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Façades Technologies at the Service of the Imitation of Successful Models

Façades Technologies at the Service of the Imitation of Successful Models. In the history of architecture, models have always had a certain importance. The model was a reference that had to leave room for the creativity and free interpretation of the individual designer. In today’s reality, however, we sometimes see the use of successful models that turn into fast and repetitive architectural façade solutions: in this situation, globalised technologies seem to have a central role. This paper aims to analyse the procedures of imitation of successful models through the use of specific façade technologies (metal façades, translucent surfaces, shading systems) worldwide, and also in some projects planned for Italy.

Keywords: Environmental design, sustainable technologies

Fashions and models have always had some success in the design of buildings. Without going too far back in time, we may just remember the importance that the Seagram Building skyscraper, designed by Ludwig Mies van der Rohe (1958), had for many other skyscrapers that have arisen later in New York. Among many buildings, we could remember 28 Liberty Street, formerly known as One Chase Manhattan Plaza, designed by Gordon Bunshaft of S.O.M. (1961). The modular scanning of glass and metal façade is similar, as is the upper culmination and the ground level façade, with the large square pillars forming the entrance portico, and so on. In this case, we are dealing with skilled designers who have contributed to the identification of a model that has produced many replicas in Manhattan’s urban environment. In the contemporary world, on the other hand, where everything is globalised, the patterns are not limited to the characterisation of a particular neighbourhood or city, but appear at all latitudes. Instead, “[…] contemporary architectural culture since a long time has absorbed the international dimension predicted during the period between the two Wars. The greatest architects work worldwide and the industry increasingly unifies the building techniques” (L. Benevolo, 2006, p.17). Models and construction techniques have also passed beyond making differentiations based on the different destinations of use of buildings. To quote Italo Calvino, “any pyramid roof could cover the leprosarium as the baths of odalisques. The traveller turns around and has nothing but doubts: he is unable to distinguish the features of the city, even the features he
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keeps distinct in his mind also mingle” (I. Calvino, 1972, p. 16: The cities and the signs 3). In fact “the rules that underlie the aestheticism of the world do not seem to lie in professional competence, in history, in the evolution of a craft, but in the experimental experience of surface solutions indifferent to the culture that has based their existence” (P. Zennaro, 2009, p. 125). The difference therefore seems to exist between the designer who can control models and technologies in favour of the project, and the “hasty designer” or one insufficiently equipped with control instruments capable of dominating this complex matter. To again quote Italo Calvino, “[…] you will arrive at another Trude, the same point by point, the world is covered by a single Trude which does not begin and does not end, it just changes the name of the airport” (I. Calvino, 1972, p. 61: Continuous cities 2). The risk, then, seems to be the creation of places that are completely identical or at least very similar to other distant places, creating a sort of globalised continuum. The reference models seem to be cemented in the memory of the less skilled designer, who draws them out of the hat in times of need. Hence we assist in the replication of façade systems for social housings with opening panels, such as those created in the nineties by Herzog & de Meuron that we find replicated around the world, possibly using less durable materials. Or, as in our latitudes, recent refurbishment projects for historic buildings that have ended up looking like pastiches of other famous projects.

1. International Style and Successful Models

The influence that the International Style had on the design of buildings in the twentieth century is widely known. The principles identified by Philip Johnson and Henry-Russell Hitchcock in 1932 established the basis for many followers:

- rectilinear forms;
- light, taut plane surfaces that have been completely stripped of applied ornamentation and decoration;
- open interior spaces;
- a visually weightless quality engendered by the use of cantilever construction. Glass and steel, in combination with usually less visible reinforced concrete, are the characteristic materials of the construction (Encyclopædia Britannica, 2005)

Even today in many schools of architecture, the fundamental architects of the International Style (Le Corbusier, Mies van der Rohe, etc.) are taught as role models for the design of contemporary buildings.

Perhaps the most emblematic example concerns the model created by the Seagram Building in New York, designed by Mies van der Rohe with the aid of Philip Johnson, which was completed in 1958 (Fig. 1). For the façades, Mies used non-structural bronze-toned I-beams to suggest the non-visible structure of the building. These elements run vertically, like Mullions, encasing the large curtain-wall façade. From that time on, this method of construction, using an interior reinforced concrete shell to support a larger non-structural façade system, become very common in Manhattan’s urban environment, and many skyscrapers were built in the years following that reinvented the model proposed by Mies.

One of the most famous is undoubtedly the One Chase Manhattan Plaza (28 Liberty Street), designed by Gordon Bunshaft of S.O.M. and completed in 1961. The façade is made with aluminium components instead of bronze, but in its configuration is nearly identical to that of the Seagram Building.

Other buildings with similar configuration located in New York City are: 270 Park Avenue, also known as the JPMorgan Chase Tower and formerly as the Union Carbide Building, designed by Natalie de Blois for S.O.M., completed in 1961; 277 Park Avenue, designed by Emery Roth & Sons and completed in 1964; Burlington House, designed by Emery Roth & Sons and completed in 1969; 888 7th Avenue designed by Emery Roth & Sons and completed in 1971; and Olympic Tower designed by S.O.M., completed in 1976. Other “minor” buildings have similar configuration, drawing a kind of pixelated landscape made up of
virtually identical points that often reappear in front of the viewer, as if to reassure him, almost as in “the city and the signs” by Italo Calvino. The US banking system chose and presented again, at least for a certain time, successful models with which to represent its image (Fig. 1).

2. The Contemporary Situation: the Role of Designers and Technologies

What can the difference be between the quotation of a quality model, and a copy or imitation of a lower level? To quote Pietro Zennaro, in the contemporary world “[…] there is no limit in expressing yourself in the way that best suits to you. This leads to a dichotomous condition in which the good designer is able to make true works of art and place them appropriately in the territory, while the designer without quality is allowed to produce vernacular buildings” (Zennaro, 2015, pp. 21-22).

Another important theme is the globalisation of construction techniques and technologies. The days of the “genius loci” are long gone (See. Norberg-Schulz, 1979), and contemporary cities appear to increasingly fill with “non-places” (See. Augé, 1992) where the condition of living seems to be the one advocated by Karl Marx: progressive alienation.

The technologies are the same everywhere, and the suggestions travel from town to town, often being simplified, creating a sort of visual continuum, at least as far as suburbs are concerned. The technology, if not properly controlled by the skillful designer, ends up taking over, and determining by itself the main features of the project. This aspect seems to be particularly evident with certain façade technologies, such as those using metallic materials, translucent materials, and shading systems.

3. Façade-technology Models: Metal Surfaces

Within the use of metal surfaces in architecture there seems to be an apparent dichotomy between the most talented designers and other designers. These are materials that require special precautions to be taken in the design phase in order to obtain an effective yield in construction. For this reason, it is necessary for the designer to take many factors into account, such as, for example, the material they use, the size and thickness of the panels, the curvatures, etc. Designers who are less accustomed to the use of these materials may incur drawbacks that prejudice the final effect of their work. The use of metal surfaces is obviously subject to fashion and, as is well known, the prevailing fashion often has a big influence on local designers. Let’s think about the “Bilbao effect” - the famous Guggenheim Museum completed in 1997 - that in the early years of the twenty-first century spawned various attempts at emulation, even at our latitudes. A typical example could that of the metal façade on the traffic roundabout linking the SP55 road with the highway exit of Noventa di Piave (VE). It is a parallelepiped-shaped shed. The main façade is fully glazed, and has been completed with an over-cladding made with a metal surface. The shape of the cladding seems to recall some old work of the architect Frank Gehry, responsible for, among many examples, the Experience Music Project in Seattle (2000), as well as the geometry of the Maison Folie in Lille, designed by NOX (2001-2004). The Maison Folie project, in fact, involved the over-cladding of an existing industrial building. The perforated and wavy metal surface is formed with a metallic fabric that harmonises with the load bearing elements, in which the perforations follow the curvilinear progression of the cladding.

The cladding of the building in Noventa di Piave, on the other hand, presents a surface with an “oil-canning” effect, which shows an error of judgement when selecting the bearing structure and cladding thickness. Moreover, the perforations seem to follow a logic lacking in balance, both in regards to the size and to the placement of the holes (Fig 2).
4. Façade-technology Models: Translucent Surfaces

What has been stated about the technologies of metallic materials can be equally valid in respect to those of translucent surfaces, for example in regards to the technical and stylistic solutions that give balance and functionality to a façade. Furthermore, the use of large glass surfaces can certainly be considered a fashion, especially among architects. As previously stated, the International Style has a great influence even today in certain architectural schools, and this is reflected in the work of the designers who graduate from them. The use of glass is related to technological aspects, such as the support elements (for example, uprights and crosspieces), which are often standardised. This contributes to the fact that we find ourselves with buildings featuring large glass facades that are relatively similar, one to another.

In addition to glass, among other translucent surfaces, architects make an emblematic use of other contemporary materials such as, for example, polycarbonate. One of the most significant buildings where this material is widely used is the Laban Dance Centre in London, designed by Herzog & de Meuron and completed in 2003. The building envelope is almost entirely realised with this material, with some parts in transparent glass. The polycarbonate surfaces have a diaphanous colour ranging between shades of green and purple: the colours used in the interior spaces are reflected on the surrounding walls, creating a gradient effect on the façade.

This building had a certain success at our latitude, and some designers have drawn inspiration from it for the realisation of some of their works. For instance, the “Roberto Gritti Civic Center” in Ranica (BG), designed by DAP Studio (2009), presents a polycarbonate shell with colours similar to the Laban Centre, albeit much more saturated as the material used is batch-dyed.

Another building that seems to have been inspired by the Laban Centre is the “Sports Centre for Gymnastics and Fencing” in via Lodi, Udine. The building was designed by studio Zoppini Associati of Milan, Area Progetto Associati of Perugia, Hilson Moran of Milan, and Studio Gentili of Udine, and completed in 2011. Also in this case, the entire building envelope is made of polycarbonate. The colours are similar to those of the Laban Centre, but the tones are much more saturated and all the cladding-plates are coloured, whilst in the work of Herzog & de Meuron coloured parts alternate with neutral translucent parts, making the whole colour much more suffused (Fig. 3).

5. Façade-technology Models: Shading Systems

Even among static or dynamic sun shading systems, there seem to be reference models that have repeatedly been re-used by many designers. One of the most emblematic is the façade system with big folding blinds. Objectively, this is a very effective system for protection from the sun and of privacy for façades characterised by continuous galleries, loggia, or balconies. In fact, this represents a reinterpretation of traditional shutters, although in this case they have the same height as the entire floor, thus covering the entire façade. Perhaps the first architects to have had this intuition were Herzog & de Meuron. “The idea was to adapt traditional folding blinds to large, transparent surfaces. This reinterpretation has resulted in the use of wooden shutters, metal gratings, and perforated or laser-cut plates, so as to create a completely opaque filter. In one of their first published works, the Schwitter Building for apartments and offices in Basel (1985-88) Herzog & de Meuron realise a façade with balconies that extend all along the string course. The structure is made of concrete pillars and the rear elevation is clad with prefabricated panels [...] and large regular windows that extend throughout the curved facade. The windows are protected by red-brown thin folding blinds” (Premier, 2012). This technology evolved in many of Herzog & de Meuron subsequent projects, including the façade of the Fünf Höfe shopping centre in...
Fig. 1
From the left: the Seagram Building in Manhattan (Mies van der Rohe); skyscrapers on Broadway (Manhattan) with the same type of façade. Photo © Alessandro Premier

Fig. 2
From the left: Frank Gehry, Neue Zollhof, Düsseldorf (2000); Building in Noventa di Piave (VE). Photo © Alessandro Premier

Fig. 3
From the left: Laban Dance Centre in London by Herzog & de Meuron (2003); Sports Centre for Gymnastics and Fencing in Udine (2011). Photo © Alessandro Premier
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Fig. 4
From the left: Fünf Höfe in Munich (2003) - Photo © Alessandro Premier; Carabanchel Social Housing in Madrid (2007) - Photo © Katia Gasparini.

Fig. 5
Mock-up by SANAA at Venice Architecture Biennale 2000. Photo © A. Premier

Fig. 6
Saw-tooth roof: mock-up at Venice Architecture Biennale 2016. Photo © Alessandro Premier
Munich (2003), where the sliding and folding blinds are made of folded perforated brass sheets (Fig. 4).

Today this façade system is also employed in numerous interventions by other designers, for example: Ladderstile House in London by Threelfold Architects (2009); the Altis Belém Hotel in Lisbon by Risco (2009); the Cherokee building in Los Angeles by Pugh + Scarpa (2010); House 77 in Povoa de Varzim, Portugal by Dionysus LAB (2011); and many more besides. Among the many similar examples, there is the Carabanchel Social Housing in Madrid by Foreign Office Architects (2007). In this building the F.O.A. group drew up panels of bamboo featuring the same opening system adopted by Herzog & de Meuron. Also in this case, the folding blinds characterise the whole building envelope, however the material is more perishable, and has degraded rapidly over the years (Fig. 4).

6. Models on Complex Environments and Urban Regeneration

In Italy, the imitation of successful models seems to be more frequent, especially in the implementation of preliminary projects, projects carried out in a short time, and projects with a low budget. It happens that even in urban regeneration projects there may be elements that bring to mind the international scenarios of a recent past, or scenarios predominantly metabolised in the minds of the experts. An example could be the recovery project for the former Austrian Arsenale in Verona, designed by 5+1AA (2016). The video of the project can be viewed here: https://www.facebook.com/contecingegneria/videos/vb.598669113572526/883719078400860/?type=2&theater (Retrieved:01/07/16).

The “strip” flooring of the central courtyard and garden looks very similar, for example, to the project for the University Square designed by Chyutin Architects in 2008. The square is located in the western part of the Ben-Gurion University campus in the city of Beer-Sheva, Israel.

For a comparison, the project designed by Chyutin Architects is visible in this webpage: http://architizer.com/projects/university-square/

The large glass roof for the central court seems to recall, by its form, certain projects such as the Santa Caterina Market in Barcelona, designed by Miralles-Tagliabue (2005), and also the Museum der Kulturen in Basel, by Herzog & de Meuron (2010), but is probably most similar to the jagged roof of the Translucent Glass Concert Hall in Poland, designed by Barozzi Veiga (2007-2014).

For a comparison, the building designed by Barozzi Veiga is visible in this webpage: http://www.dezeen.com/2014/12/28/barozzi-veiga-szczecin-philharmonic-concert-hall-poland-translucent-glass/ (Retrieved:01/07/16).

7. Conclusions

The technologies available today, globalised and available at every latitude of the capitalist world can overwhelm the ability of some designers. The technologies seem to dominate some projects, creating similar buildings all around the world. Globalisation is also reflected in the
appearance of urbanised landscapes, in their materials, and in their colours. The imitation of models seems to be due to the recurrence of the technologies that take over the project. It seems to be necessary for architectural schools to train their students with cultural tools, by providing a broad framework to highlight the impact that the latest technologies can have on environmental design.

Sommario
L’International Style ha avuto una forte influenza sulla progettazione di edifici nel corso del XX Secolo. La potenza del capitalismo è stata celebrata anche da efficaci modelli di successo (ad esempio i grattacieli) che hanno caratterizzato interi centri urbani. A Manhattan i grattacieli progettati da S.O.M. hanno facciate molto simili all’originale Seagram Building, opera di Mies van der Rohe del 1958. Oggi il ruolo del progettista e delle tecnologie è fondamentale. Il progettista più abile riesce a controllare le tecnologie a favore del progetto. Il progettista apparentemente meno abile sembra essere dominato dalle tecnologie che finiscono col creare copie poco efficaci ed edifici simili a tutte le latitudini. Capita quindi di imbattersi in edifici del tutto simili a “brutte copie” di archistar quali Frank Gehry, Herzog & de Meuron, SANAA, solo per citarne alcuni. Sembra quindi necessario che i progettisti chiamati ad operare in territori via via sempre più sensibili e complessi si dotino di strumenti e preparazione adeguati ad affrontare le sfide progettuali del presente e del futuro.

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