From the Historic City to the Historicized City: Reflections on Several Studies on Urban Form Conducted in the Last Century

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The following reflections refer to a few studies on the urban form of Turin whose research methodology was based on the identification of a hierarchy of values characterizing the investigated reality and on the definition of a graphic language suitable for the representation/communication of the results achieved.

The historic city

The concept of the historic city, in the 1960s, was linked to the size of the pre-industrial city that had developed within fortified walls as a product of an urban planning/architectural culture that had operated with continuity of intent within a system of morphological and structural invariants while entailing, within itself, a set of variants tied to the succession of architectural styles, construction techniques and technologies, and functional and political motivations.
In an essay written in 1993, Cesare Macchi Cassia stated that the formal value recognized to the historic city can be grasped at three fundamental levels: "at the level of the fundamental structure of the city, of its ground plan, at the typological level as well as the stylistic level, that is, at the level of the language with which the pieces of the city express themselves. The form at the urban level has the purpose of rigidly identifying the structure on which every other aspect of the image of the city rests, allowing the successive formal levels, both typological and stylistic, all the variety, diversity and flexibility that has always been one of the fundamental arms for the quality of the city of the past. A strong differentiation of the pieces, of the image of the pieces within a strong order, a strong significance of the fundamental system" [Macchi Cassia 1994, p. 75].

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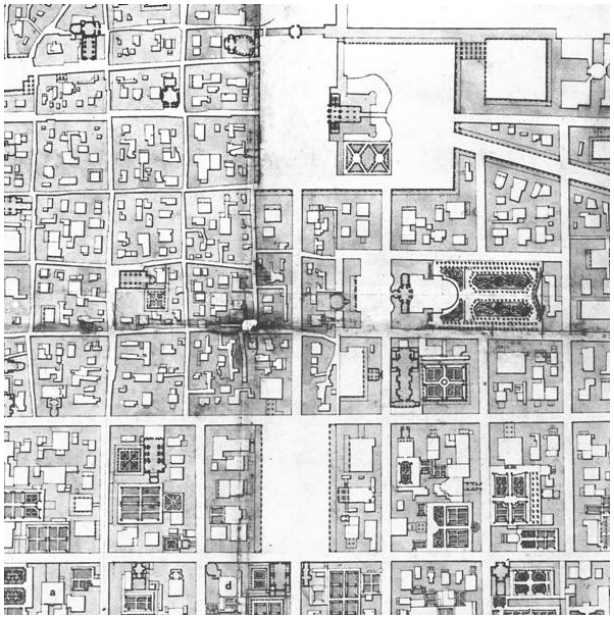

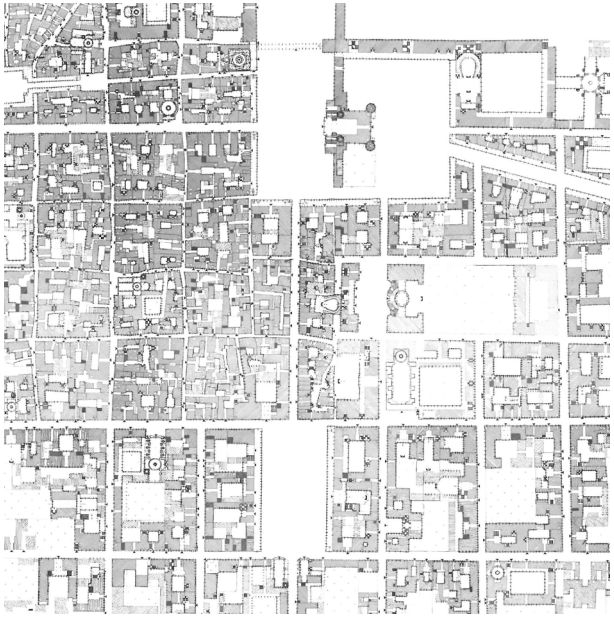

Fig. 1. Excerpt from the Copia della Carta dell'Interiore della Città di Torino, drawn up around 1763. AST, Maps for A and B. The map represents the state of construction of the urban fabric showing the public buildings, porticoed passageways and gardens as elements characterizing the image of the city.

Fig. 2. Excerpt from the map of the conjectural philological survey in the last quarter of the eighteenth century of Baroque Turin, from AA. VV. 1968. The map bearing the UNI 7310 standard number was constructed through the direct survey of the existing building fabric and the reconstruction on archival documentation of what was demolished and replaced in the last two centuries. The specially developed graphics shows the spaces and buildings for public use on the volumetric consistency of the urban fabric, the profile of the skyline and the morphological conformation of the individual blocks.

The cultural attention devoted to the history of cities in the 1960s was very strong. Saverio Muratori, in Rome, conducted research on the urban form of the capital, Paolo Maretto in Venice had begun a major work of urban survey taking in the entire historic center, Luigi Vagnetti worked on the historic center of Genoa. Along with them, other scholars in Italy focused their interests on the morphological structure of cities in order to identify regulatory aspects for their recovery. Augusto Cavallari Murat had set up a research group within the Istituto di Architettura Tecnica of the Politecnico di Torino with the aim of developing research and studies on the urban form of the Savoy capital, comprehensive of a survey campaign of what was then identified as the historic center, namely, the city that had been formed within the perimeter of the Baroque-period walls before their dismantling in the Napoleonic era. The research group in Turin, of which I was a member, was in constant contact with a celebrated historian of urban planning, the French Pierre Lavedan, with whom interesting confrontations were woven on the values characterizing the urban planning of the city in the Baroque period and on their hierarchy, in order to identify the methods of investigation, as well as methods for the graphic restitution of the results obtained. In addition, the aim was to point out the methods and timing of the entire construction period, selecting the main stages of implementation from within it. "It is wrong to consider the living city formed over the centuries as being similar to a geological stratification, because every age erases the pre-existing one, sometimes reusing its materials and construction elements. However, by making a conjectural note of the building consistencies on various pieces of paper and superimposing them, the living city virtually becomes a city stratified in stages, at different times… Architectural survey is no longer that im-

mediate, traditional work with maps and paper; rather, it thus becomes painstaking lab work: the work of subsequent scrupulous transfers and meticulous elaborations, controls, conjectures and experiments" [Cavallari Murat 1968b, p. 114].
It was therefore necessary to develop a research method capable of constructing, through a series of investigations (direct survey, archival research of historical documentation, both illustrated and not, historical-bibliographical research), a reality that today is no longer totally present, since the aim was to represent, with the means available at the time, the urban form that characterized Turin at the end of the 18th century, considered, as mentioned above, a completed form of a city that starting from its Roman origins in Imperial times had assumed the dignity of national capital through the coordinated work of urban planners/architects active between the second half of the sixteenth century and the end of the eighteenth century (Vitozzi, Carlo and Amedeo di Castellamonte, Guarini, Juvarra, Planterj, Alfieri, Vittone…) with a precise strategic and cultural vision. The main difficulty was also that of finding a set of graphic works capable of visually recreating the characteristics of the urban form object of the research. A first important reference was undoubtedly the historical cartography elaborated in the Baroque period. Substantially, however, this cartography was constructed on a hierarchy of pre-established values: in practice, the ground floor plans of what were considered architectural emergencies of particular artistic interest or representative of the different powers (political, religious, welfare, military) present in the city on the undifferentiated basis of the built context were represented through precise graphic simplifications. Some of the research being carried out in the 1960s, on the other hand, was directed towards the recreation of the ground floor plan of all the building "cells" making up the urban fabric, through a laborious assembly of the relative cadastral maps verified –I hope– on site and redrawn with the usual methods of architectural drawing. Cavallari Murat thought otherwise. "Urban planning is one of those arts that require an adequate conventional schematization: it is easy to recognize, at the current state of development of concepts about the historic districts and their characterization, how necessary it is to outline a scheme of the urban scene. The drawing of monumental urban survey must increasingly aim at simplification, normalization and economic reproducibility. It is therefore not only drawing, but also an annotation of the most varied research involving every manner of extrinsic expression of an elementary critical thought […] Where the intervention of the art critic is necessary, a conventional symbolic schematization of reality is required, leading it back to its immaterial essence. Moreover, this means that a conventional remodeling is necessary whenever an interpretation of thought as a scientist and not as an executor intervenes […] The surveyor of the historic district will be able to dominate his own ambition by knowing how to limit, in the graphic dictation, those means of representation that are most useful

Fig. 3. Excerpt from the Conjectural Philological Survey map from AA. VV. 1968. The map represents the morphological structuring of the urban fabric of the so-called Città Vecchia before the major urban restructuring interventions by the royal architects (A. Vitozzi, C. and A. di Castellamonte, G. Guarini, F. Juvarra, B. Alfieri, G. Planterj…) for the purpose of giving Turin the magnitude of a national capital.

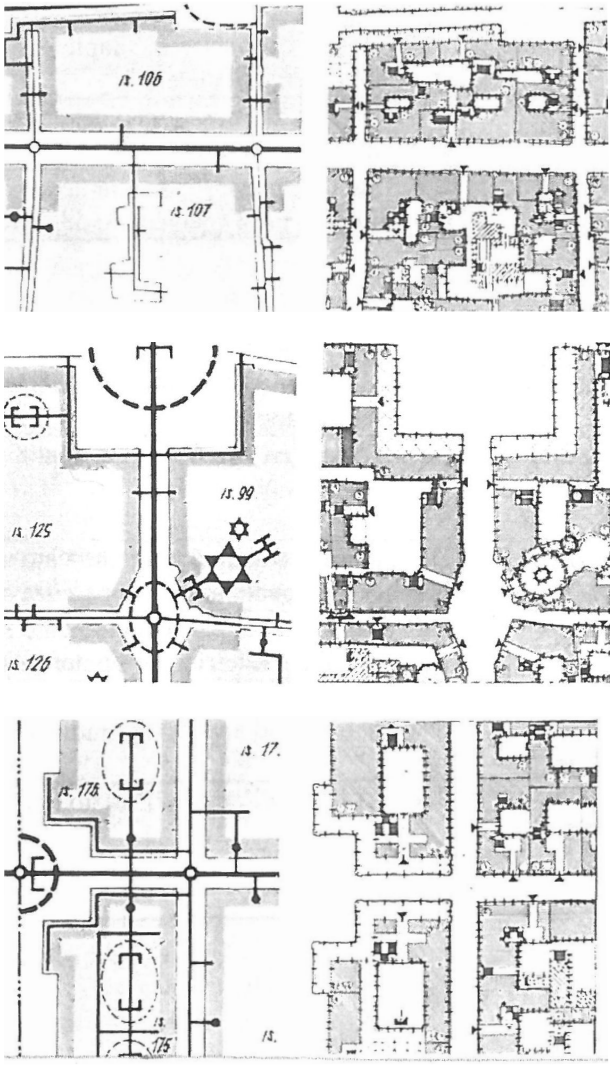

Fig. 4. Conventions and symbols of the maps illustrating the urban and architectural connections in the environmental complexes characteristic of Baroque Turin.

in the urbanistic aim proposed, having no scruples about referring further surveys with more precise goals to future users" [Cavallari Murat 1968b, p. 115].
With these theoretical premises, a campaign of research regarding different disciplinary fields (history, urban planning, survey) was conducted, which led to the construction of the urban reality investigated with a conventional graphic language constructed on iconographic and symbolic elements and which was then accepted as a method of reading and interpretation of urban realities of other historic centers. The so-called "conjectural philological survey" had, as already mentioned, the purpose of recreating, with a series of maps drawn up on a scale of 1:1000, an urban reality at a precise historical moment taken as a hypothesis of its greater stylistic and formal completeness. This experience, which lasted about four years, was the first indispensable moment of theoretical research, an essential basis on which it was possible to construct subsequent experiences of applied research, with different operational goals related to a conception of the project as an interrelated process between cognitive and decision-making moments. The whole of the graphic conventions elaborated were structured in a *corpus* in accordance with the UNI 7310 standard, *Convenzioni e simboli del rilievo urbanistico congetturale di rioni storici* (figs. 1-5).
It should be noted that the survey campaign was not originally based on operations of metric survey of a specific instrumental accuracy. The ground plan of the individual building cells making up the urban fabric was constructed, based on the topographical map of the Municipality of Turin compared with that of the Turin Land Registry of 1823. The survey on an urban scale was limited to the description of the public portion of all the building cells: from this point of view, the representation of the spaces for free circulation of public, private and service buildings was differentiated. In this way, a building cell was deconstructed into two parts: the spaces intended for circulation and for the performance of activities relating to the sphere of public life, and the spaces intended for private activities, the latter being filled in with a grid pattern. It should also be noted that over time, in the various experiences of studying the urban form of other Italian and European historic centers, the *corpus* of the graphic language adopted assumed the role of a method of reading/interpreting the various activities investigated. But in line with the concept that "a drawing that intends to be a critical schematization must be constantly renewed, born from a terrain fertilized by a tradition but at the same time a revival and surpassing of that graphic tradition" [Cav-

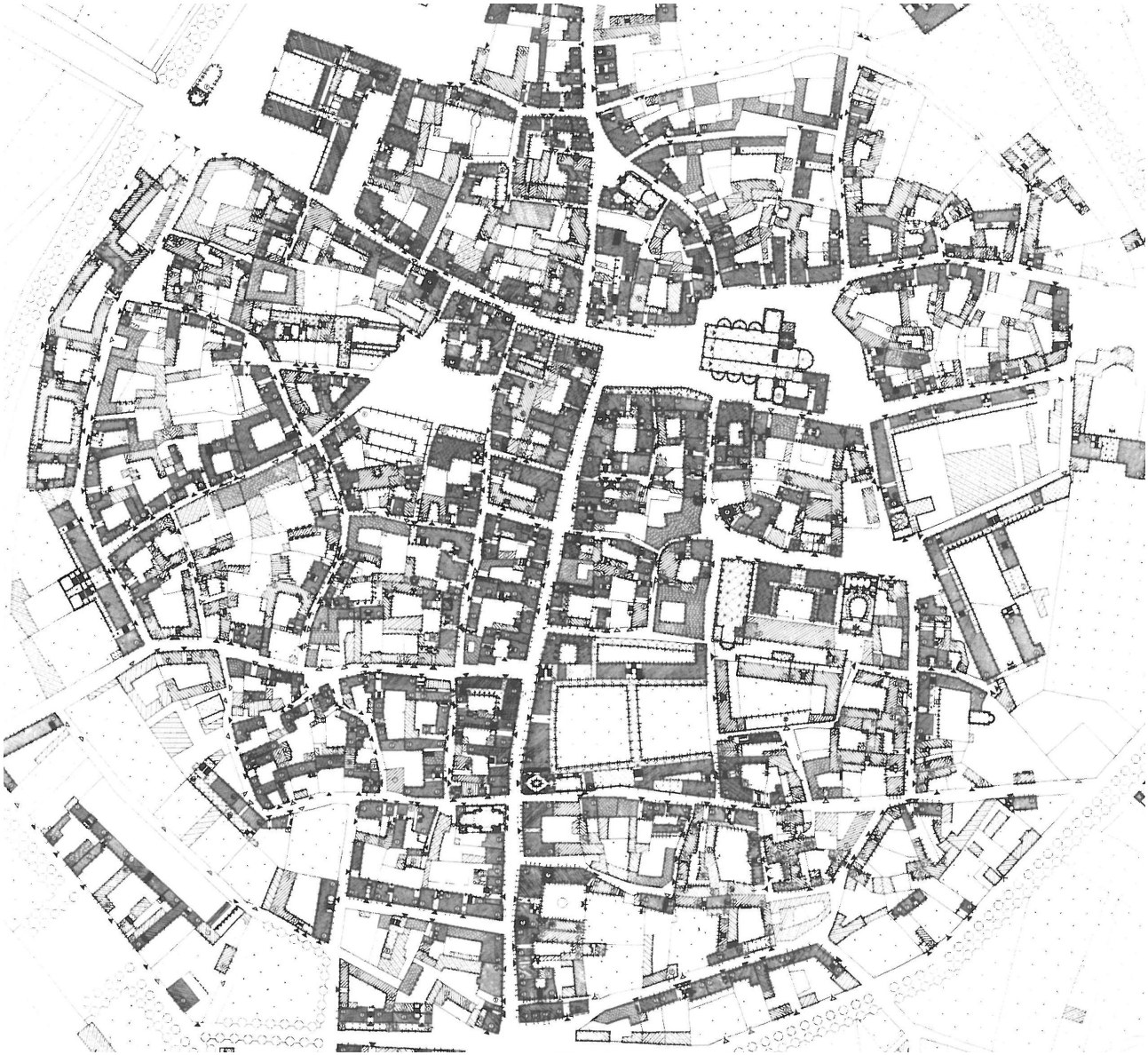

Fig. 5. Map of the city of Alba at the beginning of the 20th century drawn up on the basis of the UNI 7310 standard with the necessary variations developed according to the particular morphology of the urban fabric examined, with densely built-up areas along street fronts, but with a more porous structure, of rural derivation, in the suburban blocks.

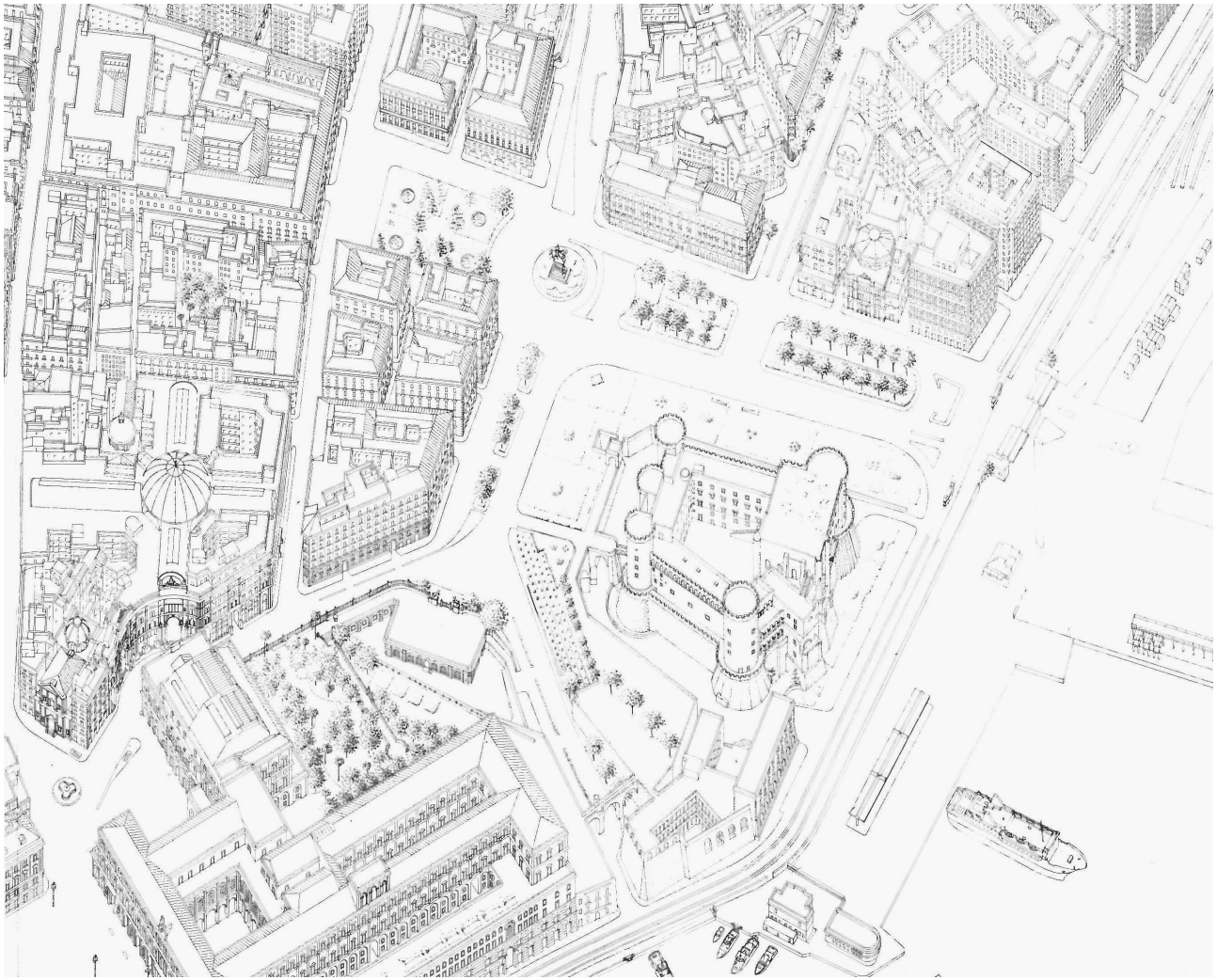

Fig. 6. Excerpt from the axonometric representation of the historic centre of Naples, from Baculo Giusti 1996. The representation of the architecture of the street fronts has been elaborated with special graphic conventions regarding the presence of decorative elements and building components.

allari Murat 1968c, p. 97], the body of conventions has been expanded and increased in relation to the formal consistencies of the individual urban realities investigated [Coppo 2010]. I would like to mention that an analogous, but different schematization of graphic conventions was elaborated in the 1990s by the research group coordinated by Adriana Baculo for the description of the formal structure of the street fronts in "*Napoli al 4000*," cornerstone and essential

cultural reference for all the three-dimensional models that have later been realized (fig. 6).
"The drafting of the abacus of signs derived from the categorical imperative dictated by the need to translate architecture into graphic signs, passing from the real life scale of 1:1 to the 1:1000 scale of the drawing, i.e. operating a reduction […], which in analytical-graphic terms allowed drawing each and every building with a few paradigmatic marks playing an explicit symbolic role capable of referring to a more complex reality. In order to complete a drawing of the city, it was necessary to oblige oneself to make a selection of the suggestions that the urban reality proposed and that the symbolic-graphic program demanded to neglect" [Baculo Giusti 1996, p. 10].

The historicized city

The image of the contemporary metropolitan city can be considered as the product of various operations of planning, construction and restructuring conducted over several centuries, very difficult to "block" in a specific historical moment, apart from cases of urban aggregates built from an urban plan and realized in the context of a society enjoying a happy socio-economic-cultural situation within formal unifying parameters, unchanged over time and still today recognizable despite an unavoidable level of obsolescence. The problem of the recognizability of the image of the contemporary city therefore acquires importance because today's cultural attention is strongly focused on issues of urban restoration and sustainability in terms of functional energy of the historical urban fabrics, with the consequent need to draw up regulations aimed at a form of protection that cannot be limited to bringing pseudo-ideal situations to a standstill, but must be oriented towards solutions consistent with the characterization of the individual urban fabrics. Proceeding in the study of the urban form of the contemporary city therefore implies the identification of individual fragments present each with its own historical, morphological and formal characterization, retracing the process of design and implementation in individual historical moments in which different cultures and motivations have left their mark on spaces and environments of life.
Another experience of research dating back to the 1990s, in Turin, is linked to the drafting of a series of thematic maps functional to the drawing up of the PRG, conducted by research groups of the Politecnico di Torino in collaboration with the design group led by architects Gregotti and Cagnardi [Cagnardi 1994]. This experience of applied research could only have been born from the previous pure research of the 1960s: in fact, in our field, we can speak of applied research only if we have previously operated in a line of research that imposes the problems to be addressed at the methodological level [Coppo 1994].
In this perspective, in fact, it is necessary to consider the results of the individual experiences proposed not as models that can be exported to other historical and territorial realities, but as terms of reference on which to construct, case by case, specific operational methods and choices.
In the case of Turin, the construction of a map relating to the formal structuring of the contemporary city has been studied in order to highlight fragments of urban fabrics in relation to the single process of historical generation so as to be able to set up a normative discipline functional to the protection of the single building cells within the relative historical and environmental context. For the present purposes, a historical environmental context can be defined as a set of urban spaces and reciprocally related buildings that together make up an environmental image characterized by stylistic, structural and historical components that are still evident and recognizable. In most of Turin's historical-environmental contexts, including the so-called historic center, these spaces now appear to be linked to each other and to the overall image of the "consolidated city," since each of them was intentionally studied and created in relation to the design and stylistic and formal characteristics, as well as to the functional, economic and political motivations of the individual design/construction period. These areas have also, of course, undergone subsequent interventions, renovations and renovations that may have partly changed the characteristics of the original plan. In addition, some of these interventions, also present in the historic city, are partially incomplete in comparison to the original project, but still testify to the character of process and continuous evolution present in most of our cities. Within each event, however, individual ideal moments can be identified which are always, and in any case, interrelated:
- phase of conception and planning of the intervention of urban expansion or restructuring from which the environmental context originated;
- phase of modification of the urbanistic project under construction;
- phase of realization of the urbanistic plan;

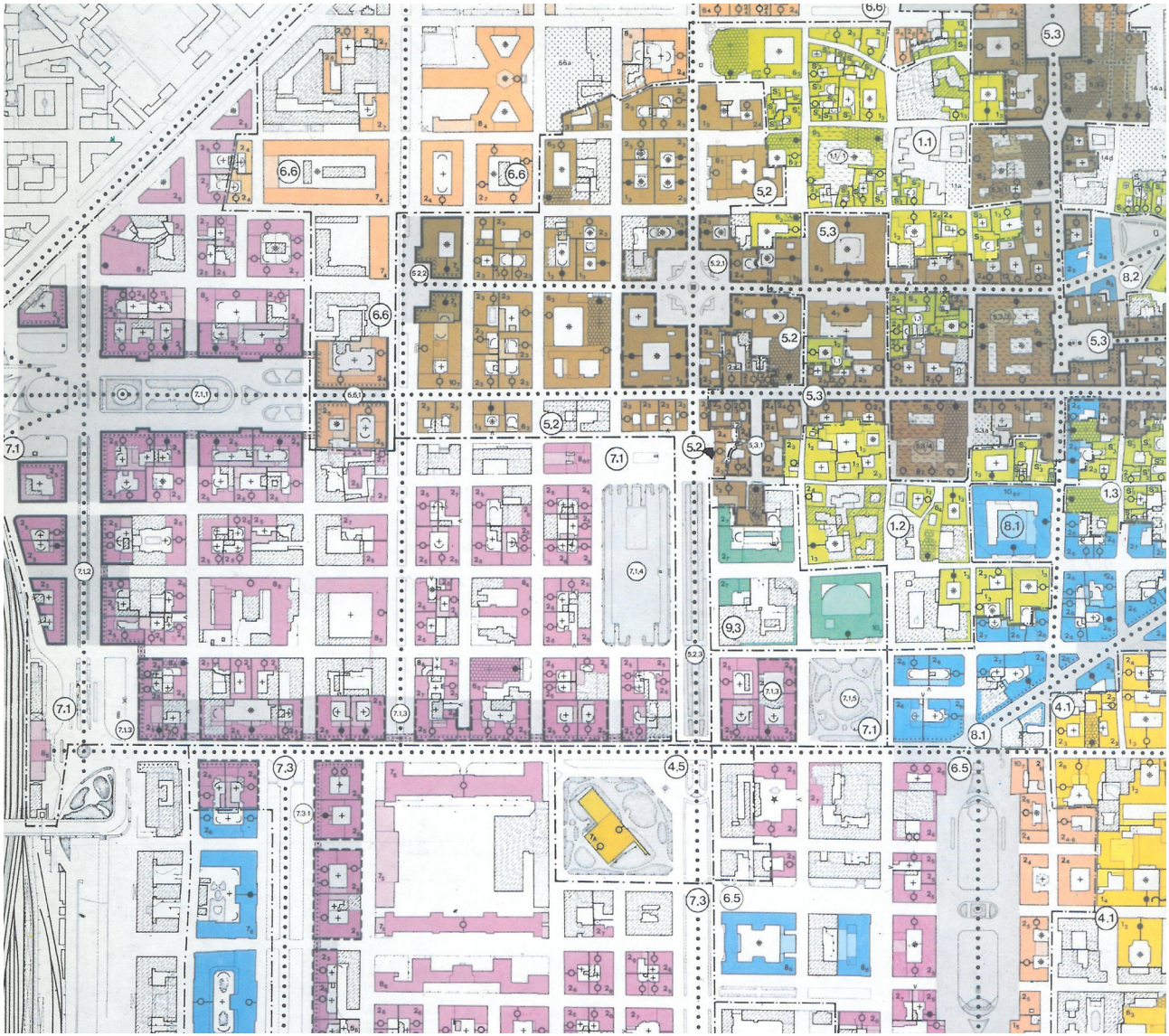

Fig. 7. Excerpt from the map drawn up by DISET for the Municipality of Turin, for the purpose of drawing up the 1994 General Regulatory Plan. The urban fabric of cultural and environmental interest is highlighted by the areas filled in with colors or patterns representing the period of the expansion or transformation plan; the black borders identify the fronts of streets or squares of uniform architecture or realized according to specific regulations. Seen inside the buildings, there are spaces (hallways, stairs, courtyards…) of particular architectural value or used as connections in the morphological and formal structure of the blocks.

- phase of rehabilitation and modification of buildings and urban spaces up to the current physical consistency.
Within the areas of the individual environmental complexes identified a number of annotations were reported, including:
- Identifications referring to the volumetric conformation of the urban fabric highlighted with the color related to the aforementioned context;
- indications referring to the nature and the construction events of the individual building cells;
- indications referring to the presence of detailed plans;
- indications relating to the presence of the principal routes constituting links between public and private space;
- indications relating to the organization of courtyard and garden spaces;
- indications relating to elements characterizing public spaces and pathways: main axes of the urban form, covered porticoed walkways, façades overlooking public spaces of unitary architecture or that meet specific urbanistic regulations.
The maps showing the complexes thus identified were drawn up on a scale of 1:2000 on the basis of the representation of the building volumes within the boundaries of the individual lots (fig. 7). The modes of representation were studied in function of the immediate visual restitution of the different categories of complexity investigated, on an iconographic basis so as to be used as a support for the study of regulatory hypotheses.

On the subject of urban survey

The experiences presented, dating back to the last half century, were characterized by the invention of a graphic language constructed in relation to knowledge projects, strongly characterized but united by a homogeneous research methodology. Today the technical and technological

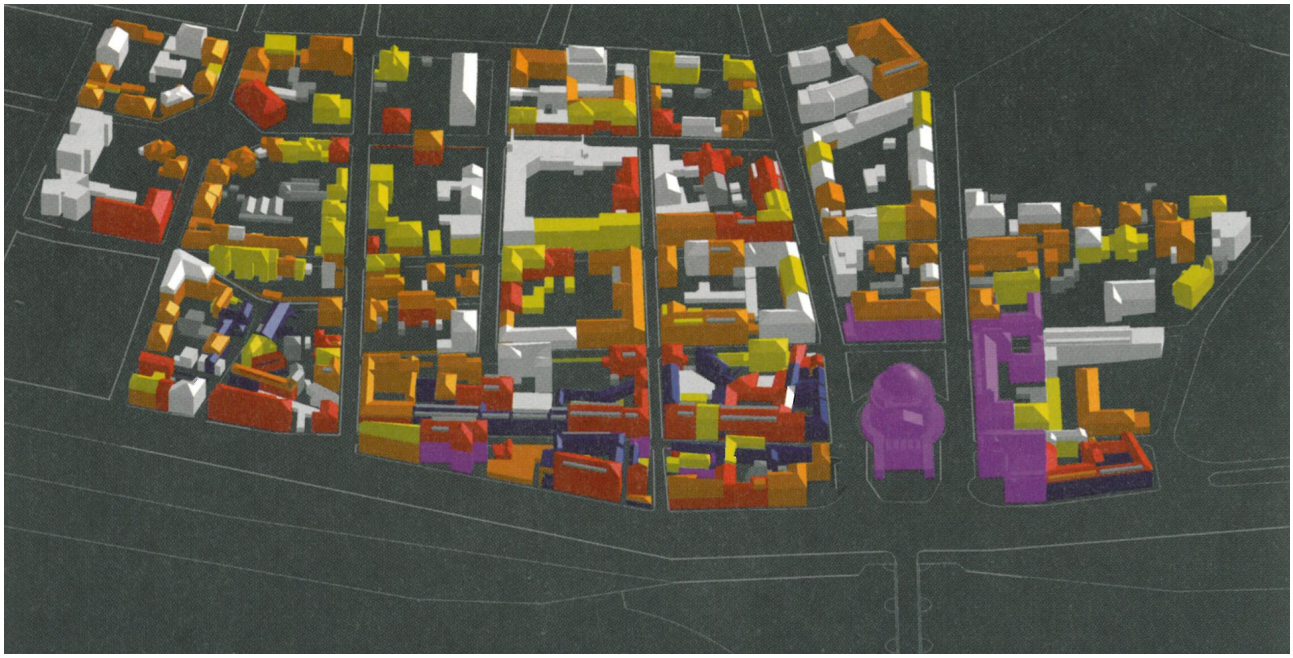

Fig. 8. Axonometric view of the 3D model of the current building consistency of the Borgo Po district in Turin, with identification of the individual periods of urban development in AA. VV. 1999.

Fig. 9. Excerpt from graphic documents related to the presence of the open-air market in the historic center of Cuneo. The data collected and represented are intended to permit the understanding of the spatial relationships between the components of the street market and fixed shops, the architectural conformation of the porticoed space and the identification of the pavements. In Coppo, Osello 2007.

landscape in the field of both survey and graphic language has substantially changed and the different digital techniques and technologies in use are constantly evolving. It seems to me substantially useless to retrace the different experiments carried out in specific studies on many urban areas based on the use of three-dimensional models and the construction of databases, linked to the methodologies of GIS systems. Such experiences not only translate into territorial information systems or urban information systems sets of data that are not only spatial, but that also informatically integrate data that are typologically dissimilar, becoming the main portal for sharing and exchanging information, also for decision-making purposes [Boido 2010]. As I have already mentioned, a fundamental experience in this context is represented by Adriana Baculo's *Napoli nel database*, dating back to the early 1990s, grafted onto the three-dimensional view of the city, but still constructed with the traditional techniques of manual drawing. Today, the three-dimensional models created with the use of "out-of-scale" computer tools are exquisitely iconographic in nature and the transition between the scale of architectural knowledge and the urbanistic scale often takes place only with a scalar reduction, without a rethinking or a definition of the contents of the different disciplinary fields. So, if the contents of our now ancient research can still be at least partially a subject of interest, what added values can the renewal of IT techniques provide? The first and main one is that of dimensional precision connected with the construction of a three-dimensional model of the volumetric consistency of the urban fabric in its current situation. On this basis, the representation of the transformations undergone over time, constructed backwards in accordance with historical research and archival documentation, requires only the need to adapt information of "qualitative" and not quantitative level to the basic three-dimensional model. The various experiments carried out in some thematic studies (*Il disegno dei portici a Torino*, *Il disegno di luoghi e mercati a Torino e in Piemonte*) have, on the whole, produced quite satisfactory results (figs. 8, 9).
More interesting, instead, would be an experiment aimed at translating into three-dimensional terms the hierarchies of values on which the UNI 7310 standard was constructed. The work of translating the geometric conformation of architectural spaces into three-dimensional models (covered walkways, hallways, staircases, vaulted systems of churches and public buildings…) would, however, not only require geometric schematizations of the buildings characterizing these spaces, but –I believe– also the invention of a special graphic language that could lead to a critical re-reading of the spatial conformation of the buildings being studied. And on the control of the informatic weight of this body of readings we could set up a different way of connecting the single bits of information.
Today, the construction of database systems, I believe, is no longer a problem: the difficulty, if anything, is that of choosing the type of information to be taken into consideration, since it relates to the system of knowledge linked to the regulatory system of reference [Novello Massai 2002].
The state of the art of many of the topics dealt with, especially in the field of three-dimensional modelling and construction of databases, has been extensively investigated in the proceedings of the 37th International Conference of Teachers of the Disciplines of Representation, *Drawing & City*, of 2015. In particular, with regard to the built city, the presentation by Pina Novello and Anna Marotta reiterates the need to "identify and build stratifications, transformations, changes with integrated, traditional and innovative methodologies. It also means recognizing the connections

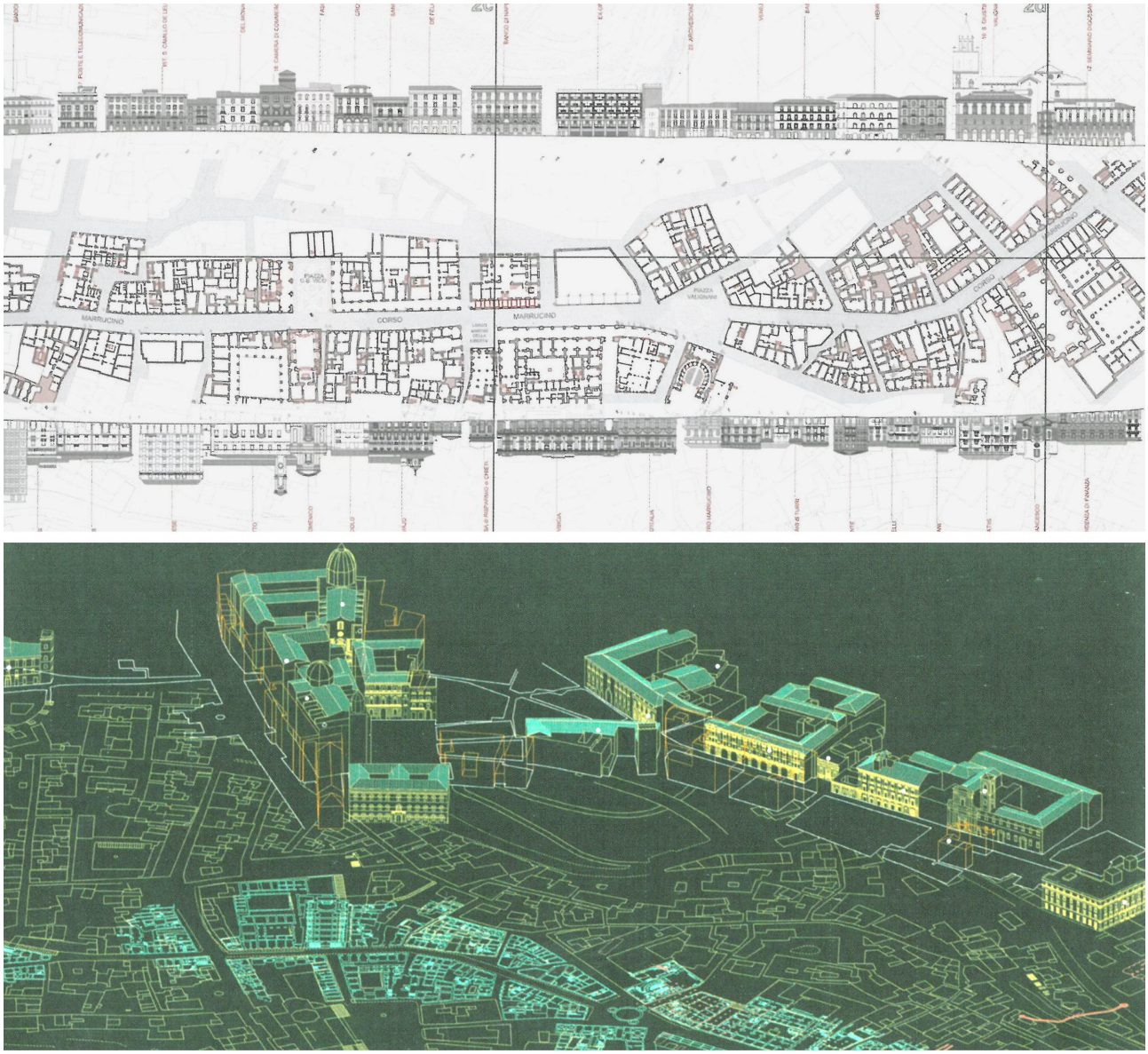

Fig. 10. Representation of a portion of the urban fabric of the city of Chieti, comprehensive of ground-level plans, street front elevations, axonometric model., in Bizzotto, Mezzetti, Sardo 2009.

characterizing the relationship between urban components –fabrics, artifacts, materials and their environmental context– to highlight old and new strategies aimed at the sustainability of feasible interventions, with attention also paid to natural components" [Novello, Marotta 2015, p. 1]. Once again, attention is focused on the definition of the contents that research in the field of urban form must have as a first hypothesis for the definition of the line of research; the great and varied means provided today by computer systems and the now generalized mastery of three-dimensional modeling systems for the construction of virtual realities and dynamic readings can only prefigure goals once unimaginable. The research of the last century had produced as a final result maps drawn up with manual representations, logical and necessary translation into graphic language conceived as a result of a methodology of investigation based on the identification of a set of values characterizing, in a hierarchical order, the urban form examined. We have repeated it several times. The consequent symbolic schematization was necessarily linked to the scale of representation and left room for the necessary in-depth investigation of the building fabric at the level of specific urban contexts (squares, streets, infrastructure systems) to other levels of knowledge related to other scales of representation (fig. 10).
In my opinion, however, the work of correlating at a theoretical level the innovations related to the use of the most innovative IT tools to the specific interdisciplinary contents of urban survey still presents ample room for study.
Research in this field requires dedication, practice, and – why not?– financial commitment.

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