SCENIC DESIGN AS A FIELD FOR EXPERIMENTATION BY ARCHITECTS: THE SET DESIGNS BY HERZOG & DE MEURON AND MORPHOSIS

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Introduction

Although in different ways, architecture and scenic design have historically shared investigations into the concept of space, temporal dimensions, illusion, and reality. Whenever science and technology propose new dimensions, it is art that first tries to experiment them and remind us that space and time are constructions that may be re-read and disassembled. Thus, the revision of geometric space, conducted through Einstein's physics and the non-Euclidean geometries, has been incorporated into art, as well as the micro atomic space, where matter and energy converge.

As Foster (2011, p.93) indicated, when analysing the work of Diller, Scofidio + Renfro,

> *Architecture might seem to be extrinsic to such topics, dear as they are to postmodernist art, but, pace the discourse of "fusion", the interdisciplinary thrust of these projects is first to suggest that architecture is always already present somehow – as unseen setting or frame – and then to disrupt this normative use of architecture with a critical intervention.*

For some contemporary architects, interest in the performance of bodies and, therefore, in stage performances is growing, and has provided theatre audiences with experimental scenic devices that address issues which go beyond stage convention. The set designs analysed herein were produced by different theatre companies, but what they have in common, besides being for performances during the first decade of the twenty-first century, is that those responsible for their production sought architects in order to create them, since they recognised conceptual research in their works that would collaborate with the scenic performance. Through its characteristic as an "essay of space", scenography, in a certain manner, enables "isolated" phenomenological experiments. The Italian stage, with controllable qualities of light, sound and visibility, functions as a kind of "test tube" for architects interested in the essential phenomenon of space, body and movement.

Here, we use scientific language terms for two reasons. First, we draw a comparison between the Italian stage and a scientific laboratory, which seeks to reproduce "standard temperature and pressure (STP)", in order to make the results of the experiment universally valid, within the standards stipulated by the scientific community, so that it may be repeated by other scientists. Likewise, the Italian stage has certain characteristics that make it possible to transfer a performance from one stage to another while maintaining some degree of uniformity. Second, but no less important, we believe that it is this quality that establishes the desire for architects to experiment on the stage with devices and concepts similar to those with which they work in the architectural field. The possibility of controlling lighting, sound and even pressure qualities (as revealed by the set for Tristan und Isolde, which we analyse herein), thereby fixing the attention of the audience in order to control almost entirely the image to be created, is an opportunity of experimentation, since such conditions are but predictable when dealing with architectural objects. Architecture is exposed to the weather, to the inconstancy of natural lighting, to interference from the lights and sounds of its surroundings, to the appropriation of spaces according

of to the decisions taken by the user, which thereby change the way of both approaching and walking through the object. Ultimately, architects have little control over the images that will be generated from their architecture. In the cases we analyse, the visual cues of the stage go beyond the scenic code to refer to aspects such as texture, topology, and spatial geometry. Brejzek indicated that in the theatre work of these *'architects-scenographers'*, attention is focused upon a single device (Brejzek, 2017, p.63), and we believe that this is in order to force us to plunge into the reflection implicit in its effect.

Herzog & De Meuron

The Swiss architects Jacques Herzog and Pierre De Meuron graduated from the Zurich Polytechnic Institute and, in the 1980s, began to act professionally. Their intention was to discover in art, mainly in the stream of minimalism, the inspiration to develop their projects. The two architects were involved with Joseph Beuys and the artists of the minimalist movement from which a significant part of their conceptual behaviour originated.

Minimalism seeks an aesthetic impact in the physical qualities of the work (scale, material, spatiality), instead of investing in metaphors or rational reading. For Foster (2011, p.XI-XII), with this aim, Herzog & De Meuron began from a "formal reductivism", so that the object could not be read as a composition, but rather as a totality (or series). Their greatest interest lay in the tension between the literalness of the geometric form and the phenomenal effects. Herzog & De Meuron stated that they proposed an architecture that had the ability to affect people first physically and emotionally before they are intellectually aware of what is happening (Zaera-Polo, 2016). To accomplish this, they sought to explore the material "before the image". Hence its "volumetry" is almost always a single prism, a gesture that W. Wang calls "megatectonic": *'Dialogically oscillating between factual tectonics and megatectonics, between material reality and the great structural gesture, (…) They chase the paradoxical effect produced by the*

strict forms and the articulated materials' (Wang, 2000, p.12)[1].
Their first outstanding project, the warehouse for the Ricola industrial complex in Laufen (1986), is a clear manifesto of this method of work:

> *Whatever material we use to make a building, we are basically interested in finding a specific encounter between construction and material. The material is there to define the building, but equally, the building is destined to render the material "visible". (…) we convey the material we use towards an extreme, in order to show that it is completely independent of any function other than that of "being".* (in Zaera-Polo, 2016, p.104)

Generally, in the works of Herzog & De Meuron, they state that *'the materials enable the appearance of form and help define the structure'*. Undoubtedly, this is not a random choice of material, but is rather suggested by the architectural problem. The two architects emphasize that the material, whether *in natura* or industrialized, besides an external form, also possesses a visible form, an internal structure, invisible, but determinant. From the beginning of their careers, they were interested in the relationships that may be established between these invisible structures and the image, as well as social behaviour or human psychology. One method they describe as *'a search for codes that adapt both natural and cultural information'* (idem, p.83). This concern resulted in the manifesto-text "The Hidden Geometry of Nature" (1989).

Tristan und Isolde **and** ***Attila***

'(...) the invention of a new material addressed a specific architecture. It would not be easy, therefore, to extrapolate the invention elsewhere'. This sentence by Rafael Moneo (2004, p.366) on the work of the architects is valid for the set designs in 2006 for *Tristan und Isolde* at the Berlin Opera, directed by Stefan

[1] This and all non-English citations hereafter have been translated by the author.

Bachmann. After months of attempts, a mechanism was finally achieved of a negative pressure chamber that enabled a rubber membrane to be moulded onto different backgrounds, realizing the conception of Herzog & De Meuron: *'The stage sets and the staging would not represent the things themselves but rather their appearances. (…) that were constantly changing, breathing, imperceptibly overlapping, fading in and fading out. With the addition of precision lighting, these appearances acquired an almost hallucinatory effect'*[2].

The device makes us intuit the material without guiding us towards it, although the light-texture sensation comes first, before the image-appearance that informs the scenery (*'The appearance of the hull of a ship, stairs, a cave or part of a body, a concrete form and identity, and the appearance of emptiness, of nothing, of a zero space*). Material intuition "informs" something, and then misinforms. The effect reminds us of the architects interest in the microscopic invisibility of materials and the substitution of determinism for probabilistic predictability, which describes the essential nature of particles, between energy and matter. The solid condition disappears, although this achievement is due to the material texture or, rather, due to our desire for the material that insinuates, but does not materialize. Rafael Moneo describes this same sensation when analysing the office building also created for Ricola in 1999, where the effect is achieved using glass:

> *(...) The volume virtually dissolves with the superposition of images in an infinite play of reflections, rendering impossible any reading that might understand the building as a static reality. The image multiplies and dissolves, and the architects seem to be interested not so much in the values accompanying a world of presumably impenetrable solids, as in the values that are present in the virtual and atmospheric spaces to which the systems of voids have accustomed us.* (Moneo, 2004, p.402)

[2] This and the following excerpts from the architects themselves, when not referenced, were taken from the official websites of Herzog & De Meuron (https://www.herzogdemeuron.com) and Morphosis (Morphopedia – https://www.morphosis.com).

The membrane created for *Tristan und Isolde*, rather like the works of Christo and Jeanne-Claude, sharpens our curiosity about the image by hiding it, and revives the perception of matter when it reveals its qualities of volume, texture and shadow, still perceptible under the skin. The membrane, when applied to architecture, proposes the resumption of something lost in the passage from the traditional façade to the contemporary screen. For Scoffier (2009), it recaptures a sense of interiority and exteriority, which modernism intended to snatch away in a universal isotropic space, revealing, while at the same time hiding, the interior, in a game of seduction that summons our imagination.

The duo, in the 1990s, arrived at techniques that brought into question both the planarity and the depth, screen printing images on glass, as well as printing relief images on concrete blocks. These techniques, invented by the two architects during their research on screen and texture, textile and three-dimensional qualities, transparency and reflection, possibly originated from their observation of ornamental patterns. Pierre Herzog noted his perception on the Alhambra Palace: *'the illusion of a plane instead of space, or of a trellis in front of the infinite space. Surface-stone (mundane, heavy) becomes clothing (textile, immaterial)'* (Apud Melo, 2002, p.55). In *Tristan und Isolde*, the membrane is sometimes lit from behind, becoming a transparent screen revealing the profile of the materials, and is sometimes lit from the front when stressing the materials, revealing their texture. This ambiguity between texture and screen, materiality and image is a very important issue in our relationship with the contemporary world.

This is because we are constantly confronted by luminous images, created not only to transmit information to be processed rationally, but also to reach our senses. The ability of these images to make our organism react, to reach our senses of touch, smell and taste, involving our body, is part of its success in generating meaning and filling our existence. Similarly, our own perception is being transformed. The imbrications between the physical presence and the virtual image are increasingly explored, both by artists and by our own feelings. The idea of dematerialization, pursued by many architects since the dialogue

Figure 1. Herzog & De Meuron. *Caja Forum* in Madrid (2007). The image shows the contrast between vast planes of vegetation and construction materials. Photo: Júlia Martinelli (PIBIAC – FAU – UFRJ). August 2021

between matter and image proved to be irrefutable, is an expensive topic, and was successfully developed by Herzog & De Meuron.

For the set designs of *Attila*, at the Metropolitan Opera House in New York, led by Pierre Audi in 2010, the architects designed two devices that worked in contrast.

In the prologue, the mountains are represented by concrete rubble, with smaller pieces below and large slabs above. In the other acts, the forest around Rome is a "cloth" of leaves that covers the entire scene, from floor to ceiling, in a dense texture with holes for the characters to appear through. Here, the duo abolished "form" so that the focus fell on the qualities of materials that, in contrast, followed the main theme of destruction and rebirth.

If the polystyrene mountain transmitted weight and indicated that the image and the material had become increasingly closer, they did so in the opposite direction of the gabion walls of the Dominus Winery, where the spaces between

Figure 2. Herzog & De Meuron. Library of University of Applied Sciences in Eberswalde (1999). The image shows the effect of "textilization" of glass and concrete. Photo: Immanuel Giel (August/2005) [CC BY-SA (http://creativecommons.org/licenses/by-sa/3.0/)] source: https://commons.wikimedia.org/wiki/File:FH-Eberswalde_Bibliothek_Fassade.jpg (downloaded on 1/4/2020)

the "real" stones caused them "to float", thereby betraying the ontological meaning of the material. The curtain of leaves, in turn, leads us to a direct parallel with the Vertical Garden of the Caja de Madrid (2007), where it provoked the same contrast and, less directly, with the Ricola pavilion (1993) and its polycarbonate façade applied with images of a leaf. Repeated hundreds of times, the leaf becomes a sign like those of Pop Art, going from image to texture. The silk-screened glass created by Herzog & De Meuron did not allow itself to be imprisoned. It is almost impossible to comprehend the matter of their mutant surfaces. The material deceived the eye and played with our perceptions, which journeyed between surface and depth, and between the leaf design and the transparency of the glass. *'They apply its idioms cannily: often they use serial units in such a way that material and image are all but conflated, sometimes with materials deployed as images and sometimes the reverse'* (Foster, 2011, p.123).

For Herzog & De Meuron, *'[glass] is as solid and stable as stone or concrete. In*

opposite, by printing on concrete, it suddenly becomes porous or shiny like glass' (Apud Foster, 2011, p.263 [32]). Here, the duo presented a theatrical posture with regard to the materials, in a somewhat baroque fashion. No longer the rational mechanism of illusion that confronted the two-dimensional surface installing an illusion of three-dimensionality, but a phenomenal mechanism by which a tactile material surface was confronted with an image that destroyed its reality. An architectural experience that perfectly symbolized the contemporary precedence of the gaze and the creation of a purely visual world.

The Silent Collisions of Morphosis

Thom Mayne is the principal founding architect of the California studio Morphosis, created in 1972, which defines itself on its website as *'a dynamic and evolving practice that responds to the shifting and advancing social, cultural, political and technological conditions of modern life'*. In defining the studio as a 'dynamic and evolving practice', the collective highlights its interest in movement and transformation, not only of professional practice, but of the objects generated in this practice. Hence Morphosis embraces projects of installations and exhibition spaces, understanding architecture as an expanded field. On being invited to build the exhibition stand that would receive Vecta chairs at a large New York showroom in 1989, Morphosis applied its unpragmatic reflections. Instead of highlighting the products, they placed them in luminescent boxes with small cracks through which the viewer could glimpse parts of only 6 chairs (each "hidden" inside a cube), chosen from dozens that the company intended to expose. The luminous cubes, suspended from the floor, formed a small maze through which visitors searched for cracks that could reveal the objects exposed inside. The exposed object, traditionally *on* the cube, was now *inside* it. The purpose of the collective was, in his own words, *'to create interest through mystification by hiding the chairs within an object'* (Apud Cook & Rand, 1989, p.217). The device emphasized the formal quality of the object, rather than its utilitarian value, because it instigated curiosity and proposed new views on it, both

displacing our perspective (since chairs, in general, appear standing on the floor) and fragmenting its image. At the same time, it illustrated the interest in displacements, fragments and concealments, revealed by Thom Mayne:

> *Our work concretizes the ephemerity of feeling. It transcribes the complexities of the world and the fragmented, disbursed, and detached nature of existence. Our interest in indeterminacy parallels our interest in formal language. Our work reiterates the unfinished nature of things. We hope it unmasks the deceptions of first appearance and explores what we don't see.* (Idem, p.7)

In 1999, the collective, headed by architect Ursula Schumaker, designed the expography of *Silent Collisions*, a model exhibit of Morphosis itself at the Netherlands Institute of Architecture in Rotterdam (NAI). Within an ideally "neutral" exhibition room, with balanced dimensions, high, warp ceilings, and closed to the outside environment, the collective created two layers of light: traditional expographic lighting, focusing directly onto the exposed models and planks, and above this, a second layer which, attached to the ceilings, passed through a device installed as a second translucent cover, creating discrete variations of light in the environment.

The device, made up of triangular and trapezoidal planes hanging from the warp, covering almost the entire area of the room, resembled a translucent roof of many pitches, and moved very slowly, changing its angles and opening cracks, transforming and promoting almost imperceptible changes in the exhibition environment. Thus, it simulated solar incidence, such an essential component in the appreciation of architecture but which is often overlooked. In an exhibition on architecture, Morphosis reminded us, phenomenologically, of the importance of light and of its long duration in contemplating the architectural object.

According to the Morphosis website description, the devise is *'an abstract timepiece'*. On the mezzanine floor of the gallery, the architects positioned a chair so that the device could also be admired, like a 1:1 model (or, as the

project memorial states, *'a transformation of space at a one-to-one scale'*), which completed its cycle every hour. It was thus exposed in the superposition of a dynamic space to a static space (the gallery's ground floor with the traditional exhibitors), a scale of times, or times within times, as one of the intrinsic qualities of architecture and the city. The architects stated that:

> *(…) our experience of the built form changes with light, temperature, and climate over the course of the day, while the physicality of a building itself changes over the course of seasons and years. Reflecting architecture's diurnal transformation, the exhibit structure moved at a nearly imperceptible rate, completing one full cycle in the span of one hour.*

We could draw a parallel between the "performance" of this space and Robert Wilson's goals in works such as *Einstein on the Beach*, of which Salter declared: *'Wilson's slow motion, dreamlike archi-scenography created a performance event no longer dominated by the unfolding of linear clock time or chronos, but instead by tempus – the spectator perceived sense of "lived time"'* (Salter, 2010, p.60). The *Silent Collisions* exhibit project received an award from the American Institute of Architects, and choreographer Frédéric Flamand (Charleroi Dance) envisioned a space to experience the interaction of dancers within the limits of space and light. He invited Morphosis to conceive a performance to be presented at the first Venice Dance Biennial, in 2003, whose theme was precisely 'body-city'.
For the performance created with Morphosis, the idea of the exhibit device was maintained, as well as the title *Silent Collisions*, which translated the relationship of bodies with the space of the city. Flamand's choreography was inspired by Italo Calvino's depictions of imaginary cities in "The Invisible Cities".
Performed at the Teatro alle Tese at the Venetian Arsenal, the choreography was set in a bifrontal scenic space, with the arches of the shed laterally limiting the device and participating in the scenic configuration. Three large planes – each cut into triangular and trapezoidal panels, enabling light to pass between these

fragments – formed a scenic box, a kind of white cube: a plane parallel to each arch and a plane forming the ceiling. The panels were constructed with metal frame and tensioned translucent fabric, to allow the passage of light. Its vertices hung from the warp by a network of cables, as in a great puppet of wires, and could be uneven, gradually dismantling the initial cube and reconfiguring the space with angular and broken shapes. *'Flamand orchestrated projections of text and images as place markers, as virtual dancers, and as literal references to the contemporary mode of navigating the world (the internet)'* (Weinstein, 2008, p.30). According to the memorial of the stage set project, *'Space and dancer become singular in this four-dimensional space of fixed and kinetic levels, breaks, inclined planes, and undulations'*. Both elements – space and dancer – moved, sometimes dictating, sometimes following the movement of the other. The architects were proud to offer the choreographer *'the tool to operate on the performance environment, to choreograph not only the dancers but also the space'*. Thus, both choreographer and architect sought to create a performance where the dialogue between body and city was represented.

Starting as a white cube, the device acquired 11 different conformations, relative to 11 of the cities imagined by Calvino. Despite the dynamic configurations, the project memorial highlighted the reference to the cube as a kind of "referential regulator" of form: *'As formal and temporal symmetry device, the structure starts and ends as a platonic form - a cube. Throughout the performance, the planes of the cube fold up or down to animate the environment'*.

This short excerpt serves as an important key for reading some architectural projects of the collective. We may analyse two designs of educational buildings conceived around the time of the *Silent Collisions* sets. Diamond Ranch High School, a 1996 project that opened in 1999, was one of the most important by Morphosis. This was a set of school units, linked by a central avenue that was implanted diagonally within the place. The fragmentation and deformations of the volumes, according to the architects, were inspired by the 'jagged and inherently unstable forms of the Los Angeles foothills' but this relation to context was not as striking

Figure 3. Morphosis Architecture, with Gruzen Samton as associate architect. Cooper Union New Academic Building, Cooper Square, New York City (2009). The image shows the transformation of a cube block. Photo: short.dale [CC0] (April 2011) source: https://commons.wikimedia.org/wiki/File:CooperunionNAB.jpg (downloaded on 1/4/2020)

as the still-present reminder of the regular prisms that gave origin to the volumes. We may also say the same about one of Morphosis' most controversial projects, the new headquarters of the Cooper Union School of New York, conceived in 2006 and completed in 2009[3]. Here, once again, the origin of the object is clear and the starting point of the design process may be referred to as a parallelepiped derived from the complete occupation of the New York block. The regularity of the volume is broken by an expansive movement that comes from the inside and corresponds to the prism of the stairs, a place of coexistence with irregular flights and catwalks that expand to "crack" the cube and open

[3] The controversy surrounding the project concerned the high building costs that the school had to deal with, which, coinciding with the great US crisis of 2008, consumed the funds left by the founder Peter Cooper. This led the institution, which had been free for 150 years, to start charging for tuition. Andrew Rossi's *Ivory Tower* documentary, winner of the 2014 Sundance Festival, questioned the need to build the new headquarters and showed the Free Cooper Union movement. Membership of the movement included those such as Barack Obama, who mediated the board's agreement with the students who occupied the school's headquarters in 2013.

the view to the inner community nucleus from the front facade or, according to the project's memorial, *'connecting the creative and social heart of the building with the street'*. The fragmentation of the object remained at a distance from the formal origin, short enough to allow us to go back to the cube and thus recreate the dynamics of transformation in our imagination. The image of the cube allows us to revisit the formal symmetry and, also, the original moment that initiated the procedural conception or, in other words, the action of the transforming forces that generated the final object. These forces, visible and active in the choreographic spectacle, can only be intuited into the architectural object. The architect, however, does not give up on bringing the architecture of these qualities closer to performance.

The *Silent Collisions* installation/set participated in a collection of 1:1 models that, since the 1960s, has gained importance and, according to Brejzek and Wallen (2018), became the big stars of the 1980s at the two largest international architectural events on architecture and scenography: The Venice Architecture Biennale and the Prague Quadrennial. For the authors, the 1:1 models were neither representational nor iterative, but autonomous, i.e., they have established a conceptually significant spatial experience themselves and reach the observer with its immersive power:

> *At such scales, the model created for the exhibition becomes an experiential interior space and volume, rendering it both performative and autonomous. Beyond the mere representative display, it is constructed increasingly for exhibition alone, asserting its autonomous status as a cosmopoietic or world-making physical object or environment.* (Brejzek et Wallen, 2018, p.133)

In the lyrical installation project *Snow Show*, for the 2004 outdoor winter exhibition in Rovaniemi, Finland, Morphosis used qualities of water to create a "performative" architecture. Three months before construction, capsules of red antifreeze liquid were sunk into a lake. When the lake froze over, the ice

blocks were extracted, some of them with capsules inside. In the built pavilion, also a 1:1 model, solid blocks immediately contrasted entirely with others that were kept inside the red fluid. At another "time" transposed by the installation, however, it was possible to observe the mutation of the whole object, both by enhancing the light effects on ice surfaces, and by transforming the states of water. The installation reaffirmed the collective's interest in concepts involving time, manifested by light, natural cycles, and cube transformations. According to Morphosis,

> *As our NAI exhibit challenged viewers to perceive the diurnal passage of biological time, this project provokes its audience to examine the making process over the course of seasonal time (…) This process, with its biological timeline and resultant experimental structure, are inextricably connected to ideas about nature, the progression of time, entropy, and the life cycles that pervade our body of more fixed, permanent work.*

Conclusion

A recurring fact in the history of theatre is that the absence of the initial dramatic text induces a less illustrative and more suggestive scenography, as evidenced by the spatial evolutions arising from the partnerships between Gordon Craig and Isadora Duncan, and Adolphe Appia and Jacques-Dalcroze (Goldberg, 2015)[4]. What we see here is that the architects used the movement of bodies (choreography) or of sound (opera) to create a space or image.

In the case of the operas, Herzog & De Meuron used the texture of materials to refer to the texture of sounds. A texture that is not always felt directly. In *Tristan und Isolde*, the texture was told by light. The technique had a strong effect,

[4] Figurative sets, of course, also show suggestibility and are, to some extent, open to interpretation. However, here we refer to the tradition inherited from the symbolism of Appia and Craig, that which uses few volumetric elements exactly to increase its suggestibility and also allows the rapid changes of image, under lighting effects, following the movement of music and dance.

as it realized the material abstraction in which the music was conceived. The continuity in which the images were mounted and unmounted was the visible parallel of the invisible structure of the notes, which ran towards a harmonic "attractor" and, when they converges, materialized into full realization. In *Attila*, the textile quality emanating from the texture of the material was intended to accompany the texture of the music and reinforced its perception. By giving up decisive forms, the duo submitted the visual space to the sound space.

We understand that in the strategy of postmodern art, integrating the flow of time seems more effective than trying to hold it up. David Harvey (1992), analysing the postmodern condition, reminded us that while social theories focus on temporal changes, aesthetic theories usually investigate the communication of values in a frozen spatial order. Harvey wondered how aesthetic practices, which are spatializations, are able to communicate flow and change when these become essential values. He admitted the protagonist effect of music and cinema in postmodernity and emphasized that the dilemma is especially serious for Architecture. *'How could architecture be proposed as an evolutionary process rather than a fixed entity in time and space?'* (Mayne apud Weinstein, 2008, p.30). This is the question that Thom Mayne seeks to answer when he draws our attention to the time of the sun on architecture, or when he proposes to formally trace the transformation of the cube.

Therefore, it does not seem strange that the architects approach performance – especially dance (choreography) and music (opera) – which are rooted in the flow of time, to try, once again, to dominate it. Essentially, as Harvey tells us, quoting Elliot, *'Only through time, time is conquered'.*

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