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Delsante, Ioanni and Bertolino, Nadia

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### **Original Citation**

Delsante, Ioanni and Bertolino, Nadia (2014) Urban analysis techniques and role of morphology in post crisis urban design. In: ISUF 21st International Seminar on Urban Form: Our common future in Urban Morphology, 3rd - 6th July 20104, Porto, Portugal.

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# Urban analysis techniques and role of morphology in post crisis urban design: the case of Rubattino and Ortica districts in Milan

**Ioanni Delsante, Nadia Bertolino**

School of Art, Design and Architecture, University of Huddersfield  
School of Architecture, The University of Sheffield. Email: i.delsante@hud.ac.uk,  
n.bertolino@sheffield.ac.uk

**Abstract.** *Urban spaces and towns are facing different and contradictory dynamics, between “endless” expansion and “shrinking” trends. Post financial crisis urban renovation also deals with different practices, between real estate development and temporary use entailing reappropriation of urban areas. It is nowadays almost impossible, at least in Europe, to realize major town plans similar to those carried out in the past decades, but new forms of urban renovation, much more complex and fragmented, or temporary and low cost, are now spreading. They allow the participation of different actors (public / private partnerships), flexible timing and spatial organization, with the not secondary goal of reusing urban territories and buildings. The aim of renovation projects is more and more focused on social issues and challenges, for example in terms of quality of life and health, also by means of innovative housing programs, and sustainable layouts over the years: which will be the effects of this “programmatic” architecture on urban morphology? The completion of elaborate programmes requires deep and integrated urban analysis, based on a “reading of the town” through multiple and complementary methodologies (i.e. considering the town as combination of layers, the town seen as an archipelago or a “town within the town”). Urban morphology plays an important role in defining urban strategies, especially within fragmented or superimposed layouts. Rubattino and Ortica districts in Milan represent a meaningful case study for research and design: it could be described as a multi-layered and multi-composed scenario, considering its various parts and their “complementary”, “separated” and even “contradictory” status, as opposed to a homogeneous and uniform one.*

**Key Words:** *post crisis urban design, programmatic architecture, town as combination of layers, town as ‘archipelago’, Rubattino and Ortica districts in Milan*

## Contemporary situation of urban settlements

Towns and urban territories have to deal simultaneously with contradictory dynamics: on the one hand “expansion”, that is mainly linked to urbanization trends at a global level (Bugatti and Shiling, 2011), and characterizes the *megapolis* of developing countries (i.e. Asia, South America), or the sub-urbs of urban territories (Garcia Vázquez, 2011).

The meaning of “town” (Rossi, 1982) itself is changing (Cacciari, 2003) as the existing habits, rules and procedures contributed to create an uncontrolled urban effect and to the “eradication” of planning activities. The results are evident in terms of urban “sprawl” (Ingersoll, 2006) that could represent also a loss of meaning for human settlement. “Greenfields” are economically attractive for the real estate industry, so that urban settlements too often expand with no relationship with landscape and environmental sustainability.

On the other hand, urban degrowth and town shrinking are already occurring, mainly due to postindustrialization and post financial crisis effects that are affecting specific territories (i.e. Detroit in Usa). Sometimes these events create large urban “vacancies” involving social, economical and political problems, and even the loss of “urbanity”. The focus should be shifted also on the reuse of existing buildings and “brownfields”: innovative uses and strategies should be defined in accordance with more complex situations including soil pollution, existing and underused architectures, lack of density and functions. Urban design should find new tools and

methodologies to deal with these trends in a different way: it is evident that urban renovation based on large and ambitious town plans (i.e. Milan “Bicocca” plan, by V. Gregotti) are no more effective and sustainable from many points of view.

### **Architecture, social challenges and the role of programs**

Even if the effects of financial crisis are deeply affecting society, the causes that generated it still have to be solved (Rossi G., 2011).

Social needs are strongly and increasingly emerging - even if not like in the past - and they involve larger parts of the population.

Architecture and urban design are not autonomous: new or renewed social needs in the post crisis society concern housing (i.e. lack of or too expensive), but also working spaces, facilities, infrastructures, public spaces and all functions that affect urban quality and quality of life. Quality evaluations take over quantity ones: the failure of urban planning leaves the strong need for “urban” futures (Bertolino, 2013).

Architecture should also face the changing meaning of “community” (Moroni and Brunetta, 2011): different kind of “contractual communities” are possible (i.e. Usa, North Europe) and they reveal the potentialities of unexpressed needs in terms of shared spaces, activities, values. Which could be the effects of a larger diffusion of these kind of experiences on urban development?

The meaning of “housing” itself, between “private” and “non private” spaces (Riley, 1999), is rapidly changing accordingly to new life styles and to new enlarged concepts of “family”. The modernist approach to men’s needs and life organization is definitely over.

Architectural and urban design should actively act within this innovative framework, for example by dealing with flexible and multi functional layouts and realizing innovative social “programmes” (i.e. via Cenni Social Housing in Milan).

More flexible configurations can include also innovative and diversified housing, (i.e. temporary or co-housing) (Delsante, 2011), work spaces (i.e. coworking), creative , high-tech, or other forms of soft production spaces (i.e. start-ups, incubators, etc), and also other functions (Delsante, 2012). Functional mix and social diversity are some of the key words tracked in these experiences (Fernandez Per, Mozas and Arpa, 2011).

As a matter of fact, the architectural “program” (social, functional) becomes more and more important: a well defined program could better fit fast changing scenarios and social needs as well as the reuse of existing and underused buildings.

“What pressures - specific of the twentieth century -. does the combination of programs impose on architectural form?” (Holl, 2011); in other words, if post crisis architecture becomes “programmatic”, which are the effects on urban design and morphology?

### **Innovative tools and procedures to regenerate urban settlements**

Many techniques and procedures could better meet the actual conditions of urban territories in the post crisis framework.

Updated or innovative public private partnerships (PPP) can better fit a more complex urban organization with multiple actors and wider needs. At district level, “private” driven requalification initiatives, even small scale (single or multi owner residential buildings), could become part of larger initiatives including public spaces and infrastructures (i.e. smart town projects).

Forms of “contractual communities” could also represent innovative ways to approach urban renovation: in some cases, groups of tenants organizing themselves to develop a refurbishment project of an existing building (i.e. Numerozero in Turin). Auto construction and participated

design processes represent the most meaningful examples of these experiences, whose effects should be deeply evaluated.

Other approaches support the “temporary” use or reuse of existing spaces and/or buildings (Bishop and Williams, 2012). Flexible, low-cost, light architectures and installations often reflect new forms of social organization (i.e. Temporiuso in Milan). These kind of transformations are usually connected with innovative “participation” processes, promoted by or agreed with public authorities. The results of these experiences are not only significant in terms of use of public spaces, and of transformation of unused spaces or land (i.e. taking care of “urban agriculture”), but also of reuse of underused or dismissed buildings with no chance to be transformed, as a consequence of the economic downturn and lack of private investors (i.e. Macao and the *Torre Galfa* in Milan).

All these different kinds of urban habits call for social sustainability and realization of innovative and flexible programs meeting the complexity of actual urban conditions. Which are the effects of complex, multiple and even temporary forms of renovation on urban design and morphology?

Needs are new and diversified, and the tools do not seem completely adequate: the “urban dilemma” is still not just economical, technical or even social but it is also a “*design*” issue.

### **Rubattino and Ortica districts in Milan**

The districts of Rubattino and Ortica represent a meaningful case study to show the effect of post crisis design on urban morphology. They were originally constituted by two different historical settlements outside the “town” of Milan, along two important communication routes.

These historical centres are nowadays still recognizable but they were merged by urbanization process mainly after World War II. The history of both districts is strictly related to the industrialization process that started in the beginning of the XX century. Ortica area became a factory and railway neighbourhood with poor life conditions, that led to the development of social housing, whereas Rubattino was historically linked to big car factories such as Maserati and OM). Huge industrial yards are still visible on part of the original places, as a memory of that era.

The whole urban area of Rubattino and Ortica is historically (from the middle of XIX century) surrounded by infrastructures and strongly separated from the “planned” city (town plan by Beruto, 1884).



**Figure 1. Aerial view of Ortica and Rubattino districts.**

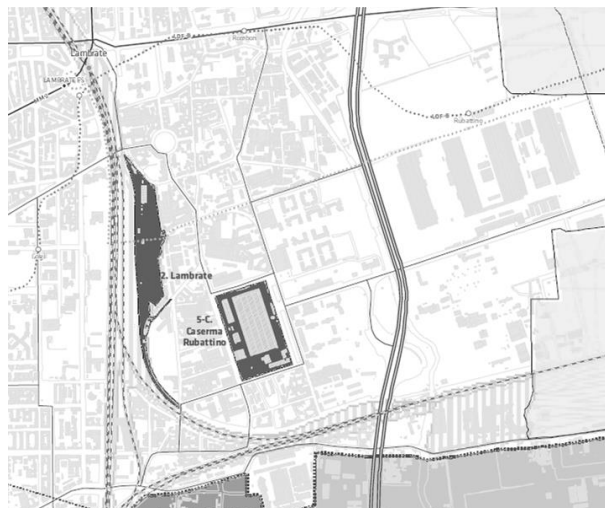
The west and south facing sides of the area are defined by the strong edge represented by the railway (the urban ring and the Milano-Venezia line), with high concrete walls showing strong differences in height: along the entire south and west perimeter just two small tunnels link the site to the town. Large inaccessible and unused spaces under the elevated highway (eastern ring

road) depict - as a matter of fact - the end of this urban district on the eastern side. Except for the huge industrial factories, large greenfields and agricultural areas are still present just outside this eastern edge: unfortunately, real estate development assisted by law procedures still continues to build new and meaningless “architectures” instead of recuperating the large amount of dismissed areas. This is a meaningful example of contradictory trends in contemporary urban settlements, between “endless” expansion and the complexity of reuse and reappropriation of urban vacancies.

Inside Rubattino and Ortica district different parts can be recognized, which are characterized by functional and morphological specific features: historical settlements with their monuments, social-housing blocks, big industrial sites, large old barracks, blocks of small factories, residential areas from post war expansion, recent and high density post industrial housing complexes recently recuperated for creative and cultural activities.



**Figure 2. Urban fabrics with preservation and renewal areas.**



**Figure 3. “Transformation Areas” (in dark grey) according to the new PGT (Territorial Administration Plan).**

The attempts to carry out an urban renewal in the middle of the ‘90s through large real estate plans suddenly stopped, and were partially unsuccessful, since some of the residential blocks

still need to be completed due to real estate crisis. Even if the reuse of outer dismissed industrial sites is still replaced by more convenient developments on close greenfields, some innovative and also temporary reuse of old manufacturing yards and buildings show a successful pathway to urban “regeneration”. Different buildings have been reused and rearranged for creative activities (i.e. fashion ateliers, designers’ studios, creative productions, etc): in addition to this, there is an extended use of underused or dismissed industrial sites during Milan Design Week (via Ventura district).

So, what to do with large underused areas and old barracks? Milan municipality recently approved a new Territorial Administration Plan (PGT, 2012) that supports new planning strategies, accordingly to a general vision of a “shrinking” town that is reducing its population. According to the new plan, within the above selected district we can distinguish two main “Transformation Areas”: the first deals with the site of the disused barracks of Rubattino, whereas the second one runs along some unused railway lines close to Lambrate station.

A truly “programmatic” architecture is needed to better meet the needs and the social transformation of the whole district: urban morphology should play an important role in defining strategies able to face the complexity and multiplicity of the urban structure. There are no actors (public or private) with the financial capacity of transforming the whole complex of dismissed sites, but there is the chance to transform them on the basis of a progressive, sprawled, multiple actor urban regeneration process.

### **Techniques for complementary urban analysis**

Taking into consideration the complex urban framework and the lack of homogeneity in the urban fabrics, the aim of the research on Rubattino and Ortica districts is to deal with urban analysis in accordance with different approaches, showing their complementarities and effects on design strategies.

Post industrial towns are characterized by “differences” more than by homogeneity and the town is intended as a sprawled and open structure that cannot be reduced to a homogeneous system: “Appropriate techniques have to be found for identifying the character of these disparate places, defining it and developing its specific features, either by adding the missing functions or by perfecting the existing ones” (Ungers and Vieths, 1997).

There is still the chance to identify specific and recognizable features, also in a morphological sense, as already revealed by some urban studies years ago (Boeri, Lanzani and Marini, 1993).

Continuity and “separation” are two complementary issues of urban structure: they “are not the consequence of each other, but they are two simultaneous phenomena meant to reinforce each other” (Aureli, 2011).

The whole and its parts (Ungers and Vieths, 1997) should be recognized (i.e. “the town within the town”) and the post crisis urban territories identified as an “archipelago”: “the idea of separated parts links the possibility of an absolute architecture to the idea of the archipelago as a form for the city. The concept of the archipelago describes a condition where parts are separated yet united by the common ground of their juxtaposition” (Aureli, 2011).

Moreover, the superimposition of different urban elements (in time or in space) should also be read and interpreted (i.e. “the town as a combination of layers”). Differences and contradictions emerge and cannot be reduced.

Post crisis urban regeneration is characterized by morphological multiplicity and variety, with complementarities, differences, separation more than homogeneity and the uniformity of the “sea of urbanization”.

“Conflicts, fragments, unresolved contradictions and oppositions are, however, the original criteria of the “town as a combination of layers”. The various structures are superimposed, like the layers of a historical city [...] the variety of forms and spaces is intentional, the result of a clear and strictly defined process. This process takes into account the topographical and

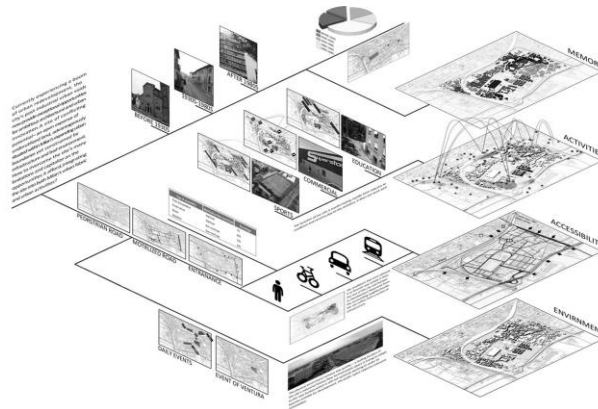
historical factors, the techniques as well as the social requirements and formal concepts. Nothing is decided in advance, decisions are taken on a case by case basis” (Ungers and Vieths, 1997).

As a matter of fact, two approaches appear to be more appropriate to describe the features and morphology of Rubattino and Ortica districts: one is based on the idea of “archipelago” that describes the city as a unity of different and independent, though complementary, parts. It deals with typological and morphological features, more than with mere functional ones.

The other one is based on the idea of the town as a “combination of layers”, showing the interference of different functions and “systems” (not just historically), and of contradictions and differences, also due to superimposition. The analysis of spaces through these different methodologies represents the chance for a comparative study.

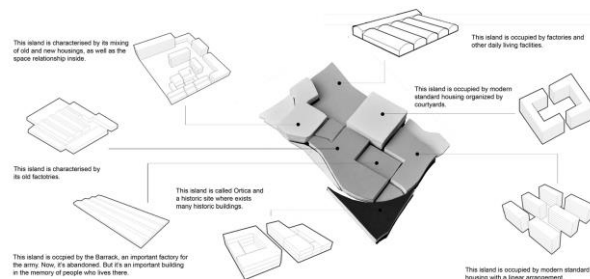
The results of urban analysis, developed also within the course of Architectural Composition 3 held at the University of Pavia (Academic Year 2013-14 – by Ioanni Delsante; side professors: You Yinan and Nadia Bertolino) show the effectiveness of the selected methodologies.

Reading the city in layers led to a better understanding of the superimposition of historical developments, physical structures (i.e. rail systems), mix of functions and diversified spaces not just per dimension but also per role, use and quality.



**Figure 4. Urban analysis by “layers”.**

Reading the city in parts showed morphological “differences” together with functional and social “clustering” processes. “Continuity” and “separation” are two complementary faces also defined by the buildings themselves.



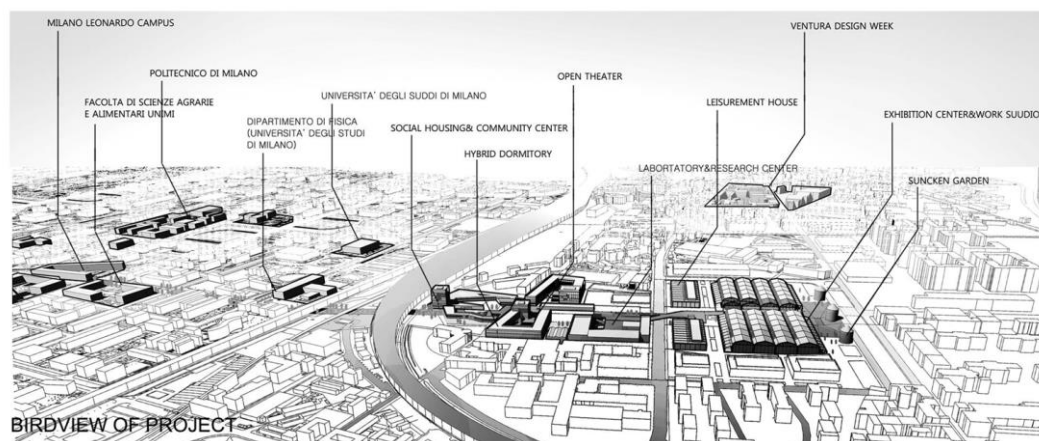
**Figure 5. Urban analysis through “islands” and “archipelago”.**

Urban analysis is the basis for the consecutive design activity: interpreting the urban complexity, also from a morphological point of view, can lead to define strategies that are more adaptable to fast changing scenarios.

Some design experimentation could better show the results of this process, but simply as an attempt and as a consequence of the interpretation of urban structure.

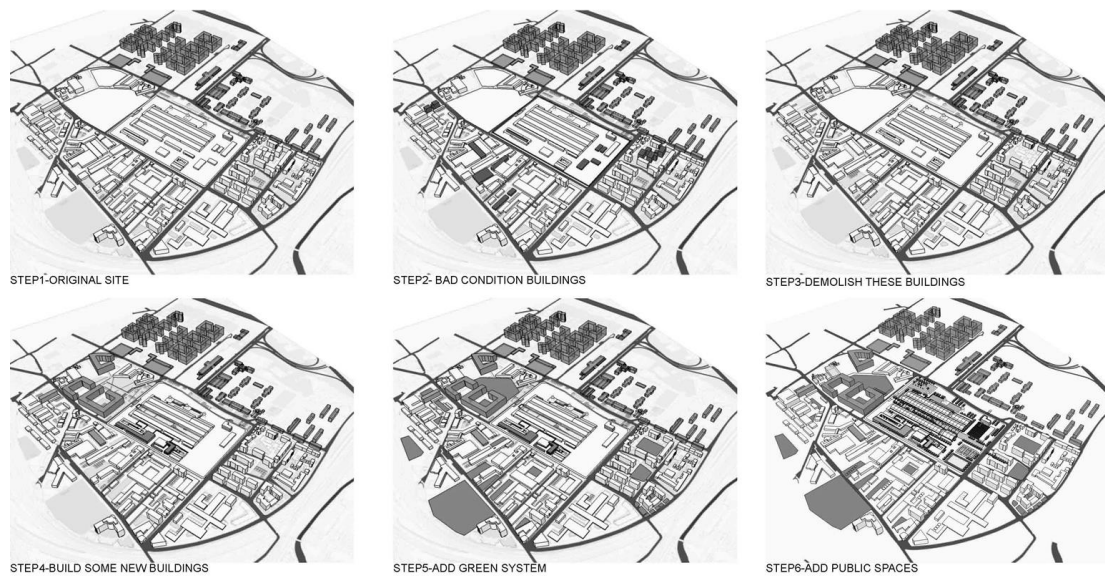
Some urban strategies clearly emerge and can be briefly described as follows:

- i) deal with the urban scale and dimension, and not with pre assigned perimeters or enclosed spaces. Relationships and enclosures are two complementary features, depending on specific site conditions. Urban morphology is one the key factors in defining the dimension and the “edges” of the project;
- ii) define a clear architectural “programme” with also different or progressive timing, including social, economical and functional goals;
- iii) take care of multiple actors or public /private initiative, with fragmented, complex or even enlarged perimeters in comparison with the fixed ones stated by planning regulations or “transformation areas”. Urban design supports flexible, progressive, inclusive strategies at urban level;
- iv) define a strategy in terms of preservation and transformation of existing buildings, with short and long term planning, also depending on economical conditions. Social needs have to be translated into a morphological strategy.

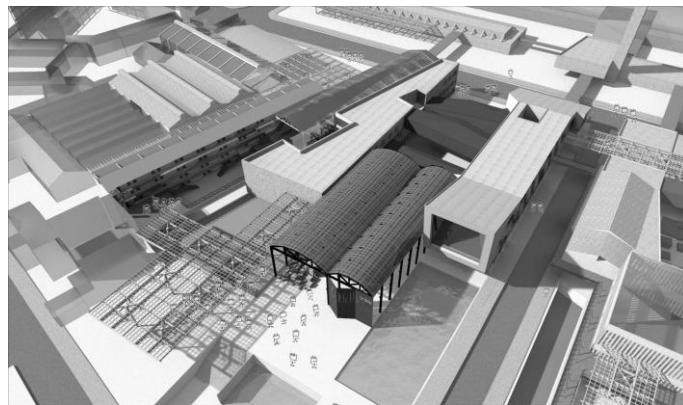


**Figure 6. The project scale is urban, involving public and private actors in accordance with the specific program and goals.**

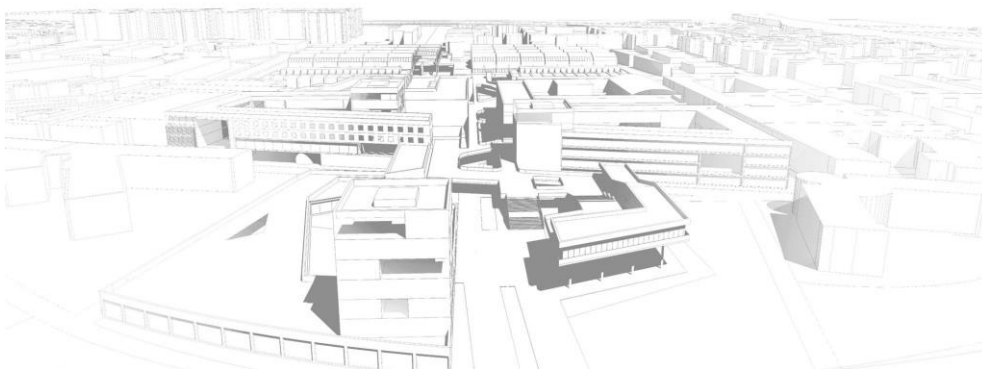




**Figure 7. Progressive design including existing buildings and public spaces.**



**Figure 8. View of one of the experimental projects: new urban shapes defined by reuse and addition of functions in existing urban fabrics.**



**Figure 9. The superimposition of morphological shapes on the existing framework.**

## Conclusion

Taking into consideration the post financial crisis framework and the conditions of urban settlements and architecture, urban analysis in Rubattino and Ortica areas should deal with selected methodologies to better meet and describe urban “complexity”.

Societal challenges and economical trends shift the focus of the project on the “program” that should be sustainable from many points of view, and not just technically.

Urban morphology plays an important role in identifying features, continuities and separations, also through differences and contradictions that fragmented or progressive programmes can realize in multiple steps and long term periods.

The results of the research developed on Rubattino and Ortica districts in Milan show the effectiveness and the complementarities of multiple urban analysis representing a meaningful case study in terms of coherence between morphological strategy and urban renewal techniques and tools.

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