time as the special buildings¹⁴ of the *Palazzo del Podestà* or *Palazzo Brioli* (clock tower), reflects the polarity of the four study blocks, which are made up of different layers and represent a development model that can be found in other areas of Rimini's historical centre. However, the study of the blocks requires a clarification of terminology in terms of urban morphology: "An urban block is defined as that part of the city formed by three half-counties with a marginal building on each street

¹⁴ The concept of "special building" as well as the concept of "polarity" are extensively discussed in the widely cited publication: Caniggia, Gianfranco, Gian Luigi Maffei, and Nicola Marzot. *Interpreting Basic Buildings* (New Revised ed. Firenze: Altralinea, 2017)

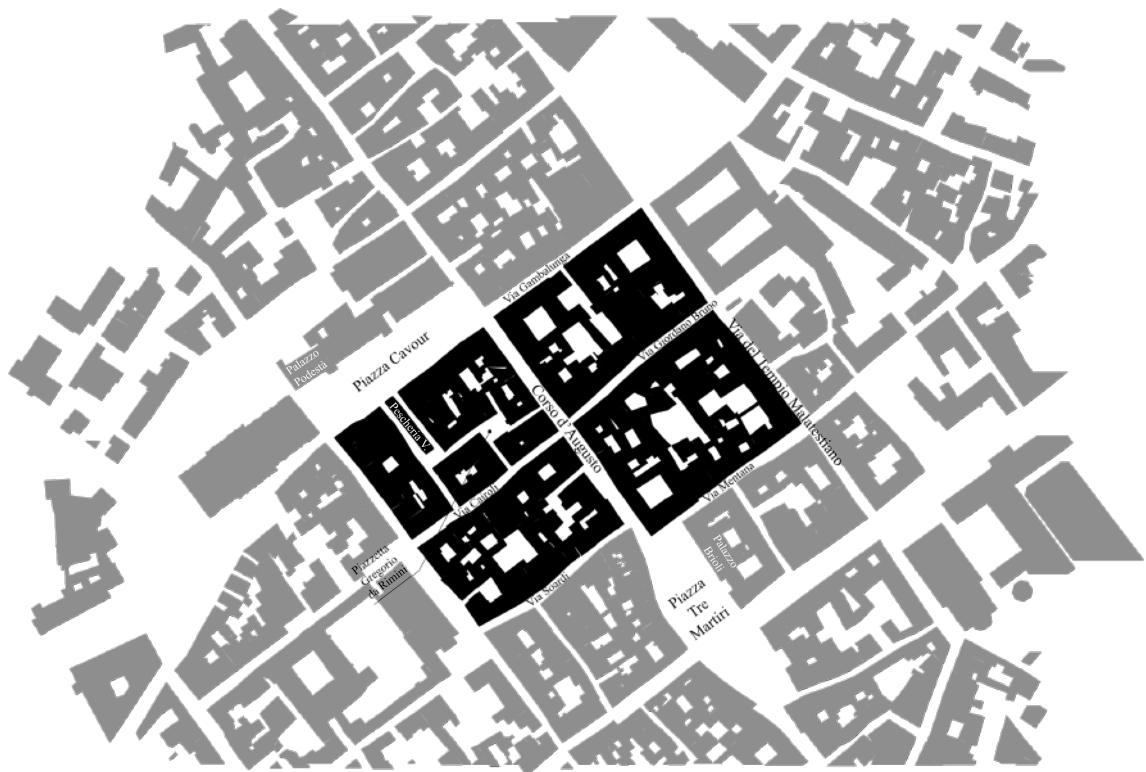


Fig.5 – Map of four blocks with the indication of streets and main squares.
Source: Author, 2022.

and with the typical hierarchies between the formative routes (matrix route, building layout route and connecting route)¹⁵. Taking up Gianluigi Maffei's words, it is possible to clearly define the object of study, i.e. the sample of the four urban blocks, which are characterised not only by the conformation of the buildings but above all by the road network that surrounds and crosses them. Streets and routes are a fundamental element of morphological analysis, which is usually only associated with the study of built form. Despite being an empty space within the urban structure, the street constitutes the structure and defines the hierarchy in the urban analysis. Within the urban fabric of Rimini it is possible to identify three types of routes: matrix routes, building layout routes and connecting routes. Therefore, the traceable matrix routes are *Corso d'Augusto*, *Via del Tempio Malatestiano* (Fig. 5), and the building layout routes are the streets perpendicular to the matrix routes (*Via Cairolì* and *Via Giordano Bruno*, *Via Soardi* and *Via Mentana*). Finally, the connecting routes are all the alleys inside the boundaries of the block (Fig. 5).

However, the current configuration of the blocks derives from the stratification of different compositions that have followed one another over time. The layout of the four blocks in Roman times consisted of a system of lots with open series of appurtenant courtyards; there were special structures such as the Roman theatre and peristyles in the north-eastern block, the *horrea* (or public warehouses in Roman times. The Latin term has the meaning of granary, but the buildings that had this name were used for the storage of different types of goods) in the south-west, temple and *quadriporticus* in the south-east block¹⁶. There was a reuse of the Roman lot system in the mediaeval phase introducing the merchant court type. In the north-eastern block, as shown by the studies of the architect Edoardo Preger in 1988¹⁷, the progressive clogging of the road system and partial shifting of the connecting route were caused by the decay of the adjacent Roman theatre (Fig. 6). In the

15 Gianfranco Caniggia, Gian Luigi Maffei, *Composizione architettonica e tipologia edilizia. 1. Lettura dell'edilizia di base*, 136.

16 Grazia Gobbi, Paolo Sica, *Le città nella storia d'Italia. Rimini*, (Laterza: Bari, 1982).

17 Edoardo Preger, *Morphological studies for the construction of the new General Plan of the city of Rimini*, 1988.

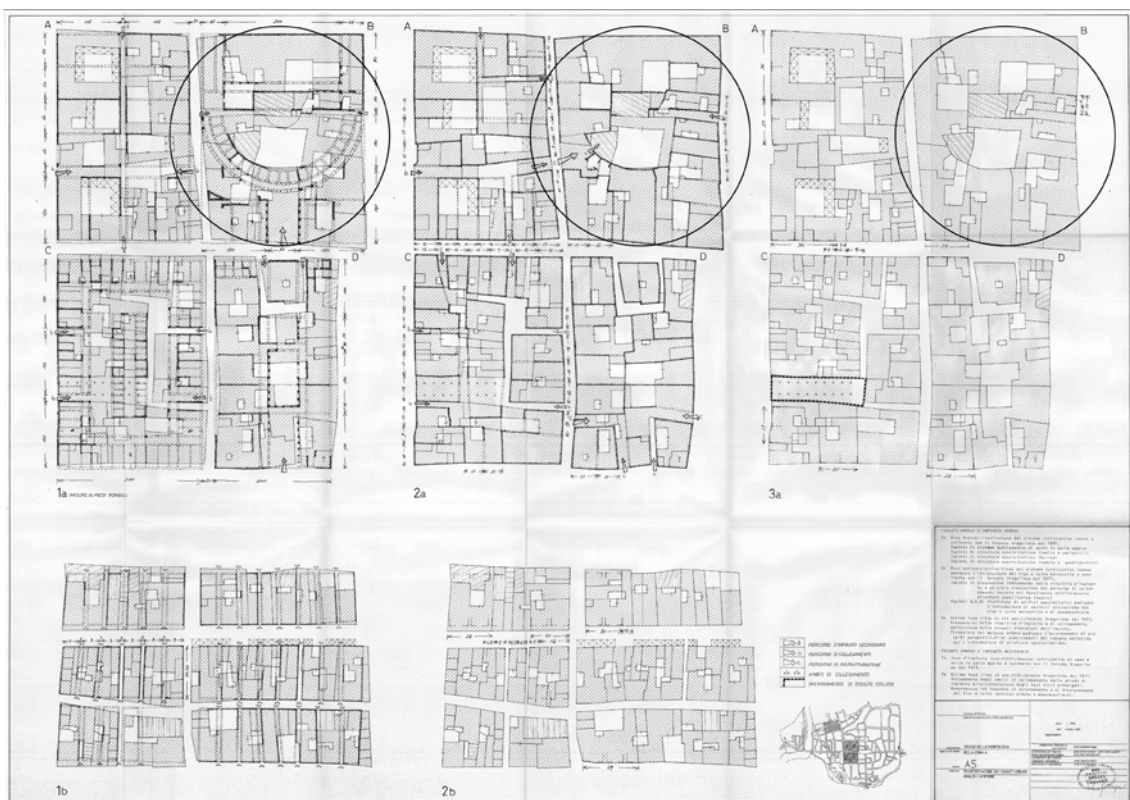
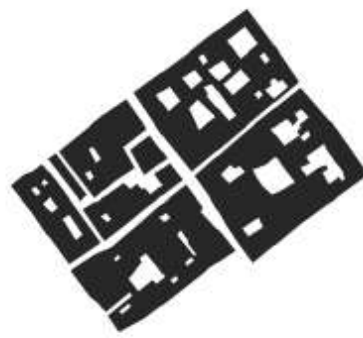
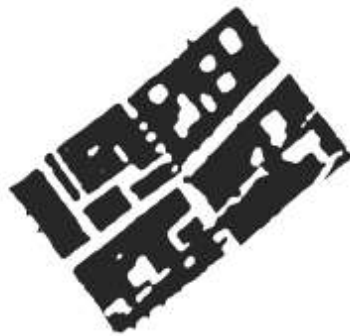


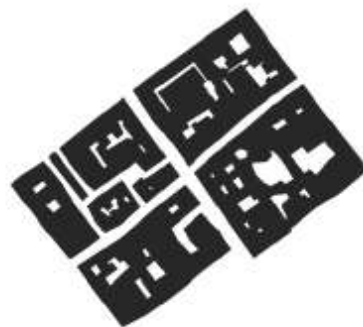
Fig.6 – Edoardo Preger 1988, Morphological studies for the construction of the new General Plan of the city of Rimini. Source: Rimini's Archive, 2020.



1894



1912



1975



2020

Fig.7 – The transition of the four blocks. Source: Author on the basis of historical cartographies, 2022.



Fig.8 – Example of a building that respects the block morphology but presents modernist canons. Piazza Cavour, 1, 47921 Rimini RN. Picture. Source: Author, 2020

other three blocks, the reuse of special buildings by introducing synchronic variants of the merchant court type and pseudo-shelters is noticed. In the urban situation photographed by the Gregorian Cadastre of 1811, it is possible to trace the clogging of the system and connecting roads with the consequent definition of the current dimensions of the block. In addition, it is possible to notice the formation of the urban palace through the amalgamation of several merchant courts with the first gutting of the residential fabric to introduce *special buildings* (Fig. 7).

The curtain layout of the four blocks continued in the years following the Gregorian Cadastre, except for the *Pescheria Vecchia* lot, overlooking *Piazza Cavour*, which was freed of the adjacent superfetations. Another sign of transformation is the system of internal courtyards. These underwent changes in size and form after World War II due to the bombings and the subsequent construction of residential buildings on the edges of the blocks. The buildings constructed on the bombed-out plots conform to the general morphology of the four blocks. However, they have architectural characteristics that differ from the pre-existing ones regarding materials and architectural style. For example, ribbon windows, plastered facades and flat roofs create a visual detachment from immediately perceptible context (Fig. 8).

The urban morphological layout in the form of a block and the road layout are concepts compared with the courtyard building typology as a measure, module and principle of aggregation and as a minimum unit within the city's design. The four blocks of the sample were selected because of their narrative capacity concerning the rest of the city and their stratification for the mixture of different urban typologies and materials. For these reasons, it is possible to reflect on the logical-expressive complementarity of two orders of characters: open/closed and compact/porous. Above all the relationships, the distinctive features of the courtyard type emerge from studying its relationships with the city and with the form of the fabric. Building/road, interior/exterior, and public/private are the relationships that, decomposing and recomposing, define the courtyard type within the urban environment. As these relationships change, the specific problems of the courtyard residence in the urban context emerge, and the permanence and permutations of

this particular morpho-typological structure become evident. Therefore, three of the four blocks can be defined as closed urban organisms, i.e. they maintain a clear, defined, impenetrable boundary.

In contrast, the block to the northeast presents a semi-open system due to the presence of the *Pescheria Vecchia* and the *Piazzetta Gregorio da Rimini* (Fig. 5). As a result, the courtyard loses its function as a domestic “backyard” and becomes part of the urban square. The perimeter block relates to this inversion by remodelling its physical consistency and rewriting the relationship between its solids and voids. The porosity of a residential courtyard model, or the biunivocal relationship between mass and permeability, can create new spaces, dematerialising the boundary and the envelopes and re-defining the void (the street, the circulation space) as an architectural presence.

The analysis of the block, its paths, polarities, porosity, and development allows an understanding of the limits and possibilities of action on this urban conformation. The “solids”, i.e. the buildings, are almost untouchable, except for restoration work¹⁸. The work on the voids, or instead on the spaces of circulation, allows a series of spaces for manoeuvre.

So one of the possible prefigurations is to act by micro-interventions, also considering a limited time dimension and a reversible arrangement (Fig. 9). Hence the awareness of establishing a sort of abacus of urban elements to be inserted in the circulation spaces (i.e. collective or private courts, roads within the block, paths, etc.).

The project is thus understood as a catalyst, an accelerator of dispositions; it is seen as one of the possible configurations of urban development¹⁹. Above all, the project’s vision in the urban regenera-

18 In the Executive Urban Regulation of the Municipality of Rimini the buildings in the historic centre are classified according to value categories to which an intervention category is associated. See Table RUE 2-3 of Rimini Municipality's Executive Urban Regulation. In the study blocks, with the exception of buildings rebuilt after the Second World War, most of the buildings only foresee conservative restoration.

19 Pasquale Mei, *Il tempo della simultaneità nel progetto urbano. Tra permanenza e mutazione* (Maggioli Editore: Segrate Milano, 2015).

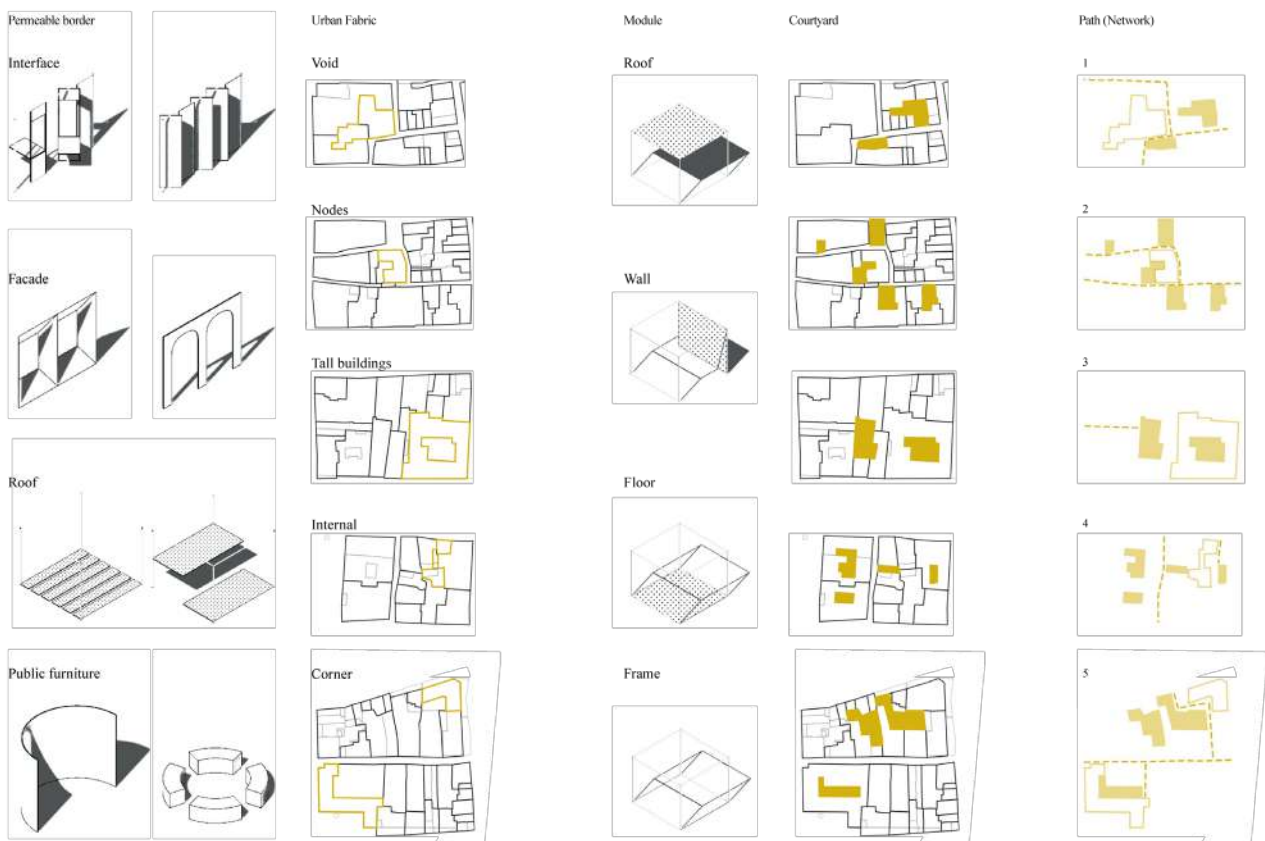


Fig.9 – Guo, Liquizi, Abacus of temporary structures for the circulation spaces in the blocks. Source: Master Thesis by Guo Liquizi, 2021.

tion of Rimini's historical centre is understood as incremental: not as a formal or normative dogma, but as a sum of operations distributed over time that does not return an immediately predictable image. Given the formal characteristics of the study area, it is possible to deduce certain design orientations aimed at maintaining the identity of the sites and oriented towards increasing building capacity. One of the possible solutions that this research is experimenting with is the formulation of an abacus of temporary structures to be inserted within the circulation spaces (internal roads) of the blocks. For this purpose, the north-east block is the most porous and most suitable for experimenting with a series of design solutions. Nevertheless, the inner (private) courtyards of the other blocks can also provide temporary spaces used by the community. In addition to this, the buildings reconstructed after the Second World War, both in terms of façade redesign and the use of flat roofs, provide a design opportunity (Fig. 9).

According to Giuseppe Samonà, the figure's construction is a synthetic and essential procedure to arrive at the first signs of the project, which are still purely iconic. The space, represented by the figure, connoted more than described, manifested more than drawn, speaking more than spoken, becomes a metaphor of the intermediate between demand and architectural project, between the description of the context and prescription of the project; it is a metaphor of the intermediate passage, of that ferrying of the number of numbers of an urban plan into quality and definition of the character of the material of the urban composition and the relative architectural project.

The results discussed in the following paragraph represent the transposition of the reasoning around the compact fabric with blocks and stratifications and its relationship with the road (the void) on the level of urban design and the deduction of rules for the regeneration of historical fabrics with the same characteristics.

An urban code matrix based on form

In inter-scalar reasoning, or sometimes in this transcalar analysis, the choice to analyse urban fabric samples is instrumental in verifying

whether the reasoning conducted *a priori*²⁰ can be applied more or less effectively to the existing urban fabric. Hence the awareness of being able to export the reasoning carried out on a sample to the remaining urban fabric, which presents the same morpho-typological characteristics. However, it is possible to set up a preliminary matrix to define the knowledge base for reformulating and sometimes overcoming the existing rules to improve the building capacity in the historical centre. The table proposed in this article concerns the summary of the analysis conducted on the four sample isolates. Within this synthesis are represented the formal requirements of the morphological clusters (IF), the possible actions on the urban tissues with the subject that can carry out the regeneration actions (IS PERMITTED), the benefits for the subjects involved (ADVANTAGES) and finally a draft of the operations allowed in each situation (LIMITS/QUANTITIES). So IF there are conditions of compact building fabric with blocks and stratifications (on the shown sample), IT IS PERMITTED to rethink the urban space to allow porosity through:

- interventions on the system of voids in inner courtyards (temporary and reversible);
 - interventions on the surface of facades;
 - interventions on the surface of roofs;
- through promoters: private citizens, with the ADVANTAGE of receiving discounts on environmental taxes, being able to carry out operations within the LIMITS of
- occupation of private land by the public on a two-year concession;
 - interventions on building envelopes and roofs (or solar slabs) in compliance with the typology.

IF	IS PERMITTED	ADVANTAGES	LIMIT/QUANTITY
There are conditions of compact building fabric with blocks and stratifications	To rethink the urban space to allow porosity through: <ul style="list-style-type: none"> - interventions on the system of voids in inner courtyards (temporary and reversible); - interventions on the surface of facades; - interventions on the surface of roofs; Promoters: private citizens	Receiving discounts on environmental taxes	<ul style="list-style-type: none"> - occupation of private land by the public on a two-year concession; - interventions on building envelopes and roofs (or solar slabs) in compliance with the typology.

Fig.10 – Table of rules set. Source: Author, 2022.

20 “Reasoning conducted *a priori*” refers to the concept developed in the first paragraph of this article regarding the connection between urban form and regulations.

This reading method, applied to all the other morphological clusters defines relations between spaces, subjects, and possible guidelines for developing Rimini's historical centre.

The study of the street pattern defines the structure, the boundaries and characteristics of the built environment, playing a role of primary importance in architectural design and thus representing the guide on which the urban fabric bases its reasons²¹. The operation carried out on the urban fabric of Rimini is to make the architectural project a research tool to investigate the urban scenarios and to be the outline for a set of rules. Supposing that urban regeneration is seen as a gradual rather than a single event, it can gradually take shape based on existing qualities. As a result, it is easier to respond to unforeseen and unpredictable social dynamics. The gradual approach to development contrasts sharply with the conventional approach, which assumes one big step towards a predefined situation or final position, known as urban planning. As a result, planning no longer produces a static and permanent outcome but outcomes permanently in a state of flux²².

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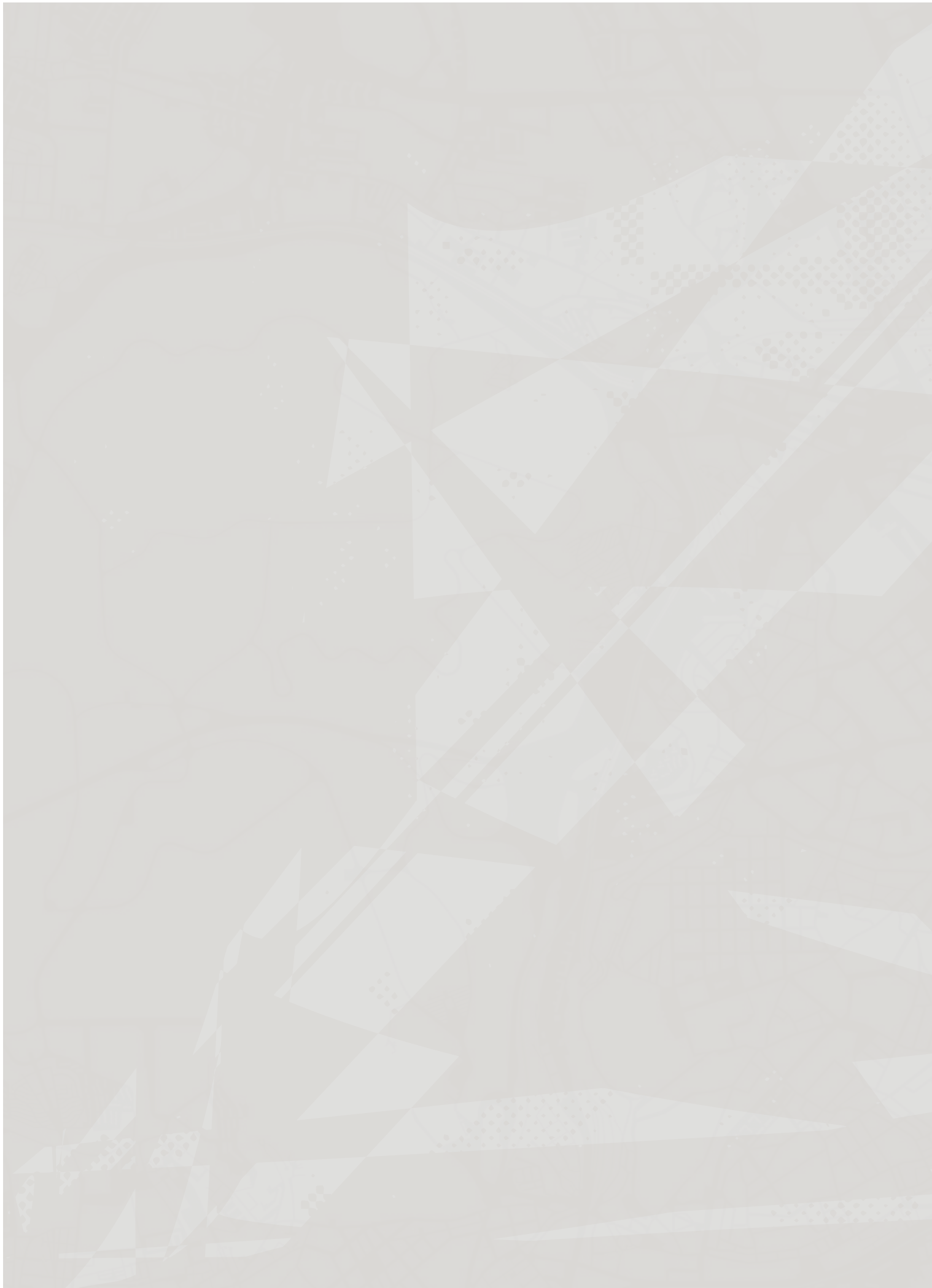
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