

# REPRESENTATION OF URBAN SPACES: HANDCRAFTS AND POSTCARDS

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## Urban project and visual representation

Drawing has always played an essential role in designing urban spaces and single buildings. Images of reality or fantasy could only be made through human made signs on a flat surface, be it stone, clay, papyrus, parchment or paper.

The hand, guided by the brain, where ideas are formulated and perception elaborated, traced signs which materialised the ephemeral inner process of neurological activity and fixed it for an

indefinite time on a medium. The resulting craft was meant to be communicated to others, but also helped the author to store in a safe memory his/her mental work, to be retrieved and thought over. In the course of the 20th century visual representation changed radically. After the first daguerreotypes, at the dawn of the century photography was perfected enough to be used in many instances. Of course reproduction of already built townscapes was one of the main professional applications. Along with that, the possibility of



manipulating the photographic images with photomontage was exploited by illustrators and designers.

In this process, two or more images were combined or overlapped with the aim of making a single new image looking as if taken from a single real scene. The technique, though troublesome, was effective and seemed ideal to create the illusion of urban scenes or landscapes that actually did not exist. But the real revolution was yet to come, with the advent of computers in the mid-1960s.

With ever improving hardware and software the burden of difficult calculations has been much eased, allowing realistic visual representation of projects spanning from the single building to entire town districts.

At university courses students are taught to use CADs and virtual reality applications. They have learned to appreciate speed, ease of use, precision, stunning special effects but they are walking on a wide straight road which compels addiction and numbs the brain (Guney, 2015).

## Handcrafts and postcards

The representation of a project, particularly in the case of a townscape, needs realism to be properly understood by the lay public, but still has to convey the spirit of the project author, and to this end too detailed are not required (Farey, Edwards, 1949).

**Figure 1**  
130 William Street, NYC, 2017  
Project by Adjaye Associates  
Drawing by Gaia Leandri

This point of view has prompted some authors to avoid the excessive, cold realism of photographic renders in favour of a handmade artwork (Richards, 2013). Representation, on any medium, is the product by the crafter who visualises his/her perceptions of the outside or inside world to be communicated to beholders.

The draw maker can only represent his/her perceptions in a way that both external and internal worlds are mingled together in the handcraft. Ambiguity and incompleteness are essential qualities of representation because they are the hallmarks of the divergent thinking that is behind creativity. As much as perception is the one's mind idea of reality formed through the biological channels of the body, so the drawing is a representation materialized through the work of the hands, the final product of an embodied experience (Pallasmaa, 2009). Simulation, nowadays very popular, is a novel creation where everything is known and completely under control. It is «an artificial environment that creates an artificial experience that is felt to be reality» (Scheer, 2014). Anything can be done but on condition that it stays within the constraints of the provided frame, be it software, hardware or, as in theme parks, buildings. There is no ambiguity, there is no incompleteness, there are no divergent ideas. The rules are set by the authors of the simulation application, so no user can develop ideas outside it.

In modern design, digitally made 3D renderings of photographic quality are extremely popular and easy to make. These are the «blue skyed [...] lush leafed [...] populated by groomed and grinning clip-art figures [...] postcards from the future» originated by “Cartesian given” projects (Jacob, 2017). Most authors praise such products of simulation even on grounds of creativity, because various solutions can be simulated and tested in just few moments (Lawson, 2002; Ivarsson, 2010; Khan, 2018).

But the asserted creativity only lies inside the application world created by developers; it is a limited creativity, an oxymoron in itself, against which several warnings have been issued (Lawson, 2002; Bernath, 2007).

Summing up, we are now in an age where handcrafted representation is often considered outdated and uselessly time consuming, whilst

simulation is easy to produce and as realistic as a postcard. Little thought is given to the fact that postcards and creativity have not much to share.

But postcards also have other drawbacks. Can they be considered a graphic language, can they communicate the author's ideas? Perhaps not as well as handcrafts.

## Communication

In the implementation of the urban project, representation is an integral part of it, to the benefit of its crafter and the public. If the graphic visualization is an anticipation of what doesn't exist yet, it plays an even more important key role in the design of a city project, where the visual image alone has to deal with manifold features on different perceptual levels. The purely abstract act of creation becomes a project in the mind and hands of the creator but it ought to be communicated in the right way, not just to deliver a message but also to make the abstract creation real to the beholders.

The urban landscape belongs to everyone, with its historical and social heritage that has settled over the years and become part of the collective imagination, constituting a reflection of the city itself mediated by the vision of individuals. The image of the project becomes a project of the image where invention and analysis of the existing must establish a dialogue between the designer and the final user. Therefore, it is essential to define what is the best means of communication.

A simple test was set up and published on the web to answer the question about communication. The platform used was *Typeform*<sup>®</sup>, which combines figures and text, and performs some descriptive statistics of the results.

Two townscape images with the project of a new building were presented: the first one was a handdrawn representation (Fig.1) and the second one a simulation render of photographic quality (Fig. 2). In order to provide an answer, the test taker had to choose one among four possible figures where a building was pre-marked as the new one. Only one choice was permitted. Both the question-image and the possible solutions were presented in randomized order to avoid sequence bias.

In the preliminary stage of investigation, the test was submitted to



professionals in the architectural field. Fifty-five subjects took the test. In the category of handcraft there were 34 (61%) correct answers and 21 (38%) errors; in the category of photographic render there were 18 (32%) correct answers and 37 (67%) errors. Statistical analysis with Chi square calculation confirmed that both differences between correct and wrong answers were significant ( $p < 0.01$ ). Summing up, in the handcrafted figure the new building was identified definitely better than in the photographic render. The message that the building had something special that characterized it from the others was clear in the hand drawn figure but much less clear in the render. Why was that? The hand drawn figure did not have peculiar characteristics that could suggest which building was the new one; nevertheless it could be spotted in many of cases. Of course the experiment will have to be repeated several times with different styles of drawing and rendering, but this first attempt is a strong suggestion that there are differences that the conscious eye may not catch, but the unconscious might.

### Visual perception, communication and the hidden features

Of the classic Aristotelic five senses, the test takers only used vision to choose their answers. So it is the neuroscience of vision that has to be investigated to get some reasonable clue as to possible mechanisms underlying the choices. The visual cortex is situated at the back of the brain, in the occipital lobe (Fig. 3). Approximately at the centre of this lobe is the “primary” visual area, where the nervous afferents from the retina, after one intermediate relay, connect for the first time with cortical neurons. The latter are spatially arranged in a faithful map of the retina, called “retinotopy”. This part of the visual system is devoted to analyze some physical constituents of the image, called “visual primitives” (contrast, line orientation, brightness, colour, movement and depth) (Gilbert, 2013), which are essential to recognition of objects. It is at this stage that most of the image characteristics aimed at social “communication” play their role.

For example, definite angles of line orientation are better identified by

cortical neurons. Drawing lines at such angles may catch the eye of the drafter, even unconsciously, who will use them most than other lines. The observer’s eye will also be caught by the same lines, and the object will stand up from the background, with little apparent reason. There are several of such hidden hallmarks that a handmade drawing might include unknowingly to drafter and beholder, but that will make the end product more communicative.

Other cortical areas receive visual information for further analysis and comprehension, for example recognition of faces and complex objects. It is hypothesized that such more subtle analysis is based upon details of the image that are of intermediate size (Ullman et al., 2002).

This could be another feature that easily escapes the conscious acts of drawing or observation, but that *the thinking hand* (Pallasmaa, 2009) may well fit in on its own.

**Figure 2**  
3 Hudson Boulevard, New York  
Render by Notriangle Studio

## Conclusion

By their representations, projects live in the collective imagination before than in the real world, often becoming «important cultural reference points, forms of social anticipation and paradigmatic representation of possible or desirable futures» (Deserti, 2013). Their perception conveys a message that is not fixed but changes according to the onlooker, reshaping the project in a continuous dialogue that takes place on a visual level.

Handcrafted representation is thought to be aesthetically more pleasant and meaningful than photographic render (Richards, 2013), and the results of the reported Web test support its superiority in communication too. Neuroscience provides some definite clues as to the involved mechanisms. Broadly speaking, these could be of three types.

Firstly, the brain functions leading to a handmade drawing are the same that are used by the onlookers to watch and judge the drawing. Secondly, such mechanisms may not reach the conscious level neither on the part of the drawer nor on the part of the observer. Thirdly, the communicative property of the image is probably stronger if it happens at subconscious rather than at conscious level. Summing up, the properties of handcrafted images should be taken into due account both at educational and professional level, so that they can be used with proficiency alongside the photographic renders. Renders ought to be considered as something unavoidable to present projects at competitions and government agencies, but should never be used without the support of the more communicative and convincing handmade images.

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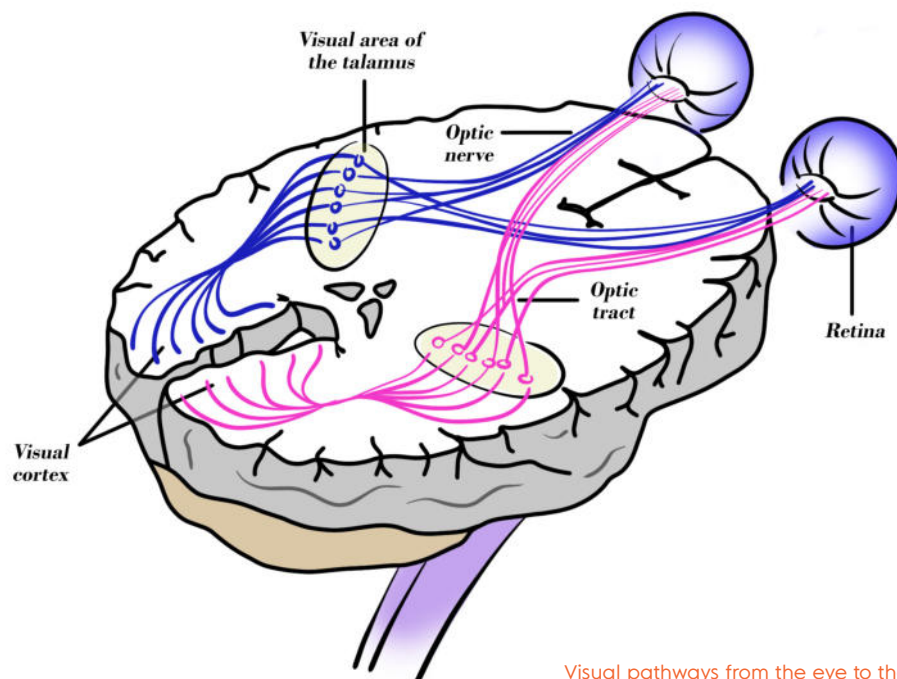
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**Figure 3**  
Visual pathways from the eye to the cerebral occipital cortex. Drawing by Gaia Leandri

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