Drawing is Alive – The Observer's Momentum

Raquel Pelayo

Faculdade de Arquitetura da Universidade do Porto/ i2ads - Instituto de Investigação em Arte Design e Sociedade

Introduction

Architecture is always about changing how things around us are. Any intervention is an intervention on the landscape, be it urban, wild or rustic. Architects have a tremendous responsibility once most of their interventions have this public component in which we are all its users. In this sense architecture builds worlds to be lived by all of us.

The faculty of architecture of Oporto University (FAUP) in the northern Portugal has a strong identity developed in the second half of the XX century that has produced two Pritzker awarded architects – Siza Vieira (1933) and Souto de Moura (1952). Its singular approach to architecture teaching bases itself in two main aspects. The first one is the importance given to formal context, valuing differences and specificities as possible determinants of the form, from the beginning of the design process. The second aspect is the use of the indeterminacy of observation freehand drawing as a powerful tool for the architect to think about visual complexities; be it focused on the preexisting site or the one(s) to be. Thus, architecture is understood as a process of providing experiences and ultimately as something to be lived through all one's senses. Even if a parallel can be established with Pallasmaa's[i] thought, this vision is rooted in some of the main founders of FAUP, professors Carlos Ramos (1897 - 1969) and Fernando Távora (1923 - 2005) or Alberto Carneiro (1937), a sculptor that played an important role as professor of drawing from 1972 to 1994 at FAUP.

Carneiro[ii] developed a contemporary pedagogical approach to architectural drawing that answered the school needs inherent in its founders' vision and that overcame the shortcomings of the so-called modernist pedagogical paradoxes in art teaching - the ones De Duve[iii] has referred to, that embraced a growing iconoclast position that waived the representational power of observation freehand drawing. FAUP drawing puts the architect in the position of the observer. This means that drawing becomes a technology – even if it's a Stone Age one – to awaken the senses and sensibility, promoting deep knowledge of the intervention site only obtainable through actually living it. This approach is considered to be fruitful in terms of students' design thinking and the faculty is still embracing it today, even though it's a considerable time- and resource-consumer. Observation freehand drawing became a bridge between site and studio, a way for the architect to create a deep connection with the site, a way of creating a living experience of it that aims to go further than merely a rational one.

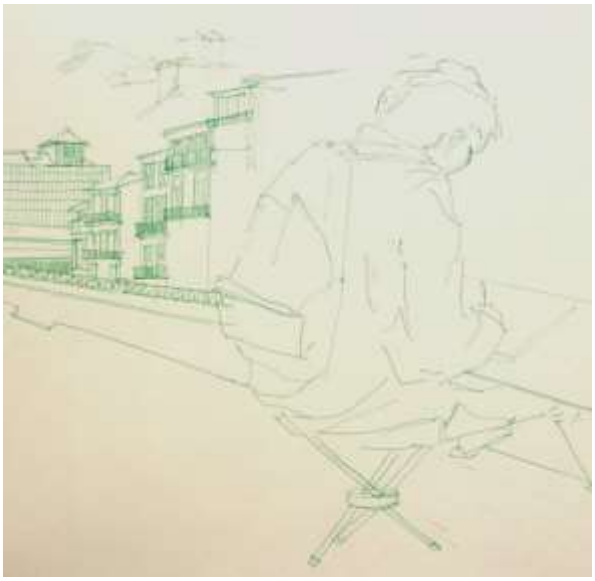

Fig. 1. Student freehand observation drawing at Porto, pen on A3 paper.

Drawing 2 is a second year class in the architecture course offered by FAUP. The first exercise students undertake is the "analysis of a place" in very much the terms defined earlier by Alberto Carneiro. The real place to be studied through architects' eyes is defined by the main course of that year, Project 2. Always located in the city of Oporto, it is the site for which students develop an intervention project, during the whole academic year, with no use of computers allowed. The drawing skills required for the task have been developed the academic year before in Drawing 1, a very intense course on how to draw (8 hours a week - annual).

A theoretical discussion, from the viewpoint of one of the professors that is also the researcher, tries to gather arguments to explain, through the cognitive processes involved, the added value of the approach that requires so much time, patience and endurance, once the site is to be lived during seven classes of three hours each, one

per week, sometimes in not so good weather conditions. Nevertheless the main argument is still the resulting body of students' work.

Pedagogical Practice

If architecture pursues living/experiencing then its process should begin with an empathic encounter with the existing place; a process in which the concepts of understanding and living become fused with one another. Portuguese urban sites can be quite complex. Their organization has apparently no rules unless the terrain is organic. Its main characteristic is the multiple coexistence of fragmented organic geometries which – only sometimes – have a clear geometric rule or pattern. Articulation of fragments frequently creates abrupt changes in directions and creates a very rich environment. Still, any cityscape has high levels of visual information challenging its understanding, its reading and interpretation when there is a proposal to design new equipment for that site.

Fig 2. Student freehand observation drawing at Porto, pen and color pencil on A3 paper

Drawing "in loco" allows a much deeper encounter with the site than alternative ways such as photography or video. Drawing produces not only visual information registers, but also an experience-based process of discoveries, of information codification, of memorization and of projective interpretation. A profound body and mind understanding of the site can lead to a fair and creative problem interpretation of the project commissioned and can be a light, suggesting ways to achieve good solutions. By the opposite, a handicapped encounter will lead to skewed readings and eventually to solutions that do not fit the problem.

Cognitive Performance Involved

Observation drawing is about creating representations. It mobilises cognitive operations that rely on visual analysis to overcome an initial state of perplexity. The first of those operations is the selection of the visual cues that refer to three-dimensionality that are adequate to the production of a coherent bi-dimensional simulacrum and it can be based on the observer's location when producing a perspective drawing, or it can be based in the thing being represented producing an axonometric drawing. It also can, more abstractly, be based on orthographic views like sections, elevations or floor plans. This means that the draughtsman perceives in a conditioned way, conducted by specific interests in some kind of elected visual information – in this case the formal properties of constructions in space that form the site.

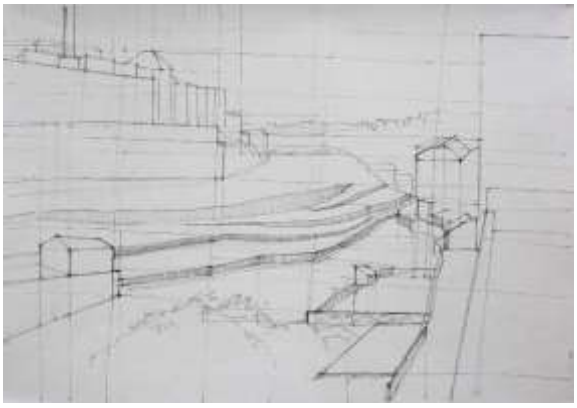

Fig. 3. Student freehand observation drawing at Porto, pen on A3 paper.

So, when drawing from observation, our perception functions more like a top-down process, relying on visual attention mechanisms to solve the drawing task. It is a different perception from the naïve and dispersive perception of everyday life that is mainly bottom-up, generally conducted by the visual stimulus characteristics. The main difficulties in learning how to draw from observation come from this phenomenon[iv], once it generates a paradox in the graphic representation processing; namely in what concerns form constancy and actual information from the observer's viewpoints. The first one comes from long term memory, and the second one comes from working memory.

Equally important, and also concerning the mentioned cognitive operation, is the interpretation of relative sizes of forms that demands comparison of visual cues with each other multiple and successively, like comparing relative sizes, relative directions and relative positions of edges in space[v]. Despite visual information necessary for graphic representations being available to the observer's senses, all observational drawing requires the use of memory - although of different kinds.

Different graphic representations ask for different memory uses. Intuitive perspective entails an intense use of working memory once the brain is not able to keep perceptive images more than half a second, requiring constant returns to the thing being visualised. The task is even harder when the brain also has to alternate the model visualizations with the ongoing drawing visualizations, in a specific rhythm.

In its turn, axonometric representations, that keep objects' form constancy, ask for long-term memory,

once dealing with propositional information that is previously acquired, synthesised and archived. In this case the representation is basically a geometric translation in the sense that Willats[vi] proposes, that is, it is about producing highly codified abstractions by geometric systems which translate tridimensional information into a view that has never been seen. Frontal views, plan views, and sections are also quite abstract.

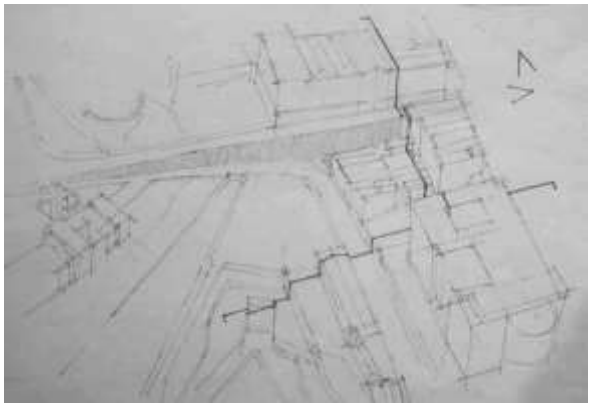

Fig. 4. Student freehand observational drawing at Porto, graphite on A3 paper.

At the site, students are encouraged to use all representational systems, starting with perspective. In the first stage they have to establish physical contact with the place through walks that aims to develop an intuitive encounter with it to discover, observe, realise and interiorise sensorial information through drawing perceptions from different viewpoints. Perspective drawings are an analytical instrument and require the student to choose the most adequate viewpoints to draw a series of drawings that only in their set will reveal the formal complexity of the wholeness. Perspective drawings in sets have a power to construct a personal visual discursiveness that uses the space "in between" the images.

The next stage is to draw a plan and axonometric representations of the complete site, or portions of it, depending of the site extension and complexity, based on walking through the site, and eventually measuring distances walking. Note that these other than perspective representations separate time to observe and time to register but still, the exercises are mostly done on site. These drawings are more about creating an interpretative synthesis and are no longer analytical. In fact, they play an important role once they allow the draughtsman to confront himself with his interiorised information about the site; namely what has been retained and what hasn't. A student's critical revision of these drawings looking for errors and blanks allows him to verify what he know and doesn't know about the site. Note that at this point students already had access to the official plans of the site in Project 2. This analysis of the resultant drawings frequently shows misunderstandings of proportions of the site's formal properties. This means that unconscious misconception of the site can easily create preconceived ideas or even wrong expectations of what the site is. It's fair to deduce that these errors in relative sizes can emerge from misconceptions of the place and can make the design solving process difficult.

Other types of representations like sections, elevations or floor plans are explored. Drawing floor plans at the site can be quite challenging. It questions the main axes that organise all elements of the place and, again, implies an interpretation of it. Sections planned over floor plans, embedded in axonometric representations or even in perspective drawings (only considering parallel plans to the projection plane) allow one, at any time, to make new readings of height differences of buildings and/or differences in the relief. Those drawings can be used for analysis or as part of a visual discourse in a final synthesizing description of the place.

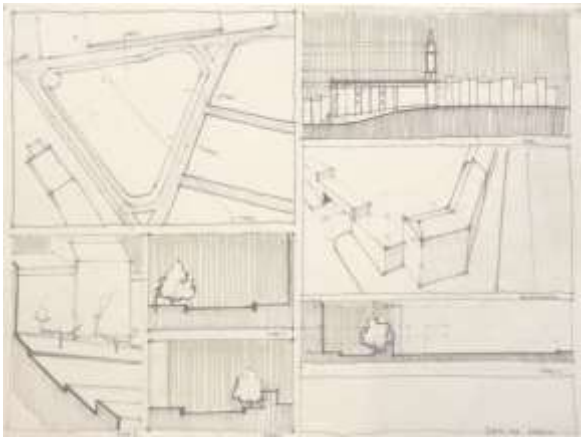

Fig. 5. Student freehand observational drawing at Porto, graphite, pen and marker on A3 paper.

The interplay of all kinds of representation codes, sometimes to analyze the site, other times to establish discovered characteristics of it, implies the use of different visual memory mechanisms and different cognitive high-order cognitive skills that have to do with interpretation. Drawing at the site also mobilises a complex process of information management – focusing on information outside and inside the draughtsman – that is expected to develop visual intelligence and drive towards an understanding of the site that can't be achieved by other means.

There's a game between perception and mental representation going on, that might be similar to a child's mind figuring out the world she lives in. Drawing at the site, in terms of representation, makes the draughtsman confront himself with the very representational limits offered by drawing. In that sense, drawing is an invitation to the draughtsman to force those limits to capture what is subjectively true for him as interpretation of what the site is for him and also for others; although here in a more rational way.

Conclusions

Based on the discussed complex cognitive mechanisms involved in drawing freehand from observation, we argue that to draw from observation can be a live experience enhancer for the architect and even more for the architecture student. By spending some hours walking around the site drawing, one has the opportunity to feel it, flirt with it, recognise it. Trying to understand it by oneself. The premise is that one can't intervene in a complex urban space just by analyzing the city plans or using other second-hand representations: one has to experience it more deeply, taking time to apprehend it through one's unique sensibility. A precious time to spend living and learning architecture.

Fig. 6. Student freehand architecture design drawing at the site, Porto, graphite on A3 paper.

References

[i] Pallasmaa, Juhani. *The Thinking Hand* John Wiley: United kingdom. 2009.
[ii] Carneiro, Alberto. *Desenho Projecto de Desenho*, Instituto de Arte Contemporânea: Porto. 2002.
[iii] De Duve, Thierry. "When Form Has Become Attitude- and Beyond" in *Theory in Contemporary Art Since 1945* Blackwell: Malden, MA. 2005.
[iv] Pelayo, Raquel & Fonseca, Teresa. "Drawing as a Cognitive Strategy: Perception and Creativity" in *Proceedings Book of Drawing in the University Today - International Conference on Drawing, Image and Research*, University of Porto: Porto. 2013. (in press).
[v] Pelayo, Raquel. *Saber Ver no Desenho - Percepção e Representação no Ensino do Desenho de Observação*. PhD thesis presented to Faculdade de Psicologia e Ciências da Educação da Universidade do Porto. 2009.
[vi] Willats, John. *Art and Representation. New Principles in the Analysis of Pictures* Princeton University Press: New Jersey. 1997.