“Place as Scaffolding: Temporary Visibility / Permanent Imprint”

Every part of the world can be identified by architecture and construction methods, developed over decades by its inhabitants in order to suit their place of belonging. These methods, in a sense, are taken as ‘local’, or vernacular to that place, culture and community. However, one construction technique remains as a worldwide method, one that is common to most human design and building processes: scaffolding. With its analysis, one can start to understand how the purity of a skeleton built as architectural armature may have defined places, however temporary or ‘invisible’ the structure was. Scaffolding has always been an internationalized vessel, which brings infinite architectural possibilities to many parts of the world and, acting much like an imprint, leaving traces of its presence behind.

However, as the vernacular method begs for local materials, methods and environment, the contemporary style of architecture seen worldwide nowadays tends to trade those details made through local construction for the practicality and affordability of pre-fabricated parts. It is no accident that pre-made buildings such as homes and apartment units are already for sale in certain parts of the world. The scaffolding method, as an example of place-maker in architecture for its close interaction with both the building that is permanent and the process of making, has an intricate role within these changes, role which is explored in this paper. With this radical change in building possibilities, the scaffolding method becomes a prime way to explore the visibility of construction and assemblage in architecture. Moreover, this paper treats the scaffolding method as an architectural inprint, so as to seek what influences from the process of making are made visible in the buildings that remain.

Fig. 01 | From left to right: scaffold on quasi complete London Viaduct during 1869, London; Buddha statue under restoration, Thailand; Realengo workers’ housing in 1942, Brazil.
In light of Frampton’s *Critical Regionalism* and its approach to analyzing architecture within specific categories, this paper infers that the legacy of the method can be searched based on a framework defined by the following characteristics: tectonics, boundaries, and transition-movement. By having graphic illustration and textural descriptions, these ‘parameters’ can make visible the process of becoming: how similarities such as details and materials are a part of vernacular architecture, in support of critically developed design and connected to the design thinking of architects as they perceive the world they help build.

After a thorough analysis of the researched material, the framework chosen to compare vernacular architecture to the scaffolding method is guided by three major relationship groups: temporal-cultural, spatial-physical, and material. Within these, the notions of boundary, tectonics and transition/movement in architecture are applied, questioned and exemplified, while taking in consideration several aspects of vernacular and contemporary architecture, and scaffolding. This broadening of notions allows one to understand that scaffolding, as both material and method, is also the creator of imprints, which reveal the thoughts of makers in architecture. Of all its aspects, scaffolding directly relates to the ways in which architecture lingers in permanence: as inherited environments, vernacular building methods, and as temporary shell, which is external and removable to the architecture that is indeed built to last.

In opposite relation to this permanence that is characteristic of the building held by the scaffold, one can infer that the temporary is, in fact, the one which is alive. In this tensioned relationship between interdependent objects, the scaffold itself portrays fluidity, flexibility and adaptability, by allowing builders to transport it to other sites and adjust it. It is due to this active process that one can define the temporary as alive. If it is alive, then serving the built architecture might be its greatest legacy, leaving the permanent behind and being structured anew somewhere else. This idea begs the question however, how could one make the temporary scaffold permanent? Does presenting it as visible architecture change the way inhabitants perceive it?

An example of this thought is the Centre Pompidou in Paris by Piano and Rogers, and another is the Finnish Embassy in Washington D.C., designed by Heikkinen-Komonen. Both projects canonize the skeletons by which they are structured, Pompidou more vigorously and the Embassy more particularly. Details such as the cross-bracing over pipes in the Centre Pompidou even resemble
the human skeleton, declaring a relationship between building and inhabitant, through their shared physical tectonics. In the Finnish Embassy, a much more human scale is achieved through one wall of structure, one sole part of the skeleton if compared to Pompidou. Gaining the interesting aspect of a permeable barrier that is delicate yet essential, the structure’s details call out views to the outside, while protecting the interior spaces from unwanted looks. This example brings up the delicacy and precision found in a scaffold’s tectonics, however supporting that structure may be to the work under construction.

Fig. 02 | From left to right: human circulatory system’s veins and arteries; pipes going through Centre Pompidou’s facade; external and internal relationship in the Finnish Embassy building.

Temporary or not, an indubitable correlation to the human physical boundaries prevail in both these examples, however in light of this correlation’s visibility a question is raised; what happens when the boundary between human and building is defied by cultural means? Does the boundary become less visible?

Continuing with the analysis of Heikkinen-Komonen’s work, more questions which regard temporal-cultural boundaries come to mind. Do the material availability and the general reputation of a material in a society depend on a social aspect more fundamental or hidden than just regulations? An example to this is the prejudice certain places have towards construction methods which are considered ‘local’, such as earthen architecture, often because the material is representative of low-end housing and poverty. In Guinea for instance, earthen architecture in comparison to fired brick – a much more expensive and less sustainable way of construction – is directly related to the cultural understanding of poverty and luxury. Projects such as the Villa Eila, located in Mali, Guinea and designed
by Heikkinen-Komonen Architects, fight this social prejudice by proposing the usage of local methods and materials while applying technical improvements and promoting economically fit architecture. The outcome was a house prototype, which started with Finnish development association Indigo and their concern for the socioeconomic effects of this architectural prejudice in Guinea. (Rael, 2009)

Temporal-cultural boundaries relate in very specific ways to spatial/physical ones. The notion of boundaries in society are infinite, however the causes for their existence, such as colonization, aging, technological revolution and sociopolitical issues, draw lines – of separation and connection – between these two ways of understanding boundaries in architecture. Of course their visibility can be argued; its presence however cannot. This relationship between the temporal-cultural and the spatial-physical reaches another level when one speaks of the Brazilian favelas in Rio de Janeiro.

Favelas are all about the physical boundary at a glance, or the boundary that was lost amidst the organicity of it all. Yet the physical boundary of the city as grid was what guided the people to build up the hills, where there was no bounded space. However, there is no material boundary. There is a material culture, but boundary is no longer the word for it. One could say the major boundary in the favelas case is the cultural one; the disconnect between the city, the rest of the population, the prejudice and the change of values.

Fig. 03 | From left to right: mn walks through favela hills in Brazil; kids play on scaffold in India, narrow passageway between houses in favela, Brazil.

Compared to scaffolding, the favelas’s relationship to the city is the same as the scaffold to the building: there is an invisible diaphragm, holding, separating, tensioning both sides. Scaffolding is temporary however; the favelas could have been, but as an institution, the city never left room for that society and so they became permanent, a part of the city while apart from the city. They became characterized as the favelados, the ugly, the rudimentary, the organic. What if scaffolding wasn’t temporary,
and instead lasted like the favelas: could this method have adhered to itself all these characteristics?

One could argue that it has, indeed, achieved similar characteristics in society’s eyes; scaffolding is hardly seen as worthy of permanence or visibility, especially compared to the architecture that is helping to raise up. There are a few examples in architecture however, that relate to how the scaffolding of buildings did reach permanence, by meaningfully being utilized in creative and locally relevant material-method-architecture relationships. In light of Frampton’s work, this could be defined as both consciously bounded architecture, concept which is here analyzed through a material rather than a timely perspective; and tectonically particular, rather than architecture reduced to walls and floors.

A tremendous example of the permanence reached by scaffolding is the city of Brasilia, land of site-cast concrete and perhaps an argueable choice of urban grid to be studied in a paper that relates to vernacular architecture. Brasilia, as urban grid, promotes an odd feeling of unbelonging to its site, a somewhat noticeable disconnect to the land on which it was built. This is because no physical boundaries surround Brasilia except the man-made; interestingly enough, Brasilia as a building complex achieves the points that define Critical Regionalism and moreover, helps to create more correlations between defined material boundaries, and spatial-physical ones. One particular detail that can be noticed throughout the buildings is the texture from the wooden mold that once held up the site-cast concrete. Much like a signature on a painting, the natural texture contrasts beautifully with the roughness of the concrete in color and weight. Moreover, in buildings like the Itamaraty, the way the mold was constructed directly influenced the architecture, not only in texture but also in the achieved shape and structural capability. This textural remain is one of the most material-sensitive parts of Brasilia, almost overruling the immense amount of concrete usage. Here, the scaffold shows itself as essential, to the building of an entire city and to its material characterization: the boundary established by its mold is now imprinted, visible and yet inexistent, for the material becomes much more organic and alive with the scaffold’s textural legacy acquired to it.

Fig. 04 | Wood grain along concrete arches from the Itamaraty building in Brasilia, Brazil.
The notion of letting the material that bounds influence the material that lasts speaks both of spatial-physical tectonics and material boundaries. Other examples of these relationships being explored together in architecture are in the works of Barragan and Ando, both exemplified in Frampton's Critical Regionalism essay. Barragan’s works, according for Frampton, define a kind of ‘earthbound architecture’, where architecture is bounded by site, land and culture; “an architecture that refers indirectly to the Mexican estancia” (Frampton, 2007). Such intense connections to place-specific boundaries allowed for the development of tectonics that evoke an understanding of these boundaries, as if they were the scaffolding that raised up such a regionally defined architecture. Projects such as the Gilardi house play with the notions of material boundaries: weight, textures, colors, the time of day, all of these influence the way spaces are arranged together gracefully and meaningfully. Moreover, Barragan as an architect valued many of the same categories included in Frampton's Critical Regionalism, such as the concept that architecture must be not only visible but also tactile and invite all senses into participation.

Tadao Ando, to whom Frampton refers as “one of the most regionally conscious architects in Japan”, also theorizes the most similar to the precepts of Critical Regionalism. With his architecture, Ando proposes the idea of a ‘Self-Enclosed Modernism’, to reiterate the intimacy once traditional of Japanese architecture between man and nature. The creation of surfaces by means of material specificity such as concrete instigates a whole new perspective on how intimate and profound architecture can be, perspective often experienced in Ando’s architectural works. How does Ando’s self-enclosed Modernism relate to scaffolding? As boundary, or perhaps a boundary that does not get to be visible – a theoretical one. It is however both material and spatial; Self-enclosed Modernism can be atemporal, yet materiality and spatial meaning define it.

Culturally, Ando’s architectural theory touches on certain aspects of Japanese architecture that correlate more specifically to the notion of material boundary, as well as the notion of material transition-movement between cultures. Going back to the analysis of a cultural boundary, Japanese buildings laws do not permit rammed earth construction, for it is not an earthquake-resistant material. However, in an exploration regarding the design of a house that had the least impact on the environment, architects Manabu + Nez/Loco dared to propose Zousei, the method of excavating and ramming soil for construction.
The design entailed the raising of organic ‘walls’ from the ground, creating spaces by bounding them here and there with these pieces. Much like Ando’s notion of surfaces, which enclose and promote intimacy, this project proposes two types of transition-movement in architecture: one, the spacial-physical, that a house can be defined by its boundaries with the rest of the world; and two, a blend of temporal-cultural and material, that a culture can utilize a non-earthquake-resistant material as a kind of recycling feature, allowing for nature to have those materials, once an earthquake does strike and the house is most literally returned to where it came from.

Across the world, another architect engages with architecture and regionalism similarly to both Ando and Barragan. Paulo Mendes da Rocha, Brazilian Pritzker prize laureate, also creates within the principles of Critical Regionalism, in a sense that architecture becomes bounded by materiality, time and land. Material and spatial-physical tectonics are used in his work to evoke both a connection with the place and an intimacy with the space; Mendes da Rocha’s adaptive reuse projects are of a tremendous sensibility and portray the precepts of Self-Enclosed Modernism as well as Critical Regionalism in their surfaces, openings, material choices and site design.

The Chapel of Our Lady of Conception in Recife, Brazil, is one of these projects: one intimate space enclosed by the ruins of a 19th-century masonry and tile building, with openings that make the visitor transcend to the Atlantic forest surrounding the chapel. The roof is suspended by two gigantic columns and creates a beautiful weight and tension between its plane and the walls, developing a tectonic that speaks of the time passed between the ruins’ construction and their renovation. Once again the intimacy of the space lets the visitor transcend only to the outside, where the remains of the ruins that weren’t renewed for the interior of the chapel create a pathway, asking the bypasser to transition in and out of the space and walk through and by them. This walkability is another point that correlates not only to a spatial-physical transition-movement, but also a temporal-cultural one. Mendes da Rocha, with this adaptive reuse work, asks one to see the building as if it was on its ‘second act’ – expression coined by Frampton when characterizing the main points for a Critical Regionalism. The idea of a ‘second act’ for architecture relates to scaffold in a sense that it doesn’t have only one or two acts; as a structure that moves and adapts for as long as it stands, it inherently has as many acts as it can support.
This project specifically relates to scaffolding in a sense that it creates a cocoon-like structure over the ruins, enclosing that which was not safe and making it safe and inhabitable again; and it does so while paying homage to the interior space and the ruins. Moreover, this homage is important because however permanent this ‘scaffolding’ surface was intended to be, it is thanks to that structure that the main one – the one intended to make visible – can still stand. In a sense, the scaffolding that is permanent actually becomes invisible to the eyes of the visitor.

Still considering Ando’s concept of Self-Enclosed Modernism, a project that challenges it and yet poses similar questions of material boundary as Centre Pompidou and the Finnish Embassy in the U.S. is the retrofit project for a creative studio space at the ITESM Leon, Mexico designed by SHINE and TArquitectura. Perhaps the best example for the analogy of scaffold as a cocoon, this structure wraps the entry facade of the building, creating a pathway for the bypasser to walk through. Again a project which stimulates the sense of walkability, this structure is notably flexible, raising comparisons to the ways a scaffold might be placed around the work under construction. Moreover, an inherent comparison to the cocoon metaphor for a scaffold structure is that it allows for the movement and transformation of the being which surrounds into another, a butterfly in the cocoon per se. Maybe the most intriguing aspect of this project is that it is a creative setting for university-level students, where they might indeed come through as one person ideologically and leave as another. A metamorphosis actually happens within this structure, one of the inhabitant. Meanwhile, the structure itself canonizes the legacy of its counterpart – the scaffold structure – doing the same, a metamorphosis of adaptability and of its work within, which grows through construction and support given by the scaffold.
Can the tie or bond that unites the scaffold in an architectural way be compared to the bonds of culture? Moreover, can that same tie be compared to our details, finishes which define vernacular architecture, that at the same time are present in the framework that makes building with concrete for instance, possible? Where does the correlation that all this belongs to culture stops? And is it ever made visible? To continue the thought that scaffolding allows for architecture to be safe and continue on to a second act, how does interior scaffolding affect the spaces within the building? Thinking about a tunnel’s reconstruction and how much safer it is with the scaffold installed, one can’t help but think of it as a cocoon, a protective shell against the dangers of architecture. Yet if one considers the Reichstag enclosure project by artists Christo and Jean-Claude, it is almost as if the world is being protected by this cocoon. Inversely, the people inhabit the outside and not inside, like the tunnel. Therefore, it is as if the cloak protects people from the dangers that might come from within the building. A very political move, the installation represented the unveiling of a new Germany to the world, a reconstruction happening within and separated only by the texture of the fabric and the tension between the cloak and the building. Here, scaffolding is part of the notion of a cultural transition-movement, one that is both timely political and social.

But for a critical sense of transition-movement, architecture must not always engage society as a whole. The beauty about the framework in which scaffolding compares to architectural characteristics is that it can be as intimate as the relationship between the scaffold and the building under construction. A remarkable example is the vineyard residence in Victoria, Australia, designed by John Wardle Architects. Inspired in the clients’ move from the city to the countryside for their passion of viticulture and built with rammed earth excavated from the site, openings, connections and details in this home talk about transition in architecture, tectonics with the ground and materiality that is meaningful to the land. This correlates to scaffolding for its transitory use, the final removal of the support so that the newly built can perform by itself.

If anything, what we understand as temporary structure comes with characteristics that are inherent in our thought of it as a defined, reified ‘temporary structure’. Efficient is one of them. That entails other characteristics such as cost-effective and easy constructability. Interestingly enough, scaffolding, as a world-known method for temporary construction support, tends to also be rudimentary. That is a characteristic that does not correlate with its typological twin in today’s architectural design,
the temporary/ portable/ mobile buildings. Taken as installations, these buildings are considered epitome of building technology.

However, the idea behind it has been used so many times and in so many places that to call it efficient, or cost-effective, or transportable, tears the meaning off of a primordial part of architectural construction, the scaffolding method. So why is it that the word ‘rudimentary’ comes to mind? Analysing images taken in places as opposite as Japan and Brazil, the contrast between the building itself and its outer skeleton is undeniable. Materials, finishes, details, everything differs. Yet one could not stand without the other. There is an intimacy, a tensioned relationship between the architecture that has been thoroughly analysed and designed, and the ad hoc twin which, much like a cocoon, embraces it and allows for the building to grow within its reach.

It’s odd then, if one takes this relationship further, that on the opposite side of such perfectioned architecture, there is an instinctual, rough support system. After further analysis, the word rudimentary becomes present only because of the contrasting building under construction. Without its extreme opposite standing right by it, and for nowadays’ understanding of temporary architecture, scaffolding methods could become installation, art, spaces, building. With the framework proposed in this paper, scaffolding appears visible again, as part of contemporary architecture and as influence to regionally-based architecture. Its roughness and instinct-based finishing never leaves. However our seeing it as rudimentary does. Maybe that is the issue with architecture that is taken as vernacular, but in fact is not. That it is so attached to the way we see it that, once it breaks free from its comparisons, it becomes something else.
References


Figure 1


Figure 2


Figure 3


Figure 4


Figure 5
