URBAN MAPPINGS AS A VISUAL RHETORICAL TOOL FOR DESIGN TEACHING CHANGE

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The urban context is considered as a typical problem of master's courses on Design Studio's assignments in architectural education. Conversely, bachelor students mainly learn basic design tools such as drawing and model making, geometry, structural conception, and basic tectonic issues. Bachelor courses, overlooking urban context and avoiding cultural and social meanings for architecture, sub-sume design, to design skills learning. The question that comes about is, thus, *how* to incorporate specific urban topics on design studio assignments in a bachelor level? Moreover, *what* change in practice is necessary in order that those incorporations may lead to a more world aware strategy for design studios?

This paper addresses cognitive mappings of urban topics as a visual rhetorical tool for design teaching on design studio.

LEARNING FROM URBAN CONTEXT

One of the current problems about design studio exercises, mainly in undergraduate design studio courses, is precisely how to teach students that a design proposal is the result of a broader Design Process. Starting students design proposals from complex program briefs and respective functional or programmatic demands leads to autonomous or object based responses. This kind of response avoids the constructional nature of the architectural design process, and doesn't allow a pedagogic strategy for reflection-in-action[1]. Conversely, as stated by Mc Allister[2], "making the Design Process relevant" for students implies an evaluation of the elements produced along the design development (study drawings, sketches, diagrams, models) and their respective pertinence for the final result.

At Design Studio II in Coimbra, we started in the last couple of years to incorporate the urban context on design studio briefs. The design studio brief consists on drawing urban articulations between down and upper town [Fig.1], and site survey, through mappings, is meant as a strategy for starting the design process. Later on, in the second semester and after further development of design proposals, students have to come back to their original site mappings and re-draw them in order to clarify their design argument. Maps are never finished because they support the urban topics through which the design argument is sustained, and as the later progresses also the former is remade.
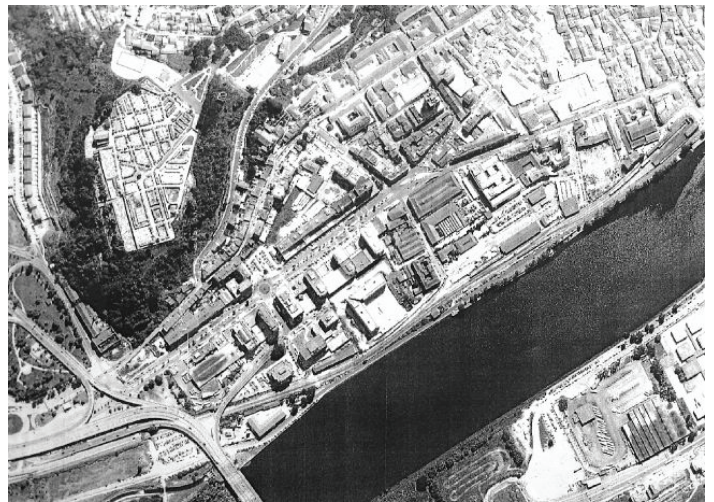

Figure 1. Design Studio II, Site, aerial photograph.

Site surveying can be thought as a task that allows students to start their design process for a design proposal. Given a specific urban context for a design studio exercise, students need to incorporate the site, and through several records as drawings from the site, photographs taken during the site visit, or site model making, they start to construct their own observations about site functions, buildings presence and social use of public space. Collecting, selecting and inscribing drawings or other types of records made during one or several site visits are tasks necessary for the design process construction, and give a specific value to each selected record. Thinking so, site surveying is an instrument for design studio learning as it provides the records for map making.

But there are some problems about site surveying, and maybe the major problem, at least in undergraduate courses, is about taking site survey as a normative practice. For a graduate student, a normative site survey is taken as something that later on will support design proposals, but for undergraduate students a normative site survey can be a cooling down process, as students don't have yet the practice to foreseen the importance and use of the collected data. Moreover, as the site survey has yet no direct relationship with design proposals - there is no relationship between collecting information and making an architectural proposal, in part due to an

absence of a personal reading on a specific site - students may get lost in a normative site survey.

Quite recently other forms of site survey have been explored, as is the case of the creative survey by Butterworth.[3] This kind of approach, much easier related with the creative nature of design studio proposals as it starts with a site interpretation, allows the record of impressions, possibilities and readings that a personal interpretation of the site may induce.

Besides a creative or interpretative site survey, students need to record the relevant information they are collecting, and mapping their urban experience is a synthetic way. Recording the urban experience of a site is foremost to place oneself as inhabitant of an urban context. Only through experiencing to live, for a moment, in a specific site is possible to get familiar with that site. For instance, drawing from a specific point of view allows observing minutely how buildings work together in a specific urban context. Photographs, on another hand, have a very different role; they allow capturing a moment, or a landscape, or even a detail. Finally site models give an overall comprehension of the site, and translate hierarchy, scale, and urban space relationships. Conversely, mapping the site demands some distance, and is due to a gaze over the site that simultaneously is detailed and general, as maps do have a synthetic and abstract nature.

In conclusion, there is no normative reading of an urban site. Quite on the opposite, every "reading" on the urban context of intervention is related to personal and subjective impressions, and the several records made during the site visit can be watched as telling a story about the site. In this sense, the urban context of intervention is a creation, and the collected elements to record it should allow a personal reading of the site.

MAPPING THE URBAN CONTEXT

Mapping is an activity that implies collecting, choosing and inscribing information in cartographies, bringing tacit into explicit knowledge. Only throughout the urban experience – walking, drawing and describing urban space - students may get empirical information in order to map it. Furthermore, mapping is a creative activity, as stated by Katharina Harmon. For instance, the book *The Map as Art – contemporary artists explore cartography* by Harmon[4], is a good example of a collection of artistic cartographies that draw attention to the creative and critical readings of sites that are implied in the process of map making. As she states: "[maps] can act as shorthand for ready metaphors: seeking location and experiencing dislocation, bringing order to chaos, exploring ratios of scale, charting new terrains. […] Like artworks, maps are selective about what they represent, and call for differences between collective knowledge and personal experience."[5]

Besides the artistic construction of maps, mapping may have a specific role for design studio pedagogic strategies. In this sense and from an epistemological point of view, Bordeleau and Bresler[6] pointed the difference between mapping and drawing:

"Drawing brings to the fore the phenomenological dimension of architectural graphic representation as it engages architects and viewers set in the thickness of time, an embodied time involving memory, experience, and imagination. Mapping foregrounds another dimension, pointing rather to the epistemology of the project. Maps reveal, construct, and project the *epistemé* against which the project builds itself. Hence, through drawing and mapping, architects do not merely represent an existing world but also actively project a creative and cultural reading, thereby negotiating the line between representation and projection. In other words, the architect must consider both maps and drawings insofar as they compound past, present and future."

As stated, drawing is taken as representation, and mapping brings to the fore projecting. And it's precisely in this sense that Bordeleau and Bresler refer the ideas of James Corner in his text "The agency of Mappings."[7] For James Corner,

"Mappings have agency because of the double-sided characteristic of all maps. First, their surfaces are directly analogous to actual ground conditions. […] The other side of this analogous characteristic is the inevitable abstractness of maps, the result of selection, omission, isolation, distance and codification. […] The analogous-abstract character of the map surface means that it is doubly projective: it both captures the projected elements off the ground and projects back a variety of effects through use."[8]

Hence, map making could directly be connected with the very idea of place projecting, which is a characteristic of design proposals – to foster a design proposal in the direction of a new or enhanced place - reinforcing the idea of Bordeleau on mapping as a projective device. In this sense, Corner's text questioned the precedence of mappings over design proposals, arguing that after completion mappings do not have any role in the creative design process. Moreover Corner claims about the divorce between project making and mapping: "This indifference towards mapping is particularly puzzling when one considers that the very basis upon which projects are imagined and realized derives precisely from how maps are made", adding that

"an unfortunate consequence of these attitudes is that the various techniques and procedures of mapping have not been subjects of inquiry, research or criticism. Instead, they have become codified, naturalized and taken for granted as institutional conventions. Thus, critical experimentation with new and alternative forms of mapping remains largely underdeveloped if not significantly repressed."[9]

According to Corner, mapping is a creative activity that projects a new reality for itself, and mapping "have yet to find adequate ways to engage creatively with the dynamic and promiscuous character of time and space today". As he says, "mapping is neither secondary nor representational but doubly operative: digging, finding and exposing on the one hand, and relating connecting and structuring on the other."[10]

This double operative characteristic of mapping, or mapping the urban site, is related to exploring the urban context from its morphological, historical and social point of view as well as to inscribe, resume, and connect the records made in cognitive maps. The resulting process is the map as document, with its own graphic expression.

For Design Studio purposes, urban context mappings have a specific role in architecture design education because they allow a projective approach to urban context. In Design Studio II at Coimbra School of Architecture, we've experienced the introduction of map makings as a strategy for an urban context approach. The maps produced by students, which we called cognitive mappings of the urban site, were meant to catch the resulting process of site surveying. In order to turn the mapping exercise more clearly objective, we needed to define specific objectives for mappings, including references to the variety of information that should be collected by students. Thinking so, collected information must correspond to three topics and respective types of cognitive mappings: *Cultural* mappings draw social use and functions of urban spaces for programmatic aims. *Affective* mappings draw unexplored or hidden urban spaces for architectural articulations, and *Critical* mappings draw iconic or conceptual urban infrastructures as a support for architectural design. Moreover, as already stated, the idea was not to produce maps as finished artefacts, but on the opposite mapping as a creative activity.

CULTURAL MAPPINGS

Cultural mappings [Fig.2] allow students to understand the functions and uses of urban space as well as buildings. It means that these kinds of mappings play a special attention to the communities that are living in specific city quarters, their habits and customs. Being particularly attentive to social uses of urban space may induce students to be aware of special needs of the communities that inhabit city, or even to see opportunities of incorporating some urban facilities in their design proposals, that are not especially well located. A comprehension of social or public demands for public facilities, the age or occupancy of inhabitants, and other aspects allow a very different picture of a specific urban site. This kind of approach may forward also a more pertinent comprehension about the location of specific architectural purposes later on the design process.

The exercise doesn't give any normative clues of surveying, and is much more the result of an exploratory practice in which students should walk, observe and record how public space and buildings ordinarily function. The curiosity about cultural habits in using public space is particularly relevant for making proposals that should be site attentive.

A particular attention to different uses of public space along the day, or the location of some specific activities in the interior of urban quarters, or even other activities that occur in crossing streets, allow a comprehension of city space as something with its own live or structure.

Cultural mappings allow a comprehension that architectural proposals should be rooted in social use of public space, and that architectural proposals may contradict or reinforce those uses. As a strategy for a creative survey of urban sites, it leads to design proposals as site interpretations.

Figure 2. Design Studio II, Cultural Mapping, Gonçalo Barbosa and Sérgio Gomes.

AFFECTIVE MAPPINGS

Affective mappings [Fig.3] explore a huge diversity of scales in urban space. Every urban context has its own history, the history of urban facts. Mapping urban space history as well as architectural morphologies and typologies allows a comprehension of reality as a result of the superimposition of many layers that construct an urban site. This kind of mapping privileges subjective approaches to urban context and throughout this strategy may induce design proposals to be connected with the history and strengths of a specific site. The idea of

Figure 3. Design Studio II, Affective Mapping, Claudia Handem and Vera Mendo.

exploring architecture and urban space through walking and recording allows a context comprehension of architectural aims and purposes, and avoids a reading of architectural intervention as an object construction isolated from context. On the other hand, this strategy allows also to explore some narrow streets, connections, buildings and urban spaces that are not usually evident in a first approach to a site; one example of this kind of mapping, which is shown to students in the classroom is precisely the Nolli plan of Rome, of 1748 where the interior of buildings (as courtyards, patios, stairs, passages, and other kind of interiors) is clearly connected with the continuous and surrounding urban space. Another type of mapping included in affective mappings is the mapping of the urban void space, which means to fulfil in a plan not the buildings but the "empty" space among buildings. This exercise shows clearly the form of the urban space, and allows a more clear comprehension of the relationship between built and un-built space in the urban context of a design brief.

CRITICAL MAPPINGS

Critical Mappings is coined after the proposals of Manuel Solà-Morales text "A cartography for the Catalan territory"[11]. As he says, "To improve description already means to make proposals. The morphological description of the territory has been [...] an alternative instrument with which to make territorial proposals for Catalonia, through its very shape."

The purpose of critical mappings [Fig.4] is to highlight the urban meaning and design of urban infrastructures as public pathways, public green areas, huge sustaining walls, public stairs and other kind of public infrastructures.[12] As happens in other forms of mappings, the objective of this specific mapping is to give special attention to some iconic infrastructures that otherwise are invisible. And as record process implies the recognition of the specific form and qualities infrastructures have and driving to design processes of their incorporation. Only through the process of recognizing, drawing and recording them students may map making. Besides, urban infrastructures have con-
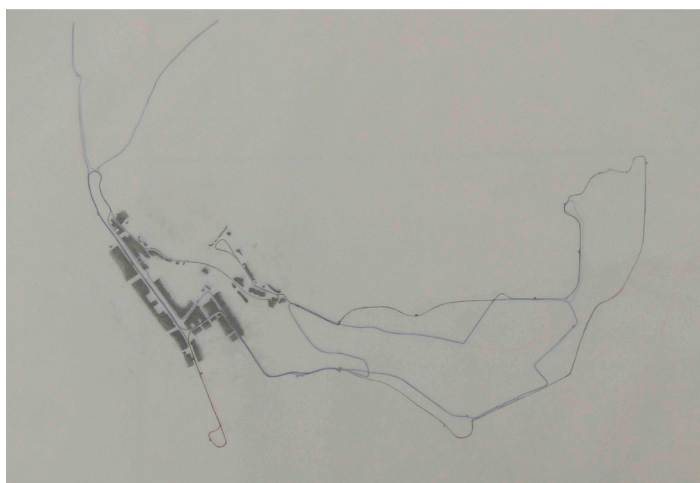

Figure 4. Design Studio II, Critical Mapping, Gonçalo Barbosa and Sérgio Gomes.

tinuity for themselves and operate in the design process as elements that foster cohesion to the design project.

Finally, mapping infrastructures may allow complete what is incomplete, or reinforce some design arguments by their connection with context infrastructures. Mapping an infrastructure is already projecting architecture.

MAPPING AND DESIGN PROPOSAL

From a teaching / learning approach cultural, affective and critical mappings and correlated cartographies allow a *reflection-in-action* practice, and are projective over design proposals. Besides a classification of mappings in accordance to specific recording objectives and aims, the role of mappings in the design process can further be explored taking account of the roles evolved in mapping as an activity. Bordeleau and Bresler, in the before mentioned text, referred three types of roles evolved in mapping: as documenting, documentation and documentor.

> "Looking particularly at the role of mapping, we can consider again the relation between mapping and architecture in a threefold role, first as the action of *documenting* upon which the project builds itself, second as the *documentation* resulting from the process, and third as *documentor*, or index of the intentions of the project. Mapping as a way to actively *document* a search for architecture may allow the identification of what is specifically heuristic in drawings, a process oriented around questions rather than the illustration of a predetermined answer; mapping as *documentation* can reveal how the process of building a perspective on the site emerges from a careful consideration of the questions asked and documented; finally, the map as *documentor* hints at the indicative potential of drawings, as they index both a positioning with respect to the documented site and programme, as well as its materialization as a construction in space and time."

Thus, mapping can be intimately related with the design process, and moreover can elucidate about the design proposal groundings, what are the main topics of site considered, and what are the design intentions of the design proposal.

Mapping the urban experience is an *iterative* design process related to the argument of design proposals, and results in the production of empirical urban cartographies. In fact, it's in part due to the repetition of sketches that connect site records and design proposals that students may interiorize tracings, and through them to produce mappings. That's also the reason why maps are never complete, because they are projecting a new place, as the design proposal does, getting progressively further information in order to turn it coherent with the design proposals.

Moreover, urban context mapping for the design proposal is a *heuristic-creative* process, as mappings do support the design idea, drawing a solid ground for architectural projects delivered by the students. As a *heuristic-creative* process, site mapping allow to establish specific readings that support the flowing of design project ideas, and because of it's epistemic character, mappings play a role of argument synthesis in relationship to drawings of design

proposals. Thinking so, the design process is constructed through the permanent changing role between architectural drawings as representations, and diagrammatic mappings as epistemic records. Maps, in this sense "provide a working table for identifying and reworking conditions" for the design proposal as their function "is not do depict but to enable".

As Corner stated, "the function of mapping is less to mirror reality than to engender the re-shaping of the worlds in which people live", which is common to design proposals in Design Studio courses.

MAPPING AS A RHETORIC TOOL IN DESIGN PROPOSALS

Rhetoric is a process of meaning production, and as an art of persuasion it may be understood as a tool for refinement of design proposals. The uses of rhetoric communication strategies allow to structure oral as well as visual communication. The way visual rhetoric translates specific architectural aims and objectives throughout urban cartographies is a very rewarding process, because it leads to the clarification of the purpose of each data mapping and its pertinence for the general argument of the design proposal. Researching specific visual rhetoric arguments is also a way of learning communication skills, and turns design proposals more comprehensive.

Mapping the urban site can be a creative and projective task for starting a design proposal in undergraduate design studio courses. Throughout recording and collecting information for map making students may learn about the urban context of intervention, and moreover learn to connect those data with a personal reading of the urban site. The translation of their architectural intents in supportive cognitive mappings reinforces their design proposals and may even be a rhetorical strategy for design proposal self-clarification.

As stated by Bordeleau and Bresler,

"Could our mapping of the site reveal fragmentary conditions, rich of a multiplicity of possible spaces, loaded with many potentialities of time, and hence create representation more telling of the complexities of an actual architectural project? [...] the potential layering inherent to mapping may allow architects to momentarily monumentalize a perspective on the site, constructing the present of the site out of many pasts and potential futures. The architectural site is never a clean slate; an architectural project is not an idea projected in a preset future but, as its documentation would attest, a process shaped as much by what was than by what is and what might be."

ENDNOTES

1   Donald Schön, *The Design Studio: An Exploration of its tradition and potentials* (London: RIBA, 1985),

2   Keith McAllister. "The Design Process - Making it Relevant for Students." *Archnet-iJAR, International Journal of Architectural Research, 4*(2-3) (2010): 76-89.

3   Carolyn Butterworth and Sam Vardy. "Site-Seeing: Constructing the 'Creative Survey'." *field: a free journal for architecture, 2*(1) (2008): 125-138.

4   Katharina Harmon and Gayle Clemens, *The map as art : contemporary artists explore cartography* (New York: Princeton Architectural Press, 2009).

5   Harmon and Clemens, 10.

6   Anne Bordeleau and Liana Bresler. "Drawing the Map: Siting Architecture." *Footprint - Delft School of Design Journal, 4*(2), (2010): 45–58.

7   James Corner. "The agency of Mappings," in *Mappings* (London, Reaktion Books: 1999), 215.

8   Corner, 215.

9   Corner, 216.

10   Corner, 225.

11   See Manuel de Solà-Morales, "A cartography for the Catalan territory", *Lotus International* 23 (1979): 10, and also 21.
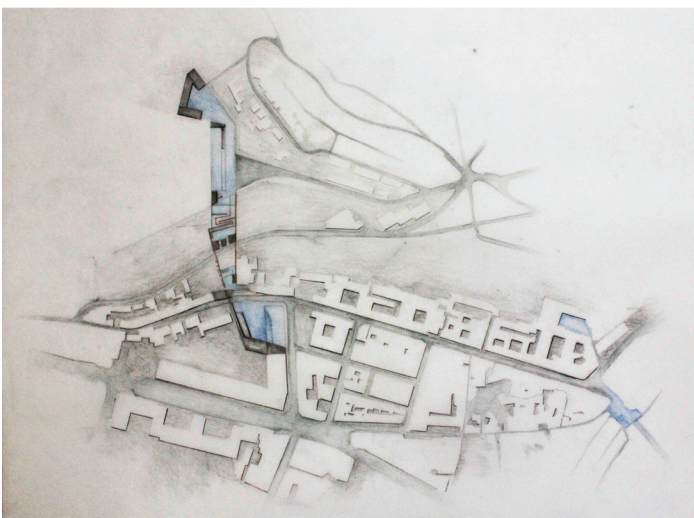
12   Bordeleau and Bresler, 50.

Figure 5. Design Studio II, Mapping and Projecting, Ana Sofia Silva and Daniela Barroso.