



Space use as an input to the design process

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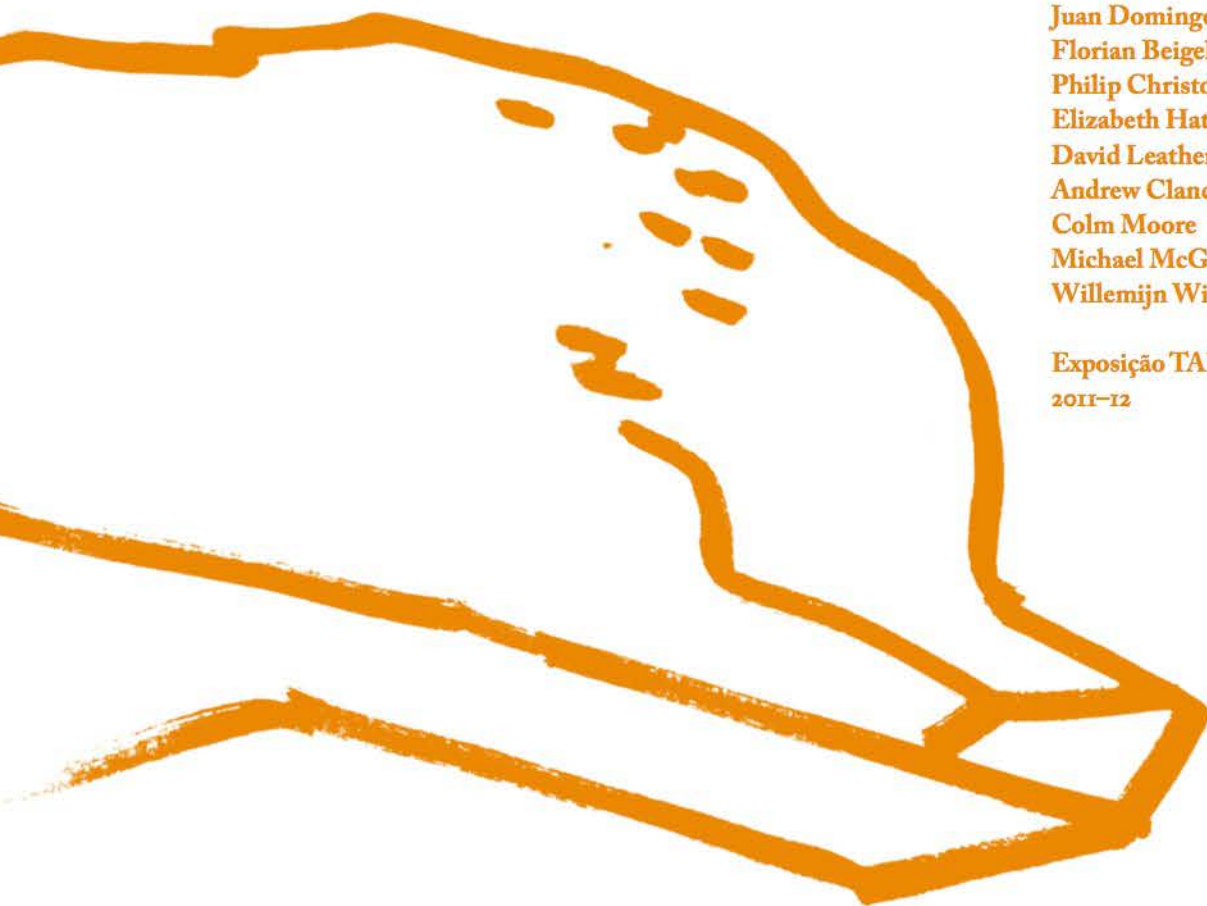
04

ENSINAR PELO PROJETO TEACHING THROUGH DESIGN

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Introduction

This paper aims to acknowledge the space conceived by the architect in the Design Studio as a built object and foremost a lived vessel that shelters and enhances experiences and human behavior. Consequently, it will first articulate space and use and it will draw attention towards the importance of considering space use, early on, in the Design Studio.

Hence, it will be crucial to point out the stages of the interdisciplinary process and its different stakeholders' contribution in each stage, assuming a *Pre* and *Post-Design* Participation. So, after referring to current approaches of Design Participation in the schools' curriculum, the paper will then address the Evidence-Based Design subjects, as diverse as they can be, considering them as an incisive way to assess the differences between expected and effective use, beyond the Design Studio and throughout the building's lifecycle.

1. Space-Use Reciprocity

Buildings are the instruments of life.

(Mendes da Rocha, 2006)

With this statement Pritzker Prize Laureate Paulo Mendes da Rocha recognizes architecture's feature as an influential subject to human behavior. But to this assertion it could be added its reciprocal dimension, the fact that people, with their appropriation of space, also change it and make it their own¹.



1. *Travelogues*, Diller Scofidio + Renfro.
Courtesy of Diller Scofidio + Renfro.
(www.dsrny.com).

The recognition of the user's active role in the objects' definition was taken on by authors like Lefebvre (1974), Jauss's *Reception Theory* (1977) and Gadamer's *Philosophical Hermeneutics* (1976). Artistically, in the early beginnings of the 20th century, Duchamp already pointed out that the object had no absolute value but that it gained value and became complete with the individual experience of the spectators/users.

More recently, Jonathan Hill² transposes this to architecture, regarding:

[...] the creative user with a role as important in the formulation of architecture as that of the architect. To use a building is to alter it, either by physical transformation, occupying it in unexpected ways or conceiving it anew. A carpet of snow can be a bed or become a chair. Architecture is made by use and by design. (Hill, 2003, p.148)

Works like Diller Scofidio + Renfro's embody these concepts and, by valuing overall users' fruition of space, their works engage life within them from the first draft. For projects like *Travelogues* (New York, 2001) (fig.1) or *Arbores Laetae* (Liverpool Biennial, 2008) (fig.2), the sensory stimulus motivates the design experience and contributes to its full definition.

So, for the Design Studio Education it will be crucial to conceive space in regard to its future uses, with a deeper acknowledgment not only of the physical objects *per se*, but what they mean to the individuals' experience in space, embodying once more the words of Jonathan Hill:



2. *Arbores Laetae*, Diller Scofidio + Renfro.
Courtesy of Diller Scofidio + Renfro.
(www.dsrny.com).

[...] architecture is not just a building. It is, primarily, a particular relation between a subject and an object, in which the former occupies the latter [...] (Hill, 1998, p.7)

2. Participatory Design Process

A new building has its origins in the perceived need of the user or group of users for space.

(Duffy et. al, 1998, p.54)

Design Participation is a concept often linked with *Pre-Design Process*, where users are asked to contribute to the brief by explaining their needs. Whereas this legacy endures across close, but autonomous, disciplinary areas, like urbanism, politics and social sciences, today Design Participation embraces other dimensions and layers, and Usability is a recognized subject within the realm of architectural studies themselves (fig.3).

Recent literature on the theme show that this remains a chronic sore point for architecture, that should be introduced to students from the beginning in the Design Studio, in terms of Universities' curriculum worldwide.

The graduate *Design Activism Studio*, at the University of Washington's Department of Landscape Architecture, poses these questions in terms of the architecture's role³. Also the Design Studio Course on *Occupancy*, at the Carnegie Mellon's School of Architecture (Pittsburgh, USA) arouses students to the relevance of the engagement with clients and future inhabitants, as a constraint when conceiving the design.

The Harvard Graduate School of Design (Cambridge, Massachusetts) also provides students with subjects like: *Issues in Architectural Practice and Ethics*; *Design and Development: from Concept to Implementation*; and *Digital interfaces for collaborative and participatory design*.

The University of Newcastle, Australia is another thorough example of a school's curriculum keen on co-design and management, with subjects like: *Project Design and Reflection*; *Design Collaboration, Negotiation & Conflict Resolution*; and *Project Communication*.

3. User Research

You cannot talk about a corridor being narrow without making assumptions about how buildings are used.

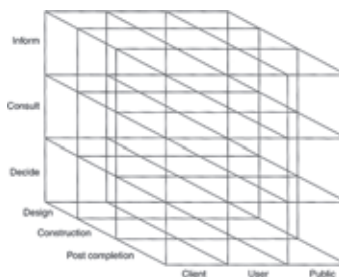
(Fawcett, 1995, p.8)

The most common ways of incorporating use onto the Design Process are translated by generalizations and stereotyped information, such as: standards, theoretical models and conventions. However, each project implies a deep recognition of its context, users and needs.

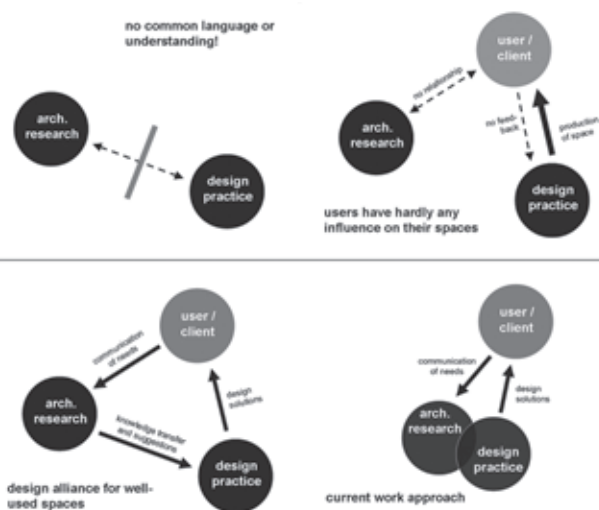
Therefore, the study of space use is an operative tool for the Design Process, informing on quantitative and qualitative variables, invariables and specificities of a real life scenario. Despite having



3. Areas of possible literatures of relevance. Courtesy of Professor Paul Jenkins. (Jenkins and Forsyth, 2010, p.10).



4. 3D analytical framework. Courtesy of Professor Paul Jenkins. (Jenkins and Forsyth, 2010, p.14).



5. Re-defining the relationships between architectural research, the design practice and the user. Courtesy of Kerstin Sailer. (Sailer et al, 2007b, p.7).

different study fields (whether of a more analytical or cultural nature), disciplines in the scope of *Evidence-Based Design*⁴, such as Space Syntax, Post-Occupancy Evaluation (POE), Facility Performance Evaluation (FPE) and Usability Studies, act as input to the Design Process – a *feedforward technique* that complements the architect's options.

Through these instruments, the project will result on a more thorough one, supported by User Research outputs and the feedback of a broader stakeholders' community, without obliterating the professionals' knowledge and creativity. This will bring closer the space thought by the architect during the Design Process and the space lived in by the individual afterwards (fig.4).

This is also a way to make users accountable and to introduce their contributions Post-Design Process, as *actionable knowledge* (Elliot, 2001, p.555) to future interventions on that or other buildings, acknowledging use and change, and knowingly matching conceived and lived space, along the building's lifecycle.

This process aims at gathering data from the findings collected from previous User Research Studies and that particular case study, as well as theoretical results provided by literature and cutting-edge research, as a contribution to the professional's team, in a comprehensive approach to the Design Process, guided by aesthetic, but also functional and cultural goals when organizing and creating space.

Accordingly, scholars at the Bartlett School of Architecture, along with Spacelab Architects, within the Effective Workplaces project, aim at defining a *KnowledgeTransfer Partnership* that provides input on User Research Studies to the practice, both its process and product (Sailer et al, 2007a) (fig.5).

Current literature like *Inquiry by Design* (Zeisel, 1984), *Excellence by design: transforming workplace and work practice* (Horgen et. al, 1999) and *Managing the Brief for Better Design* (Blyth, Worthington, 2001), revolve around the incorporation of users' input and the human experience in the brief, to better match demand and supply. Specifically, books like *Assessing Building Performance* (Preiser and Vischer, 2005) and *Building Evaluation Techniques* (Baird et al., 1996) point out methods of assessing space use.

Space Syntax aims to relate spatial configurations and morphology with uses, providing quantitative outputs and subsequent cultural and social interpretation (Hillier and Hanson, 1984). It was first undertaken in the 1980s at the Space Syntax Laboratory at the Bartlett School of Graduate Studies and it continues to be taught today on the MSC Advanced Architectural Studies, originally conceived by Bill Hillier in 1974, as the first space syntax course (fig.6).

Although, mostly applied to Graduate Studies Programs, Space Syntax subjects spread also worldwide. The current *European Postgraduate Masters in Urbanism*, a conjoint program conducted by: TU Delft, UPC Barcelona, KUL Leuven and Università IUAV di Venezia, had in the Autumn 2012 semester a ten-session course on Space Syntax, which is a clear example of the practical importance this tool as gained for notable universities and study fields.

POE focuses on the building's use in the actual physical space⁵. Despite only being called POE by the mid-1970s, its first initiatives

arose in the 1960s at the Universities of California and Utah, having as main drivers Preiser, Rabinowitz and White (1988). Since then, these studies have become more frequent and recognized through associations like Post-Occupancy Evaluation and by authors throughout, such as Watson in New Zealand or Ornstein in Brazil.

These methods often appear in close coordination with research centers at universities, as tools used on more advanced or post-graduate studies. These are the current cases of the *Center for Building Performance and Diagnostics* at the Carnegie Mellon University, as well as the *Center for People and Buildings*, in close relation with the TU Delft and namely with Voordt's work (Voordt and Maarleveld, 2006), which revolve around the connection between high performance building, user satisfaction and work efficiency.

Recently, Lippman (2010) systematizes *Evidence-Based Design methodologies*⁶, distinguishing them in: quantitative and qualitative, formal and informal, used separately or in group, and also differentiating them in: *self-report measures*, *observation methods*, and *others*.

Each of the referred methods will provide specific results. The choice in method should be appropriate to each case study and be suited to the research goals, the cost/benefit in using each one, and the kind and amount of output its endeavor will result on, assuming that the use of several methods, in a triangulation approach, will have more complete results and will provide a wider contribution to the Design Process.

Conclusion

The idea is to help people report to architecture, to help architecture report to people, and to help people to report themselves.

(Sejima, 2010)

By recognizing the reciprocity between space and use, buildings are conceived not only as stages but also as producers of human behavior, and their users are both spectators and creators of meaning by appropriating space. Hence, space use is the actual acknowledgment of the Design Process when encountering life.

Architecture, both as a process and a product, is always imbued with social values and the user extends the work of the architect to define the space. Ultimately, User Research Studies *help architecture report to architecture*, embracing Schön's (1983) *reflection in action* concept.

If Architecture and Life are no longer related alternatively or subsequently, but become an implication of one another, Use is hence an inexorable feature of architecture, to be considered in the Design Studio Education, as a synthesis of *Pre* and *Post* contributions to the Design Process, in the form of a Participatory Design Process and User Research Studies, for lived, whole and suitable built *life containers*⁷.

Through the examples that have been given, use could be considered in the methodologies, contents and overall frameworks of the Design Studio (fig.7). It could be introduced initially in the brief definition, when addressing the client's identity and futures uses



6. Space syntax studies at the Bartlett School of Graduate Studies, UCL. Courtesy of Professor Bill Hillier. (<http://www.bartlett.ucl.ac.uk/graduate/programmes/postgraduate/mscdiploma-advanced-architectural-studies>).



7. Larc 503 Design Activism: LdZ's Pitagorus School's children and teachers interacting with the Studio's students. Courtesy of Ben Spencer. (http://larch.be.washington.edu/programs/courses/Winter2011_503/503_designactivism.php).

and its evolution onwards; it could be undertaken as a participatory process in each stage of the design, defining methodologies that use tools to engage all the stakeholders and inquiry on users' wants and needs along the way; or finally it could also be addressed by accompanying the built object beyond the Design Process and involving students in the actual use analysis of a built space. By and large, it could be through the conceptual definition of the Design Studio, in incorporating a more cultural nature in the Design. Or it could be by incorporating in the course's curriculum subjects in the scope of Evidence-Based Design as a way to provide students with the knowledge on how, when and why to use each methodology as operative tools for the Design Process.

- 1 → Lippman refers this space as Behavior settings, considering them transactional or mutually influential (Lippman, 2010, p.19).
- 2 → Professor at the Bartlett School of Architecture.
- 3 → The 2011 winter Larc 503 Design Activism, instructed by Ben Spencer, won the Social Economic Environmental Design Awards.
- 4 → Evidence-Based Design was first applied to hospitals, but has been applied to other programs ever since.
- 5 → By perceiving evaluation through the whole process, it can be distinguished between ex ante (before the event) and ex post (POE) (Voordt and Maarleveld, 2006), where the first will test potential solutions and contributions and the latter the actual final product.
- 6 → Specifically applied to educational facilities.
- 7 → Quotation of an expression by Gonçalo Byrne (Byrne, 2007).

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