

## Article

# Cross-Disciplinary Approaches to the Regeneration of Minor Historical Centers: The Case of Mogoro in Sardinia

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**Abstract:** In Italy, the regeneration of historic centers is a relevant issue in the theoretical debate and practice of urban planning, a discourse which usually adopts strictly constraining approaches and tools directed almost exclusively at the preservation of the traditional characters of historic buildings, neglecting social and economic processes. In particular, the redevelopment of minor historic centers becomes a priority action for the revitalisation of marginal territories affected by the phenomena of depopulation and weakening of the socio-economic structure. The paper focuses on the regional context of Sardinia to investigate methods and criteria for the drafting of planning tools for the redevelopment of minor historic centers, enabling the definition and implementation of strategies in accordance with the objectives and guidelines of the Regional Landscape Plan. With a case study methodology applied to the historic center of Mogoro, the research discusses an innovative and interdisciplinary approach to the definition of flexible regulations to manage the urban regeneration process.

**Keywords:** historic urban landscape; landscape plan; detailed plan; planning regulation

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## 1. Introduction

Minor historic centers, particularly widespread in rural areas, are representatives of the Italian landscape, which is otherwise affected by processes of marginalization of the inner areas, with a progressive weakening of the socio-economic and physical structure of the urban fabric. The lack of relevant architectural landmarks, compared to the historic centers of major cities, often corresponds with the adoption of weaker preservation rules, allowing the decay of their original features and the cultural identity of the minor center. The valorisation of minor historic centers represents an opportunity for the territories to contain the process of depopulation and to preserve their artistic, historical, and cultural heritage. The enhancement of historic center values (e.g., material, economic, social) as local resources benefits from planning strategies directed towards an integrated socio-economic development of the territory, one not limited to attractiveness to tourism, but aimed at strengthening long-term development and attachment to the place.

The paper analyses the Italian context, Italy having been one of the first European countries to have addressed the issue of historic centers, achieving relevant results in planning theory and practice. In particular, the Region of Sardinia has had a long tradition in the recovery of historic centers since the 1990s. Specific laws and the first Regional Landscape Plan in Italy have paid special attention to the planning of the so-called “centers of ancient origin and first development”, supported by an integrated and multilevel knowledge tool that later resulted in the series *Handbooks of the Recovery of Historic Centers*. The research question investigates the ineffectiveness of traditional ways of planning and managing Sardinian minor historic centers in achieving physical regeneration of historic fabrics while preserving project quality and satisfying the local community's needs. Overcoming the approach based on strict constraints, which limits the physical and social

transformation, is a debated topic in the urban planning field, but it does not yet appear to be effectively solved in operative practice. A detailed knowledge framework is a starting point for the formulation of planning strategies that meet contemporary needs while respecting the historical and cultural values of the local context. Based on these assumptions, although the context in question is of a “minor” nature by virtue of its inherent characteristics, the approach suggested by the manuscript is related to the conceptual framework of “sustainable development,” in view of the social, economic, and environmental effects desirable from the effective implementation of the detailed plan, consistent with the cornerstones of the “sustainable city” paradigm, in its cross-cutting meaning [1–4].

The detailed plan for the regeneration of the historic center of Mogoro represents, in the field of research, a test, integrating multidisciplinary skills and knowledge in the drafting of rules and strategies for historical patterns characterized by a strong degradation of traditional characters. The paper aims to set criteria and methods to define an effective and adaptive planning, one able to support community participation and foster bottom-up urban regeneration processes.

### *1.1. The Evolution of the Theoretical and Normative Framework*

In Italy, the issue of historic centers had fully emerged in the 1960s, as evidenced by the foundation of the National Association of Historic and Artistic Centers (ANCSA) (the acronym derives from the Italian name *'Associazione Nazionale Centri Storico Artistici'*), whose basic principles were outlined in the first Gubbio Charter in 1960 [5]. Over time, ANCSA has encouraged the debate on the preservation of historical heritage, highlighting the risks related to the loss of the historical, cultural, and identity characters of settlements, due to the urban and territorial transformations that have affected European cities since the post-World War II period. The gap between ancient urban patterns and recent urbanisations is the result of rapid urban growth driven by economic development.

The historic center represents the focal point of an articulated settlement structure, resulting from a long-lasting process, which requires an integrated vision between city and territory. The recognition of these historic heritage values is essential for existing city planning and management efforts. Since the laws for the conservation of heritage of historical and cultural interest in the 1930s, the awareness of the widespread value of historic urban fabrics has gained importance, extending the attention from monumental landmarks to the whole urban and territorial context [6,7]. In fact, protection policies aimed at the specific object proved inadequate, favouring processes of abandonment, degradation, and radical change of physical and social characteristics, except for rural contexts where settlement patterns were preserved, at least until the Second World War [8]. In Italy, the first operational approach resulted in the identification of “Zone A” of the historic centre in municipal urban plans, with the delimitation of a protection area through the definition of a boundary that is lacking the complexity of the historic landscape [9,10].

Urban planning was initially oriented towards the management of urban expansion processes, neglecting the regulation of building interventions in historic centres. At the end of the 1970s, there were some innovations in terms of specific tools for urban recovery, with the introduction of the categories of interventions (maintenance, restoration, and conservative renovation) and new operational urban planning tools, such as the Recovery Plan (L.457/1978) [11] and the Integrated Intervention Programme (L.179/1992) [12].

Often, the conception of the historic centre as a heritage to be preserved in its entirety, without any consideration of its financial, use and social values, has limited private initiative with constraints and restrictions, even on low-quality buildings, favouring its physical degradation and abandonment [13–15]. Rigid and generalised protection policies also threaten the permanence of productive and commercial activities or favour gentrification processes, with the loss of the residential function in favour of tourism and the tertiary sector [16–18]. The regeneration of historic centres is affected by the ongoing conflict between valorisation and protection policies, with a view to identifying the appropriate

functions to ensure the preservation of historical and identity values and the strengthening of attachment to place [19–22]. During the 20th century, the debate on the landscape and cultural value of the territory led to its recognition as a social product characterised by an evolutionary and transformative dimension.

In 1992, the cultural dimension of the territory was endorsed with the official recognition of the Cultural Landscape, including rural landscapes, in the UNESCO World Heritage List, as representative of the evolution of human society and settlements over time, occurring under the influence of the physical conditioning and/or opportunities of the natural environment and the consequent action of social, economic, and cultural factors, both internal and external.

The dynamic character of the landscape cannot be compatible with approaches based on the limited recognition of parts of the territory that have conditions that make them eligible for protection. Therefore, the static delimitation of an area and the imposition of restrictive protection measures are ineffective in preserving a living system that is constantly in evolution and preventing current transformations that could compromise its identity values [23].

In 2011, the UNESCO General Conference, with the Recommendation on Historic Urban Landscape (HUL), suggested to member states a dynamic and inclusive voluntary approach to the management of the historic urban landscape, one which recognises and interprets the system of tangible and intangible values, not only architectural, but that also constitutes the identity and character of the urban context, including economic processes and social and cultural practices [24,25].

The term Historic Urban Landscape refers to a stratification of historical, cultural, and natural values which goes beyond the notion of “historic center” to include the broader urban and geographical context. In this direction, the mapping of physical, cultural, natural, and social features supports decision-making for the implementation of normative and regulatory systems, adapted to local conditions, that help protect the integrity and authenticity of urban heritage and direct transformation processes toward improving the quality of life and space [26–29].

The HUL approach involves the use of traditional and innovative instruments according to the characteristics of local contexts and the needs of communities.

In this direction, the provision of participatory practices and civic engagement in involving a plurality of actors to identify key values and define objectives, strategies and actions for heritage conservation and the promotion of local development is crucial [30,31]. The issue of heritage valorisation is linked to the economic processes affecting the urban context and establishing the development potential of the resources concerned to achieve social goals other than protection [32].

In the context of urban planning and decision-making for the conservation and regeneration of historic fabrics, it is essential to identify the wide range of heritage values to be assessed, necessarily adopting a combination of multidisciplinary approaches and criteria. Heritage conservation policies cannot be limited to material interventions in the physical environment, but instead require socio-cultural activities and inclusive strategies for the involvement of different forms of expert and non-expert knowledge in the planning process.

Historic centers, including the so-called “minor centers”, are holders of socio-cultural relevance, a relevance attributed to places and buildings because of the sense they represent to the community due to historicity, artistic or architectural value, as well as a connection to an historical event or era. Historical value is understood as the potential of a site to communicate, embody, or foster a relationship with the past. Cultural values are used to construct cultural belonging in the present and may be historical, political, ethnic, or related to other ways of living together (e.g., related to work or craftsmanship). Symbolic value refers to those shared meanings associated with heritage that are not, strictly speaking, historical (related to the chronological aspects and meanings of a site). Besides historical and socio-cultural values, heritage also encompasses economic values and use

values that refer to the goods and services derived from it, values that have been recognised and appraised on the market [33].

### 1.2. *The Historic Urban Landscape in the Landscape Planning*

In Italy, the entry into force of the “*Codice dei Beni Culturali e del Paesaggio*” (known as the Urbani Code) [34] in 2004 started the elaboration phase of regional landscape plans or regional territorial plans with landscape value. To date, the Regional Landscape Plan (RLP) for the coastal areas of Sardinia of 2006 [35], the RLP of the Region of Apulia [36] and the Territorial Plan with RLP value of the Region of Tuscany of 2015 [37], the RLP of the Region of Piedmont of 2017 [38] and that of the Region of Friuli-Venezia Giulia of 2018 [39] have been approved [40]. It is considered useful to offer a summary of the different approaches proposed by landscape plans regarding the protection and valorisation of historic centers, with an in-depth focus on the Sardinian regional context.

The Friuli-Venezia Giulia landscape plan identifies historic centers of significant landscape interest and settlement components of historical identity value through the recognition of the different “morphotypes” that are generated by the interaction of natural, anthropic and identity factors. The regulatory framework is expressed in the construction of an abacus of morphotypes that provides guidelines for urban planning.

The Territorial Plan of the Tuscany Region recognizes the settlement structure of historical-territorial and identity value, which includes urban components, minor settlements, and related infrastructural, industrial, and technological systems.

It also extends attention to the area included in a buffer zone of 300 m from the perimeter of “Zone A”, which is strongly connected on a morphological, perceptual, identity and historically functional level to the historic core. The task of developing strategies to protect and enhance the polycentric character of settlement systems and the historical and identity values of the landscape context is assigned, again, to local planning. The Piedmont Regional Landscape Plan protects the components of historical and cultural interest, considered as key elements of the regional cultural identity, and therefore identified in the complementary Regional Territorial Plan.

Historic centers, qualified as consolidated urban areas, are included in the morphological and settlement components (major centers, minor centers, and outer settlements). Local plans define the perimeter of historic centers, including edge areas and open spaces that have established fundamental relationships with the landscape context. In addition, they elaborate detailed regulatory guidelines for the conservation and valorisation of the original morphology, the relationships between historical and territorial systems at the local scale, the specificity of structures, typologies and built fabrics, and, finally, the elements of perceptual value in the landscape.

The areas to be redeveloped are identified to ensure the coherence of the interventions with the original aggregate patterns, alignments, relationships between solids and voids, orientation of roofs, materials and colours typical of the place.

In the Apulia Region’s landscape plan, historical fabrics are included in the cultural and settlement components and refer to the portion of urban centres ranging from the historic core to the compact urbanisation of the first half of the 20th century.

Historic settlement resources, consisting of historic centers and cores or the complex of elements and traces of the historical productive and infrastructural organization of the territory, are understood in the dual value of components of the settlement system and important parts of the cultural heritage to be protected.

Local planning is necessary to ensure the conservation and valorisation of these integrated territorial systems, which are the result of long-term processes, by identifying the qualities to be preserved and the specific problems to be addressed.

The structural part of the municipal urban plan analyses urban and rural contexts, including structural invariants of a historical and cultural nature, identifying their morphological features through a reading of the patterns and values deposited by settlement processes.

The plan identifies the ‘urban contexts to be protected’, defining the perimeter of the settlements that constitute the cultural heritage to be protected, as well as the distinctive elements and potential for qualification and development, the transformation processes underway, and any factors of abandonment and social, environmental, and building degradation.

In Sardinia, the Regional Landscape Plan expresses the need for a profound revision of the planning processes of historical fabrics, according to an innovative conception of transformation processes for contemporary uses, respecting the values and identity features of the context, even in the case of minor buildings, ones often subject to degradation and obsolescence. The elaboration of the plan was associated with an awareness-raising research activity on the issues, with a popular and educational approach aimed at bridging the levels of knowledge of the value system that characterises historical fabrics.

From an operational point of view, the plan protects areas characterised by historical settlements, in particular centres of ancient origin and first development, recognised by reading the historical cartography, as well as modern and contemporary original centres, including specialised productive areas and spread settlements (art. 51, RLP), by drawing up an initial proposal for the perimeter of the conservation area and defining specific prescriptions and guidelines to be taken into account when adapting local urban plans. Municipalities verify the perimeter of centers of ancient origin and first development, through the analysis of the built fabric and factors that certify their “historicity” [41]. However, reference is made to the executive planning, to the instrument of the Detailed Plan of the Historic Centre (DPHC), to deepen the knowledge framework on the various physical and socio-cultural aspects of the historic settlement and to define the discipline of use and transformation. The delegation to local planning of the definition of criteria and actions for the conservation and valorisation of historic fabrics represents the common element of landscape planning approaches to the issue of historic centres. The contribution of significant innovations to methodologies and practices for the preservation and redevelopment of historic fabrics has been limited by a framework of traditional planning tools, however not adapted to the flexibility and processual nature of the regeneration of historic centres.

### *1.3. The Detailed Planning for the Recovery of Historic Centers in Sardinia*

Sardinia has adopted a strictly conservative approach that refers to the drafting of a detailed plan for the historic centre, preparatory to the implementation of building transformation projects, including complete renovation, in the historic centres defined by the RLP. In the case of a lack of a detailed plan, only direct maintenance and restoration work is permitted, establishing a safeguard measure so as not to compromise historical and cultural values, even though this may indirectly encourage situations of abandonment and degradation. The detailed plan analyses the built-up area in depth, identifying its morpho-typological characteristics and the processes that generated them, classifying the existing buildings based on their period of construction, their traditional historical character or the compatibility of recent constructions with the context, expressing a rating of historical and landscape value to which corresponds a different degree of transformability and a specific regulation of interventions.

However, a knowledge framework of the current state of an urban context that, although detailed and accurate, refers to a specific time, is often outdated at the final adoption step, making it unable to provide a picture of current processes and dynamics. It is also essential to be able to monitor the state of urban areas and their evolution, to facilitate the evaluation of planning proposals and to improve management skills and procedures.

The procedures for the adaptation of municipal urban plans to the Regional Landscape Plan are too complex and long, discouraging any effort to update or revise planning choices. In addition, the lack of participation and choice-sharing by decision-makers results in inadequate agreement from the local community. Traditional recovery plans, related to a concept of public-initiative planning, have proven ineffective in regenerating

the historic fabric, despite their excellent results in the analysis of settlement characteristics, defining the degree of preservation and transformability, and protecting historic values with constraints on building development.

In accordance with the guidelines of the Regional Landscape Plan, the detailed instrument should pursue the conservation of the historical stratification of the settlement and the valorisation of the traces that testify its historical origin, through a set of interventions aimed at protecting the specificity of each historical centre, enhancing and promoting the recognition of the edges and of those areas that are more specifically the expression of transformative and relational dynamics with the contextual landscape system, often with a strong productive character. Going beyond the purely conservative approach, the definition of building and urban restructuring interventions of urban portions profoundly altered by recent interventions of replacement or net transformation of identity elements, traditional typological and building characters, spatial arrangement and organization of blocks is desired. The use of public-private partnerships is also promoted for the replacement of incongruous and incompatible parts and the redevelopment of public spaces, to recover the original urban layout and historically recognized morphological features. The construction of new buildings is allowed for possible functional integrations and additions of new volumes, with respect for the characteristics of the historical context, evaluating as a priority the opportunity to use for public purposes the unbuilt areas. The design of interventions must be based on criteria and rules that interpret the specific spatial relations of the historic building type, to avoid the so-called “typological degradation” due to the inclusion of incompatible settlement patterns in the historical context.

The innovations introduced by landscape planning in relation to the issue of the recovery of the historic urban landscape require an updating of local planning practice and methodologies for drafting instruments, overcoming rigid and static rules, which are not able to support the dynamic implementation of planned interventions.

## 2. Materials and Methods

The research aims to innovate methods and criteria for the drafting of planning tools for the recovery of minor historic centres, enabling the definition and implementation of redevelopment strategies in accordance with the goals and guidelines of the Regional Landscape Plan. The use of the case study methodology allows an in-depth analysis of the specific issue in a real context, testing the hypothesis and criteria proposed. The case study of the historic centre of Mogoro was chosen to investigate the peculiarities of the Sardinian regional context, which is characterised by an extensive settlement network of minor historic centres under the regulations of the Regional Landscape Plan, and the consequent process of adaptation of urban planning instruments.

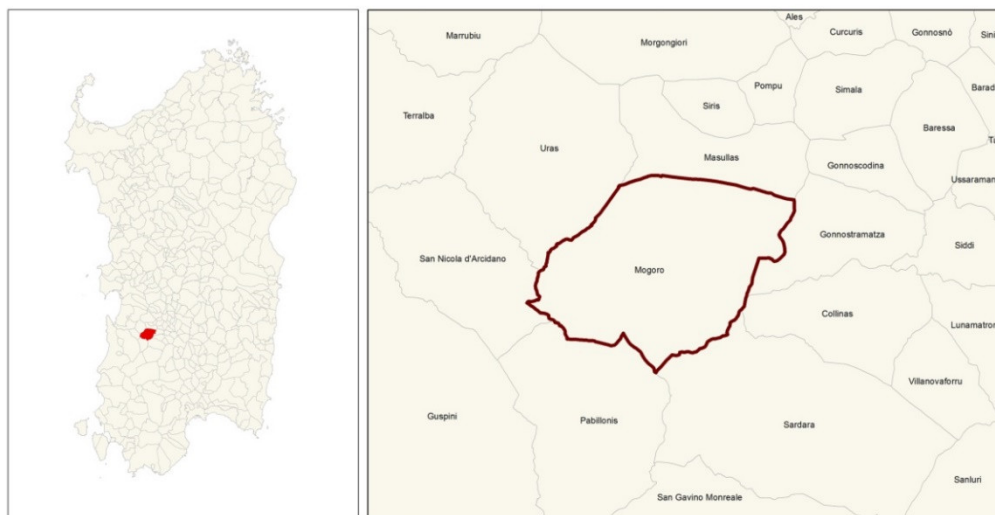
The research is part of the collaboration agreement between the Department of Civil, Environmental and Architectural Engineering of the University of Cagliari and the Municipality of Mogoro for the drafting of the detailed plan of a part of the local settlement fabric that falls in the center of ancient origin and first development.

### 2.1. Case Study Selection

The municipality of Mogoro is in the historical region of Marmilla and falls administratively within the Province of Oristano (Figure 1). The territory has a singular and clearly identifiable shape: it is mainly occupied by a basalt plateau cut by the Rio Mogoro valley and by a strip of the Campidano plain in the western part. The morphology of the area, characterised by the low slope of the terrain, has meant that Mogoro has historically played an important role in agriculture and animal husbandry. The relationship between the plain, the mountain with its dense forest and the constraint imposed by the Rio Mogoro valley have conditioned the development of the settlement, which is organised along the path that leads from the mining sites of Monte Arci, the pastures, and the strategically interesting reliefs of the basalt plateau towards Campidano.

The economy of Mogoro is mainly based on the agricultural and agri-food sectors related to local productions, particularly wine production. In the Sardinian regional context, the municipality of Mogoro has gained an important role in the field of handicraft, particularly in the textile and woodworking sectors, which are essential in the local economy. In recent years there has been widespread interest in the cultural tourism sector, with the development of archaeological itineraries and religious routes. The demographic trend shows a continuous growth until the 1950s, followed by a period of slowdown in population growth, reaching 5000 inhabitants in 1981, followed by a gradual decrease until the current resident population of less than 4000. These socioeconomic and demographic dynamics have historically affected urban development and the current condition of the settlement fabric.

The built fabric of Mogoro has an irregular pattern generated by the aggregation of large, deep blocks with shapes that cannot refer to orthogonal logic; the buildings are arranged in the blocks according to oriented alignments, in accordance with the rules of the settlements that constitute the settlement network of the Marmilla territory. The urban form and building fabrics find in the courtyard the mediating element with different dimensions to adapt the typological rigour of the arrangement of the built volume to the configuration of the system of paths, essentially linked to the orography of the place and the ownership framework [42].



**Figure 1.** The case study of Mogoro in the regional context and in the geographical area of Marmilla. Localization and identification of the boundaries of the municipality of Mogoro (Serra and Floris, 2022).

## 2.2. The Framework of Urban Planning in Force and the Study Area

The municipality of Mogoro currently has an outdated municipal urban plan, approved in 1973 and subjected to general revision in 1986. The plan originally did not identify “Zone A” of the historic centre but classified the oldest part as homogeneous “Zone B1”, mainly residential and almost totally built-up, with no constraints on urban and building transformation. Following the entry into force of the Regional Urban Law of 1989, a new Municipal Urban Plan was adopted in 2006, although the approval process has not been completed. In 2019, a new urban plan at municipal scale was adopted in accordance with the Regional Landscape Plan and the Regional Hydrogeological Plan, and regulations are currently in place to ensure the simultaneous validity of the two planning instruments. About executive urban planning instruments, Zone A is regulated by the 2009 Detailed Plan of the Historic Centre [43], which covers an area of over 10 hectares in which 18 blocks and 433 building units have been identified. This is the oldest nucleus of the centre of ancient origin and first development, as shown by the act of recognition



of the perimeter verified during the co-planning phase with the Sardinian Regional Authority in 2007.

The need to draw up a detailed plan for the remaining area of the original core is determined by the transitional rules of the Regional Landscape Plan, which limit interventions to maintenance and conservative restoration, pending an executive plan that regulates the interventions allowed after a careful recognition of all the surviving historical and cultural values. For this reason, the research work focuses on sub-area A2 (Figure 2) identified in the adopted municipal plan, which concerns altered original urban fabrics to be redeveloped, in which, however, buildings with original typological and constructive characteristics typical of the local tradition can be identified.



**Figure 2.** The historic core of Mogoro and the study area. Identification of the perimeter of the ancient and first development center of the Municipality of Mogoro. The part highlighted in red constitutes the sub-area A2 on which the focus was on (Serra and Floris, 2022).

The interventions regulated by the Detailed Plan must be oriented towards the redevelopment of the modified and altered urban fabrics and the conservation and recovery of the surviving identity elements. For building units and fabrics that have been recently replaced, building and urban redevelopment interventions must be planned that are in accordance with the pre-existing elements in terms of density, relations between full and empty spaces, heights, alignments, and views. In this case, the study area concerns the outer belt of the original historic core, where the presence of historical and cultural values is poor and strongly compromised over time by building development, although the original fabric patterns and building coherence are still clearly recognisable. The different analytical and regulatory approaches adopted by the two detailed instruments and the need for greater coherence and integration represent limitations to the current planning work.



### 2.3. Methodology

The structure of the document follows the main phases of the drafting process of the plan instrument: paragraph 3.1 analyses and describes the municipal urban framework and the area affected by the new detailed plan; paragraph 3.2 illustrates the results of the application of the morphological typological analysis of the building fabric, supported using Geographical Information System (GIS); paragraph 3.3 describes the role of the abacus in supporting the application of the plan's regulatory scheme and in guiding intervention decisions; paragraph 3.4 summarises the guidelines for the redevelopment of public space, which constitutes a fundamental component of the planning tool. The need to work with different scales of representation, ranging from urban fabric to architectural and building characters, has required the use of tools to represent and interpret the whole set of components that make up the articulated stratification of the study area.

In this sense, the use of GIS has been recognised as functional to the management of the dynamics that characterise the built environment, and in particular historic centres [44,45], according to the contemporary interpretation of planning as a process activity. This tool has made it possible to manage the complexity required by the detailed plan of the historic centre, allowing the development of qualitative and quantitative surveys on the state of the settlement fabric, which are preliminary to the definition of recovery and redevelopment scenarios and strategies. Based on these assumptions, the methodology adopted was based on the design of a georeferenced database aimed at setting up an exhaustive cognitive framework of the components of the historic centre, guaranteeing flexibility in the management of the various elements identified and at the same time an adequate level of detail in relation to their specific characteristics, according to a hierarchical logic from a typological, morphological, and spatial point of view. In line with this assumption, typological and morphological analysis was identified as the main cultural and methodological reference in setting the framework of analysis.

The assessment of the existing context is developed in the detailed plan with an analytical study of the urban center, from the territorial and urban scale to building and structural characters. It focuses mainly on the system of rules and relationships underlying long-term processes, including those currently in progress, although it also provides up-to-date data on the state of things in terms of conservation, saturation, and alteration [46,47]. The final output of this process is the definition of the "abacus" of the different types of settlement fabrics and guidelines for design approaches on which to base interventions. In this sense, it takes the form of a tool for interpreting the typological and constructive characters of the context.

## 3. Results

### 3.1. The Analysis of the Settlement Fabric and the Geographical Information System

The urban fabric was subdivided into 26 blocks, defined as components delimited by the street network, further subdivided into 447 Minimum Intervention Units (Figure 3). The concept codified and traditionally adopted by redevelopment plans of Minimum Intervention Unit (UMI) refers to the set of areas and buildings of recognisable typological, constructive, and functional homogeneity with respect to the original morphological layout [48,49]. The Minimum Intervention Unit is a concept widely used both in the scientific literature and in the practice of architecture and urban planning, particularly in the Italian context, to which for brevity we refer with the acronym UMI, derived from the Italian language expression of "Unità Minima di Intervento". From a planning perspective, the UMI represents the minimum reference for the regulation of permitted building interventions, in compliance with the overall landscape quality and current regulations. Although the UMI can be conceptualised as a single building unit, its identification is independent of the ownership regime.

The plan provides a further level of classification of the components that constitute the UMI and that can be identified within its boundaries: "buildings", "courtyards" and

“unbuilt areas”. The former consist of the constructions recognisable within the perimeter of the UMI and can be further classified on the basis of their formal and functional configuration into “building”, in the case of structures built with standard characteristics and independent from a structural point of view; “canopies”, accessory constructions open on the perimeter; “ruins”, in the case of constructions lacking some original elements and in a compromised state of conservation; and “stairs”, constructions intended exclusively for vertical connection.

The areas not occupied by buildings are distinguished instead into: “courtyards”, which are those private areas within the UMI intended for uses associated with adjacent buildings; “unbuilt areas”, which are UMIs characterised by the absence of buildings, either historically or following the demolition of the pre-existing built-up area. In the specific case of Mogoro, the unbuilt areas within the UMIs, mainly falling within the courtyard building typology, are particularly relevant for the preservation and possibly the restoration of the morpho-typological structure of the urban fabric, characterised by density, porosity and permeability linked precisely to the positional and dimensional relationship between voids and volumes. The identification of these components took place through the analysis of historical cartography, the first cadastre of 1906 (Figure 4), and the comparison with the current cadastre and recent technical cartography, to recognise the rules of the historical settlement pattern, the permanence of the characters of the original fabric and the outcomes of recent urban transformations.



**Figure 3.** The relationship between solids and voids in the settlement fabric. The figure shows the subdivision of the fabric into the different minimum intervention units and its density (Serra and Floris, 2022).



**Figure 4.** The ancient and first development centre of Mogoro on historical cadastral cartography (Serra and Floris, 2022).

The proposed hierarchy, which is reflected in the structure of the GIS database, makes it possible to adopt a scalar approach, ensuring a coordinated and consistent application of the discipline for the entire UMI, and to define specific prescriptions and guidelines for the individual components within it.

Each UMI has been assigned an ‘overall judgement of landscape value’, which expresses the consistency of its configuration with respect to the landscape context, the state of conservation of building types and structures and the characterisation of the different areas (Figure 5). These judgements concern the choices and categories of admissible intervention in coherence with national and regional regulations, to which correspond general prescriptions aimed at guiding the design approach.

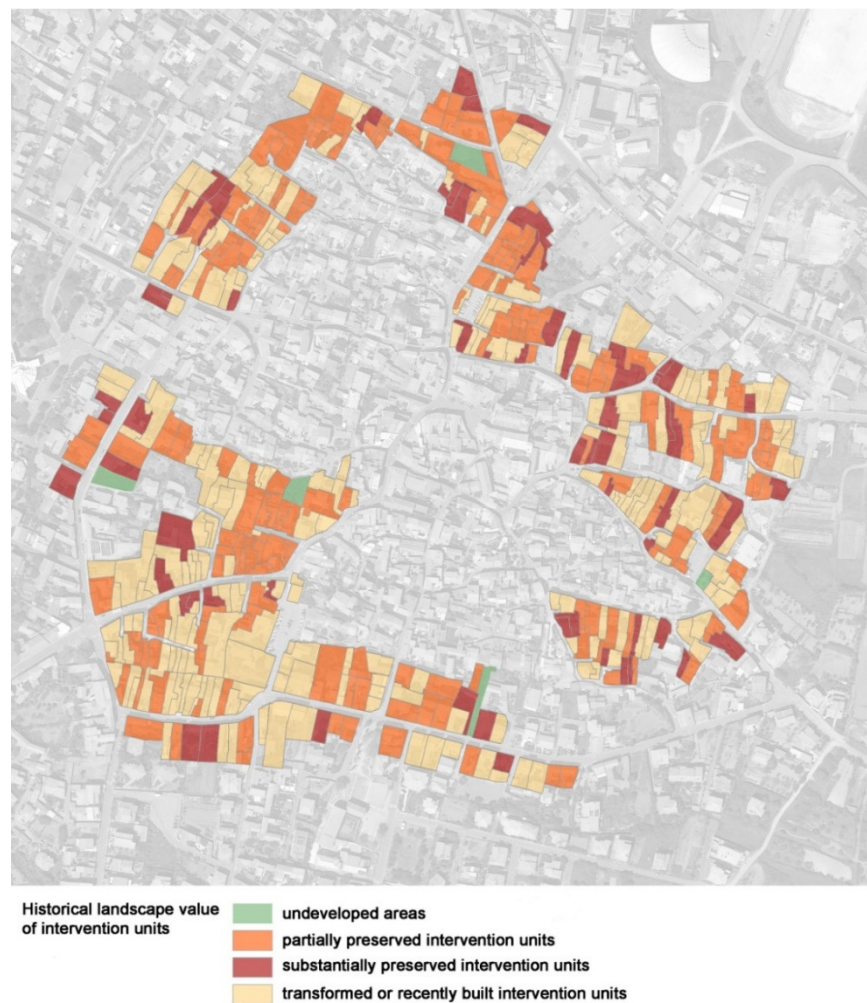
The judgements have been summarised briefly in the following definitions:

- *UMIs consisting of substantially preserved buildings*, in which the original building typology, most of the buildings and open spaces are preserved;
- *UMIs consisting of partially preserved buildings*, in which the building type is preserved although all or part of the original buildings and open spaces have been modified;
- *UMIs consisting of substantially transformed buildings*, in which the original building type, building constructions and open spaces are not maintained;
- *UMIs consisting of unbuilt areas*, never built on or resulting from the demolition of the original built-up area.

As shown in Figure 5, most of the UMIs are substantially transformed or newly built (about 48%) and partially preserved (about 37%). Only 14% of the UMIs fall into the category of substantially preserved, while 5 UMIs were not built.

Based on an accurate survey of building volumes, 1481 buildings and 644 courtyard areas were identified with a code and analysed according to a series of predefined criteria: covered area, built volume, height, age, state of preservation, construction system, finishes, roof geometry and roof covering (for buildings); type of wall fence and entrance (for courtyards).





**Figure 5.** The analysis of the historical landscape value of minimum intervention units. The figure highlights the categorisation of the fabric based on the level of preservation of historical features (Serra and Floris, 2022).

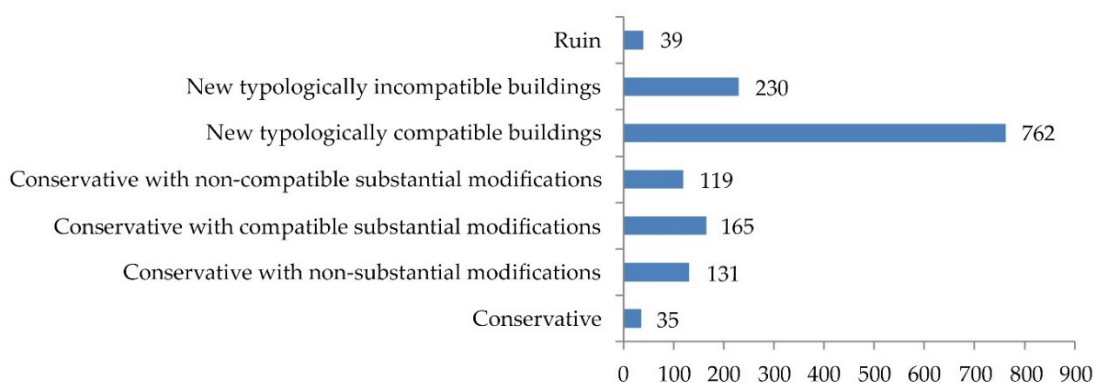
Analyses of building volumes and comparison with historical cadastral maps have shown a high degree of impairment and alteration of the historical fabric, the result of a process of progressive densification and saturation of the urban fabric that has led to an evident increase in the area covered. These transformations have profoundly altered the relationship between UMI area and building density: historically, covered area was inversely proportional to lot surface area. Moreover, the study area constituted the historical edge of the settlement, where the built-up area gradually merged into the rural area, with less dense urban fabrics and large courtyards functional to agricultural activity. The saturation of the courtyard areas has led to the construction of accessory rooms and canopies that, driven by the need for temporary use, have at times compromised the minimum hygienic and sanitary conditions and certainly challenged the original morphological layout.

Each ‘building’ in the area has been assigned a ‘class of transformability’, based on its historical-cultural value and compatibility with the landscape context (Figures 6, 7 and 8), to which corresponds a specific degree of transformability and some admissible categories of intervention.

In summary, buildings were classified into:

- *Conservative*, buildings of historic-traditional value that preserve their original character (2.4 %);
- *Conservative with non-substantial modifications*, partially modified buildings with preservation of their original character (8.8%);

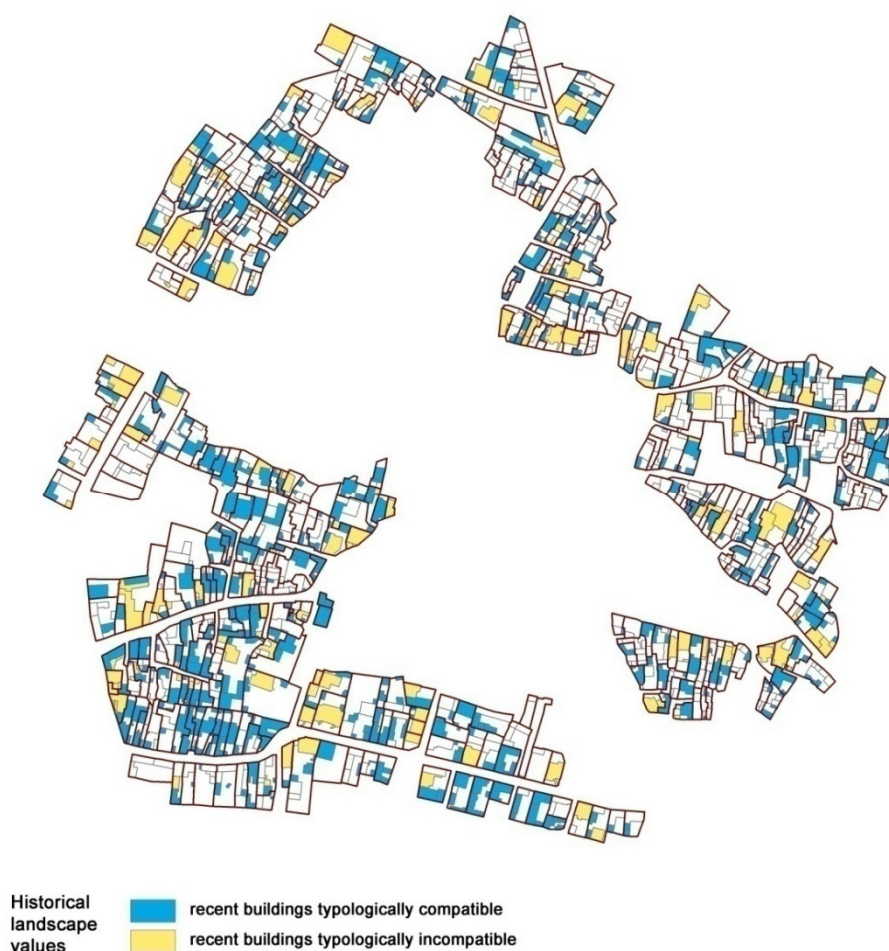
- *Conservative with compatible substantial modifications*, partially replaced or integrated buildings typologically compatible with older buildings (11.2%);
- *Conservative with non-compatible substantial modifications*, partially replaced or integrated buildings whose nature of changes is not consistent with older buildings (8%);
- *New typologically compatible buildings*, predominantly, or totally replaced, typologically compatible with historic-traditional fabrics (51.5%);
- *New typologically incompatible buildings*, replaced in complete contrast to the historic-traditional fabric (15.5%);
- *Ruin*, partially or totally compromised buildings from a structural, conservative, and functional point of view (2.6%).



**Figure 6.** Buildings by judgment of historic landscape value. The graph shows the results of the analysis of buildings in relation to their value from a landscape perspective (Serra and Floris, 2022).



**Figure 7.** Conservation buildings of historic landscape value. The figure highlights the overview of conservative buildings in relation to their degree of impairment (Serra and Floris, 2022).



**Figure 8.** Recent buildings for typological compatibility with the historic landscape. The figure shows the fabric of recent construction in relation to its coherence with the characteristics of the context (Serra and Floris, 2022).

Urban planning regulations are defined for each building, with the attribution of specific prescriptions aimed at the adaptation of incompatible building features, the elimination of incongruous components and the protection of valuable elements, to guarantee the coherence of interventions with the historical-traditional characters. For typologically incompatible buildings, two different lines of intervention are proposed: volumetric reconfiguration, which is applied in the few cases in which the owner spontaneously decides to demolish the incompatible building and rebuild it in typologically compatible forms; adaptation of the façades, through a set of interventions to mitigate the impact on the landscape of incompatible elements. The plan aims to promote a process of redevelopment of the settlement, avoiding the imposition of transformation constraints that may disincentive investment in the historic centre and support processes of abandonment. The approach for open spaces, on the other hand, is structured according to a different logic. For “courtyards”, the analysis focused on the possible historical-cultural value and compatibility from an architectural, building and landscape point of view of the components that contribute to their definition, including: the “fence”, understood as the element of linear development that circumscribes the space, and the “portal”, understood as the element, or set of elements, that identifies and allows access, representing, together with the wall of the courtyards, the character that most distinguishes the urban structure and the image of the street built environment. The continuity of the enclosures on the one hand and the syncopated rhythm of the courtyard thresholds on the other, in fact, historically constitute two of the most relevant syntactic elements of local building practices. Both components



are assessed for their coherence with the context by virtue of the interface role they play between the building fabric and the public space.

Lastly, 'unbuilt areas', in some cases resulting from the demolition of old courtyard houses, are not assessed in terms of landscape compatibility, but their condition has been evaluated with a view to a possible building transformation, or a more desirable destination for services of collective interest.

The modalities and design guidelines resulting from the permitted categories of intervention and the prescriptions established for interventions on the described components, whether general or specific, are regulated by specific abacus that direct the choices and support the possible solutions, while respecting traditional models and typologies.

### 3.2. The Abacus Framework

The structure of the abacus is aimed at identifying both the object and the method of preservation. The urban system has been developed over time through long-term strategies and transformative actions that have to be read and recognized to act with greater awareness and control in managing the built environment. The potential combination of urban aggregate forms in relation to the principles of variation, saturation and alteration of building types is given by a consolidated system of existing relationships (Figure 9).

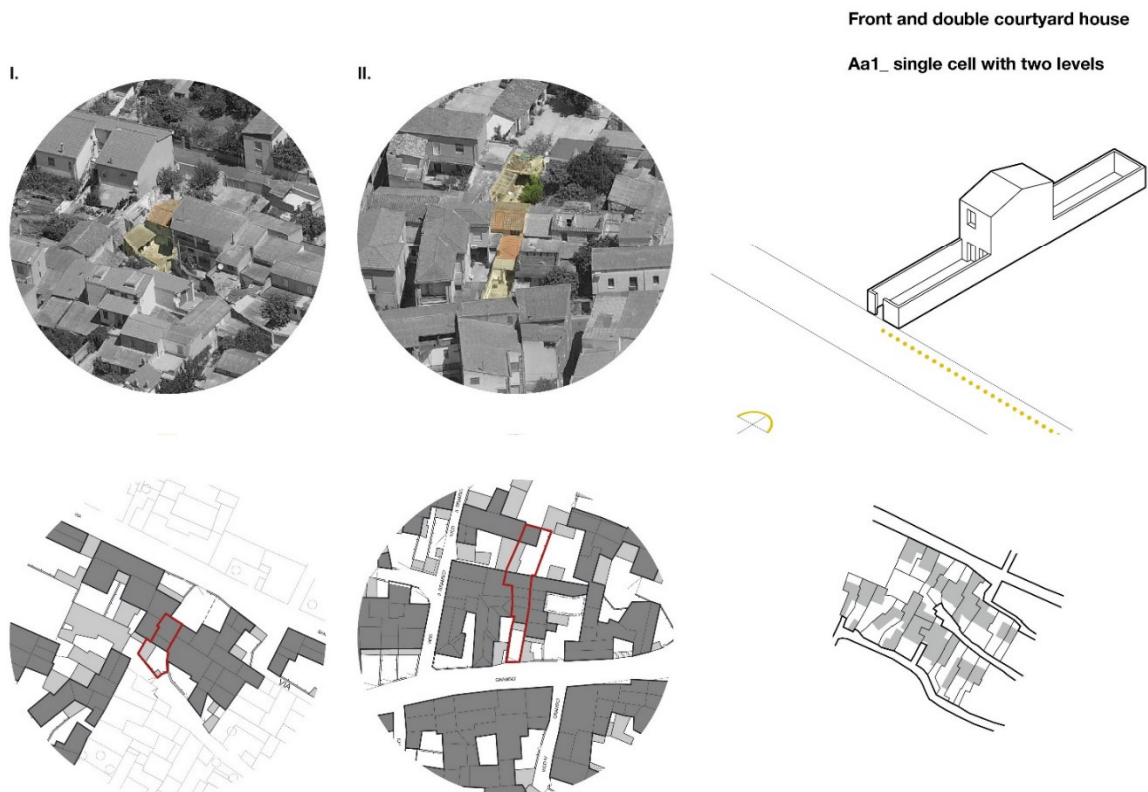
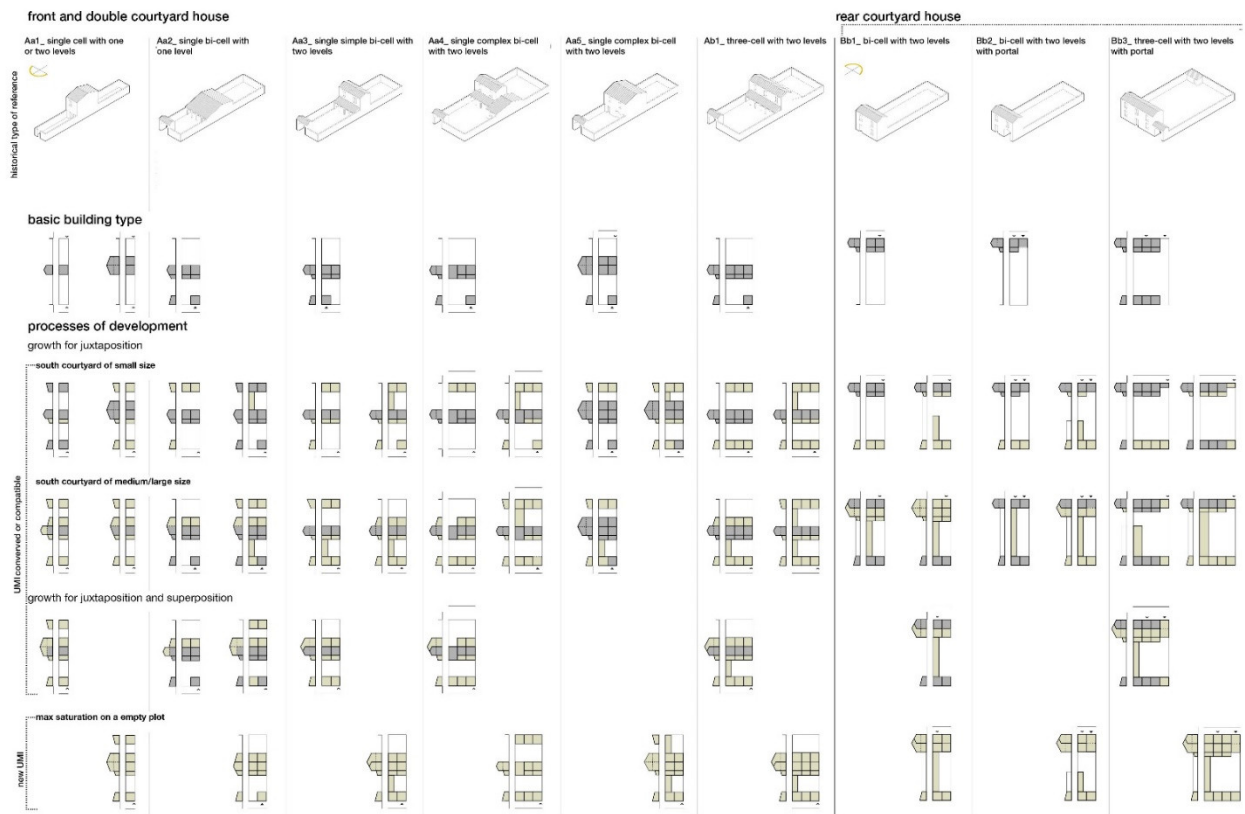
Conservation is not necessarily addressed to the physical object, but to the built environment as an expression of the settlement principles and evolutionary processes that have ensured its durability over time according to processes of reactive and adaptive continuity with respect to the changing needs of the community [50].

The transformation is implemented as part of an operational strategy that is part of the ongoing processes, avoiding a constraining and conservative approach. In this framework, the objective is rather to lead these processes back to a coherent rational scheme that allows for the protection and restoration of the historical logic that has influenced the settlement, also using the residual building development capacity—in some cases relevant, in others marginal—but always potentially decisive, as a lever to produce tangible results.

The general approach is to work in a systemic and inter-scalar way, through a practical and necessarily "acupunctural" interventions. The analysis identifies incompatible anomalies in the single building units that can compromise the stratification of fabrics based on rules and modifications, proposing interventions with the aim of preserving the historic structure.

The mitigation of incongruities, in fact, must be understood not as a process of historicization or harmonization, neither to show a continuity now altered, nor to mask an irremediable discontinuity at a deep level, but rather as a process of absorption and response of the urban fabric to certain strongly compromising "inflammatory processes". This approach is both to measure the degree of resilience to changes in the historical fabric that have challenged its set of consolidated settlement principles and rules, and to operate according to compensatory and mitigative processes when this compromise reaches levels of incompatibility that can no longer be recovered.

In this vision, the wall fence plays a dual role: on the one hand, it is the structural archetype of the living culture of the historical region of reference, and on the other hand, it is the most significant element to which the project can refer to balance in cases of the most severe compromise of the fabric. It is, in a sense, still addressing the wall fence and its nature as the first generative element of the settlement structure, as a last attempt to reintroduce these particularly critical elements of discontinuity, avoiding their acceptance and before proposing their complete demolition.



**Figure 9.** Synoptic framework of types, transformation processes and relationship with the urban fabric. Development dynamics of courtyard houses typical of the settlement fabric of the Municipality of Mogoro. Examples of front (I) and double (II) courtyard houses (Atzeni, Cadoni and Marras 2022).

Saturation processes, even when they break away from the existing system of rules and lead to alterations and compromises of settlement invariants, even to their denial, are generally of two types:

- additive;
- substitutive.

The additive one can be summarised as a use of the same typological characters while ignoring their grammar. Usually, the incorrect application to the syntactic elements of tradition is also accompanied by an improper interpretation of the originary rules of settlement that refer to the basic morpho-typological principles [51].

The resulting alteration, easily identifiable and isolatable at a morphological level, often implies particularly significant and critical repercussions on the existing fabric, both constructively and structurally, which do not make the option of removal immediately available, at least not without a profound repercussion on the 'freed' parts as well. Priorities for intervention are thus identified, admitting a margin of admissibility, re-absorption, and acceptance of the anomaly in the fabric (which is also naturally present in historical processes). The additive process, therefore, is accompanied by a potential for modulation of urban pattern repair interventions that makes it possible to re-establish a physiological condition with margins of positive outcome in the long term.

In the process of replacement, on the other hand, the types of reference are unrelated to the settlement culture of the place, and their incompatibility, beyond the value judgment on the building, is not assessed in absolute terms but in relational terms, in the sense that they refer to a different system of rules and scenario of aggregation with respect to that of the fabric in which they have been inserted. In the case of replacement processes, the incompatibility is above all systemic and exasperates a theme that is also present in the case of alteration processes on the existing: the relationship between the quality of public space and the quality of private buildings.

The interpretation of the stratifications and the understanding of these dynamics require an in-depth analysis of settlement structures in the identification of morpho-typological facies and its characters of progressive adaptation and transformation with respect to the themes of considering the specific case as an individual within a more complex whole, that set of individuals united by recurring characteristics [52].

- Porosity;
- Permeability between interior and exterior;
- Exposure to the sun;
- Alignment of fronts;
- Progressive modulation of spaces in public-private relations.

The aim of the plan is not to isolate the individual from its context by pursuing its historicization and monumentalization with the outcome of freezing the pre-existence in an urban scenography, but to try to conserve the principles that have produced the context of reference as a whole, still valid for both pre-existences and new constructions; conserving and building can be moments of the same act of conscience, because they are subject to the same method [53].

The object of interest of the plan, in fact, is the 'historic centre' system, the protection of which cannot be separated from the preservation of the single artefacts/buildings that compose it, nor from the vitality of the settlement and the project as a tool for intervention in the built environment. It is the context, therefore, the landscape and historical asset to which the plan turns its attention, recognising and reinterpreting the principles and rules that have determined persistence and modification, while at the same time constituting the links on which transformations are structured and fostered. The recognition of the permanence of the principles even in buildings that present morphological variations and in typological and constructive characters, represents a first degree of compatibility as an expression of continuity with the history and processes of the place.

Four abacuses have thus been defined, two of them of reinterpretation and analytical interpretation of traditional morphotypes and two of operational design which, starting from the previous ones, provide guidelines for intervention solutions:

- The abacuses of historical types and characters, which identify the common types recurring in the fabrics under study, the consequent invariants, and constructive characters they constitute the synthesis tool for the recognition of existing buildings that have been preserved, modified or introduced *ex novo*, also defining a critical judgement that ranges between the three value categories of “preserved”, “compatible” and “incompatible”. Incompatible solutions are identified by way of example, to highlight their distance from solutions that are coherent with the rules.
- Abacuses of modifications and mitigation, which identify approaches and processes that can be implemented at the operational level in an integrated and complementary manner, at the morphological, typological, and technological scales.

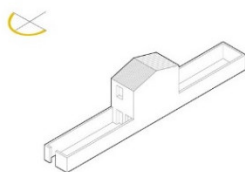
The set of intervention rules, summarised in these abacuses, provides the strategy for restoring the most damaging and compromising alterations to the layout, which in turn reduce the potential of the fabric, generating a lack in the quality of the space even strictly in terms of healthiness (exposure, shading, ventilation, visual introspection), often beyond the limits set by the Civil Code.

The abacus of modifications focuses on the typological and relationship matrix between the construction elements at the building scale and the morphological relationships that structure the full-void relationship at the scale of the urban fabric. Each transformation scenario has its own reference type, identified in the abacus of historical types, a typological matrix for the additive process (Figure 10).

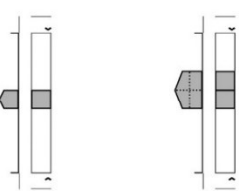
The abacus of mitigations represents a thematic extension with respect to that of modifications and constructive characters: it identifies a series of common solutions that alter the elements identified by the abacus or that are added *ex novo*, and for each of them, having clarified the criticalities in relation to the individual and the system, it proposes a strategy of recomposition as much as possible coherent with the regulatory framework. The proposals are modulated according to different operational solutions, between the polarities of recomposition by removal and that by addition.

The presence of dysfunctional solutions and elements is one of the emergencies because the repetition of an alteration of the fabric becomes established as a rule, without this, however, becoming a guarantee of the quality of the built space, but only the sum of particular interests incapable of making a system. The reconnaissance carried out on the total number of units was preparatory to the definition of a dystopian typological synthesis of all the alterations of typological and constructive features.

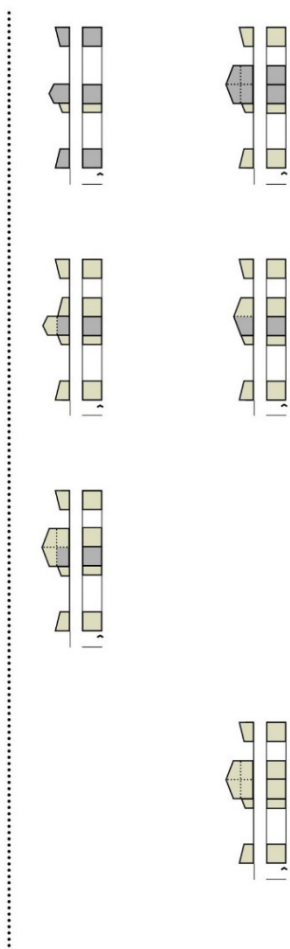
Front and double courtyard house  
Aa1- single cell with two levels  
historical type of reference



Typological process



growth schemes



Example of prescription application for "UMI" (UMI partially conserved)



Morpho-typological actions

- reduction of density, readability of implantation
- increase in density

Building characters actions

- removal of incompatible characters
- adjustment of characters

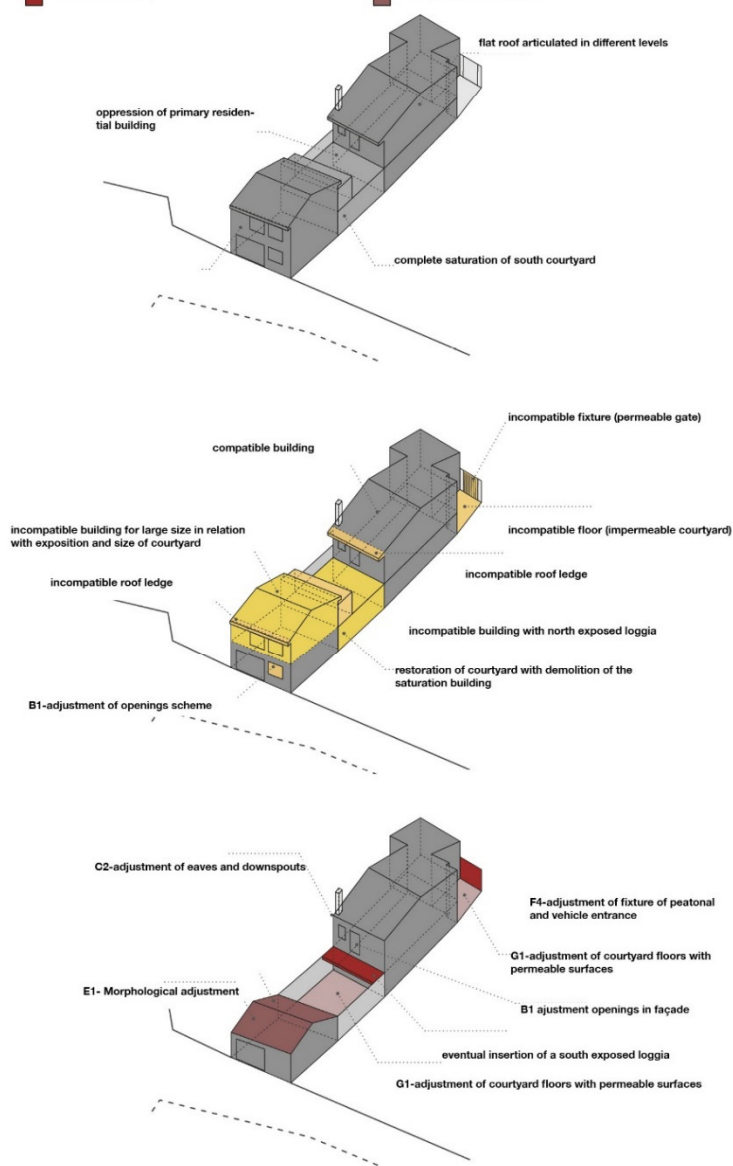


Figure 10. Transformation actions on the double courtyard house: case study of typological modifications. Representation of design solutions to ensure coherence from the point of view of morpho-typology and characters of the buildings (Atzeni, Cadoni and Marras, 2022).

The translation of this “inflammatory process” into an abacus has precisely the purpose of recognising its impact on the general conditions of the fabric and the built environment, bringing out and understanding its negative effects. The aim was therefore not only to construct a matrix of ideal cases, compatible cases, and non-compatible cases, but to give specificity to the phenomenon, identifying within it the most incisive components. The alterations identified were typified as follows: fences, thresholds, external stairs, projections of intermediate floors (loggias, balconies) and roofs (projections, pelmets), elevations. The idea behind the abacuses as operational tools, beyond the strictly disciplinary aspects of identifying and understanding the rules, is that of making responsible those who live that fabric, who necessarily take charge of it through their own choices (it should be remembered that the ownership of the building heritage to be protected is essentially private, and this status obviously makes virtuous behaviour less linear and in any case leads to problems with respect to the uniformity of choices and methods of intervention). The case-by-case method, probably the only possible detailed solution to act on the built heritage through architectural design, is here limited to the reconnaissance phase only, to build the necessary operational tools for those who will subsequently have to operate.

Excluding the solution unit by unit, according to this vision the abacus is not a simple catalogue of standard solutions to be chosen and transposed, but a tool that accompanies the designer in the process of modification [54]. In short, it is a participatory tool based on knowledge, which investigates the problem in its most complex and scientific parts, bringing disciplinary attention back to the constituent nature of the heritage to be protected, but leaves the solution to the community, giving continuity to the tradition of living understood as an operative and living practice that continuously affects the construction of built landscapes.

### 3.3. The Design of “Public Space”

The issue of the relationship between the original core of the historic centre and its margins has produced traces and transformations not only in the parts of the fabric affecting residential units, but also and above all in the public space. The almost-complete preservation of the historical medieval patterns has given way to some voids obtained by the demolition of a series of courtyard houses, which has produced residual spaces used as parking spaces by residents. This phenomenon of substitution, more functional than formal, is associated with an extreme fragmentation in the design of the most recognisable public spaces. On the one hand, the churchyard of the ‘Chiesa del Carmelo’, on the other, the narrow fabric of the alleys, an element of extraordinary continuity in community use, now appear relegated to private use, without any public design control.

The latter is also associated with an important long-standing issue that has affected the settlement construction of the urban centre, namely that of water capture from the groundwater through well systems. These are recognisable in public, semi-public and private spaces and represent a strong identity character of communities that retain their historical names in streets and neighbourhoods. Issues relating to the habitability of the urban centre find extreme tension in public space, where the lack of design or its fragmentation and heterogeneity contribute to emphasise the problem [55].

The design of an abacus for public space starts from three founding principles acting on different levels:

- Typological continuity with the historic fabric;
- Sustainable recovery;
- The definition of a coordinated and controlled image.

The courtyard constitutes the central core within which the settlement culture of the place is founded, moving from individual micro-courtyards to large courtyard systems, particularly in the fabric sections on the edge of the historic centre, between the late 19th and early 20th century, where double-courtyard systems changed to large courtyard systems with ample space for storing agricultural products and for sheltering animals. The



continuous wall and the punctual threshold constitute two of the elements that characterise the domestic courtyard and can be the subject of a design reinterpretation for the construction of the public space. The issues of soil permeability, water saving, and electric mobility constitute three further factors for the regeneration of public space in an ecological perspective on which the project can act. Finally, the definition of a coordinated image represents a third element of reflection that investigates the development of a unified system of materials and elements for the project.

The three principles act together on two operational sections:

- The abacus of public space elements;
- The guiding projects.

The first section defines a series of construction elements, devices, materials, and rules for intervention in public space, which, while avoiding proposing a catalogue, links devices and materials to a series of actions typical of open space, such as that of standing and crossing. In continuity with an approach that focuses on the permeability of soils, a series of open-jointed paving systems are proposed that allow the passage of water, using local stone in cubes to define the privileged places for standing and relations, or in slabs or bindings for crossing spaces.

The ability to recognise the character of the space also makes it possible to coordinate the coherence of interventions throughout the historic centre and to avoid the risk of patchwork in current projects, reinterpreting the logic of urban types: alignments, continuity of routes, hierarchy of spaces, integrating with existing fabrics or creating new ones based on the habits of the inhabitants [56].

The selection of elements, drainage channels, types of surfaces and the way paved surfaces are laid are an integral part of the abacus and are in line with the principles stated above of continuity with the historical memory of the places, sustainability and coordinated image, while distancing themselves from a nostalgic and historicist approach. In addition, there are rules for the occupation of public spaces by commercial activities and a unified communication system in terms of signs, plaques, and labels to allow clear and uniform recognition of places and activities.

The guiding projects are framed in a place-specific acupuncture logic that uses the abacuses of the elements as superordinate tools and is articulated through specific guidelines on certain critical spaces with a strong representative potential of the urban centre:

- The fringe squares;
- The spaces of the alleys;
- The historical network of public wells;
- The parking squares.

The guiding projects with a specific and individual character try to operationally express the principles of continuity with the fabrics, sustainability and coordinated image by linking up with the historical patterns of the urban centre. The wall and the courtyard, also at this scale of intervention, constitute the supporting framework of this system, as elements, therefore, capable of defining the public-private interface and which return to being pivotal elements of public space as well.

Parking squares represent a metabolic attempt to absorb the transformations of the fabric and at the same time meet the standards in terms of parking spaces in the urban centre. They are in fact spaces generated by the demolition of parts of the historic fabric, subsequently made into public spaces for parking cars.

The plan proposes an intervention to mitigate these spaces that starts from the redefinition of the elements that characterised the former historic house, namely the fence wall and the courtyard shade, trying to reinterpret these elements as thresholds and access devices for parking and “green shading” for cars and pedestrians. The wall reconstitutes the historic relationship of continuity with the surrounding context and allows precise regulation of access to the void, restoring the hierarchy of the traditional house between openings and portal at the perceptual scale. The idea of the project is to restore the space

of the courtyard, but through a radical change in the typological paradigm: no longer an exclusive private space, but an inclusive public space that maintains the proportions and spatial relations with the typical elements of the traditional courtyard. It plays an important microclimatic role at the scale of the block, mitigating the heat island effect typical of asphalt car parks, transforming the pavements into draining soils, renaturalised with vegetation, which re-establish conditions of humidity and naturalness now lost. Once again, this is a conservation project which, starting from the recognition of the artefacts and their new interpretation with innovative solutions, intends to reintroduce the issues of soil permeability, energy production and sustainable mobility, making these otherwise purely technical car parks the protagonists of a sustainable urban aggregates. Together with the courtyard, the alley represents the founding character of the fabric of the urban centre, the supporting system of a high-density habitat, an urban device of capillary infiltration within the deep blocks. The detailed plan seeks to restore a new centrality to the system of alleys, releasing them from the private, rearward use of the main streets, which are often characterised by extreme neglect in the surface of the pavement and the overlapping of paths and vegetation networks.

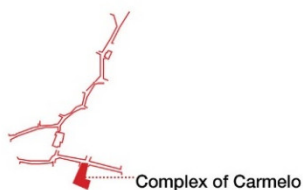
Respect for the principles of continuity with tradition and design coordination requires a unified intervention with the aim of fostering collective practices and restoring the public and semi-public role of these urban areas. It therefore aims at:

- The limitation of street occupation;
- A unified framework of furnishings (benches, public lighting, threshold devices, vegetation, public paving);
- An abacus of paved surfaces;
- An abacus of plant infrastructure elements (gutters, manholes, lighting devices, etc.);
- The punctual and selective restoration of portions of private enclosures;
- The restoration of historic wells with a coordinated project.

The currently existing network of historical wells crosses the historic fabric with capillarity and establishes the interface and continuity between private, semi-private/public and public. The well can become, in this sense, an important element of the coordinated image of the public space; it is therefore planned to reactivate the network of the 25 public wells in the urban centre, which are currently in operation, and to define a series of water supply points, equipped with an information system, a seat and, in some cases, a shading system. The historical relationship between the wells and the tiny fabric of alleyways thus constitutes a network of capillary redevelopment of public space and at the same time improves the historical house-court-street relationship that represents the line of continuity that the plan wants to follow, starting from the community water management devices, understood as a founding, and identifying element of primary interest of the inhabited centre [57].

The last guiding project acts, finally, on the theme of the marginal squares, near the religious garrison of the “Chiesa del Carmelo” and its convent and is proposed by confirming the centrality of the void and reshaping the permeability towards the historical fabric, through new enclosures that regulate topography and punctual accesses (Figure 11). The space, currently characterised by a residual park resulting from different design phases, is reconverted into an orchard which, using vegetation as “mass”, attempts to redefine the links with the settlement fabric, further stigmatising the emptiness of the square with respect to the church, considered as an external outpost to the consolidated village and today merged within the residential buildings on the fringe.

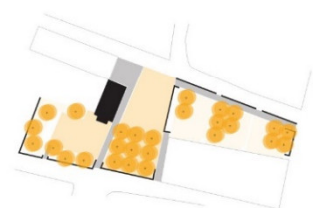
Recovery and refurbishment of the churchyard of Carmelo



Draining surfaces



draining concrete stone cubes



Renaturalization



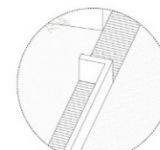
closure/threshold



terraces



Hierarchy spaces/entrances



shadow maker



garden

1. pedestrian entrance from via Dessi
2. closure/threshold with white plastered wall
3. existant arena
4. shadow area with fraxisinus trees
5. Carmelo church
6. pathways with basalt stone slabs
7. square with surface in draining concrete and expansion joint of corten iron, and french channel
8. row of shrubs of the Mediterranean maquis
9. churchyard in basalt slabs
10. terraces with prefabricated concrete elements
11. pathways with basalt stone cubes



**Figure 11.** Pilot projects on public spaces: the case study of the sustainable recovery of the churchyard of the “Chiesa del Carmelo”. Summary of planned interventions (Atzeni, Cadoni and Marras, 2022).

#### 4. Discussions

The detailed plan for the regeneration of minor historic centres has the general objective of preserving and restoring the landscape quality of the environmental, cultural and historical context, providing conservative measures for elements of historical and identity value and transformative interventions for the compromised parts of the urban fabric. The presence of incongruous buildings and structures, even if legitimately authorized, without aesthetic value or in total disharmony with the context, has a negative impact on the landscape and results in a loss in terms of identity and quality of place. The plan must direct private intervention toward improving the quality of buildings and urban spaces, even by renovating or completely replacing the existing building that has been assessed as incompatible. Thus, there is a need to integrate different disciplines in the drafting of the detailed plan, which must necessarily be flexible and adaptive, directing through the plan abacuses the adequate design of interventions and avoiding too restrictive measures that may discourage the maintenance and renovation of the private building stock. Strict regulations could lead to the preservation of the status quo, not only in the eventual demolition and reconstruction in compatible forms, but also in the ordinary maintenance of buildings, resulting in worsening conditions of abandonment and degradation. In the case of buildings that are incompatible with the historic landscape context but are legitimately built, the plan cannot require demolition and reconstruction but, while hoping that the private owner can act in that direction, provides a series of interventions for mitigation of impacts with character of a guideline rather than an imposition for their project.

The abacus allows a dynamic approach, supporting the implementation of differentiated interventions balanced on the needs of both conservation and redevelopment, according to the different characteristics of the Mogoro context, with compromised fabrics from the point of view of landscape quality and, at the same time, areas in which the typical historical characters of the place are still recognizable, as highlighted in Section 3.2. In some cases, such voluntary demolition by private owners is encouraged, allowing reconstruction of the existing building size in a compatible form in terms of construction characteristics, heights, shadows, and placement in the lot.

This plan strategy must face with the lack of agreement of private owners, given the lack of cost-effectiveness. The decision-making phase is necessarily developed on a multidimensional level, integrating economic, social, cultural, and environmental aspects. It is therefore important to develop an adequate cognitive framework that, in relation to the characteristics of the context, is the precondition for the implementation of the identified objectives and the subsequent monitoring of the results.

Planning tools, at different levels, show a clear difficulty in interpreting a complex environment and summarizing it within a knowledge framework that is periodically updated as socioeconomic conditions change. The structure, the availability and the quality of data are considered a fundamental condition for the proper definition and management of policies and actions.

Choices related to the regeneration, preservation and valorisation of historic urban landscapes consequently depend on a more detailed knowledge, in a process that involves the architectural features of the heritage but also, and above all, the context in which it is located, to ensure its integrity and authenticity.

It is essential to be aware of the need to understand a complex and dynamic process, which is difficult to be defined in temporal terms, rather than a static phenomenon.

The continuous changes affecting an urban area, especially if historical, require the constant acquisition and monitoring of data.

Based on the increasing use of advanced tools thanks to new technologies, it can be clearly stated that the planning model, based on the deterministic and functionalist paradigm, has outlasted its effectiveness, revealing the need for flexible and dynamic tools that allow the choices made to be monitored over time.

In this direction, the case study here presented has used GIS tools to enable the planning tool to be updated and integrated quickly and effectively. It is important and strategic to evaluate the effects of planning choices, spatially and administratively, particularly when they are not in line with plan expectations. This monitoring activity should be carried out on both the plan and the real context, through tools that describe its effectiveness in relation to the actions implemented, the financial resources involved, and the objectives achieved.

## 5. Conclusions

In Italy, every place is a palimpsest of stratifications that have originated from the sequence of ideals and needs that rewrite its meaning with a continuity that builds its own multiform identity. The stratification, both temporal and physical, that has made our cities unique, at the same time addresses the problem of contemporary design in the ancient city; each modification, even minor, is a specific case, in which history and traces become material for new ideas and can provide the necessary basis for a new conscious design. There is general agreement that the historic centre represents the identity of the urban area. However, the historic centre should not be read as an ideal city, but as a sum and co-presence of multiple and different contributions, linked by an overlapping of contexts, and not by a single language, which should not limit its uses and accessibility.

The historic centre acquires a specific meaning only if it is understood in its evolving relationship with the city and the territory, as a part characterised by historical and cultural values and typological and morphological features, but also by economic and social reasons. In this sense, we must reconsider the essential role it plays in relation to the different phases of development and following a natural, as well as physiological, process of renewal of the building fabric that, with aggregations and juxtapositions, redesigns the street façades and sometimes complicates their original reading. For this reason, possible solutions involving limits for other uses should not be ignored. This implies the possibility of transformation of the formal order, which the building and the entire settlement fabric supports, without losing its individuality and character, especially when the designer seeks to maintain an agreement between figurative and functional components.

The urban fabric is read in all its connections, through the interpretation of the relationship with the public space, the street, and the square, and not exclusively of the building model.

The private looks to the public and composes façades, juxtaposes colours, transforms surfaces and walls. The public links the different realities of private spaces with interrelated paving systems, manages mobility, relations with large open spaces, with trees, with the most significant visual poles, territorial and identity landmarks.

Even though urban planning and architectural culture has overcome, albeit with great delay, a distinctly monumentalist conception, coming to consider the historic centre first as a 'cultural asset', then as a 'resource' as part of the city, thus fully involved in its progressive transformations, the instrument of 'constraint' seems to date the only answer to the alterations that those involved have not always timely perceived. If, in the 1960s, intervening on the ancient fabric could still mean indiscriminate demolition, neglecting the historical, formal, and symbolic values of the built environment, today it only means attention and discipline in interventions: not a paralyzing inertia, but the ability to deal with difficult and therefore stimulating contexts, with a design that modulates modifications in relation to the different situations of intervention.

The substantial innovation of the work lies in the search for a hybrid mode of recovery that considers socioeconomic, historical, and cultural processes and long-standing social practices that must necessarily converge in the design of the detailed plan. These practices lie at the basis of the design choices, according to a methodology of intervention in the historic center oriented to the evaluation of urban quality.

The project can therefore derive from the values that the environment under analysis presents, with the result that any modification must be a logical consequence of the natural process of transformation, always keeping in mind that a recovery action also means adding a new element to the complex stratification of interventions that have generated the urban and territorial structure. It means allowing that structure to overcome the balance or imbalance that currently characterizes it. Thus, it is correct to think of a complex of operating principles rather than a single strategy, to give back, in a sense, the coordinates of actions useful for a coherent recovery [22].

The detailed plan for the recovery of the historic center of Mogoro is intended to be a first example of such an innovative and complex process.

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