Contemporary Metropolitan Conditions

New challenges for design education

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Abstract. This paper aims to address design education issues, with a focus on the way the contemporary metropolis is conceived. We understand the reality of the contemporary metropolis as an amalgam of specific issues that transcend local and regional contexts, converging into the categories of the so-called ‘global cities’. These new urban realities derive from territories originally controlled by other logics, and are now in new stages of post-industrial development. Thus, we notice the presence of large peripheral areas where existing industrial activities initially took place, which were later transformed and migrated, leaving behind urban fragments that are taken over by informal activities. Such sites are often crossed, when not ‘on-winged’, by transport infrastructure, increasingly essential to the growing intensity of metropolitan flows. Working with this new reality clearly means first and foremost to re-examine the tools and traditional methods of design and representation of the architect and urban planner.

Keywords. Design process; design education; contemporary metropolis.

Issues

This paper aims to address architectural education issues through design exercises that engage on new digital representation and design methods that enable a better understanding of how contemporary metropolises behave and can be transformed. As the offspring of multi-layered urban conditions, the contemporary metropolis is an amalgam of specific issues that hybridize local and regional logics in shared physical contexts. (Amin and Thrift, 2002)

By appropriating the term metropolis, this work intends to convey a much larger reality than the officially established metropolitan regions around relevant urban centers. For the sake of the argument, it was necessary to engage on the metropolis by blurring the traditional distinction between centre and suburb in a condition where these words have dissolved as they have slowly washed over and into each other. (Amin and Thrift, 2002) In this sense, it
was necessary to extend the standpoint of this work toward the metropolis to larger-scale logics, where the local and the regional continuously merge into each other. Following this concept, the presences of the abstraction of the regional, and the objectivity of the local are challenged. These realms are undergoing an intensive process of simultaneous existence never achieved before.

Set as the background of the investigative exercises described in this paper, the conceptual construct of the metropolitan conditions was derived from the initial argument that its new urban realities derive from territories originally controlled by logics that have been transformed by current post-industrial development. (Graham and Marvin, 2001) In this context, we notice the presence of large peripheral areas where strictly monofunctional activities initially took place – often industrial – which were later transformed and migrated, leaving behind undefined urban fragments that are taken over by informal activities. Such sites are often crossed, when not ‘on-winged’, by transport infrastructure, essential to calibrating the intensity of metropolitan flows.

These infrastructures are organized in networks, which do not seem to be determined anymore by the factors that have traditionally organized the occupation of urban land as the subdivision of lots, natural obstacles or distances to be traveled.

Today, by contrast, intra-urban commuting crosses neighborhoods that once mediated trade-based and socially symbolic activities. Everywhere, residential and commercial enclaves are deployed as ‘cities within the city’. These are linked much more easily to transport infrastructure, and therefore to the level of mobility, rather than to intrinsic qualities of the place (Graham and Marvin, 2001). In the interstices and margins of these enclaves abound occupations and unforeseen activities of the informal city, with its diffuse and mixed signals.

Increasing investments on urban and regional mobility leave behind spatial residues and foster dynamic potentials that have not yet been fully scrutinized by current urban research. Spaces meandering infrastructural traffic elements and urban surfaces generate regions of ambiguous character, often described as blighted or decaying. Paradoxically, these regions also offer optimal conditions for a myriad of normally ‘undesired’ urban functions, which are, most of the times, related to intense mobility of people, commercial goods/services and information.

Their distance from the planning authorities’ eyes makes them almost ‘planning fugitives’, while providing a rather convenient freedom for informal mutations. This irregular freedom enables the development of very specific and specialized environments, which would not normally receive proper attention in planning operations. The combination of public unawareness of this potential and the resulting unregulated use of urban ground is even more visible and experienced in Third-World metropolises. This fact influenced the choice of Rio de Janeiro as the empirical object for this work. A city created along a very specific pattern, whose growth is strongly ruled by its radical topographic situation and infrastructural development.

This situation generates a series of difficulties to the understanding of the city by architects and urban planners, professionals which used to work with representational tools that now seem outdated. Among these tools, stands out the plan, that is unable to deal with the representation of dynamic realities, with different scales of stream networks and unscheduled activities that shape the contemporary metropolis today.

Working with this new reality clearly means first and foremost to re-examine the tools and traditional methods of design education of the architect and urban planner.

The experience of teaching that we report here benefits from the knowledge of non-conventional approaches studied and practiced by the authors of this paper. Contributions range from research on participatory practices to conceptual approaches of planning the large scale suburbia.
We believe that the seizure of new urban realities is now much more a process of interpretation that involves the recognition of metropolitan conditions. The comparative study of various cities in the world has proved to be, indeed, a source of analogies thanks to the strong recurrence of situations that allow us today to consider the concept of the post-Kyoto 21st-century metropolis.

The experiences of international exchanges allow the approach of apparently diverging situations by sharing several common characteristics that favour the building of a new toolbox of methods and strategies for the analysis, design and representation of the city.

Workshops

Puzzled with the contradictions lying between the architectural education still practiced in our respective schools and the kind of challenges described above, we questioned the pedagogical effectiveness of the design studio refered to the analysis-synthesis model and favored by formal design education. As we know, research in design methods evolved from that inductionist point of view to a more subject-oriented process understanding. This evolution was specially due to the popperian conjecture-analysis thesis about scientific discovery, followed, in the design field, by the seminal works of authors like Herbert Simon and Donald Schön among others.

One of the main outputs of the research done on design methodology in the second half of the 20th century is the key-concept of ‘wicked problem,’ firstly coined by Horst Rittel and Melvin Webber (1984) and taken up by Richard Buchanan (1992), that allowed to recognise the very nature of the design activity as a problem-finding process instead of a problem-solving one. This recognition is essential to the definition of design education strategies that emphasize the conceptual abstraction directed to a very fast definition of radical solutions. The aim is to provisionally simplify the intervention contexts representation from which it is then cognitively possible to establish at least a graphic basis for critical discussion and further development. Graphic representation tends here to be as radical and abstract as the initial conceptual design, deliberately avoiding any realistic picturing. In some works, students manage to present their initial ideas through naïve black and white cartoon-shaped drawings and rough sketches, with deformed perspectives and no shadows. The broad analysis of site and program, called the diagnostic stage, that traditionally precedes and is often considered by planners to be independent from design activity is then postponed in order to be guided by the research perspectives opened up through the discussion about the interim solution.

This kind of process where the analysis stage come after an initial design is typically experienced in workshops defined as short-time and intense studying platforms (Ciravoglu 2002). As students have, in these conditions, very little time to approach context, they are forced to bet on a proposal whose abstraction assumes a role of global slogan, suggesting a scenario of transformation barely committed to the local conditions. In this design process, limited by time, laptops connected to the net become the main ‘window’ to appreciate and work with the context. The initial and provisional solution is then designed by browsing websites and picking up related media, but also by ‘visiting’ the site through online geographical content tools.

Betting on the benefits that this strategy can bring to the transformation of teaching design, we have been organizing international and inter-institutional workshops. Among them are those annually held in Rio, since 2004, where the aim is to confront students but also teachers with relatively unexperienced territories and/or to compare different metropolitan conditions in order to reveal what is specific but also what is common to them and could be faced as a more global phenomena offered to research in architecture. For us, this meant to work at the borders of architects’ and urban designers’ professional fields, with what is informal, homeless, peripheral etc.
The 2009 workshop involved teachers and students in architecture from the both Federal and Catholic universities of Rio de Janeiro and from the French Ecole de Versailles. In order to address the issues of connecting design education to the actual conditions of the contemporary metropolis, the chosen site for intervention was a large suburban area of Rio, located north of downtown, alongside the bayshore and far away from the widely recognized beaches of Copacabana and Ipanema. This is a territory intersected by major highways being now taken over by slum neighborhoods that occupied residual areas lying between its remaining military and industrial enclaves.

How could we, in this case, operate with impunity without redesigning a territory already consolidated but still unresolved? In which scales should we work? What would be possible or likely to transform? How to determine the points, areas and elements to work with? These were some of the relevant issues raised.

**Precedents**

Given these questions and the vast and complex territory with which we were intended to work, it was clear to all that the methods and instruments of traditional urbanism, such as the master plan with its scale logic of the Russian dolls, would not be of great use. The teachers team had at hand three main methodological precedents to face the task complexity: two of them are concerned with alternative ways to re-urbanize the informal settlements of Rio – the Favela-Bairro and the Celula Urbana programs – and the third was the Grand Paris metropolitan project for the French capital region.

The Municipality of the City of Rio de Janeiro designed the Favela-Bairro Program (The Slum-to-Neighborhood Program) as a tool to promote urban and social integration and reverse the process of urban decline that generally follows the growth of spontaneous low-income settlements in metropolitan areas of Third World countries. The objective was to provide urban improvements, primarily urban infrastructure and services, and to create and provide access to urban facilities that would, in turn, integrate a favela into the urban fabric and social-economical dynamics and transform it into a true neighborhood. The key change in the municipal government’s programs during the 1990s was the replacement of the idea of dealing only with the deficit of adequate housing by focusing on guaranteeing services and adequate infrastructure, addressing a lack of urbanity. In other words, the city’s housing policy was reformulated, substituting the construction of isolated housing units with programs that involved the organization of the urban structure. This structure was built where the population currently excluded from public services lives, enabling the incorporation of these persons into the functional and vital dynamics of the “formal” city. To integrate the favela into the urban fabric of the formal city, the program included key actions as completing or constructing main urban infrastructure, introducing visual symbols of the formal city as a sign of identification as a neighborhood: paved streets, plazas, urban furniture and public services, implementing activities of a social nature, such as setting up daycare centers for children, income generation projects, training programs, and sports, cultural and leisure activities.

Inspired by similar principles, the Celula Urbana (Urban Cel) intended to induce a spontaneous regeneration of the urban fabric resulting from the informal growth of the favelas, by simply injecting a foreign and contrasting body that could act as a prototype solution – called the ‘model block’ – for further interventions, positively contaminating and transforming its neighborhood. This project was partly executed in a favela not far from our site. The design process associated the Municipality of Rio to the Bauhaus School of Dessau in an attempt to create a strong symbolic reference for the community as a whole.

These two successful experiences, the first one top-down, and the second one bottom-up, revealed, above all, the importance of the dimension and
reach of the intertwining of scales and temporalities when taking design measures over the physic space. Departing from empirical situations led us to better formulate the real issues to be dealt with when proposing interventions on dissonant urbanized spaces.

Besides these two local experiences, we took clear advantage to have in our teaching team, architects who have focused on the difficulty of defining alternatives to the ineffective methods and tools of the traditional planning when applied to a huge contemporary metropolis. The ‘international research and development consultation on the future of the metropolitan Paris’, asked 10 design teams to define the 21st century post-Kyoto metropolis and to make a prospective diagnosis of the pariscian agglomeration. Among them there was a team who tried to avoid answering to such questions with what could be a simplistic image of an ideal post-Kyoto metropolis or of a great futuristic Paris. This decision came from the observation that the metropolis of tomorrow is already there and that the metropolitan phenomenon is above all a cultural and globalized issue of a multishaped reality. As it is stated in the introduction of the I’AUC’s response to the consultation, “the metropolis is not a place that we can draw, but a condition that we can describe” (Klouche et al. 2009). Talking about the difficulty to approach its complexity, they denounce the schizophrenic and autistic juxtaposition of a little village and an international airport as they advocate for a more intuitive, sensitive, hybrid and linked-to-reality set of practices. They believe in less prescriptive and more empirical approaches as it is more realistic to conduct experiments on fragments, partially, than targeting the totality. What is intended here is to make a turn from normalization to stimulation by replacing the traditional planning chain of the statistical macro-scale analysis, urban plans and urban legislation, by an alternative one made of timelines, matrices, themes and situations, allowing us to think simultaneously the local micro-scale, the daily sensitive details of the metropolitan being, and the metropolis as a system, as a generalized condition. Timelines refer to the long duration of the political, social, technical, economical, cultural memory of the metropolis through which we can learn from good and bad past experiences but also draw out recurrent and still useful concepts. Matrices allow to by-pass the inefficiency of the plan and to formulate the open ID-Card of a metropolis. Themes merge from matrices through a decontextualization and conceptualization process. And finally, situations spatialize, in the form of fiction, possibilities more than projects.

**Toolbox**

As in the case of the Grand Paris, the situation at Rio-North Shore just helped us to promote and foster the creation of alternative strategies by the participants. Such strategies allowed the development of proposals for intervention in space-time. This should be compatible with the duration and the human and material resources of a design studio in a school of architecture. Instead of the typical techniques of traditional urban masterplanning, we were faced with the emergence of a number of features that allowed us to approach the territory through relatively unusual ways. We present and discuss hereafter different techniques used in the workshop and its relationship with Computer Aided Design tools.

**Thematic layering**

It allows fragmented, yet specific, representations that one can re-combine in order to better compare the influence or impact of different issues and strategies. Layering is useful to locate, especially in a macro-scale approach, different and specific design strategies in a vast territory without missing their spatial and physical inter-relationship. Complexity can thus be managed by superimposing iconically informed cartographical representations of the same site as shown in figure 2.

**Matrices and grids of situations**

This kind of tool leads to abstract but non-linear and open interpretation of the urban context through
Figure 1
l’AUC’s graphic method of timelines, matrices, themes and situations for the 21st century post-Kyoto metropolis and the Grand Paris (Source: Klouche et al., 2009).
recurrent and paradigmatic situations. It strongly refers to l’AUC’s approach of Grand Paris described above. The main advantage here is to address design issues in different but complementary scales. Building retrofitting and design strategies can thus be more easily related to and connected with the neighborhood urban context which can in turn be literally seen as part of a more global vision for the territory under consideration. Differently from masterplanning that aims to plan the whole area, these matrices and grids point out its more sensitive but often hidden potentialities as levers for re-development.

**Territorial sections**

Similarly to the design situations presented above, the territorial sections allow to raise thematic strategies for land use automatically associated to programatic and architectural typologies. Design can thus be conceived and evaluated in its direct spatial and formal relation to the site and the landscape. Sections show possibilities of superimposing and overlapping activities opening up new design perspectives that could hardly be considered in the juxtaposition logics of the plan. Sectioning the territory reintroduces 3D architectural design and its relation to topography as well as human scale references in urban planning decisions by zooming in/out that allows considering different scales simultaneously.

**Fictional scenarios**

Fictions help designers to escape from obvious and pre-conceived interpretations of the context, thanks
to a whole set of editing tools that can even transform the way to present their work.

**Conclusion**

This proposed set of tools is an attempt to depict the architectural implications of the contemporary metropolis, allowing designers to escape from obvious and pre-conceived interpretations of the pre-existences as a condition for designing. It is also developed as a critique of the traditional role of drawings as a representation of the city as an abstract and neutral base, and as such, inquire about two different “discursive surfaces”: architecture and the territory. This is a difficult articulation between two mutually self-assured practices whose connection needs to be constantly recreated and negotiated, requiring complex strategic negotiation.

The thematic layering, the matrices and grids of situations, the territorial sections, and the fictional scenarios make a whole that lead to dealing with the nowadays segmented metropolis through an idea of sequence, of temporal continuity over the spatial discontinuity. The two-fold representation of sections and situations takes into consideration an idea of chaining parts and, at the same time, the identity of the specific, putting in evidence a contradiction that constantly demands articulation.

Finally, this set of tools not only aims at expanding the repertory of design methods to deal with the
contemporary metropolis but also suggests the possible development of renewed approaches to diversified and complex urban conditions.

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