Arch. & Comport. / Arch. Behav., Vol. 7, no. 4, p. 367-374 (1991)

The Urban Project: from Fragmentation to Recomposition

Elio Piroddi and Paolo Colarossi
La Sapienza University
Via Chiusi 14
I - 00139 Rome
Italy

1. Introduction: Towards a Recomposition of the City

The fragmentation of the modern city, its functions and its spaces is partly the result of "natural", or rather, physiological causes related to the needs and conditions of growth, and partly that of a self-styled all-in concept, interpretation and proposal of a comprehensive urban model: the functional model, with its methodological and technical knack of classifying functions and specializing spaces.

At the level of the urban territory the physiological fragmentation of the city is almost certainly due largely to the explosive phase of urban expansion. But this phase now seems to have petered out. The European city appears to be heading towards, or even to have already entered an implosive phase (Piroddi, 1990).

This urban explosion, or in plainer terms, this gradual dilation, has resulted in the city losing the texture, the density, the compactness of its historical tissues. Its implosion should restore this characteristic to the city through operations to transplant new tissue possessing these same qualities onto areas by-passed by the great tide of residential expansion, like craters after a blitzkrieg: wastelands, run-down or deserted areas, empty urban spaces; operations capable of structurally transforming urban areas by introducing new poles, new city centres which have the morphological and spatial qualities of the old urban centres for which there is still a demand and which are still feasible today. It requires a structural redevelopment model that one might call *diffuse polycentrism.* Rome is a typical example: a city which was organized throughout its history on a polycentric basis, and which can now recover this polycentrism at the highest level of the modern territory by following and using its natural morphological features, which easily divide the city into a set of interconnecting parts, each with its own urban identity.

The problem is therefore not just the conceptual redesigning of the fragmented image of the city with which the functionalist model leaves us. It is also, and perhaps above all, a question of how this is to be achieved and what morphological and spatial qualities should be established. Basically what we have to decide is what type of city we want to produce, and in particular, which of two basic models: one we might call the *sectoral* (or fragmented) city and the other the *integrated* (or recomposed) city. The *sectoral city* is what emerges when specialized and sectoral operations are the rule, where the main components of urban structure are specialized and assembled essentially on the basis of accessibility, and occasionally mere contiguity.

The sectoral city is made up of large and medium-sized zones, interconnected by a road network which never becomes a "strada", i.e an urban site in its own right. Each zone is added to the next by simple juxtaposition and the road network serves as the

service passageway giving access to these zones; the roads are circulation channels bounded on either side by the perimeters of the different zones. Buildings, services, public and private facilities and even parks are all designed and built inside the zones and no projects go beyond these confines.

The main conditions required of the integrated city if it is to reproduce the "permanent" values of the historical city concern: *urban structure, functions, public space and context.* The urban structure of the integrated city is basically a tissue-like structure characterized by compactness, continuity, overall cohesion, close spatial relations between buildings and unbuilt public spaces, strong junctures, complexity and internal variation, which calls for street blocks and ordinary buildings to be fairly small, with the occasional exception standing out from the rest. The tissue-like structure is formed through the project by the unbuilt space: essentially a space the shape and area of which are determined by walls and natural elements.

The integration of functions concerns not only activities but also the uses to which the urban space is put; this involves the typological complexity of buildings and public spaces. Mixed functions, close spatial contiguity and superimposition are the general criteria that call for the coexistence of management and commercial activities, public services, facilities, housing quotas and also the reintegration of the complex road system as an urban space, the diversification and typological interconnection of squares and the use of parks for a wide variety of public interest functions.

Public space (roads, thoroughfares, squares, public gardens and parks) *is the element that gives order and structure to the tissue,* the element which, through the location and sequencing of different types of space, controls the coherence of the whole and the internal juncture of the tissue.

The context, in terms of the site (i.e the natural morphology of the land, the natural and historical elements present, the physical structures of the existing city) or of firmly established customs and traditions, *conditions and defines the identity of the structure,* the fact that it belongs in a given place, and its relations with the surrounding areas. The role of the context in shaping and defining development projects is important in two ways: firstly, it helps to firmly underscore the identity and indeed the cohesion of a specific urban "space", and secondly, it makes it possible to at least partially resolve the problem of "reproducing" that fundamental and valuable characteristic of the historical city, the temporal stratification of operations, through operations that are purely project-based, and therefore all conceptual. The historical stratification process of an urban area can partially be replaced by a specific design programme which preserves and enhances either the slightest historical traces present in the possible areas of intervention, or the morphological history of the site, the natural lie of the land and the "legible" orographic and hydrographic structure.

To conclude, as a hypothesis for further research, we shall attempt to draw up some general guidelines for consideration as new rules for the "Urban Project" to move on from the fragmentation to the recomposition of the city. These hypotheses that appear as so many essential conditions of the "integrated city" were at the origin of a series of experimental field projects carried out on a number of sites in the peri-urban areas of the city of Rome. The experiments provided further insight into theoretical and practical aspects of the four essential general hypotheses/requisites that we shall be considering.

2. Urban Structure: Back to the Idea of a Tissue

The continuity and proximity of elements which make up a city (roads, public squares, lots, buildings etc.), their close connection and their intrinsic complementarity identify the "tissue-like fabric".

In general, with the appropriate exceptions and adjustments to suit particular circumstances, the tissue-like growth process progressed into the first decades of this century. Then the tissue gradually became frayed and torn, and finally disintegrated. Rome, with its elementary images, is a fine example. The historical tissue appears muddled and compact, heavily dominated by the shape of the urban space. Around the historical core the tissue becomes dilated, although not always progressively so. We find coarse-grained fabric in the turn-of-the-century districts and tissue of a finer grain in later districts. Moreover, the dominant tone becomes less morphological and more typological, to the point where the fine grain of certain pre-modern districts (Centocelle, Città Giardino) is based not on greater complexity but, on the contrary, on the "pulverisation" of building typologies. In a more recent example (Tuscolano) one should almost speak of "pseudo-tissue" because density and compactness there are due almost entirely to the over-exploitation of the land and conceal a considerable impoverishment of the urban structure; even this example is specific to the urban tissue, however. Then, after a while, the expansion of the tissue is so rapid that it leads to fraying, followed by a sort of explosion. At this point one can no longer even speak of urban tissue. And if we examine life in these districts we notice that even the tissue of social relations is far poorer and simpler than in the historical neighbourhoods. The "technical" causes of this tearing of the tissue lie in: the growing need for outside spaces, either to satisfy residential standards (distances between buildings, open spaces, services), or to meet the ever-increasing demand for roads and parking spaces; typological simplification due to the use of heavy technologies; reckless zoning which eventually contributes to the disintegration of the urban structure.

In perspective these problems can be surmounted in the new integrated planning operations. Standards will have more scope for flexibility thanks to a different combination of functions (residential plus tertiary); private transport will naturally have to make way for public transport; heavy technologies are on the wane and the average size of buildings is getting smaller. But there are also cultural causes at the root of the problem.

Even if the impoverishment and flattening of the town cannot be attributed entirely to architects and town planners, we must nevertheless recognize their undeniable share of the responsibility. We believe that this lies precisely in their having deviated from the idea of the urban tissue, and that only by retrieving it will urban designers be able to offer a basic form on which to rebuild the urban complexity.

Recovery of the tissue-like fabric means re-thinking Urban Design in architecture and town planning schools as well as in research and professional practice. The work of Mumford and other historians has been insufficient to save the "culture of the city" and prevent modern urban planning, in its iconoclasm against the living conditions of the pre-modern city, from throwing the baby out with the bath water. Alexander's now famous appeal: "The city is not a tree" obtained much support at the conceptual level but was hardly followed up in practice and in schools. A large proportion of Urban Design subjects in architecture and town planning schools are still tackled with "lines" and "blocks" in keeping with this typological over-simplification of the urban form

and its consequent cancellation which are the rotten but common fruit of modern culture. Teachers first and foremost, like ourselves, often have difficulty changing certain thought processes. This could easily be put down to a degree of sclerosis if it were not for the considerable number of young people who brandish the same arms, showing to what extent these roots are firmly entrenched in our subconscious.

While it seems possible to eliminate some of these causes, recovering the urban tissue structure is a complex business. Intrinsically complex, since complexity is precisely what is aimed at; it runs counter to the prevailing modern tradition which is simplicity-orientated, or rather simplification-orientated.

3. The Question of Integrating Function and the Structure-Giving Role of Public Space

The question of the functional recomposition of the city can be reduced to one basic criterion: *the stratification of functions.*

This involves developing three themes in respect of the areas to be built. Firstly, the integrated city is made up of *mixed-use areas* with small and medium-sized tertiary activities, managerial, cultural and commercial activities taking precedence over housing.

Secondly, *buildings must be of the mixed type,* with functions superimposed on successive levels: tertiary-residential, commercial-residential, commercial-tertiary-residential, etc.

Finally, *single-function buildings* (particularly special-purpose buildings) should be spread over the urban structure to prevent the formation of functionally specialized zones.

The criterion of functional stratification must even be applied to parks as structural elements of the public space: from this point of view the park must be considered not merely as an enclosed area, different from and alien to the city, but as a place where numerous urban functions are integrated. If the tissue, with its complexity, its continuity and its junctures, is the historical form of the integrated city and the stratification of functions forms its "technical" basis, the role of public space is its chief structural factor. This means that *it is the public space project that determines the form and articulation of the urban structure. The shape of the structure is born of and represented through the layout of the public space, including functional spaces such as roads and parking facilities.* These must be designed and built as complex, interlocking, multipurpose or functionally stratified urban sites that are also formally qualified.

And since the urban space includes not only roads, avenues, public squares, belvederes and pedestrian precincts, but also parks and gardens, these must also be a part of the overall urban design and contribute to its structure.

4. Relations with the Context

Attention to the context is what determines the overall shape of the urban structure, which areas should be built on and which left unbuilt, to what extent unbuilt areas should be used and how they should be designed.

The resulting project themes are those of *building on the edge,* i.e. *"juncture"* with contiguous built areas; *the design and types of parks.*

The theme of the *urban boundary* stems from the increasing importance attributed to two situations: the "empty urban space" (an unbuilt area within the built-up city), and the "urban limit (an outward- or inward-looking boundary).

In both cases the choice of preserving unbuilt areas (because they contain natural, historical or archeological resources, because the need is felt to check the expansion of the city in a certain direction, or because the urban empty spaces and limits are simply a part of the history of the city's development and expansion) introduces the theme of the boundary i.e the area where city and unbuilt area meet.

The city boundary is a special urban site and should be treated as such. Special because it is where the city borders on other areas, areas containing panoramic, natural and historic resources, because it is a line of high visibility, a sort of showcase where the front line of the city becomes part of the landscape.

Along this strategic and tenuous line which both demarcates and unites the built and the unbuilt, spaces, paths, walks and access routes find their place; the main thoroughfares that shape the structure of the built-up area lead there; it is a scene of open-air activities and functions in the public interest.

The problem of linking up new project sites to the surrounding built areas brings us to the theme of *juncture.* One of the distinctive characteristics of the integrated city is, indeed, its continuity and therefore the absence (or at least the minimisation) of vague limits, of crude divisions into distinct, discrete parts, of wastelands and land which is not used to its full potential, of borders between the different parts meeting in an anonymous, random fashion: situations which generally exist around areas that have been suject for new development operations.

The theme of juncture thus represents one of the key aspects of the relation between development operations and context, and together with concern for the natural site and historical vestiges, determines the specific and individual nature of each operation.

But also, and above all, it is the basic criterion we adopt here as a rule of thumb for projects in the built urban environment, as a reference value to assess just how good the project is and probably to guarantee its success.

The general notion of urban juncture can be more clearly defined in a list of more explicit project criteria. Above all juncture means link-up with the road network and thoroughfares which intersect with or run through or along the edge of the existing built area. The continuation of existing routes within the project area determines the structure of the project area. Juncture also means indicating accesses to the new central area: the passage from the surrounding areas to the project area must be indicated by an "inside edge", along which intersections provide an opportunity to build salient public spaces or buildings. Juncture thus implies recognizing and making the most of each part of the city and the different things it has to offer, but respecting the continuity and cohesion of the overall urban structure. "Juncture" can also mean reorganizing and changing the layout of the existing boundary areas, particularly those bordering on parks. Finally, juncture also involves choices in respect of the types and sizes of buildings to be erected along the borderline between the new and existing parts, the options to be adopted (in terms of type, density and height of buildings) along the juncture line.

It is also possible to provide some general design principles on the subject of park *type and layout.* As a result of the consideration given to the uses and layout of

open spaces in new development projects, this subject has become just as important as the layout of the built areas.

The thesis upheld here, that the city's open spaces, its gardens and public parks, at least those of the park-garden and urban park kind, are one of the essential components of the urban structure, can be resumed on the conceptual level by reversing the terms of Laugier's metaphor: "the park is like the city".

Generally speaking therefore, the "golden rules" of the urban project can also be applied to open space design: a single unit, but articulated, complex and varied. As in the design of built areas, thoroughfares and facilities (park lanes and squares) also take on a structural role in parks. So even in park development considerable attention is paid to the construction of the space, above all through the use of "natural" elements like the lie of the land and the trees, but also of "artificial" elements such as small buildings and facilities and decorative elements. Functional superimposition or multi-purpose design also apply, of course, where functions are compatible or likely to enhance the park.

5. Research Hypothesis: Towards New Rules for Urban Recomposition

The idea of the integrated city, taken to mean the result of new operations transplanted onto the pre-existing fragmented tissue and capable of recomposing and reconstructing whole parts of the city, is present more or less explicitly in our experimental projects, which are the source of and lend weight to the implosion theory. Implosion implies filling in empty spaces, restructuring dilapidated or unused occupied spaces, increasing the density of half-empty spaces and above all, creating new cores. Where the modern-day city has expanded so far that it has fallen apart and lost its identity, an attempt to reconstitute it may be made through these implosive operations. This recomposition effort involves a search for a new tissue-like form, based on the rich tissues of history but capable nonetheless of meeting the requirements of the post-industrial city, rich in structural nuclei and formal relations and open to change and to various creative contributions.

A great many Urban Design tools are no longer appropriate for this type of operation. New rules are needed, the broad outlines of which we can begin to sketch. They should be simple, easy to apply, easy to communicate and as general as possible. For the sake of convenience we shall attempt to outline them in the form of a dichotomy, or an antimony. The first term of the antinomy is the positive pole towards which we should aim; the second is the negative pole which we should avoid. The latter also represents, though perhaps somewhat tenuously, the "old" rule inherited from the modern tradition.

5.1. Addition / Substraction

The tendency to erect, to build on unbuilt areas and to erase the traces of what went before may have us ignore non-renewable natural characteristics, historical traces and culture. This attitude should be replaced by a very simple rule: *any new operation should create an added value;* it should always incorporate traces of the previous layout. The lie of the land, the paths, the vegetation, the ruins, the pits, the buildings and everything else that makes up the morphology of the existing area should not be erased

but rather metabolized. We thus establish the premises of an initial stratification, and the project, although based on general models, takes on specific local characteristics.

5.2. *Complexity / Simplification*

Any operation should obtain a maximum degree of complexity from its component parts and create the largest possible number of structural hierarchies. This rule replaces a long-standing tendency towards hyperconcentration of volumes, hypersimplification of types and repetitiveness. The comparison drawn previously between different samples of urban tissue shows this constant regression from complexity to simplicity perfectly clearly. If we accept the implosion hypothesis and if the new operations must aim, wherever possible, towards recentralising peripheral or marginal areas, then the opposite course must be taken. This is a delicate matter because it concerns not only project designers but the processes too (operators, overall norms, economic constraints). But there is no doubt that project designers must be the first to rid themselves of the mental block that has gradually affected their fundamental culture after decades of schematisation.

5.3. *Continuity / Discontinuity*

All of us, in our capacity as project designers, have a strong tendency towards palingenesis, rebuilding, and effacing what used to be and rejecting it outright. This has often led us to regard our projects as operations to be effected in a vacuum, as bodies alien to the city, in the name of some abstract conceptual superiority and some figurative purported propensity for self-sufficiency. *Urban requalification should be based on quite the opposite attitude, on the patient search for elements of continuity,* by hooking up thoroughfares, redeveloping boundary areas, using green spaces as a structural network and not as a "buffer" between the old and the new, and finally, by enhancing juncture points.

5.4. *Finite / Non-finite*

Urban complexity cannot simply be the fruit of laboratory research. It springs from the aptitude of urban design to grow richer with time. The weak point of Urban Design, on the other hand, is its poor perception of the time dimension. This is partly due to the conceptual approach of project designers. The very requisite of adaptability with which many designers credit their own projects is actually intrinsic in the logic of the "finite", where the conditions are established in advance. The real problem lies in *accepting variability and progressive enrichment as intrinsic characteristics of the process* and consequently, of the project. Only through the gradual decanting of constraints and the progressive refinement of project inputs will the different pieces of the system find their rightful places in the proper way, and come to form a real overall system richer than that initially imagined by the project designer. The latter should therefore regard his project more as a set of rules, of constants and variables, than as a formally closed system. It is in these rules, in this attempt to be a form of super-system with respect to architectural projects in general, that Urban Design must find its quintessence, its "ubi consistam", the way to represent the language of the city.

5.5. Morphology / Typology

One of the most obvious symptoms of the weakness of modern Urban Design is its tendency to reduce the problem of urban form to one of typological research. New projects are based upon precise typological modules but few of them go beyond linear or particular frameworks representing only slightly more than the sum of their basic parts. The problem is not, however, in the modular project: even Mileto, the Exaimple of Barcelona and Manhattan are modular, but theirs is an urban development module, not a type of building repeated ad infinitum. In historical cities the urban form is influenced by the type of building but is never subordinate to it. The different types of building fit into a coherent whole and are metabolized by a more complex system which takes on a much higher degree of invariance. The core around which an urban project is developed has no importance. There is no reason not to choose an elementary matrix. What counts is to go beyond that matrix until it becomes a cell in the greater order, virtually indistinguishable from the others.. A city that is no more than a succession of different types of building separated from each other, as is the case in certain modern districts, is nothing but a sub-city. It is quite obvious to the man in the street that the meaning of any part of the city depends essentially on the quality of the public space. But architects have difficulty in putting this simple notion into practice given that they are so used to dismantling the urban system into its basic components but incapable of reassembling all the pieces into a coherent whole. There is obviously some methodological error in this procedure. *The starting point for urban composition and, more particularly for, urban recomposition should not be the elementary component but rather a clear idea of public space.*

5.6. Use / Image

Certain projects and operations, some of which show considerable architectural merit, give priority to the powerful image by proposing macrostructures, abnormally large objects that stand out from the context: a kind of urban "hypergraphics". I believe that this approach would be acceptable if the content of the operation were completely atypical of the city; the Grande Arche in Paris is a perfect example of the victory of image over content. In this case the effect of the image is so important that the inside of the building is reduced to a purely residual role, but in this particular instance this is a price we are willing to pay. The case of a piece of a city is different. Hyperconcentration, essential to the power of the image, necessarily diminishes the potential of the network of relations and outside spaces; in a sense it places it within an artificial structure which will be shut and "switched off" during certain hours of the day (see the famous macrostructure in the Cumbernauld Centre). Hyperdimension weakens what B. Secchi calls the "land project", the trees, the decorative elements, all these things that should form a link with the rest of the city. *The danger consists in sacrificing utility value to image value,* where the utility value resumes and represents all the users' requirements and the image value represents the purely intellectual requirements of the architect.

BIBLIOGRAPHY

PIRODDI, E. (1990), *Habiter la ville, re-qualification de sites urbains,* Thème, réglement, Europan 2.