

Research Paper

THE ANALYSIS FOR THE PROJECT: INVESTIGATION TECHNIQUE

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Investigation techniques, rural mountain habitat. The first argument to be addressed in order to carry out the analysis for the project is a consideration of this principle. In the case of the analysis conducted on the habitat of Masi di Cavalese in Trentino (Figure 1), the study conducted on the basis of maps and historical as well as current cadastral plans allowed us to define the relationship that takes place between the design of the ground and the built work. Research carried out on a rural mountain habitat has allowed us to face the system of the housing type as a *raison d'être* of building according to logic and rationality that since World War II, due to different ways of interpreting the concept of living, has gone from use to consumption.

Keywords: Analysis and design, Historical analysis and construction, Alpine habitat, Analysis of the built

INTRODUCTION

In Italian architecture faculties, analysis and design were once considered the foundation of the experience that an architect should acquire. Giuseppe Samonà (1898-1983), re-founder of the Italian school of architecture for his didactic, scientific and pedagogical approach, believed that young architecture and engineering students should be formed so that they could be given tasks as researchers-thinkers within civil society. This result did not come about, for various and anomalous reasons; in particular, in Italy, importance has never been given to the urban project, perhaps

due to a loss of disciplinary and cultural values including those relative to the concept of living and preserving. This attitude has also contributed to the loss of that constructive knowledge of the design of the city that constituted the nature of a place and that in the historical past belonged to the ancient architects and builders, but which we also find in the scholarly treatises of the same Giuseppe Samonà, as in those of Aldo Rossi. Analysis and project are in any case the cultural and scientific reasons for making architecture. From these bases, the search for permanence, for the constituent elements, and

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Figure 1: The Village of Masi di Cavalese (Trentino Italy) foto by Andrea Donelli



for the significance of the housing typology has been developed, in this study, using historical documents entrusted to the examination of maps and cadastral plans.

DISCUSSION

Analysis and project were considered, by a recent and restricted group of Italian architectural maestros such as Giuseppe Samonà, Aldo Rossi, Giorgio Grassi, and Agostino Renna, the deductive value that allowed one to read and discover in the architectural project the process of analysis itself. It seems obvious to maintain that in the absence of analysis, the project cannot exist, but here I intend to refer to a particular type of analysis.

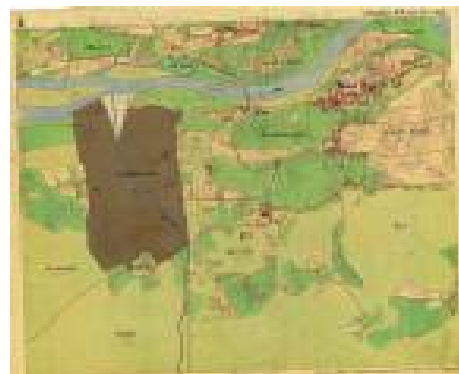
The objective of this research is to consider analysis as the foundation for an architectural project because this, in disciplinary outcomes, is no longer supported by peculiar conjectures of research and by the sum of reports by which the scientific act of the process is demonstrated. The study of the historical cartography of a place, as seen in the studies carried out for the habitat of Masi di Cavalese in the Val di Fiemme in Trentino (Figure 2), is

based on experience of observing cadastral maps (Figure 3). When the historical register is compared to the current one, one can pick up on key issues. In that examination, it is possible to reconstruct the relationships between the design of the natural and artificial ground and the design of the buildings. Therefore characteristics emerge that have competed amongst themselves to give form and identity to the habitat. This research method further permits one to understand and define the relationships that have determined

Figure 2: Plan of Masi di Cavalese, Andrea Donelli processing of cartographic support of map supplied by the office of the Urban Municipality of Cavalese (Trento)



Figure 3: Map of the historical land of Masi di Cavalese Archives of the Land Registry office in Trento and Cavalese Italy



the constructive meaning of the place. The hypothesis put forth based on observation, made possible by the super imposition of the cadastral maps with the help of the study of the building's plans, have made it possible to describe and identify the constancies, the primary elements, and also the constituent elements relative to the relationship of the design of the ground with the buildings (Figures 4-6). This systematic method allows one to discover the recognizability of the buildings of the Masi di Cavalese site, determining the purposes of the analytical research in highlighting the logical relationship that governs the nature of the habitat. In this way one can order and represent that relationship that unites the settlement and building type with the distributive nature and the constructive-structural type.

So the analysis for the project determines the one-to-one relationship between the types; it belongs to the logical construction of the architecture. In fact, so that the process of analysis is deductive in relation to the project, it must ensure such an understanding that demonstrates the value and the scientific, and not simply empirical, process. The integrated relationship of the typological reading constitutes, therefore, the scientific basis that is the foundation for deducing architectural design themes. In addition, to consider the one-to-one relationship between analysis and design, a deeper look is needed that refers to the thought and above all the way to outline and conduct the analysis. It is clear that the analysis requires a methodology and a subsequent procedure that will lead the project to make use of those elements that determine the logical process that define the facts of a

Figure 4: Zone A: Division Areas Relating to the Study of the Typological and Morphological Matrix Habitat of Masi di Cavalese, by Andrea Donelli



Figure 5: Zone B: Division Areas Relating to the Study of the Typological and Morphological Matrix Habitat of Masi di Cavalese, by Andrea Donelli



Figure 6: Zone C: Division Areas Relating to the Study of the Typological and Morphological Matrix Habitat of Masi di Cavalese, by Andrea Donelli



habitat, be it the place of design intervention or the study area taken into consideration as the theme for the project.

Valeria Pezza writes (2000), "... The crisis in the design of the city and the territory is the crisis of its conception, of the idea of its construction". From this thought emerge the traits that have led architecture to become a scientific and even earlier to that wise analytical and aesthetic control that was the art of building the city. In fact, at one time there was a common sense of sharing between architectonic and urban construction; knowledge and *modus operandi* were in that way considered adherent to a thought.

The city, taken as a habitat, maintains through its themes—public and private buildings, streets, piazzas, monuments, and so forth—a kind of fixed points, whose functions, but not their character, can mutate. The city is subject to transformations: consider for a moment the differences between the eighteenth and nineteenth-century cities. We can observe how the 20th-century city, around mid-century, underwent such radical transformations as to impede the distinction of borders or ground between the built areas and the countryside, and how this same countryside was compromised by building "without guidelines". If the nature of the city is what determines its essence, we must investigate this fundamental aspect.

The subject closely related to the logical-scientific basis comes from the notion of character and that definition delineates, above all, the theoretical guidance of the methodology used for analytical work. For a site, as for a building, with the term "character" we mean the

requirement that defines its reality, history, form and spaces as recognizable; that is, a *condicio sine qua non*, belonging to a well-advisable settlement, typological and distributive as well as constructive-structural system.

Technical mapping in this regard is a fundamental cognitive tool. The cadasters, *cabrèi*, and the reading of the parcel divisions brings us back not only to the technical data of the relationship amongst the parties, the owners, the usufruct, etc., but also reveals the intrinsic relationships that continue between the buildings, that is distinct from the streets, the fields, and the other buildings. In addition, these are evidence of the possible confirmation of the dimensions of the conjugations that belong to the same place. As has already been said, a reading of the historical cadastre superimposed with the present one constitutes the basis, a beginning, for understanding the primary elements. The continuous assessment of the building and the inferred space from a reading of the design of the ground offers a first clue about the constituent elements (Figures 7-9). By ordering and directing the analysis by using the cadaster as a geometric document, comparing land parcels with a parallel reading of the written register of the property inventory, it is possible to consider a system of variables to a "detailed scale". The parcel of an aggregate presents fundamental characteristics due, for example, to hereditary subdivisions. Ground and building may have belonged to the same nuclear family forever or because of later family ties. The middle as well as smaller sizes of the parcels may appear as the arrangement of the ground around and near the buildings. "The division, or parcel, of a single building,

Figure 7: Analysis: Overlap With the Existing Historic Register, by Andrea Donelli

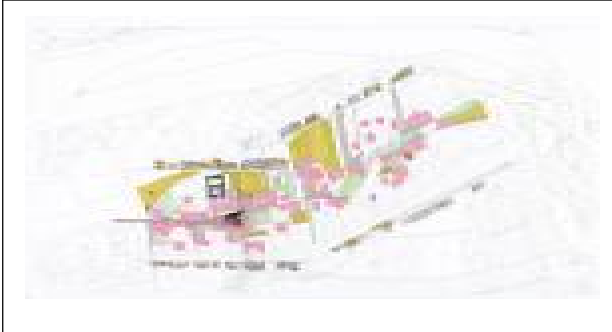


Figure 8: Analysis: Overlap With the Existing Historic Register, by Andrea Donelli

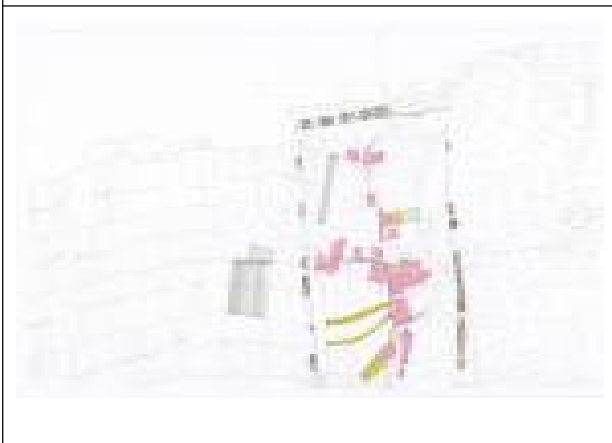


Figure 9: Summary: System Related Primary Elements of the Habitat of Masi di Cavalese, by Andrea Donelli



on the other hand, gathers its parts in a single area whose reading is generally continuous. Around the building are spaces of middle-small dimensions destined for use as a vegetable plot, a garden or, because these are cadasters that refer to rural habitats, more often than not delineated by the countryside that is largely used for cultivated fields of meadow". (Cacciaguerra and Gatti, 2000). "From the historical point of view, the word cadaster has the same meaning as inventory" (Chilò and Malara, 1981). To inventory, in addition to the various meanings such as describe, catalogue, register, etc., also means to order, and to verify, and it is the task of the analysis to compare itself with the design of the ground. This has the function of investigating the facts that take in the essentiality, that is that actuate the first step toward focusing on the character of the place.

The study of cadasters and maps of the ground through analysis allows us to obtain a description and a response between the natural form and the historical, built form of the habitat. The process of analysis carried out on the cadasters, both the historical and contemporary, requires knowledge of the territory's past as of its present state. This becomes the truth, as the map contains the objectivity of the facts and not interpretations of evasion. This concrete knowledge delineates the form of the site and reveals its utilities and necessities. The cadastral map is, therefore, the document that must be referred to for the control and confirmation of the facts it contains, also because its function is that of a fundamentally technical-analytical document. From this study emerge the design of the ground and the form of its buildings. The

cadastral map, thus, cannot be removed from the understanding that the rules of the settlement are contained in the topographical drawing, as the constructive fact of the site itself. Through the cadastral analysis one can deduce the primary elements that regulate and have regulated the compositional facts of the architecture. However, the importance of the chronological facts remains evident; in fact, it is not the cadaster that has shaped the site, but rather it registers and fixes the variations, correctly reporting the principal of its character. The composite facts: the ground, the parcels, and the buildings, are what provided the real motivation for organizing and describing their logical rules of settlement on the maps. The analysis can be achieved through various degrees of investigation and systematic study. The permanences, or constants, constitute the set of rules belonging to a system that is deduced from the morphological description of the habitat or of the study area through the comparative study of the technical documents (cadasters, parcels) and by the assimilation of the design of the ground, even descriptive, this last aspect when it is represented as a documentary source of an iconic or symbolic nature, without a substantial measurement as we have in the views, overall images, or simply in the descriptions; this will be evaluated and subsequently taken on as an analogical element in the study process. The definition of permanence is also attributed to the buildings, which are determined by a precise and immediate recognizability both for their disposition and their type. Their character belongs to history, the fabrication will be subject to verification to confirm its role. The primary

elements are a report deduced from the permanences themselves defined by the program of the design of the site or of the habitat. The constituent elements are thus inferred from the elaboration of the system of the permanences compared with the primary elements. These become detectable according to the following hierarchy: constituent elements for the type of settlement, and finally, constituent elements related to the construction-structural type. In conclusion, this means that a building, whose recognizability comes from its character as revealed through the analysis, sees its *raison d'être* correlated with the one-to-one relationship that is definable, and found, in the following system of types: settlement, building, and structural. This demonstration, which belongs to the process of elaborating the analysis, highlights above all the design of the ground, its form, and its geometry, which become analytical facts that adhere to reality. The examination of the buildings through the understanding of their typological value, classification, comparison of these, observation and study of the types as a fact related to the distributive traits (synchronic and diachronic facts) (Figures 10-13) or rather the relationship between typology and type, between reading of the building and the distributive system, as, for example “through the deeper investigation that determines and establishes an identifiable system definable as strong form” (Lena, 2002) this may refer to as the part that fixes the ordering or regulating principal of the entire system belonging to the built organism (Figures 14-15).

Figure 10: Sections: Morphological and Massing of Buildings, by Andrea Donelli



Figure 13: Sections: Morphological and Massing of Buildings, by Andrea Donelli

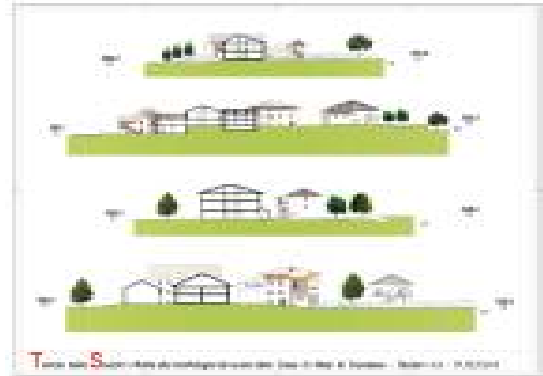


Figure 11: Sections: Morphological and Massing of Buildings, by Andrea Donelli



Figure 14: Comparative Table of the Areas Constituting, by Andrea Donelli

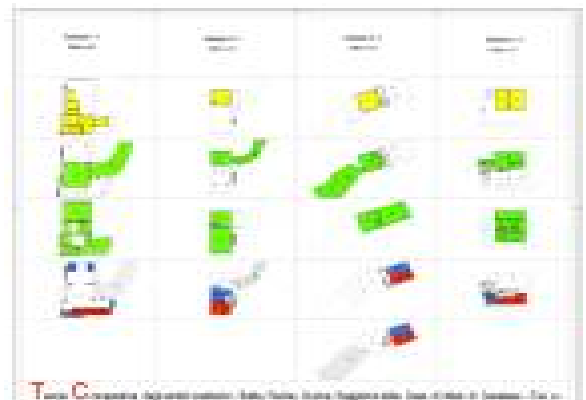
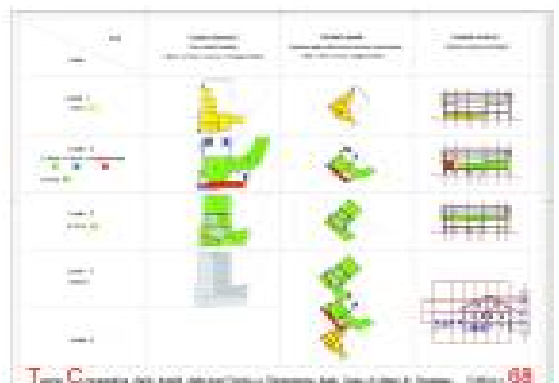


Figure 12: Sections: Morphological and Massing of Buildings, by Andrea Donelli



Figure 15: Comparative Table of the Areas of Their Form, by Andrea Donelli



The constructive or structural values, comparable and verifiable in a parallel fashion through the analytical calculation and the mechanical analysis of the structure, relate to the previously described values as a fact that is part of the schematic set of the building because it is in the constructive system that through the equipment, sections, thicknesses, and weights we can discover and get close to the material reasons of belonging and a constructive repertoire of the site. But this set also helps to pinpoint how there is a system of constructive-structural elements and facts, along which there is a binding relationship to the typological-distributive or settlement system. In fact, with the appearance of the structural typology we intend to relate in a significant way the constructive facts that interact with the settlement system and with the system of distribution characteristics. The structural aspects of a given case study guarantee a kind of constructive continuity, or rather that this exists through a meaning of belonging to a set of experiences that makes the buildings conform, provided the requisites belong to a precise recognizability or identification of the nature of the site. It becomes clear through the constructive and structural research, for example in the rural habitat of Masi di Cavalese, that the structure is not a finished element in and of itself, but rather belongs to a set that involves every constructive phase and process, from the vaulted systems to the elevation walls and the wooden louvers of the roof. There is a kind of reduction and elimination of every kind of rhetoric, of temporary or occasional facts, that

is what is practiced and proven is the only conformity to a tendency toward facts aimed at structural regularity. This assessment favours the knowledge not only of the essence of the building and its character, but above all to reconstruct the theory of its design for another project. The knowledge of the site, as of the building and its structure, is the systematic principal that establishes the report of the analysis for the project (Figures 16-20).

Figure 16: Restitution Refers to the Building Number 68, by Andrea Donelli



Figure 17: Restitution Refers to the Building Number 68, by Andrea Donelli



Figure 18: Restitution Refers to the Building Number 68, by Andrea Donelli



Figure 19 Sections: Morphological and Massing of Buildings, by Andrea Donelli



Figure 20: Detail of the Wooden Roof of the Building Told No. 68 Drawing Double Orthogonal Projection, by Andrea Donelli



CONCLUSION

In current cultural attitudes, both for the architectonic aspect and the urbanistic, awareness of an inextricable aspect that was believed to be important by Giuseppe Samonà is now missing, compromising the conceptual meaning of logical construction as it refers to the analytical process necessary to define the form of the territory. Logical construction was the ability that in ancient times supplied trusted talents and thought with the tutelage and control of a territory, above all because this was believed and considered a project, that is the commitment to know how to observe the reality regarding the events of the city. In addition, a set of knowledge linked rationality and sensibility able to give form and meaning to the value of inhabiting and preserving; that is to say, to interpose the distance between what is fundamental and what is superfluous or at best secondary.

The territory is completely built with a vast fabric of constructions in which the meaning of inhabiting and of thinking in an advanced way about the concept of civil society is supplanted by speculative, individualistic building that is increasingly rampant and unrestrained. In brief, we have reached a point of perverse logic that continues to perpetrate throughout the territory, destroying both the city and the countryside with so-called modernization and transforming the princely site into a toad. To neglect the urban project, intended as an analysis of how and not based on the quantification of data, making practical reason and aesthetic reason antagonists, is to find oneself unfortunately before a political and cultural choice, which supports the territory's only reason: the division of constructable

areas. Similar outcomes have occurred in areas of study in which the exaltation of specialization was not able to put together an acceptable concept of the whole. All of this has resulted in a varied set of facts that are no longer able to demonstrate their essence from a scientific point of view and that, on the other hand, have become a Babel of languages, of democratic pluralist beliefs, with anarchic behaviours and consequences that are unable to share a common way of thinking.

The facts described have contributed to the cause of the loss of the main notion of place and of territory, or better of construction of the territory, which has always belonged to an historical-didactic culture, rendered manifest by the wisdom of the treatise-writer as is demonstrated from Alberti to Palladio, from the concrete fact carried out by measuring the land, or rather from the knowledge of the reality made as such by the design of the ground; these aspects and themes have always distinguished evolved thought about architecture.

To talk about the analysis in relation to the project in architecture, signifies indicating a process and methodology for which we utilize research techniques. To carry out this study on the city or the habitat it is necessary to refer to the site as it was, removing the superfluous and searching for the essence. The drawings and documents such as historical and contemporary cadasters, are useful and indispensable for their technical clarity to bring to light by studying the overlays the relationship of measurements and space that exists between the ground and the buildings. Using the metaphor of overlaying, or superimposing don we not repeat, perhaps, the same process

that the ancient Romans used to derive the measurements and dimensions of the terrain? According to the experience of the Roman surveyors, it is valid to consider how the technique of the geometric arrangement of the *centuriatio* is “superimposed” on the natural design of the ground. In fact, no one was more aware than the ancients of the importance of how to build. In this reflection, we also realize how the antique Alpine dweller had the same skills for measurement and ordering, in his way of verifying and controlling the construction materials. The bond that united the design of the ground with the space for building the house was considered, within the Alpine habitat, a precious asset, which with its form and response contributed to the realization of a sign of civilization. This analytical study, carried out on a rural Alpine habitat, has allowed us to study the system of housing, that is of the house for man, as the *raison d’être* for building according to logic and rationality, verifying how and in what ways since the end of World War II as a result of the different ways of understanding the meaning of inhabiting, we have passed from a way of use to one of consumption.

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