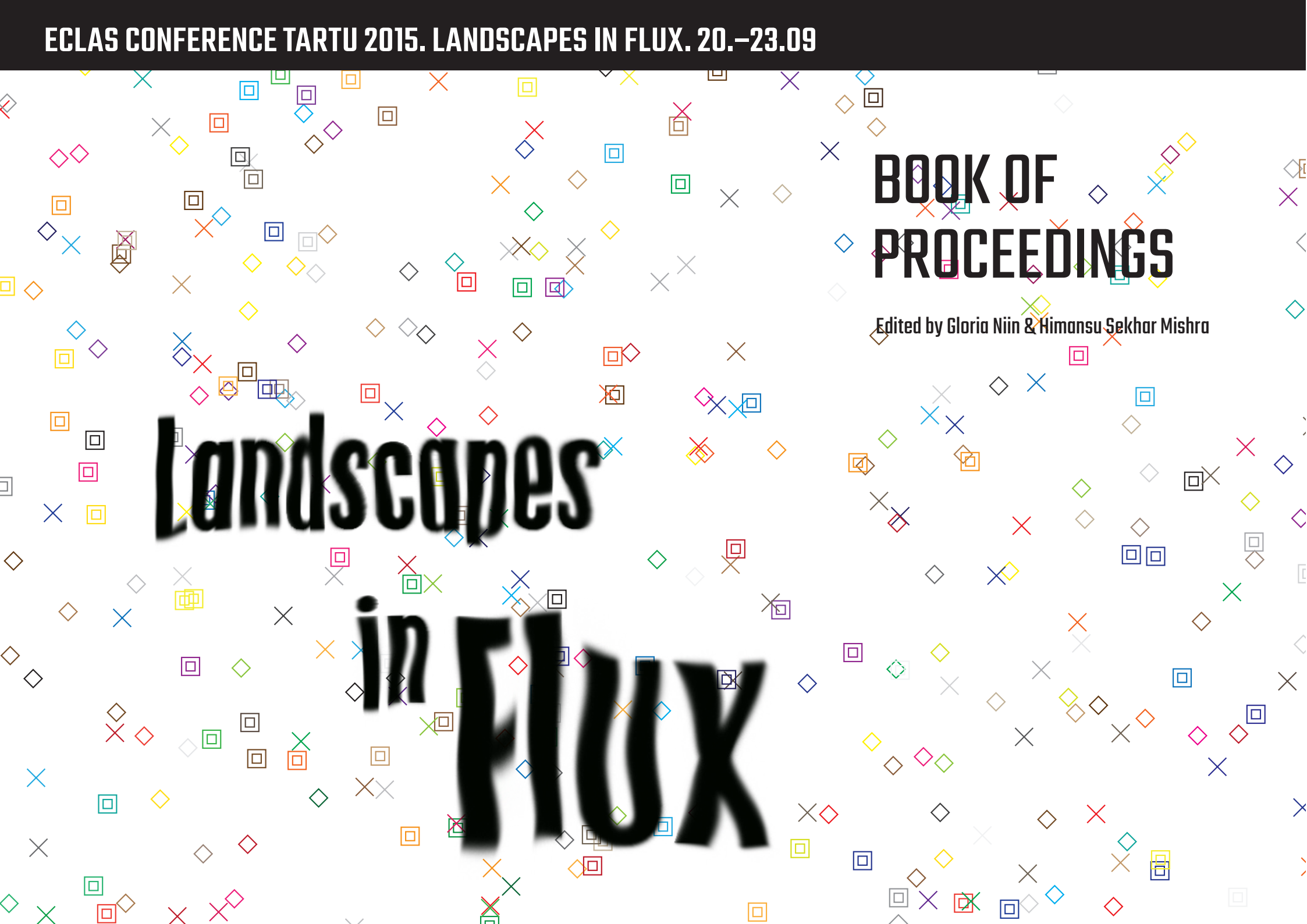


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Landscapes in FLUX



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TOPOGRAPHICAL DESIGN AND ARTIFICIAL EXCAVATION IN THE MODERN LANDSCAPE: CHANDIGARH, BRASILIA, MOERENUMA

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KEYWORDS

Artificial Topography, Perspective Control, Land Art, Earth Ground, Cities of Artificial Excavation

ABSTRACT

In the mid-twentieth century, Chandigarh and Brasilia, both new towns settled on natural landscapes and designed respectively by the architects Le Corbusier and Lucio Costa, are organized around each one parks, Capitol Park in Chandigarh and the Monumental Axis of Brasilia. In the late twentieth century, the Japanese-American artist Isamu Noguchi designs in Sapporo the Moerenuma Park. These three large parks are built as artificial topographies, a geometric overlay on the ground that is materialized into a topographical work, which is constructed with sequences of platforms, inclined ground planes and slopes, but also with artificial mountains and other earthworks. The topographic landscape manipulation pursues a perspective control from mechanisms of classic French Baroque garden to sequenced visions of space for a dynamic viewer. In some places, the ground surface is cut, drilled and excavated, as a fictitious archaeological excavation – a term defined in the 80s by Peter Eisenman in his projects known as *Cities of Artificial Excavation*. With these invented archaeologies, the void and shadows are incorporated into the ground and consequently the concept of “time passing” appears in the landscape. These tools are similar to those experimented by American land artists contemporarily, like Michael Heizer’s archaeological works in the desert. In this way it could be explained the cross printed on the bus station in Brasilia, symbol of the foundation of the city directly cut on concrete platforms; a series of archaeological pits that discover an ancient underground world in the front gardens of the Palace of the Governor in Chandigarh and the triangular stone garden excavated in the centre of the Moerenuma Park. In these three cases, design composition is focused on the ground surface as artificial topographies that are excavated in some points in order to generate anchor points with the surrounding landscape.

GROUNDSCAPE

During the second half of the twentieth century landscape architects and artists developed an interest in the new aerial landscape viewpoint, fascinated by the topographic forms of the natural landscape and the new urban geometries. This interest in the aerial landscape focuses the target of modern landscape on formalizing the ground plane as a spatial construction structure, a mechanism with clear antecedents in the great models of classic garden: the French Baroque garden, comprising successive horizontal and inclined planes designed for static contemplation from a central axis, and the English landscape garden, which undulating ground, apparently natural-looking, is the result of earthworks and artificial constructions carefully studied to accompany the movement inside the garden. In this plot, the publication of *The Landscape of Man* (Jellicoe, 1975), brilliantly reflects the historical continuity of these architectural composition tools, especially in relation to landform, geography and topography. This refers also to the research of the *tendenza* Italian School and the more recently texts of Leonardo Benevolo like *La cattura dell’infinito and I confini del paesaggio umano*, that allow us to understand some contemporary examples, like the Capitol Park for the new capital of Chandigarh, designed by Le Corbusier, and the Monumental Axis of Brasilia planned by Lucio Costa. These two case studies, along with a third, the Moerenuma Park, designed by the sculptor Isamu Noguchi, will be analyzed based on two architectural compositional tools: artificial topography and *artificial excavation*.

ARTIFICIAL TOPOGRAPHY

The landform in the contemporary landscape is like a sensitive membrane, modeled by human requirements, on the one hand, but also by the social and cross-cultural identification. This latter is translated into symbolic forms and clear geometries built in the landscape. The studied cases are based on an unspoiled natural topography or an overlay platform, which constitute an

homogeneous ground plane that only finds its limit in some geographical landforms – the Himalaya mountains in Chandigarh, the Paranoá lake in Brasilia and the Moere marsh in Moerenuma. This condition leads to the construction of the landscape from artificial topography, including folds or platforms that generate controlled spaces bounded to man. During the design process, overlapping symbolic geometries activates the topographic surface and transforms its relief.

ARTIFICIAL EXCAVATION

In the 80s, the American architect Peter Eisenman made a series of projects known as *Cities of Archaeological Excavation* (Bédard, 1994). Among others, Venice's Cannaregio or Parc de la Villette in Paris, in which he played with time, history and maps of real places, moved and manipulated, and fictional places, overlapped on real locations. The last ones act as receiving surfaces of different design process steps in which are deposited architectures, transformed or altered geometric paths, that leave traces in the form of artificial excavations: cuts, cracks, overlaps or changes in topography. The floor acquires thickness and becomes a great *palimpsest* – a phenomenon in medieval manuscripts, overlapping writings on the same paper surface-, or an alteration game based on an horizon or ground zero level that acts as an axis of time-material symmetry. A line between an excavated landscape footprint of an ancient time and material added of the future time. The resulting landscape is the excavation of a series of archaeological samples or windows that reveal found objects and findings from different times.

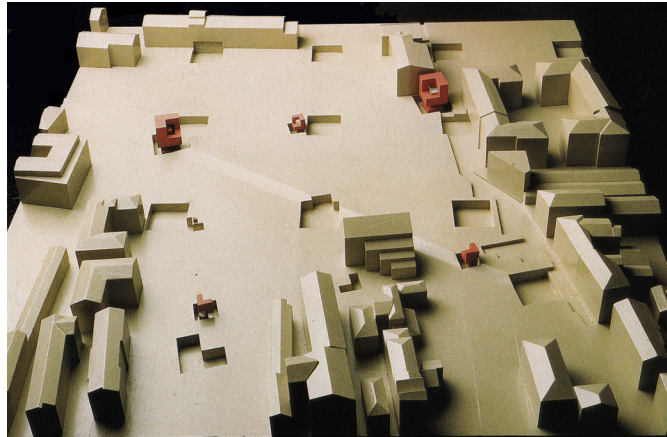


Figure 1: Project for West Cannaregio, Venice. Peter Eisenman, 1978.

These post-modern architecture laboratories allow to include fictional archaeology as a source of explanation for some contemporary landscape interventions presented here, even if they were earlier in time. Not surprisingly, contamination between architecture and archaeology is not a single event, it is actually the continuation of a process initiated by the artists of American land art of the 60s, like Michael Heizer, very interested in the world of archaeology, in their process of excavation and in their games with the alteration of time and memory –phenomena experienced in his work *Displaced/Replaced Mass*, between 1969 and 1977-.

CAPITOL PARK OF CHANDIGARH- AN EXCAVATED CONCRETE PLATFORM

Capitol Park of Chandigarh, built by Swiss architect Le Corbusier between 1950 and 1958 as head of the new capital of the state of Punjab in India, is a paradigm of large-scale contemporary landscape and the ultimate demonstration of the importance of the landscape in the work of Le Corbusier, real and symbolic (Cohen, 2013). The idea of the park is based on the construction of an artificial platform of large concrete

slabs, which from the first sketches is drawn from the *chahar-bagh* scheme -the archetype of Mughal gardens of India, characterized by two perpendicular water channels cut on the stone platform that intersect in the centre-. During the project development, the decision to transfer the buildings to the perimeter and focus all efforts on the design of the central void is taken, entirely pedestrian and perfectly design for human scale and perception. This is a priority condition that is reinforced with the transfer of road traffic to a lower level, thanks to the cut of the platform to accommodate the highways and parking lots.

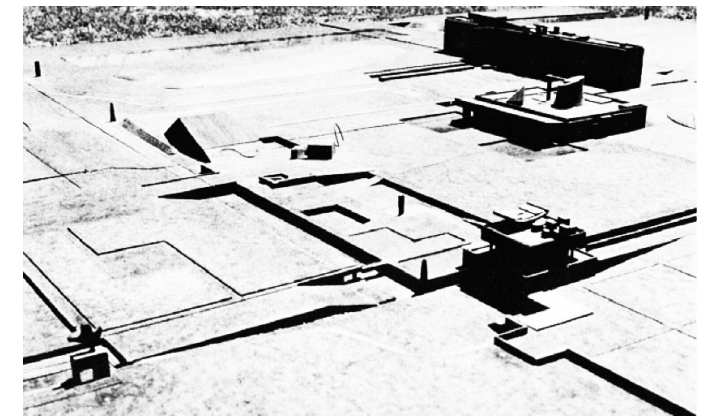


Figure 2: Model of the Capitol Complex as a composition in relief: in the centre of the photograph, the trench N-S and the sequence from Artificial Mountain and Tower of the Shadows (above) to the Palace of Governor with its front gardens (below); at the bottom, the Capitol and the Secretarial buildings.

In the photographs of the model, built after the third trip to India by Le Corbusier in 1952, all the cutting out of the platform are clearly visible, a set of reliefs and contra-reliefs articulated from the trench that runs along the axis N-S. This last is underlying the original *chahar-bagh* layout and is converted into a large crack in which the rest of the elements are supported: the crosswalks and the water channel in the cross axis, the large ponds that reinforce

the perspective and approach to buildings and even the limit wall of the Palace of the Governor garden.

Also there is working in the topography, with the placement at the perimeter of a series of artificial hills, built with earth extracted from the excavation foundations – an idea that already appears in the Plan Voisin for Paris in 1925, as part of a continuous park between glass skyscrapers, providing a certain picturesque to pedestrian paths and viewpoints, according to the Le Corbusier concept of *ville vert-*. The entire assembly is understood as a moldable plastic material, applying the Corbuserian principle of *plastic symmetry*, in which the volume of the excavations and the volume of the buildings is considered equivalent. Capitol Park landscape is thus a totally artificial groundscape that combines perfectly functional requirements with a symbolic idea for the park, which lies in the geometry and in the design of some special places.

This symbolic idea is especially present in the front gardens of the Palace of the Governor, an uncompleted complex set from the transverse axis of the park that can be understood as a particular plastic symmetry. On one side of the axis two symbolic artifacts were placed, the enigmatic Tower of the Shadows and the Artificial Mountain. The Artificial Mountain, an hybrid between topographic and constructed element, is a large truncated prism that balances the strong presence of the Himalaya and acts as receiver of excavated material. The Tower of the Shadows which Le Corbusier strategically placed at its side, is able to absorb another kind of material: the shadow. The association of both symbolic and cosmic artifacts provides the materials with which the gardens are built across the axis: the void and the shadow.

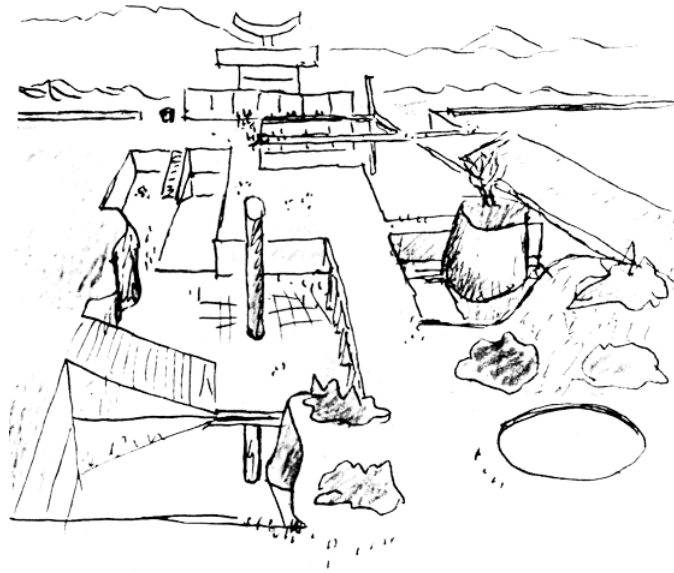


Figure 3: Sketch of the first proposal for front gardens of the Palace of the Governor, "le dessin du palais du Gouverneur définitif 12 avril 1952» Carnet Nivola I. FLC W1.8.147.

The whole garden is organized by three geometric voids cut directly on the platform, building a *promenade* or cracked path to the Governor's Palace. These recessed areas form a series of false vanishing points in ramps and stairs and optical games, emphasized by the use of water at different levels that include the reflection of the building. But perhaps the key to understand the mechanism of composition is found in the drawing in which there are represented a series of *objets trouvées* that Le Corbusier extracted from the earth bowels by these archaeological samples: prehistoric or ancient buildings –a totem or circular pillar-, fragments of an existing nature –an only tree-, the remains of ancient buildings –windows over the road street, galleries, stairs-. They all belong to the telluric world of shadows, inaccessible, as remnants of a past time that Le Corbusier exposes to build a real archaeological garden of the memory; with

overlapping memories of his trips to classical antiquity (Álvarez, 2004), the own natural history of Chandigarh itself and even the memory of a non-existent story and appealing to a universal memory for men.

MONUMENTAL AXIS OF BRASILIA- ARTIFICIAL TOPOGRAPHY AT THE SERVICE OF THE CENTRAL PERSPECTIVE

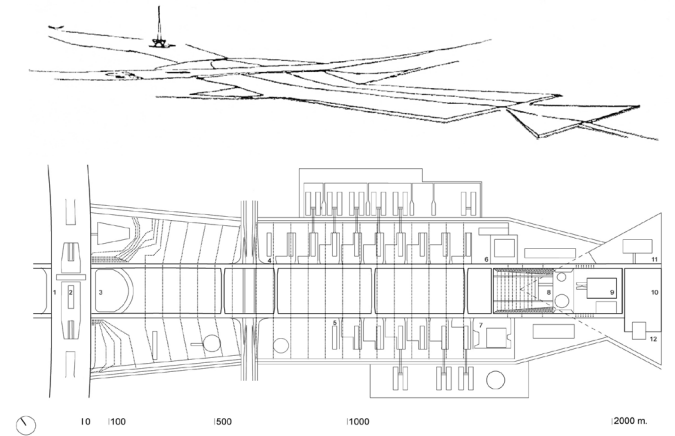


Figure 4: Sketch of the Monumental Axis. Lucio Costa, 1957 (above)

General plan of the Monumental Axis of Brasilia (below): 1. residential axis, 2. bus station, 3. esplanade of the Monumental Axis, 4. northern wing ministry buildings, 5. southern wing ministry buildings, 6. Palace of Justice, 7. Itamaraty Palace, 8. National Congress, 9. back garden of the National Congress, 10. Square of the Three Powers, 11. Planalto Palace, 12. Supreme Court.

"An esplanade -or Mall of the Englishmen-, a large lawn for pedestrians, to stops and parades." (Costa 1991: 20)

With this description of the Monumental Axis written by Lucio Costa in the memory of the Brasilia Competition in 1957, is shown the representative character which it will assume inside the new capital. As in

Chandigarh, a space of centrality becomes a democratic park for the people, where government buildings are located. In the same text he highlighted the a priori topographical character of the intervention, “the current application of the ancient Eastern technique of embankments, ensures cohesion of the whole and gives it a monumental emphasis” (Costa, 1991:20). This description is accompanied by the drawing of the large esplanade as a three-dimensional geometry of the floor where even the buildings appear.

From the slope of the original terrain, all survey operations are controlled from a rigorous perspective composition, defining a perfect canonical and representative central image of the Monumental Axis. The vast esplanade, a green surface placed in the centre and flanked on both sides by traffic roads and ministry buildings, is designed as a true *tapis vert*, like those built by the great seventeenth century French gardener André Le Nôtre at Versailles or Vaux le Vicomte. This parallel example explains the monumental scale of 2 km. long and 200 m. wide, with a slight inclination -two tranches of 1,2% and 1,4% and a third of 5,6% that descends to the Congress building-, as well as the fact that the esplanade is just crossed in certain points, thought to contemplate the central perspective. The first of these views is the one someone gets when arrives to Brasilia from the platform of the bus station in the city centre, where the extension of the esplanade is perfectly shown and disappears under a second platform on which rest the symbolic domes of Congress and Senate.



Figure 5: Monumental Axis of Brasilia. Sequence of central perspective (viewpoints from above to below): first floor of TV tower, bus station, National Congress entrance, back garden of National Congress.

At the second point, the plane of the esplanade experiences a strong descent slope between lanes of traffic and discovers the building’s entrance. This topographical and compositional tool acts in two directions. From far it negates the building entrance, looking for a weightlessness effect for the platform that is accented by the triangular spikes of it. However, from the building itself a monumental space with a view of the ministry buildings silhouetted is generated by the slope and the angle shot. Artificial resources of Le Nôtre are reused here, through an anamorphosis or play with the topography and the inclination of the planes and distances to cover, uncover and highlight different views along the axis. The conclusive proof of the esplanade of the Monumental Axis scenic landscape understood as a service perspective can be found in the construction process of artificial topography. The overlap of these areas of land on the natural terrain is determined by embankments of 5 m. high, a line whose presence in the central perspective of the axis is hidden by the ministry buildings, covering the point where deception or artifice is shown.

Away from this sequence of chained perspectives, Monumental Axis assembly ends in the Square of the Three Powers, a recess and isolated space separated from it by the platform of the Congress. Using the figure of an isosceles triangle equivalence of the powers of the people, transferred to the placement of the Supreme Court and the Planalto Palace on two ends of the square. The paired tower of Congress and the Senate occupy the third point, which is perched on a large pool of dark, deep waters and geometric imperial palm plantation. The large stone surface, which extends between buildings reserved for more formal representations, is a rising belvedere 5 m. high above the original terrain. All together with the pond, planting palm trees and the stone plaza reflect an abstract representation and constitute an anchor point of the Monumental Axis with the landscape, to which a broader perspective that controls the horizon opens.

MOERENUMA PARK. SYMBOLIC TOPOGRAPHY AND ACTIVE PERSPECTIVE

“One day in the winter of 1933, I had a vision. I saw the Earth as a sculpture; I had the revelation that the sculpture of the future should be the Earth” (Noguchi, 1986)

Isamu Noguchi, an hybrid artist between sculpture and landscaping, pursues lifelong the dream of working with the earth as a material and the Earth as origin and end of his sculptural landscapes. His post-humous work completed in 2005, the Moerenuma Park, is entirely a large artificial topography built directly by land and waste of an old dump located on the outskirts of Sapporo, surrounded by artificial lake Moere, in an old meander of the river of the same name.

a viewer in motion to build active prospects, becoming visually inclined and horizontal in reverse, with the use of anamorphic perspective. This mechanism is particularly evident in the part of the Open-air Stage, a raised rectangular surface in one of its corners and sloping toward the central area of the park. The perimeter roads leading to the highest point tighten the long slope, a line flanked by thick retaining walls, which visually cut Play Mountain silhouette. In that perspective composition in motion, only it remains the diagonal lines intersecting geometry, disappears reference to location and the horizon. The landscape is understood as a game, an illusion that is created with the viewer and the movement and, in this way, it is built himself.

In a second level of analysis of the landscape, the true symbolic elements that make up the space become visible: four high territorial sculptures or earthworks built by earth and vegetation -Play Mountain, Mount Moere, Forest of Larches and Open-air Stage-, alternating with two other sculptures -Tetra Mound and Cristal Pyramid-, which orbit around the centre of the park and a global scenery. Mount Moere, an artificial mountain of 62 m. tall, plays with time and confusion of being a pre-existing geographical feature in the landscape of mountains surrounding Sapporo. The Play Mountain is an asymmetric stepped pyramid as an hybrid construction that participates in the game between the artificial and the natural: a perfectly geometric face with 99 stone steps and clear allusions to Machu Pichu and the other two sides as organic ground slopes with an upward path to the top. The Open-air Stage, which from above is a perfectly geometric and regular surface, in foreshortening, their large retaining walls secrete a stony volume that emerges from the earth as an archaeology found. All these large earthworks are references extracted from the imagination of Isamu Noguchi, inspired by primitive cultures and that establish a parallel in two directions between sculpture and landscape. In Moerenuma Park, the latter two added archaeology, which introduces time as an element of the set.

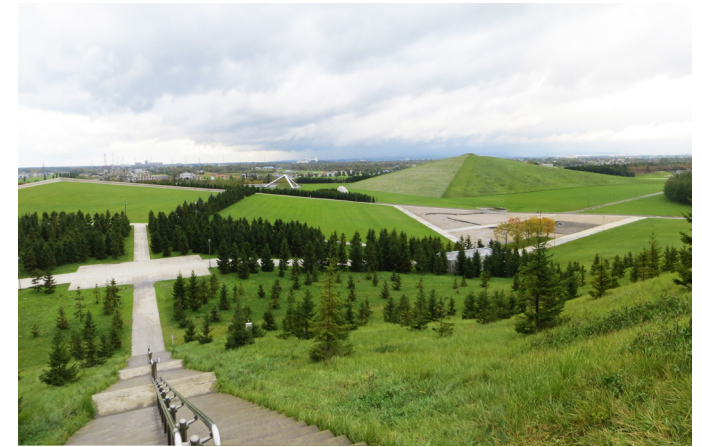


Figure 7: Moerenuma Park. View from Mount Moere: on the left, the Open-air Stage; above, Tetra Mound and Play Mountain; below, the Aqua Plaza and Canal.

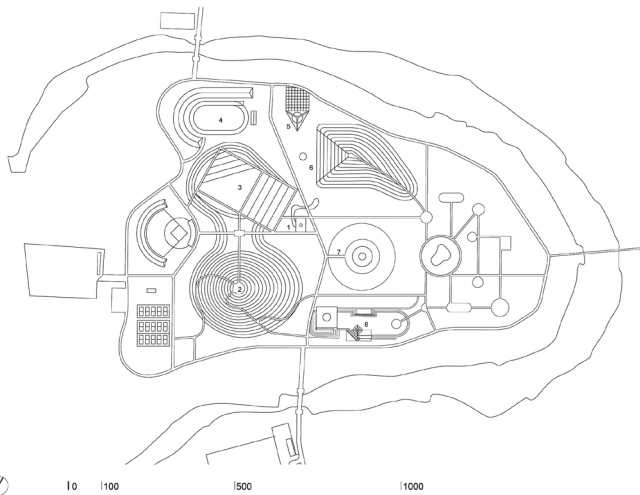


Figure 6: Plan of Moerenuma Park: 1. Plaza Aqua and Canal, 2. Mount Moere, 3. Open-air Stage, 4. Sports ground, 5. Tetra Mound, 6. Play Mountain, 7. Forest of Larches and Ocean Fountain, 8. Cristal Pyramid.

To a first approximation, the landscape is designed from a rigorous geometric network of roads and as a folded topography. Inclined and horizontal planes allow

Aqua Plaza and Canal, in the gravity centre of the park and in its lowest level provides a geometric and material equality with the previous structures. The park paths are the lines that define the balanced and Aristotelian structure of the triangle and the stone is the material used by Noguchi for its timeless character. Everything in this centre is made in stone, the circular fountain and the water channel, redoubt of one higher that appeared in the first version of the project, which led before emptying into the swamp surrounding the park. It is remaining in the final construction as a fictional archaeology of this natural watercourse. Thus, in the focal point of the park, the triangle absorbs everything: the space between the boundary lines, nature and time, condensed in the stone. Conceived as a *karesansui*, a dry stone garden depicting a landscape of water -in the manner of Zen garden of muromachi period-, the stone garden is the expression of mu (無) or emptiness, yet full centre from which everything arises, in which the symbols of nature and of human existence -the land, the river and the life - create an empty triangle, a microcosm for the man, intermediary between space

and time, according to the Japanese sense of awareness of place *ma* (間). In the garden of Aqua Plaza, a void in the centre of the park, Noguchi concentrates the energy and captures the memory of the place, in order to create from this point their own landscape.



Figure 8: Moerenuma Park. View from Play Mountain: on the left, the Mount Moere; on the right, the Aqua Plaza and Canal.

We discovered that this centre is the origin of all the landscape and its impact on land sculptural shapes orbiting around, extending lines or tentacles that ensure the balance with the central system. In this way, the Play Mountain deforms extending and curving the line of the access road; the roads of Mount Moere are oriented writhing and the Open-air Stage tense his diagonal line deforming its surface; as if everything was product of a great centrifugal force. According to the principle of conservation of energy, the force that caused its deformation remains as energy in order inherent in the form it takes. It thus creates a net of forces of attraction between the elements, seemingly invisible lines, but the viewer recognizes some points relate with others: finding alignments and continuities, guessing the hidden geometries of this imaginary landscape of Noguchi. They are tensions leading man directing toward to stopping points carefully thought

to look, places where the road ends, the surface reaches its limit and the time stops. At the vertices of these surfaces, the lines project the park landscape extending to distant places, leading the eye towards infinity.

CONCLUSION

The artificial topography in the three case studies is designed to have a perspective control, from a front and static view of Chandigarh and Brasilia particularly, to the active perspective in Moerenuma Park. Thus, the symbolic value of the topography reinforces the specific character of each of these landscapes, in their implementation, geometry and meaning: Capitol Park is designed as a memory place of the new capital built as a platform with a strong archaeological nature; the construction of a monumental, representative, unitary axis to Brasilia is specially designed to be seen from the symbolic places of the bus station and the National Congress building and Moerenuma Park builds a cosmic landscape from symbolic structures orbiting around a central void.

If the artificial topography is the tool to control the large scale of these landscapes, ground excavation as fictional archaeology let down the scale and establishes closer relations, as links of interaction between the viewer and the total landscape. Thus, there is a parallel and complementary speech, which emphasizes the material value acquired by these topographic landscapes under the ground level. Precisely when dealing with newly built landscapes, recourse to the fictional archeology tool to build a double temporary condition in them. On the one hand, it can be integrated into a continuous discourse of historical time elements of history, such as the memory of the ancient buildings of primitive cultures that Noguchi and Le Corbusier move to Moerenuma and Chandigarh respectively. Moreover, the fictional archeology, in the sense of excavation, introduces the shadow and the depth, adding to landscape the value of time and memory.

ACKNOWLEDGEMENT

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REFERENCES

- Álvarez, D., 2004. "Ici pas d'autos= un parc" El Capitolio de Chandigarh, un jardín de la memoria. *Massilia: Anuario de estudios lecorbusierianos*, 2004, 100-125.
- Bédard, J.F. (ed), 1994. *Cities of Artificial Excavation: the Work of Peter Eisenman, 1978-1988*. Nueva York: Rizzoli.
- Benévolo, L., 1991. *La cattura dell'infinito*. Roma: Laterza.
- Costa, L., 1991. *Relatório do Plano Piloto de Brasília*. Brasília: GDF.
- Cohen J.L.(ed.), 2013. *Le Corbusier: An Atlas of Modern Landscapes*. New York: The Museum of Modern Art.
- Jellicoe, G. and S., 1975. *The Landscape of Man: Shaping the Environment from Prehistory to the Present Day*. London: Thames and Hudson.
- Noguchi, I., 1986. *The road I have walked*. In: Commemorative lecture Kyoto Award. Kyoto: Inamori Foundation.