

**DRAWING
AS DESIGN ACT**
EXPRESSING
THE HIDDEN STRUCTURE
AND THE DESIGN
PERSPECTIVE
OF INNER PERIPHERY

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INNER AREAS

RESEARCH BY DESIGN

SOCIAL COOPERATIVES

NETWORKS

MATERIAL/IMMATERIAL

The contribution aims to present an ongoing research work with Confcooperative Abruzzo, about the definition of community design actions within the regional inner area. Moreover, it shows the necessity of a series of devices to report the complex stratification of these territories.

The paper traces the difficulties in describing through mapping these inner peripheries of the Italian central Apennino, pointing out the necessity of representing the complex, often subtle, dynamics and the physical asset of

the area. The study displays how understanding these problems and lacks could produce a possibility in which the critical representation of the territory can become a methodological project through an interscalar point of view, so working at different scales of analysis.

Finally, the illustration of some study drawings highlights how the territorial interpretation of inner territories could foresee design actions, recognizing the intrinsic structure of these areas, overlapping tangible and intangible networks.

INTRODUCTION

Where does a place begin? [...] Any place, any point can become a starting point (but also an arrival) to cross a land like this, centerless, which has experienced a constant repositioning, a sort of continuous recomposition and reframe of places. [my translation from italian¹] (Teti, 2014, p. 101)

The condition described above by Vittorio Teti highlights one of the many traits that characterize the inner area. It is urgent to understand how to describe trajectories, boundaries, and conditions for transmissibility of features in a perspective of regeneration. These words have evoked the urgency to understand how we, as architects, can map and represent territories in continuous change and dynamism that, at the same time, seem unchanged. Specifically, we wondered how to detect and communicate the often hidden trajectories that conceal economic, social, and environmental dynamics (Borghi, 2017), to detect the possibility of a renewed imaginary for inner areas (De Rossi, 2018).

Getting out of the arcadian vision of internal areas makes evident the dynamism that characterizes these places where scales, artefacts, and human action merge (Arminio, 2013). An overlap of material and immaterial factors, such as cultural heritage and community frames, defines a complex territorial structure that moves in between opportunities and risks (Corradi & Cozza, 2019), often difficult to interpret and represent. In addition to this, it is possible to frame a complexity regarding scale. The design phases, before the intervening, should consider the strong relationship between building, village, and territory define an essential transcalar perspective during the representation.

Transformations often occur on a small scale, on architectures and spaces, working independently from the local cultures that have given continuity to the systemic value of smaller centres for centuries. With the rediscovery of these, more and more local economies are being activated based on

the transformation of buildings into tourist facilities, crafts, small businesses, and leisure activities (Pazzagli, 2021). At the same time, the design of open spaces to define parking lots, or the reorganization of routes, needs territorial knowledge that can relate morphologies and networks (Corradi & Raffa, 2021). In the rebirth phase, there is a tendency not to read the vocation of the peculiar places, which are also the strengths of each new path of transformation (Marchetti et al., 2017).

This research has tried to find a way to represent the perimeters and abandoned settlements that bind to the change of scale by combining landscape, architecture, and barely perceptible actions. It identifies the design vocation within the inner periphery and interprets the territorial dimension with an architectural perspective. In this way, representing the inner periphery becomes an act of knowledge and design itself. Indeed the representation is assumed as an act aimed at

interpreting the complexity [...] observing and interpreting the changing world. Therefore, the development of descriptions, maps, and design atlases is recurrent. The atlases and mappings return or compare significant fragments of contemporary territories. [my translation from italian?] (Valente & Andreola, 2017, pp. 169, 170)

To better understand these issues and develop a deeper awareness of the design sensitivity necessary for approaching these territories, the contribution presents ongoing research born from the meeting with Confcooperative Abruzzo in the *Rete dei Borghi IN* experience in May 2019. This network establishes the union of community cooperatives, territorial cooperative enterprises, entrepreneurial subjects and associations, born from historical centers set mainly in inner areas and in the most fragile economies characterized by abandonment and depopulation. The synergy takes its cue from a process of reactivation of the internal areas that Confcooperative Abruzzo initiates through bottom-up actions in which the local communities are the protagonists. This research

considers an inner-area of the Abruzzo region, focusing on the relationship between four towns: Anversa degli Abruzzi, Corfinio, Fontecchio, and Navelli.

The research aims to structure and identify a methodology of representation that could help in making visible the vocation of the inner settlements and so to reconstruct community actions linked to social cooperatives, seen as connectors between the territory and local communities. Hence, identifying criteria for reading and representing actions in space was an essential first step in approaching the territory. They interpret it and understand the overlapping of material and immaterial assets to make them interact in the transformation processes of the territory, its activities, and its communities.

MATERIALS AND METHODS

The final objective of the research was to define a representation method that can be elaborated through resources accessible to all, functional to the identification of descriptive models of places, and actions to be taken to be used in the process of valorization of places, starting from the recognition of identity elements. For this reason, it was necessary to know in depth the features of the inner periphery, looking for sources and different ways of drawing. The inner areas, also called inner peripheries (De Toni et al., 2020), present a lack of representation regarding a complete system of data, such as specific tourist data, qualitative archives of the built and often abandoned heritage. The specificities of the various villages and the territory that contains them, increasing the difficulty of interpretation and action; thus, understanding this lack, it is fundamental to define the act of drawing as a research tool (Tamburelli, 2020). By mapping these intricate territories, it is possible to frame the depth of these areas and relate the project to the local communities (Magnaghi, 2020). The research applied different techniques of investigation and documentation to

approach this study, starting from indirect analysis through cartographic documents (regional and municipal technical maps, natural parks' maps, etc.), GIS mapping systems (collecting layers regarding floods and fire risks, ground morphology, etc.), *Google Street View*, and *Google Maps*, to physical site inspection and photography, investigating the architectural and territorial scale. Moreover, a direct dialogue with local institutions, such as municipal offices, mayors, park authorities, local entrepreneurs and private institutions, was essential to address the lack of data. This direct investigation was done through a series of informal interviews especially with the president of Confcooperative Abruzzo, local municipal offices were engaged through specific questions in order to collect data regarding services and local needs, and meetings with the mayors helped in better define the representation perspective in order to implement the communicability of the research. In addition, the analysis of ISTAT data (regarding population census, age, information relating to availability of receptive places) was fundamental to understanding the analytical characteristics of the four villages at the centre of the research.

From this investigation, the paper highlights the need for several theoretical and technical devices and data collection to define a descriptive set that represents the complex network of tangible and intangible assets. Consequently, expressing the space of the inner areas through the definition of synthetic maps aims to draw the relationship between morphology and metabolism, finding the specific dynamism within the inner area. Finally, the theme of scale is considered by interpreting and drawing transcalar maps that hold together data, information and space, as a crucial architectural and territorial interpretation. The transcalar perspective is indeed assumed as a way to interpret the issues and potentialities of inner areas, where the drawing of synthetic maps could foresee a method of research by representation able also to envision the vocation of the different settlements.

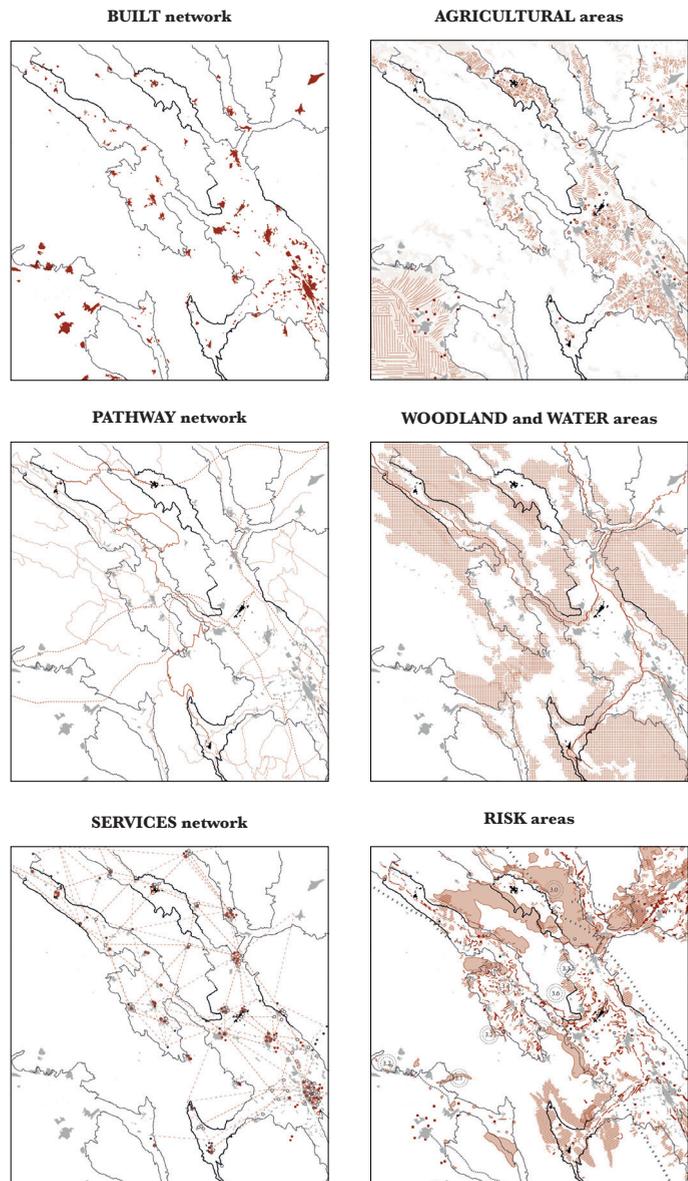
The complete research, of which only a part is presented here, produced 35 maps, developed through a transcalar study

logic that starts from the regional scale up to the analysis and recognition of 4 villages used as case studies. Alongside these, more than 60 interpretative diagrams, schemes and project drawings, have constituted a graphic set for a broader and deeper understanding of territorial data, as well as for their more in-depth communication. Therefore this article present only a part of the work done, to offer a glimpse of the methodological work, in which the representation was an element of interpretative analysis and a design perspective itself.

REPRESENTATION AS INTERPRETATION AND DESIGN ACTION

Before addressing the specificity of the research, it is essential to emphasize the spatial and ontological meaning of the concept of inner area (De Toni et al., 2020) that is exposed here. From a general point of view, these areas present an apparent problem of marginality, scarcity of local development policies, and low planning inputs. Specifically, the study focuses on the Central Apennines, in a fragile context where insufficient services and infrastructure overlap with a growing phenomenon of aging, depopulation and abandonment (Teti, 2014; De Rossi, 2018). In addition to these, other physical problems have a heavy impact on people's lives, affecting the design perspective of this territory, one of the most seismic and high fire risk areas in Italy. Moreover, climate change exacerbates other dangers, such as hydrogeological instability, which affects the risk of flooding for the built environment and, at the same time, drought for rural agricultural fields (Regione Abruzzo, 2021). All this is shaping new alarming threats that interfere with the conservation of the local ecosystem that characterizes the central Abruzzo Apennines. These characteristics are decisive in defining the research framework and identifying the set of problems of the specific territory that the survey sought to address and represent through maps. Thus, the idea of an

Fig. 1 Elaboration by the authors, *Territorial layers*, 2021, Digital drawing, 16x12, Elaboration from the dynamic atlas. The image shows the different territorial layers, representing the Borghi Minori Network between Anversa degli Abruzzi, Corfinio, Fontecchio and Navelli. The Built environment (top left corner), Traditional cropping infrastructure (bottom left corner); Slow infrastructure (top center), natural infrastructure (bottom center), tourism and essential services infrastructure (top right corner) and risk network (bottom right corner). The 6 maps aim to represent the stratification of themes to understand the spatial articulation and complexity.



asymmetrical territory (Tarpino, 2015) is evident in the inner periphery, where the concept refers to the imbalance of social, economic, and spatial relations. However, at the same time, inner areas show high potential, derived from the relationship

between architecture and landscape, in the tension between nature and human artifacts (Kipar, 2018), and the debate between local communities and the territorial network of villages. The need to represent this intricate and complex system led to the development of a study that used drawing as a research tool, thus using it to interpret the territory and also trying to use the visual language to communicate the design perspective to Confcooperative Abruzzo, the main stakeholder of this research. The first act of mapping aimed to clarify the layers that could define the main territorial, spatial, architectural characteristics and networks (Figure 1).

The investigation started from the verification of difficulty accessing sources often due to the lack of archives. For this reason, the first phase of the research identifies easy-to-find sources to make this type of investigation accessible to anyone. Then we proceeded to verify the appropriateness/correctness of the materials, especially the online sources, by cross-checking them with different databases. Starting from the information derived from the technical maps from the Geoportale of Abruzzo, it was necessary to compare the materials and information through the usage of aerophotogrammetry from *Google Maps* and *Google Earth*, in addition to images from *Google Street View* where possible, and make direct recognition with national and regional cartographies.

In addition, informal interviews with local actors (mayors, cooperatives representatives and members, and villages' citizens and entrepreneurs) was fundamental to understand the set of services present and active among the territory. Indeed, these data are often outdated and partially missing on the internet geographic information systems. The figure presented here is a synthesis prepared at the end of a broader analytical investigation that is part of the ongoing research. The individual strata are analyzed and presented with more specific and descriptive data.

In the next phase, were identified and mapped the following themes: the network of buildings, the network of

routes, the network of services, agricultural areas, with their production centers, forest and water areas, risk areas, natural and environmental systems. These are assumed as 'territorial layers' to be considered the basis of design thinking and represent the system of material and immaterial elements that make up the territory. These have been understood as a set of critical readings to be taken into account when approaching the region to plan design action at different scales. In addition, they constitute a set of morphological studies, where the various networks identify cornerstones for the built environment and daily life within the area.

The first two spatial layers investigate the diffusion of the built environment and the paths. Therefore they constitute the physical assets on which to act through spatial planning. The data obtained from the Geoportale d'Abruzzo, ISTAT database, and routes local maps showed the rarefied structure of the territory, on the other hand, the possibility of interaction between the various settlements.

As far as the architectural/building scale is concerned, a widespread problem when dealing with inland areas is the lack of survey of the consistency and quality of the building heritage. *Google Street View* has functioned as a partial tool of analysis to derive relatively up-to-date documentation and address this problem. However, especially in mountainous regions, this virtual tool is often unavailable. *Google's* cars using the Dodeca 2360 (the camera system used to make 360° images) is poorly suited for surveying the historical centers characterized by narrow streets and stairs. An example within this study was Anversa degli Abruzzi, where a stairs system structure the village's morphological asset, so it is inaccessible to cars in most of the country.

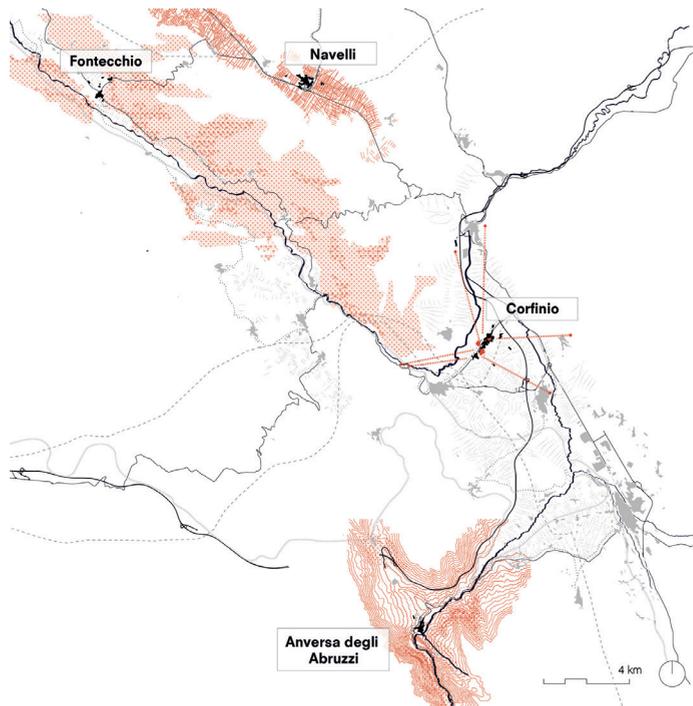
Regarding the community services network, the map represents the virtual connections that creates a relation between territorial nodes. It summarized the system composed of the health care structures, housing, educational facilities, and services for daily interaction such as gas stations, bank offices, etc. These services were considered as

the ones necessary to live and move, so essential for the inner metabolism of the area, thus configuring an heterogeneous set of services. Data were collected through the analysis of sources ISTAT 2018, Geographic Information System, and direct collaboration with local actors. Regarding this reading, it is relevant to note the concentration of services, as it clarifies the actual quality and quantity of the network.

The following layer represents agricultural, water, and wooded areas. They represent not only the landscape components of the territory, but also the essential reserve of drinking water and agricultural products for urban areas and relating cultural, natural, and socio-economic aspects and sustainability.

The analysis of the agricultural fabric, and the spread of forests, is a morphological interpretation that frames them as actors of the place. The representation has synthesized and redrawn aerial photographs and maps included in regional reports such as *ABRUZZO. Report on the state of the*

Fig. 2 Elaboration by the authors, *Territorial structure*, 2021, Digital drawing, 16x14, Elaboration from the dynamic atlas. Interpretation of the territorial structure, synthesis of morphologies and main characteristics of the studied settlements. Fontecchio is connected with the feature of the forest and the system of the Aterno river; Navelli can relate the agricultural vocation of the valley, where the representation shows the farm system; Corfinio could be the center of a series of heritage sites, spread around the settlement and in it; Anversa degli Abruzzi is a connection for the Riserva Naturale Regionale Gole del Sagittario.



environment 2018 of the regional agency for environmental protection, elaborating interpretive maps of the ecological structure about local centers and communities.

The last layer we considered concerns risks. According to data from CRESA (Regional Center for Economic and Social Studies and Research) and ISTAT, this territory has a high seismic risk, superimposed on other serious territorial fragilities related to the hydrological risk that has a tremendous social and economic impact.

Having identified the six territorial strata, we undertook a more in-depth study of the area, aiming to define a structure for this inner periphery (Figure 2), to interpret the specificity of each of the four villages analyzed. The territorial readings built the framework of work, helping in understanding the territorial issues that are present in the inner area. Working at the settlements scale, in this perspective, means to structure a project able to interact on one hand with these territorial layers, and on the other to be in relation with the local settlement's vocation.

To do this work, the dialogue with several people from the local municipalities and cooperatives, understanding the main characteristics of the area that gave identity and a kind of uniqueness to their villages, was helpful.

Once the territorial networks were identified and represented, the objective of the research focused on the detection of the vocations of the single villages, understanding the importance of a specification of their morphological characteristics related to the space and activities and in a method of representation that could embody those features.

In this reading, we tried to identify and trace the identity characters of the places and the communities living in them, linking them to space and use in a temporal projection.

For each of the villages, a specificity was identified to create an integrated system between centers.

Each of them reveals themselves as an interpretative key to developing common themes to identify culture, nature, agriculture, and services.

Subsequently, the research focused on the analysis of each of the four villages to understand and describe the development themes in which for each of them we highlighted what for simplification we indicate as a dualism: Corfinio-culture, Fontecchio-ecosystemic services, Navelli-agriculture, Anversa degli Abruzzi-nature. These dual elements combine to define a specificity for each settlement, on which to structure a project and reactivation perspective. This main 'vocation' is the result on one hand of discussions with local actors, listed within the methodology, on the other hand derived from the understanding of some identifiable peculiarities through the critical analysis of the territorial layers described above.

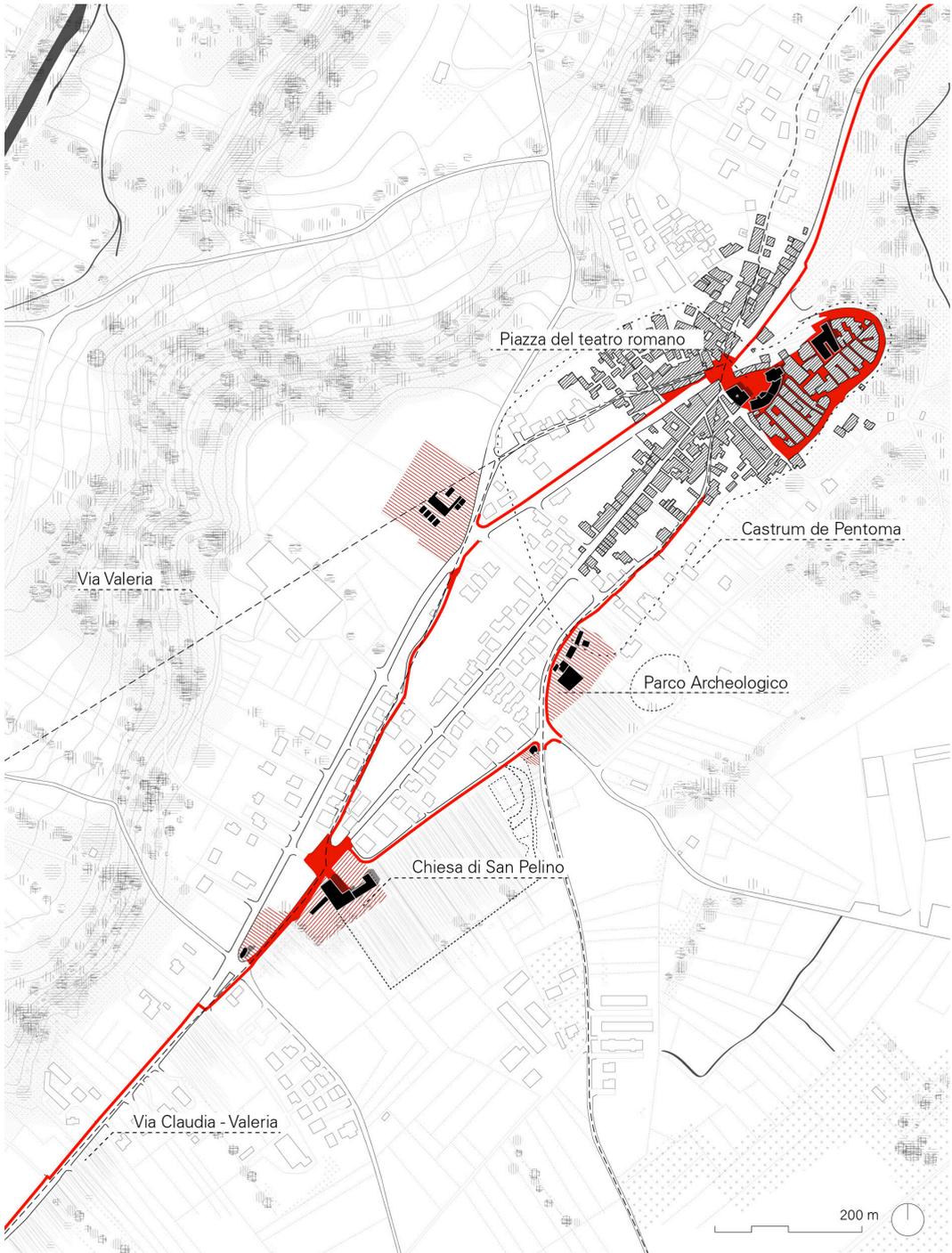
Dualism represents for each center the dominant but not exclusive character. The methodological project has the task of articulating all the characteristics of the individual project by entrusting the interpretative criteria to the specific features of each one.

To better clarify the methodology, we describe the case of Corfinio (Figure 3), as an example of the process adopted for each village.

At first, we recognized Corfinio's historical roots as the capital of the Lega Italica (Geraci & Marcone, 2017), with notable development in Roman times, still clearly and intelligibly preserved in its spatial *cardo-decumano* structure. In addition, the role of the ancient theatre is a fundamental morphological element in the evolution of the city that is still influencing the urban form. Outside the urban core, the thermal bath and the co-cathedral of San Pelino of the Romanesque diocese of Sulmona-Valva (1081-1124), gave Corfinio a territorial role and rank even in the Middle Ages.

Furthermore, the urban layout maintains a close relationship with the agricultural landscape. For this reason, both spatial organizations contribute to structuring the design perspective, which intends to act through the

Fig. 3 Elaboration by the authors, *Urban morphology of Corfinio: a design perspective*, 2021, Digital drawing, 16x22, Elaboration from the dynamic atlas. Structure of Corfinio settlement, highlighting (in red) the possibility for future areas where to focus for a renewed project, stressing the identity features of the place and its historical stratification.



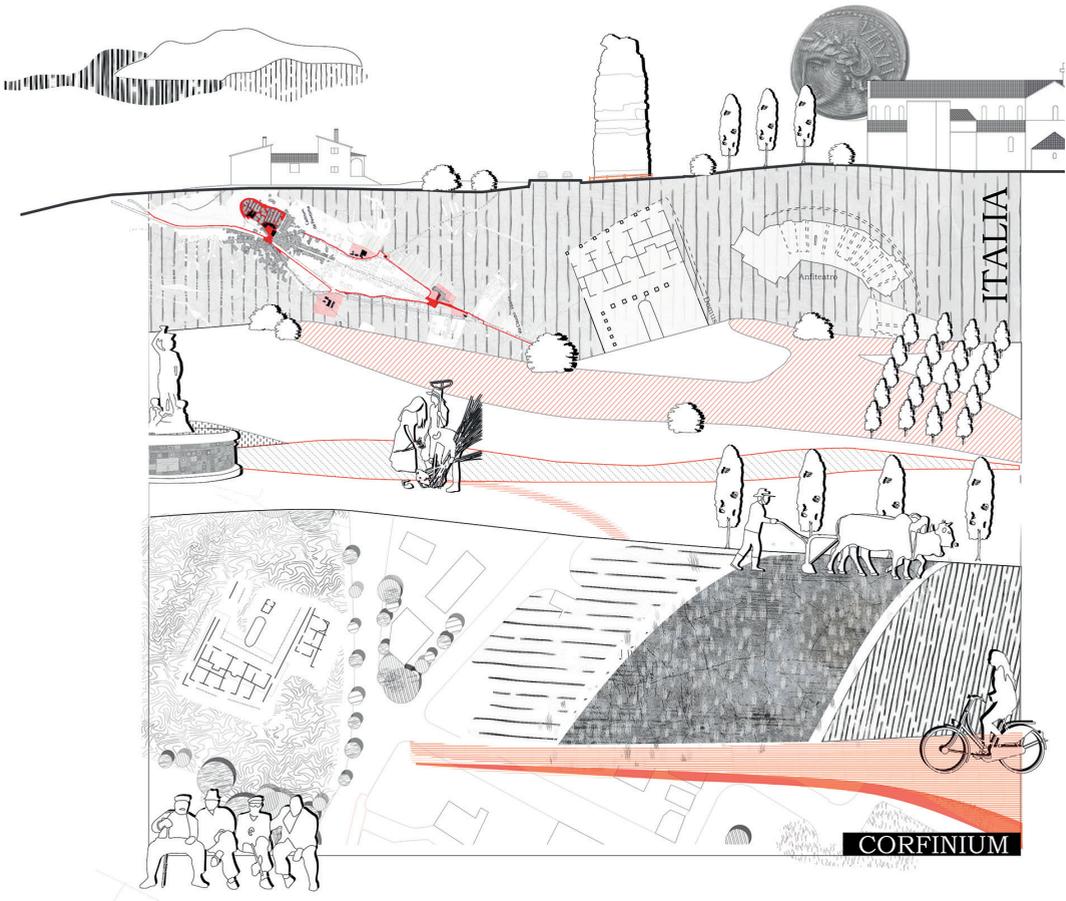


Fig. 4 Elaboration by the authors, *Visualize a possible design interaction*, 2021, Digital drawing, 16x14, Elaboration from the dynamic atlas. The visualization synthesizes the spatial and community network that could interact with a reactivation project for the village.

reinterpretation of these two elements: urban layout and territorial layout, combined with a series of activities and initiatives carried out by the local community and Cooperative.

These were first surveyed and reconnected at the various scales, thus identifying a recomposition strategy.

The urban and territorial cornerstones were then linked to the plots, drawing a framework to place the actions of physical, visual, and perceptive transformation, linking them to the actions underway by identifying and mapping urban and territorial functions.

The research used archive sources, historical maps, cartographies, digital resources, inspections, and a discussion with the inhabitants and the various actors during the Workshop *Rete dei Borghi IN* in May 2019.

Then a design visualization was elaborated, useful to represent the structural elements of the community of Corfinio and, at the same time, to describe a possible dialogue between spatial/physical elements and the immateriality of the community (Figure 4).

The aim was to have an understandable design that contains both landscapes, urban and architectural features, and, at the same time, includes the actions that take place in the space, easy to share with the local communities and actors.

The visualization does not show a single design response; instead, it makes more explicit the metabolism present in the perimeter of the inner areas related to Corfinio by identifying a series of boundaries or related areas within which to implement design actions.

MAPPING FRAGMENTS

The scarcity of organized data, surveys, maps at the urban and architectural scale, together with a system of fragmentary information gives an incomplete description of the inner area. Moreover, it highlights the need for a methodology that acquires 'ordinary' data and information from readily available tools (digital archives, direct contacts, internet, social platforms). Combined with the photographic survey activities that *Google's* applications offer and integrated with drone photo surveys or special geolocalized photographic survey campaigns of inaccessible places, thus recomposing fragments containing each internal area's genetic codes.

The choice to work with heterogeneous data is motivated by the will to make the description process easily

transferable and activatable through actions bottom-up and, therefore, harmonious with the spirit of communities and social cooperatives. This strategy implies the will to provide effective reading tools to increase awareness and knowledge of places and their potential. It also means taking a census of the inner areas' historical, architectural, natural, and environmental heritage. This collection, so knowledge, of elements is a tool and the basis for conscious choices. The elaboration, and analysis of these territories show a relationship between the different scales and networks that the representation should express. The rarefaction of settlements has required the delineation of specific areas, not necessarily determined by geographical boundaries but held together by a system of similar characteristics. So, the representation is not limited to identifying an area but defines a design perspective embodied in the territory. In a sense, unveiling "the hidden design intentionality" (Ravagnati, 2012, p. 18) of the territory in the direction Saverio Muratori had outlined.

The presented experience defines the construction of a critical and analytical setting to describe and find design possibilities for the specific inner periphery. At the same time, the research clarifies a set of problems and opportunities that are frequently present in similar areas and explains the potential of drawing as a design and research tool (Garner, 2008).

The research also revealed the crucial role that local communities can play. Indeed, they are the end-users of design proposals and the only method to overcome the lack of data within the inner periphery. Therefore, it is clear that a closer relationship between researchers and local municipalities could produce a deeper analysis and a correct representation of the inner area. Indeed, it could improve the identification of local peculiarities and the collection of the large dataset that is not yet available through GIS and internet databases.

REPRESENTATION AS ACT OF DESIGN

The research observations deepened how the representation of networks at different scales can highlight the characteristics of each settlement, starting from physical spatiality and considering local communities in their specific geography.

The representation of these maps points out the need for a humanistic approach (Teti, 2014; Arminio, 2013), capable of mixing data-driven research, interpreting data and morphological maps found in archives, with the design of local specificities. Moreover, through mapping and drawing, the potential of representation to reveal the inner periphery structure became evident. In this perspective, the sensitivity for a critical representation could be the first and authentic act of design. Moreover, the necessity for a transcalar perspective is a cornerstone in identifying the multi-scalar relation that we can detect to define the metabolism of these areas, but also to think about developments for the future.

Starting from the investigation of the territorial layers, the process of representation showed the need for a critical analysis that could embody the territorial characteristic and constitute a design expression.

Finally, considering the marginality and lack of information about the inner area, the process of drawing remains an essential step towards a deeper awareness of these realities. At the same time, it could offer common knowledge on the design potential that could be found in the inner structure of these territories.

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NOTES

- 1** The Italian text of the quotation is as follows: “Dove comincia un luogo? [...] Qualsiasi luogo, qualsiasi punto può diventare come punto di partenza (ma anche di arrivo) per attraversare una terra come questa, priva di centro, che ha conosciuto un costante riposizionamento, una sorta di ininterrotta ricomposizione e reimpaginazione dei luoghi” (Teti, 2014, p. 101).
- 2** The Italian text of the quotation is as follows: “interpretare la complessità [...] osservare e interpretare il mondo in mutamento. Perciò è ricorrente la messa a punto di descrizioni, di mappe, di atlanti progettuali. Gli atlanti e le mappature restituiscono o confrontano frammenti significativi dei territori contemporanei” (Valente & Andreola, 2017, pp. 169, 170).

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