

**Abstract**

Among the many definitions of nature, one is particularly relevant for architecture: the physical world that exists independently of mankind but includes man in its list of creatures. Among the relationships between architecture and this world that mankind inhabits and transforms, two are particularly relevant for understanding the work of Brazilian architect Oscar Niemeyer (1907-2012) and its legacy. One comes from situation, involving pre-existing conditions and the desired outcomes of their transformation. The other feeds on emulation of known forms. In academic terms, one impacts primarily on architectural composition, the definition of the correct anatomy and physiology of buildings, while the other impacts primarily on characterization, the definition of a distinctive physiognomy properly correlated with the building's anatomy and physiology. Niemeyer was educated at ENBA- the Escola Nacional de Belas Artes in Rio, created in 1826 after the École des Beaux-Arts in Paris. A close reading of his works belies the widespread association of his work with fusing nature and architecture and reveals a far more complex attitude.

Keywords

Oscar Niemeyer; Modern architecture; Brazilian modern architecture; nature and architecture

NATURE REVISITED

Among the definitions of nature, one clearly concerns architecture: the physical world that exists independently of mankind but includes man in its list of creatures. Among the relationships between architecture and this world that mankind inhabits and transforms, two clearly concern the work of Brazilian architect Oscar Niemeyer (1907-2012). One involves known situations and their transformation. The other feeds on emulation of known forms. In academic terms, one impacts primarily on architectural composition, the definition of the correct anatomy and physiology of buildings, while the other impacts primarily on characterization, the definition of a distinctive physiognomy properly correlated with the building's anatomy and physiology. Niemeyer was educated at ENBA- the Escola Nacional de Belas Artes in Rio, created in 1826 after the École des

Grounding Architecture: Unnatural Niemeyer

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Beaux-Arts in Paris. French architect Grandjean de Montigny (1776-1850), the first Professor of Architecture, was fond of spicing up Neoclassical architecture with an English landscape garden.¹

Obviously, nature features components and processes that circumscribe architecture and to which architecture necessarily responds. That applies to rural as well as urban and suburban settings, since the physical world includes the sky as well as the earth and the sea, and inhabiting requires air and light and water. There is no architecture without a site, and no site without surroundings, both endowed with a specific topography and atmosphere, soil, subsoil, climate, maybe vegetation. Postures regarding the way architecture is inscribed into nature are usually reduced to two poles with opposite symbolic dimensions. Architecture is either contrasted with nature, confronting the land, or integrated with it, merging into its setting: design with or against nature.

Just as obviously, nature provides forms and images that architecture may transcribe and to which architecture eventually corresponds. Nature is a traditional source for architectural structure and ornament, suggesting tri-dimensional shapes as well as two-dimensional images. No matter how commonplace, this kind of relationship is not mandatory, as architecture may take after art and machinery instead of life and landscape. Art in this case includes the very art of architecture and its history, even if tradition asserts that architecture is ultimately based on nature. The natural referent may not be visible near the work that borrows from it in more than one sense. Design from nature neither counts automatically as design from local nature, nor as design with nature (Fig. 1).

It seems reasonable to correlate postures regarding nature and the forms created by an architect like Niemeyer. Besides regarding architecture as art understood as extraordinary construction, according

1 Prix de Rome winner Montigny arrived in Brazil with a French Mission of Artists in 1816.

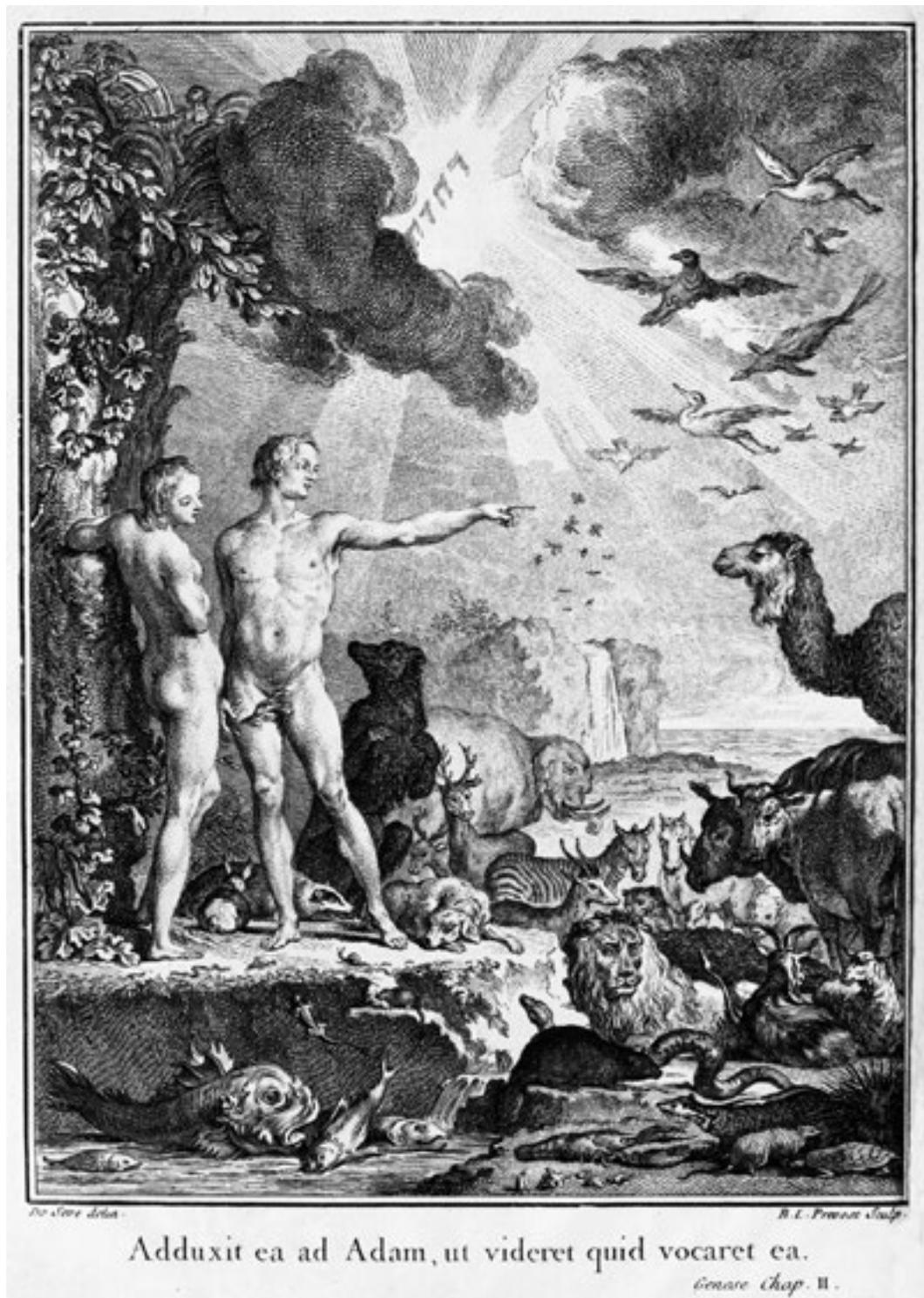


Figure 1. Jacques Christophe Valmont-Bomare (1731-1807). The naming of the animals. Engraving (c. 1770), public domain. www.biodiversitylibrary.org.

to etymology, he paraded the naturalist inspiration behind many of his forms. His avowed penchant for curves is usually taken as evidence of the wish to fuse architecture and nature, often qualified as modern architecture and tropical nature, always implying a benign nature and architecture as a benign man-made nature. Ernesto Nathan Rogers, for instance, said that Niemeyer's work "romantically tends to identify itself with nature and become a part of it".² A review of key works from the mid-1930s (when Niemeyer was first noticed) to the mid-1970s (when progressive European historians started to dismiss him) suggests otherwise. It better be preceded by some words on abstraction as it applies to architecture, modern architecture, and modern architecture according to Niemeyer's mentors, Le Corbusier (1887-1965) and countryman Lucio Costa (1902-1998).

2 "Report on Brazil". *The Architectural Review*. vol 116 n° 694 (Oct.1954), pp. 234-250.

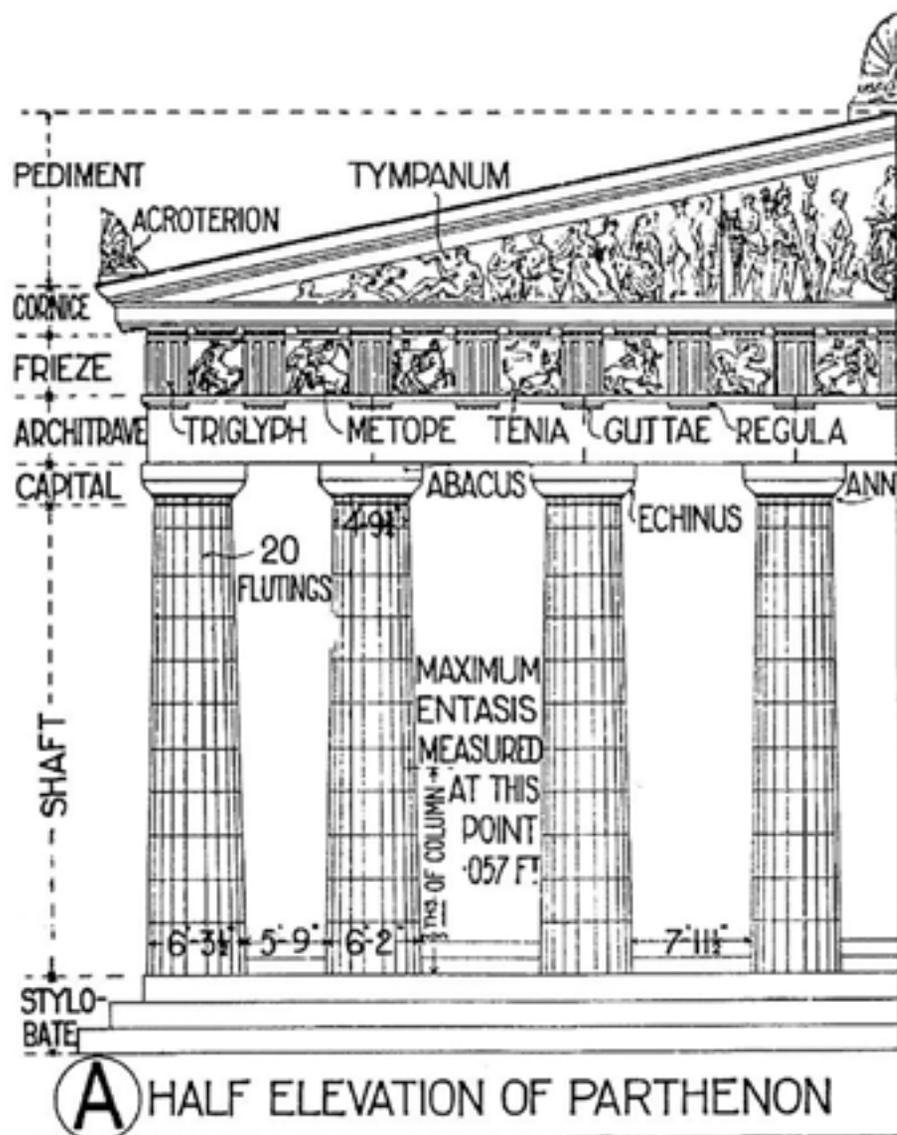


Figure 2. NA. Sir Bannister Fletcher. Half elevation of Parthenon from *A history of architecture* (1905), p. 52. Digital image (2007), Robarts Collection, University of Toronto at archive.org.

FORM AND FIGURE

Music is liquid architecture and architecture is frozen music, said Johann Wolfgang Goethe.³ Their effects derived from elements peculiar to themselves. They did not imitate objects like painting and sculpture. But architecture also appeared mimetic, for imitation does not imply copying. Similarity of elements of architecture and composition to natural forms was schematic, reproduction reserved for ornament. Caryatids and atlantes were exceptions confirming the rule. Egyptian columns recalled palm trees; the Greco-Roman ones had the proportions of man, woman, or young girl; the colonnades of a Doric temple could represent a phalanx. Like clothing, architecture could be deemed an extension of the body factually and metaphorically. The traditional idea of architecture as an abstract art was ambiguous (Fig. 2).

An early promoter of modern architecture, Henry-Russell Hitchcock was aware of it, but he emphasized traditional architecture's proximity to figuration when claiming that modern architecture eschewed "the sentimental comfort of representation". The decorative detail of traditional Western architecture was "equivalent to the recognizable elements in painting and sculpture".⁴ He compared the rejection of copying natural motifs by modern painters and sculptors to the rejection of re-using

3 According to his secretary Johan Peter Eckermann, *Gespräche mit Goethe in den letzten Jahren seines Lebens* (Leipzig: Theodor Huth, 1886).

4 Henry-Russell Hitchcock, "Modern Architecture: The Traditionalists and the New Tradition". *Architectural Record*, no. 4 (Apr. 1928), pp. 337-349.

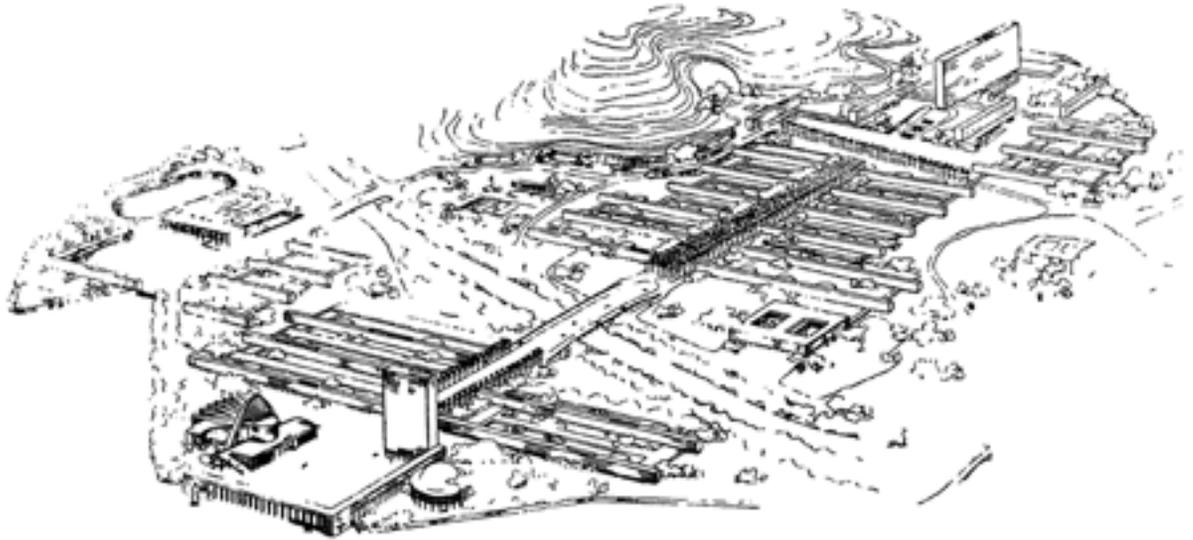


Figure 3. Lucio Costa. Aerial axonometric, project for the University of Brazil campus by Costa and team including Niemeyer. The Rectorate building is the tall slab in the entrance square at the foreground, between the Aula Magna and the Planetarium. Drawing (1936), Casa de Lucio Costa.

architectural motifs by modern architects, claiming that both represented “a refusal to imitate”.⁵ More rigorous, Hitchcock’s friend Alfred Barr Jr. pointed out the subtle differences between *to abstract* - the process of removing something from a whole- and *abstraction*- the removed fragment resulting from that process, an isolated form. He recognized pure-abstractions, works by Kasimir Malevich and Vassily Kandinsky, and near-abstractions, the Piet Mondrian seascapes and the sequence of images abstracted from the realist depiction of a grazing cow by Theo van Doesburg-⁶ as well as the work of Hans Arp and Joan Miró, labeled “abstract surrealism”.

Early modern architecture is a mixed affair as exemplified by Le Corbusier’s work. It was founded upon reducing the primary elements of architecture to their essential geometry- formal referents supposed to have an immanent meaning or no meaning at all. However, it did not cease to explore figural referents whose meaning was given by culture. As Alan Colquhoun noted, the dialectic between form and figure underlay that between form and function.⁷ The novelty lay on the displacement of concepts: choosing referents outside the realm of erudite architecture and selected regional types such as Swiss chalets or Norman manors: abstract and abstracted art, but also vehicles, utilitarian construction, engineering feats, and undecorated vernacular types, which were endowed with iconic power, turning into emblems of the machine age, mass society, and democratic spirit.

The Corbusian machine esthetic involved mechanophilia, mechanomorphism, and figural transposition.⁸ One of the Five Points of the New Architecture (1926), the horizontal window echoed the bridge of a ship and a liner’s promenade deck. In Le Corbusier’s trip to South America (1929), the horizontal slab building he proposed for Montevideo was called seascraper (*gratte-mer*) and compared to a moored liner, a reclining body reminding the public that naval architecture is a venerable branch of the discipline and Noah’s Ark a particularly venerable ancestor.⁹ Diffuse allusions in Le Corbusier’s villas amount to an abstracted eclecticism, hinted Colin Rowe. The British critic saw the point of Le Corbusier’s detractors who dismissed the Swiss Pavilion because it looked like a contemporary factory.¹⁰

5 Henry-Russell Hitchcock. *Painting toward architecture* (New York: Duell, Sloan and Pearce, 1948), p. 17.

6 Alfred Barr Jr. *Cubism and abstract art*. (New York: MoMA, 1936). Critic, Meyer Shapiro. “Nature of Abstract Art”. *Marxist Quarterly* no. 1, (Jan-Mar 1937), pp. 77-98; republished, *Oncurating* no. 20, (Oct 2013), p. 13.

7 Alan Colquhoun, “Form and figure,” in *Modern architecture and historical change* (Cambridge, Mass.: The MIT Press, 1981), pp.190-202; “Displacement of concepts in Le Corbusier,” in *op.cit.*, pp. 51-66.

8 Colin Rowe, “The mathematics of the ideal villa,” in *The mathematics of the ideal villa and other essays* (Cambridge, Mass.: The MIT Press, 1976), p. 15.

9 Hubert Damisch. “L’Arche de Noé,” *Critique*, n° 476-477 (Jan.-Feb. 1987), pp. 5-22.

10 Colin Rowe, *The architecture of good intentions: towards a possible retrospect* (London: Academy, 1994).



Figure 4. Secretaria de Viação Trabalho e Obras Públicas do Distrito Federal. Fragment of Rio de Janeiro City Plan (1935) showing Quinta da Boa Vista, with the Museu Histórico Nacional (formerly the Imperial residence) and the artificial islet and lagoon first proposed by Auguste Glaziou (1879). Arquivo Geral da Cidade do Rio de Janeiro.

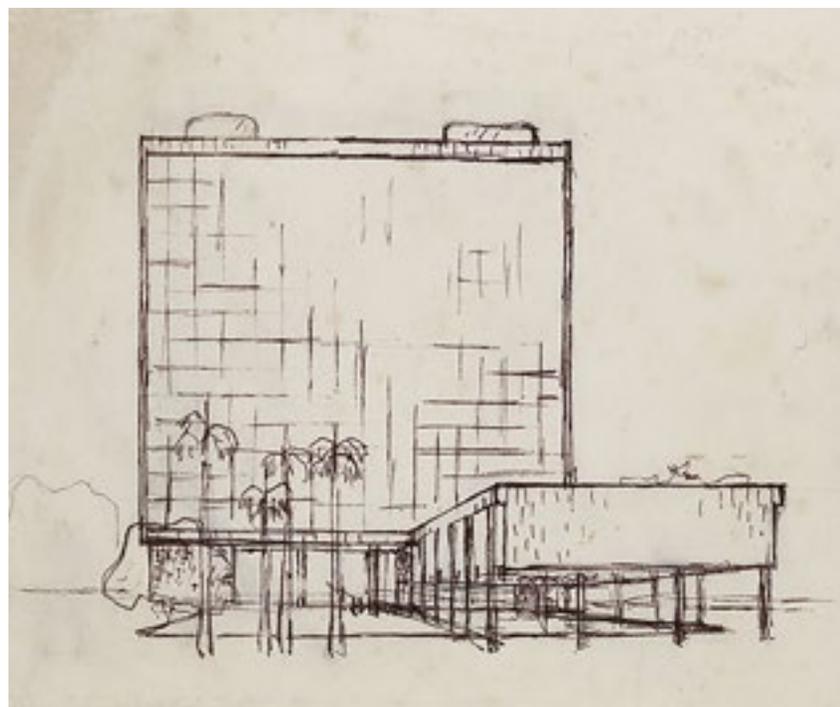


Figure 5. Lucio Costa. South elevation of the Ministry of Education and Public Health, designed by Costa and team including Niemeyer (1936-45): the paved esplanade expands the open pilotis operating as a portico, the gallery wing is balanced by the planted band in front of the enclosed staff vestibule to the left. Sketch (c.1980).

Pilotis, a cantilevered prismatic body, and a roof garden punctuated by free-standing structures led to an elevation whose vertical tripartition was suggestive. It bowed to situation, to meeting the earth as well as the sky, and had anthropomorphic, Classical connotations, but its slender open base subverted them along with Louis Sullivan's prescriptions for tall buildings artistically considered- while recalling Medieval arcaded buildings like Venice's Palazzo Ducale. Although direct stylistic reference could not be accepted, biomorphism was not a problem.¹¹ Costa, an admirer, defined the new architecture as "a smart girl with no makeup and skinny legs".¹² Architecture is represented as a woman in Latin languages, like the Muses and other Arts, but Costa's definition would not lose descriptive power if "person" were substituted for "girl" and applied to houses that are thin and tall, rectangular in plan like Maison Citrohan,¹³ as well as broad and short, squarish in plan like Villa Savoye.¹⁴

STANDING UP AND LYING DOWN

Grander counterparts of Citrohan and Savoye anchored the "contrary compositions with similar elements" designed for the Universidade do Brasil campus by Le Corbusier and Costa respectively, the upright Rectorate building and the squat Museum¹⁵ (Fig. 3). The site included the Quinta da Boa Vista, the nineteenth-century imperial residence in Rio, whose gardens were refashioned in the English manner by French botanist Auguste Glaziou (1869-1889)¹⁶ (Fig. 4). Niemeyer worked in both design teams. None was built, unlike the Ministry of Education in Rio (1936-1945) and the Brazilian Pavilion at the New York 1939 World's Fair (1938-1939) (Fig. 5). Costa led the Ministry's Brazilian design team, which included Niemeyer. Le Corbusier came as consultant for one month, but had no participation in the final design, which develops a T-shaped parti sketched after he left and attributed to Niemeyer.¹⁷ The Pavilion was a joint project by Costa and Niemeyer. A monolith, that Ministry, compared with the equally narrow but low and sinuous Pavilion- or the narrow midrise Ministry Le Corbusier had proposed (Fig. 6).

Occupying a whole square block in Rio's downtown, the built Ministry features a ten-meter-high pilotis, a fourteen-story-high and ninety-meter-long body, plus restaurants in a binuclear superstructure punctuated by the water tanks and elevator machine rooms resembling two ship chimneys. It renewed the assimilation of architecture to the human body by presenting a porous building base. The colossal pilotis is a portico, a hypostyle hall flanked by the jamb-like masses of the two lobbies, the public one standing between the gallery and auditorium wings that expand the base. The central void parallels the transparent sculptures of Rodchenko and Lipchitz. The nautical superstructure suggests the Ministry is a ship propelling the nation to a glorious destiny (the viewpoint of the admirers) or bankruptcy (the viewpoint of the detractors, who nicknamed the building "Capanema-maru" alluding to the 1942 attack to Pearl Harbor: Capanema was the Minister's name and maru was Japanese for ship). Planted bands parallel to the gallery and auditorium wings convert the T-shaped parti into a H-shaped one; the colossal cylindrical columns rise as petrified imperial palms near living ones. Roberto Burle Marx (1909-1994) was the landscapist. Vegetation is both the blueprint for an element of architecture and a key element of composition. The body of the building got window-walled northern and southern façades, the former covered with a continuous screen of mobile *brise-soleil*, a giant mashrabyia; end walls were blank.

As for the earlier Corbusian proposal for a narrow and elongated site by the seashore, it has a cruciform parti. The gallery and the auditorium wings extend slightly off-center of the horizontal

11 For Le Corbusier, male architecture, based on squares and rectangles, is the art of the ruler reflecting a Classical spirit, "strong objectivity of forms under the intense light of a Mediterranean sun"; female architecture, based on triangles and pentagons, is the art of the compass reflecting a Gothic spirit, "limitless subjectivity rising against a clouded sky". Le Corbusier. *Le Modulor 1* [Basel: Birkheuser, 200 (1948)], p. 224.

12 Lucio Costa, "Razões da Nova Arquitetura," in Lucio Costa. *Sobre arquitetura* [Porto Alegre: CEUA, 1962 (1936)], pp. 17-40. Written in 1934-5 for a graduate course in architecture at Universidade do Distrito Federal.

13 Volumes called "megaron" by Vincent Scully, *Modern architecture* (New York: Braziller, 1965).

14 Volumes called "sandwich" by Colin Rowe, *The mathematics of the ideal villa and other essays*, op. cit.

15 Lucio Costa. "Universidade do Brasil," in Lucio Costa. *Sobre arquitetura* [Porto Alegre: CEUA, 1962 (1937)], pp. 67-85. Written in September 1936 when handing out his project to the University Planning Commission.

16 Glaziou (1833-1906) came to Brazil in 1858 and designed the most important gardens of the Second Empire.

17 For a complete account, see Mauricio Lissovsky and Paulo Sergio Sá. *Colunas da Educação* (Rio: Minc/IPHAN; FGV/CPDOC, 1996).



Figure 6. Oscar Niemeyer. Perspectives of the Brazilian Pavilion at the 1939 New York World's Fair by Costa and Niemeyer. Blueprint (1938). Casa de Lucio Costa.

body of the building. Another seascraper, it has a four-meter-high pilotis with a central enclosure between open stretches of pilotis used as carports, a seven-story-high and two-hundred-meter-long body, a plain superstructure. A massive sculpture opposite the gallery creates a central entrance path, but the application of the Five Points is far less monumental. The reclining body does not convey gravity and majesty as its standing counterpart.

The Pavilion was the informal pendant to the Ministry. Both forwarded complementary images of the country. In Costa's words, the Doric severity of the Ministry, which is mainly rectilinear, contrasts with the Ionian grace and elegance of the L-shaped, three-story-high Pavilion in New York, which is mainly curvilinear as suggested by Niemeyer.¹⁸ The gallery wing on a four-meter-high pilotis bends aligned with the street, like a centipede rather than a reclining person. Porosity is reiterated at the ground floor: passages open between curving and straight walls allowing for easy access to the interior patio, graced by an amoeba-shaped lily pond and planted beds. Brazilian-born Thomas D. Price was the landscapist, developing sketches by Costa. At the street façade, the restaurant wall under the cantilever hides part of the outer colonnade, separated by one of the open passages from the sinuous wall of the coffee bar running behind that colonnade. The change of paving material following the cantilever projection contributes to suggest that a facade wall at the alignment was removed exposing the building's entrails. At the straight facade turned to the avenue, the access ramp leading to the formal entrance terrace twists like a cat's tail. The gallery's curving roof slab seems to extend a pseudopod to frame the terrace between the gallery and the obus-shaped auditorium. Inside the gallery, an amoeba shaped mezzanine floor slab advances like a ship's prow. A slightly martial mechanomorphism accompanied biomorphism's animalistic guises. The brise soleil in front of the upstairs administrative suite facing the avenue is fixed.

SOCIALIZING FOLLIES

Mechanomorphism and biomorphism combine again in the recreational complex by the Pampulha Dam and Lake (1941-1945) in Minas Gerais State's capital Belo Horizonte. Commissioned to anchor the development of an upscale garden suburb by mayor Juscelino Kubitschek, Niemeyer's

¹⁸ See Carlos Eduardo Comas. *Précisions brésiliennes sur un état passé de l'architecture et de l'urbanisme modernes d'après les projets et les ouvrages de Lúcio Costa, Oscar Niemeyer, MMM Roberto, Affonso Reidy, Jorge Moreira & Cie., 1936-45*. Ph.D. diss. Université de Paris VIII, 2002. Costa's report is translated in Carlos Eduardo Comas and David Leatherbarrow. "Solving Problems, Making Art, Being Modern," *Journal of Architectural Education* vol. 64, n°. 1 (Jan. 2010), pp. 65-68.



Figure 7. NA. Front cover of *The Architectural Review* showing Niemeyer's 1942 drawing of the Pampulha Dance Hall plan beside 1736 engraving of the Chiswick Garden plan. Photomontage (1944). Carlos Eduardo Comas collection.



Figure 8. Coplestone Warre Bampfylde (1720–1791). *Stourhead, Wiltshire, Seat of Sir Richard Colt Hoare*. Oil on canvas. UK Government Art Collection.

first big solo flight groups small buildings akin to follies in an eighteenth-century English park. They occupy tips between the lake and the twenty-kilometer-long lakeshore boulevard, except for the restaurant on a manmade island, called Casa do Baile, literally Dance Hall (Fig. 7). Internal lanes are found at the Casino and the Chapel lots only. The Chapel's axis organizes the composition. The Yacht Club and the Dance Hall stand to the east and a week-end house for Kubitschek to the west in the same southern shoreline, across from the Casino to the east and the Hotel to the west in the northern shoreline. Landscapist was again Burle Marx, assisted by botanist Henrique Barreto. In



Figure 9. José Gois. Aerial view of Pampulha lake showing three Niemeyer buildings: the Casino at the northern lakeshore tip facing the Yacht Club; Dance Hall to the right. Postcard (c. 1944), Arquivo Público da Cidade de Belo Horizonte.

May 1944, *The Architectural Review*, then edited by Nikolaus Pevsner, reported on the complex as a Social Centre. Niemeyer's Day Nursery in Rio (1937-1938) had appeared in the April 1944 issue, along with a text on Brazilian colonial architecture. The special issue on Brazil of March 1944 had highlighted the Ministry. Photographs had been shot by G.E. Kidder-Smith for the show at the Museum of Modern Art in New York, *Brazil Builds: New and Old, 1652-1942* (Fig. 8).

The first monographic issue ever on Niemeyer's work, the May 1944 *Review* featured two houses in Rio and the three Pampulha buildings completed so far, the Casino, the Yacht Club and the Dance Hall, which *Brazil Builds* had called Ilha Restaurante (Restaurant Island) and *Review* presented as Dance Club. An essay by H. F. Clark titled *Lord Burlington's Bijou or Sharawaggi at Chiswick* was included; sharawaggi was synonym of irregularity and organic lines. The cover juxtaposed a 1942 plan of the Ilha- Restaurante with a 1736 French engraving of the Chiswick garden's plan; arguably, the comparison would be more precise if made with Stourhead, developed two decades later around a lake- not to mention Glaziou's garden at the Quinta da Boa Vista, whose lake featured a manmade island supporting the make-believe ruins of a Doric temple.¹⁹ There was no Pampulha site plan and the cover layout put Dance Hall next to the Chiswick garden islands. Noting the pioneering efforts of Burlington and Niemeyer, *Review* thought the Dance Hall exemplified the integration of modern architecture with Picturesque landscape theory, for it showed "oneness between building and background" without symmetry. The wholly curvilinear U-shaped one-story-high building and the entrance patio it surrounded were inseparable from the hour-glass shaped island crafted for and bordered by them. *Review* pursued the theme in the July 1944 issue with the Arnstein House by émigré Bernard Rudofsky, a wholly rectilinear multi-patio design in a São Paulo garden suburb laid out by Barry Parker and Raymond Unwin of Hampstead fame (Fig. 9).

A Japanese-style footbridge leads directly to the Dance Hall's patio. Redolent of a true primitive hut, the round "maloca" or dance hall of the Curutu Indians drawn by José Joaquim Freire in the eighteenth century,²⁰ the circular theater restaurant for dinner, dancing, and shows features a flat roof

19 See the entry Sharawadgi in Wikipedia.

20 See the plate in the fac-simile edition of Alexandre Rodrigues Ferreira. *Viagem filosófica pelas capitânicas do Grão-Pará, Rio Negro, Mato Grosso e Cuyabá (1784-1792)* 2 vols. (Rio: Conselho Nacional de Cultura, 1971). The original is kept at the National Library. Part of the report was transcribed in Heloisa Alberto Torres, "Contribuição para o estudo



Figure 10. NA. View of the Pampulha Casino (upper left) and Yacht Club (upper right). Postcard (c. 1944), Marcos Almeida collection.

slab that extends sinuously, first as a canopy crowning a broken line of columns recalling tree trunks, then a pseudopod that bends to top a bandstand and the dressing room behind it. The canopy shelters the restaurant entrance and the tables set outdoors. The restaurant, the columns, and the bandstand define a porous binuclear scheme, which is reinforced by a circular lily pond between the patio and the bandstand, a cove joining the lake through an isthmus (Fig. 10).

Close by, the two-story-high Yacht Club is a pyramidal composition with a rectangular projection, extending perpendicular to the access avenue and the lake between a lawn and a terrace with swimming pools. *Review* found the building ship-like.²¹ The hull is delineated by another porous base. The open pilotis at the front accommodates a recessed administration on a rocket-shaped plan and the transversal passage separating it from the locker rooms and boathouse. An uncovered ramp along the lawn side of the pilotis leads to the L-shaped deck over the passage opening and the lawn and lake borders of the club facilities. Surrounded on two sides by this expanded base, the cockpit is an elongated volume crowned by a butterfly roof, accommodating lounges and a ballroom in the opposite sides of the roof's valley. Mostly rectilinear, the protuberant Yacht Club both opposes and complements the receptive Dance Hall (Fig. 11). If the former recalls an angular houseboat about to penetrate the water, the latter evokes a docked barge or a river steamboat of rounded prow and shallow flat-bottomed construction ready to receive her passengers (Fig. 12).

Since the Yacht Club also shelters a ballroom, the distinction between sport and dance facilities is not clear-cut programmatically. However, conventional associations seem to have entered the architectural characterization, amounting to a surrealist sexualization of the machine, as in Marcel Duchamp's *Le Grand Verre. La mariée mise a nu par ses célibataires, même* (1915-1923). Brazilian sculptress Maria Martins, Duchamp's muse and wife of the Brazilian ambassador to the United States, was a friend of Niemeyer since the New York's 1939 World Fair; Costa had retracted his

da proteção ao material arqueológico e etnográfico brasileiro," *Revista do SPHAN* n.º. 1 (1937). SPHAN is Serviço do Patrimônio Histórico e Artístico Nacional, the Brazilian National Heritage founded that same year, later IPHAN. A biography of Ferreira came out subsequently. V. Correia Filho. *Alexandre Rodrigues Ferreira. Vida e obra do grande naturalista brasileiro* (São Paulo: Companhia Editora Nacional, 1939). *Malocas* identified as *casas de dança*, dance halls, are presented in: Gastão Cruls, "Decoração das malocas indígenas." *Revista do SPHAN* n.º. 5 (1941). Niemeyer was working with the agency in the Ouro Preto Grand Hotel (1939-1941) all along.

21 *The Architectural Review*, vol 95, n.º. 569 (May 1944), p. 118-124. Nikolaus Pevsner was acting editor from 1943 to 1945, according to *Oxford Reference*. He remained on the editorial board until 1965, with Hubert de Cronn Hastings and James Maude Richards.



Figure 11. NA. Eastern elevation, Pampulha Yacht Club. Postcard (c. 1944), Marcos Almeida collection.



Figure 12. NA. The Pampulha Dance Hall in its man-made islet. The sinusoidal marquee links the backstage in the foreground to the restaurant in the background. Postcard (c.1944), Marcos Almeida collection

early criticism of surrealist subjectivity (1934) long ago. Moreover, across from the lake, the Casino drum-shaped theater restaurant penetrates the boxy gambling room on pilotis, another broad and short volume: arguably, a take on the drum and box scheme of the Palladian Villa Rotonda and its nut-and-bolt-like union.²² No brise-soleil are on view, but the theater-restaurant is provided internally with padded shutters (Fig. 13).

The Casino's unbuilt pendant is a near-symmetrical bow and arrow scheme. The four-story-high Hotel features an arched horizontal slab (the hotel proper, another centipede) straddling the expanded base (the public areas), whose projection is a curved triangle and whose rooftop terrace is accessible by

²² See George Hersey, *The monumental impulse. Architecture's Biological Roots*, (Cambridge, Mass.: The MIT Press, 1999), chapter 7, Penis Paradigms, and 8, The Female Genital Palace.



Figure 13. NA. The Pampulha Casino in its man-made promontory: the drum like dinner theater advances between boxy glazed gambling room and lower opaque service wing. Postcard (c.1944), Marcos Almeida collection.

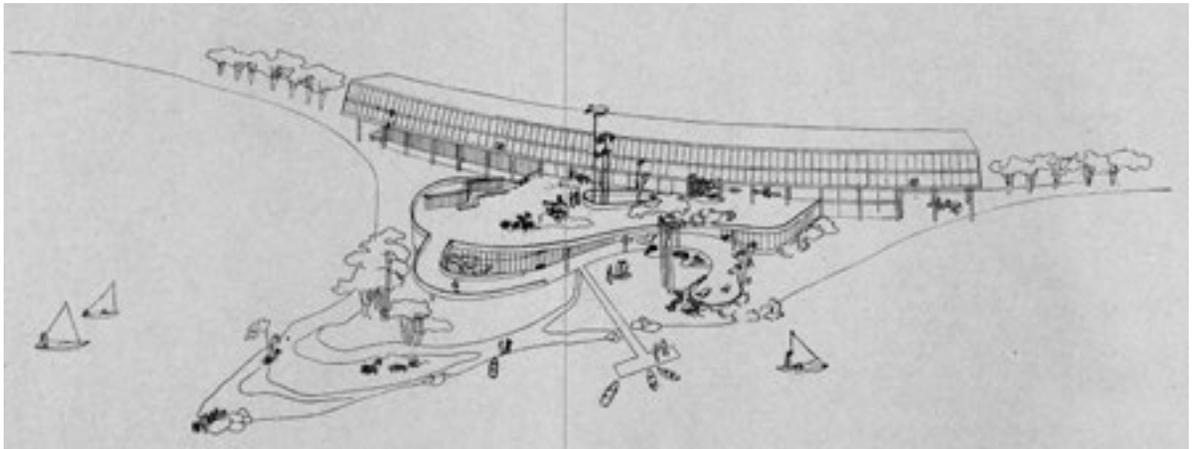


Figure 14. Oscar Niemeyer. Perspective of his design for the Pampulha Hotel. Drawing (c.1941), Fundação Oscar Niemeyer.

vine-like external curving ramps. It plays concave against convex shapes instead of curves against straight lines. Regarding lines, three-quarters of the Casino are rectilinear while the Hotel is nearly curvilinear. However, geometrical difference veils topological similarity. Regarding porosity, the contained base of the Hotel is two-story-high, while the expanded base is one-story high, so that the void-between-solids episode appears as a window instead of a portal. The exposed pilotis in the Casino define verandas instead of passages (Fig. 14).

The Chapel of Saint Francis of Assisi (1942-1945) is the single structure that employs vaults rising from the ground. The vault defining the nave features a parabolic section, a trapezoidal projection, and a truncated conic volume, it fits under a similar vault defining the altar. An ideogram of spiritual elevation with a Neo-Gothic or Expressionist flavor, the vault of the nave frames superimposed glazed facade panels, the upper one protected by metallic slats that look vaguely aeronautical. The vault's silhouette and cave-like interior relate to engineers Robert Maillart's Cement Hall in Zurich and Eugene Freyssinet's hangar at Orly. The vault of the altar rises between the smaller vaults of the sacristy and service rooms, integrating a transept with a rectangular plan. It would be a T-shaped composition, were it not for the adjoining portal made up of the single belfry and an inclined slab, which defines a narthex. Standing on a paved forecourt with lateral approaches, the portal frames the lake introducing another instance of porosity and suggesting that Niemeyer's hangar of God



Figure 15. NA. Lake elevation, St. Francis de Assisi chapel at Pampulha by Niemeyer. Postcard (c.1946). Marcos Almeida collection.

miniaturizes characteristic traits of the Franciscan order's Brazilian churches. Anthropomorphism is justifiably absent, but the outline of the vaults reiterates diagrammatically the hilly topography characterizing the city and the state (Fig. 15).

DOMESTIC PURSUITS

The straightforward U-shaped Kubitschek House does not offer much in the way of figuration—except for the butterfly roof, which tops an inverted pediment with a rough half-log siding, the U bar extending parallel to the street and the front garden. The patio develops at the rear between the service and bedroom wings, the two stems of the U. Burle Marx partnered again with Niemeyer in the Tremaine House design (1948). It would have been built in a large beachfront property in Montecito, California, a flat wooded plateau overlooking the sea but separated from the sand strip by a cliff wall. The parti accommodates reception and service areas at the ground floor and bedrooms upstairs²³ (Fig. 16).

Extending on pilotis parallel to the road, the upper floor halves the site. The ground floor has a distorted H-shape. The stem under the bedrooms has a tripartite division: the formal entrance gallery is flanked by an open pilotis for lounging and service quarters. The one-story-high stem's inclined axis extends parallel to the sea. The division is quadripartite: dressing rooms at one end serve another open lounge adjoining a second gallery space and a dining area bounded by an apsidal semicircle. The trapezium-shaped crossbar comprises the main reception area and the music room. The two lounges embrace the hourglass-shaped swimming pool. The cantilevered bent slab returns as a branch or wing of the irregular-T-shaped expanded base jutting out of the upper floor's rectangular projection. Its flat roof zigzags alternately narrowing and widening, as if outlining an ergonomic lever or a wrench; corners are rounded. Associated with the tear-like shape that adjoins the crossbar and completes the seaside stem, it appears as the last stage in a gradual conversion of orthogonal into oblique and then curvilinear geometry, attuned to the garden design by Burle Marx, a medallion-shaped tracery brooch whose pin is the house. Vaults cover the freestanding front garage, maybe alluding to the curves of car roofs and the American cult of the automobile. A double operation, it sacralizes the profane while secularizing the earlier Chapel.

23 Marcos Almeida. "Casa Tremaine," in: Ana Carolina Pellegrini, Juliano Caldas de Vasconcellos, eds. *Bloco (7): arquiteturas de morar* (Novo Hamburgo: Feevale, 2011), p.114-131.



Figure 16. Rolando Figueiredo. Aerial view, 3D model, Burton Tremain House (1948) by Niemeyer. Rendering (2021). Rolando Figueiredo archive.

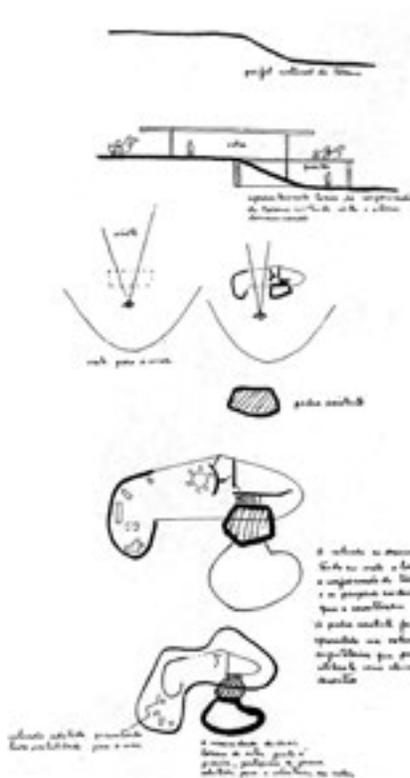


Figure 17. Oscar Niemeyer. Sketches explaining his Canoas House and view of the building from the upper entrance plateau. Montage (1954), Fundação Oscar Niemeyer.

Sadly, the Tremain House and its garden remained on paper. Three domestic designs that were built should be mentioned. The street facade of the block-length COPAN apartment building (1951-1954) combines bent cantilevered floor slabs with cantilevered parallel fins between the blank end walls, resulting in a pleated body recalling a radiator. Removing the fins in two different floors emphasizes the serpentine plan. The anthropomorphic vertical section comprises an expanded base to the rear (Fig. 17). In Niemeyer's own house at Canoas Road (1952-1953), in Rio's hilly outskirts, the amoeba-shaped roof slab distorts an original rectangle, as the architect's sketches explain.²⁴ The resulting slab may be L- or Y-shaped, according to viewpoint. Amoeboid but clearly Y-shaped cantilevered

24 Oscar Niemeyer. "Maison aux environs de Rio." *L'architecture d'aujourd'hui* n° 52 (Jan. 1954), pp. 3-7.



Figure 18. NA. View of the Copan building by Niemeyer showing the inclined slab acting as sidewalk that joins the internal street to the left and the avenue to the right. Photography for *Revista Manchete*, 611 (Jan 1964). Marcos Almeida collection.

floor slabs (as opposed to COPAN's straight end walls) and parallel cantilevered fins distinguish the Niemeyer apartment building fully occupying small triangular block in Belo Horizonte (1954-1960). Cylindrical turrets and intermediary concave spreads rest on narrow elongated tapering down concrete pillars; the horizontally pleated body evokes both shawls and togas- besides radiators (Fig.18).

POINT SUPPORTS, LANDFORMS, AND WATERBODIES

All the examples manipulate floor slabs but the Chapel. Most of them display cylindrical columns. The auditoria to be built before the Ministry of Education (1945) had crab-like exoskeletons; those holding the Theater of the Arts (1943) in Belo Horizonte were spidery. The baptistry of the Brasilia cathedral (1958-1970) is an egg-shaped volume against the ribs that structure the sanctuary. Phytomorphism assumes a primitive bias in a series of bifurcated supports in the 1950s: W, V, Y, and I-shaped columns nourish a kind of organic structuralism. Muscular, the W columns make up the base of the multifunctional Governador Juscelino Kubitschek complex in Belo Horizonte (1952-1968); the other types characterize the Ibirapuera Park Exhibition Pavilions (1952-1954) in São Paulo. At the Palace of the Industries, nowadays the Biennial Pavilion, the branches of a surreal tree support the internal ramps, developed within floor slab cutouts of liplike contours. Parabolic in outline, rectilinear in section, kite-like in elevation, the statuesque outer supports of the Alvorada, the President's Residential Palace in Brasilia (1956-1960) appear as a procession of bulging figures or dancers swirling their skirts, contemporary caryatids in the words of Stamo Papadaki.²⁵ By contrast, the supports of the Planalto, the Government Palace, are drawn as sharp cut plates and recall atlantes on tiptoe, taut and lean as the athletes in Minoan frescoes.²⁶

25 Stamo Papadaki. *Oscar Niemeyer*; (New York: George Braziller, 1960), p. 29.

26 For an outlook of the theoretical-ideological base of Brazilian Modern Architecture and its exemplary projects see Carlos Eduardo Comas. "Teoria Acadêmica, Arquitetura Moderna, Corolario Brasileño", *Anales del Instituto de Arte Iberoamericano de la Universidad de Buenos Aires*, n° 27 (1988), pp. 85-96.



Figure 19. NA. Aerial view of the Ibirapuera Park model showing pavilions and covered plaza by Niemeyer. Photography (1953), Arquivo Público da Cidade de São Paulo.



Figure 20. Marcel Gautherot. View of the Ouro Preto Grand Hotel by Niemeyer. Photography (1945), IPHAN archives, Rio de Janeiro.

Niemeyer's transcriptions of natural forms are not restricted to animate beings. The waves of the sea or his country's mountains and rivers attract him too. Like trees, landforms and waterbodies lend themselves to onomatopoeia. Some designs obviously recall landforms, as does the Pampulha Chapel. A dome springs from the earth as a hill of elementary geometry to make up the Ibirapuera Park's Palace of the Arts. For the Museum of Modern Art in Caracas (1954), an inverted pyramid proposes a regularized mirror image of the mountain on which it sits. It is a spectacular counterpart of the drum-like theater restaurant of the Pampulha Casino, which faces the lake echoing the rotund promontory it crowns. After turning the Pampulha lake into a liquid plaza, Niemeyer turned the Ibirapuera Park marquee, which defines a covered plaza with tips connecting to all the exhibition pavilions, into a petrified and upraised lake whose contours resemble those of the lake at Quinta da Boa Vista²⁷ (Fig. 19). Burle Marx's park design is a grander version of the Tremaine House garden.

²⁷ The slightly earlier Plaza Cubierta designed by Carlos Raul Villanueva for the Universidad Central de Venezuela in Caracas was more of an open gallery and foyer.

At the Canoas House (1953), the swimming pool is a teardrop hole in an artful artificial platform that incorporates a protruding rock existing on the site. The union of liquid and mineral elements echoes that of Sugarloaf Mountain and Guanabara Bay further below. Subtler, the indented silhouette of the blank and a lacy and layered front combine and give to the Ouro Preto Grand Hotel (1940-1944) the look of a broken geode showing off its crystals (Fig. 20). Set in a steep slope, the Grand Hotel results from a clever cut and fill operation that allows for vehicular penetration into the site, and a front terrace with the help of granite retaining walls.

AHEAD OF THE CURVE

Starting from the 1970s, Niemeyer often said that he was attracted to the free and sensuous curves found in the female body, in the mountains and rivers of Brazil, in the waves of the sea.²⁸ This is not the whole story. The straight line and the right angle are not absent in Niemeyer's borrowings from people, animals, plants, and geography. Clever, the architect stresses and justifies his penchant for curves observing that the Einsteinian universe is made up of them. Identifying the straight line and the right angle as tough and inflexible human creations, he implied that curves are the higher order product of a power bigger than man, nature as the forces and processes that control the physical world and its phenomena. He did not deny convention. He knew that straight lines are associated with reason, artifice, abstraction, maleness, and Classicism, therefore with industry and the spirit of the machine age, while curves point to intuition, nature, figuration, femininity, the Baroque, the Rococo or the Picturesque, therefore with handcrafts and the spirit of an organic past age. And he also knew that the validity of employing in architecture a straight line or a curve depends upon context: program, site, budget, materials, and technology.

Despite statements favoring the lines of grace, elegance and beauty promoted long ago by William Hogarth, Niemeyer did not despise the straight line.²⁹ He knew that orthogonality is usually more economical, particularly when building in steel, and therefore more rational from a certain standpoint.³⁰ It does not follow curves are irrational on principle and straight lines are always rational. Niemeyer played with the plasticity of reinforced concrete and challenged the hierarchy of values ascribed by many architectural critics to curvilinear and rectilinear geometries, supported by his proven skill in handling them both at a pragmatic and a symbolic level. He inverted polemically that hierarchy, presenting the straight line as a particular instance in a curvilinear universe. Sometimes he designed without recurring to orthogonality, sometimes he opposed straight to curved lines, sometimes he made it a point to emphasize a continuous progression from perpendiculars to oblique lines and angles, then arcs of varying radius joining oblique lines as on the ground floor of the Tremaine House; furthermore, the progression runs from the fully rectilinear slab on pilotis to the fully curvilinear garden- which involves fillets harmonizing obliques and arcs, respectively. There is not such a thing as unruly "free-form".

Maybe Niemeyer wanted to rebel against Le Corbusier, a father figure who wrote a poem to the right angle, but that is beside the point.³¹ Niemeyer knew that his French mentor played with curves all along, opposed male to female architecture,³² and thought that Brazilian work was too delicate, too feminine. This did not upset Niemeyer. What infuriated him were the narrow conception of

28 The full quote in Portuguese is: "*Não é o ângulo reto que me atrai, nem a linha reta, dura, inflexível, criada pelo homem. O que me atrai é a curva livre e sensual, a curva que encontro nas montanhas do meu país, no curso sinuoso dos seus rios, nas ondas do mar, no corpo da mulher preferida. De curvas é feito todo o universo, o universo curvo de Einstein*". Oscar Niemeyer, *As curvas do tempo*. (Rio: Revan, 1998), p. 9.

29 Hogarth's bust is found at the second ENBA building (1906-1908) by Adolfo Morales de los Rios, now the Museu Nacional de Belas Artes. For Hogarth, the "waving line" produces more beauty than any circular or straight line, as shown "in flowers, and other forms of the ornamental kind, for which reason we shall call it the line of beauty". The "serpentine line", found in the human form, "hath the power of super-adding grace to beauty." Composed by more lines of beauty and grace than a man's body, "the form of a woman's body surpasses in beauty that of a man". William Hogarth. *The Analysis of Beauty*. Ronald Paulson, ed. [New Haven & London: Yale University Press, 1997 (1753)], pp. 41, 49, 58-59. Morales mentions Hogarth's book in the thesis written to become ENBA's Professor of Architecture, reproduced in Adolfo Morales de los Rios Fº, *Adolfo Morales de Los Rios: figura, vida e obra* (Rio: Borsoi, 1959).

30 See Niemeyer, "Problemas atuais da arquitetura brasileira." *Módulo* vol 1, nº. 3 (Dec 1955) pp. 18-23.

31 Le Corbusier. *Le Poème de l'Angle Droit*. (Paris: Tériade, 1955).

32 Le Corbusier. *Le Modulor. Essai sur une mesure harmonique à l'échelle humaine applicable universellement à l'architecture et à la mécanique* (Boulogne : Éditions de l'Architecture d'Aujourd'hui, 1950), p. 52.

modern architecture entertained in the 1950s by the likes of Swiss designer Max Bill, and that involved more than the praise or condemnation of curves. Bill had published a diatribe against Brazilian modern architecture in *The Architectural Review*. Still a member of the Editorial Board, Pevsner now condemned Niemeyer's Pampulha (Chapel and Casino alike) as both anti-rational and irrational.³³ He even suggested that Le Corbusier had been perverted by his Brazilian disciple at Ronchamp. Not coincidentally, Bill had a vested interest in pure abstractionism, which he termed Concrete Art, and in industrial design, having been appointed director of the Ulm Hochschule für Gestaltung, which he imagined as the new Bauhaus. Walter Gropius, who called Niemeyer "our bird of paradise" and contributed like Bill- and Ernesto Nathan Rogers- to the *Review's* "Report on Brazil," regretted that the Canoas House was not multipliable. Niemeyer thought that was silliness and proceeded to design the Belo Horizonte apartment building.

Niemeyer's spousal of figurativeness challenged the association of modern architecture with pure abstractionism, non- objective, and non- representational art. Following Barr, Hitchcock distinguished in the 1940s between absolute and relative abstraction. Hitchcock recognized but downplayed the figural content of the amoeba shapes in the work of Arp and Miró, which were labeled "free form"³⁴ and connected to the work of Niemeyer and Burle Marx. Nevertheless, the intellectual and affective impact of Niemeyer's work depends not only upon intrinsic form, but also upon narrative content and figural allusion even if the work never violates the geometrical elementalism associated with modern architecture since the 1920s. Natural objects are not depicted realistically but abstracted recurring to stylization. Standing halfway between representational figuration and non-representational abstraction, stylization makes use of simplification, distortion, conventionality, and/or schematization.

As Ernest Gombrich commented, such strategies can also be found behind caricature and cartoons.³⁵ These were a big thing in Brazil since the mid-nineteenth century.³⁶ J. Carlos (José Carlos de Brito e Cunha, 1884-1950) was its exponent in the first half of the twentieth century, remarked by the linearity and rotundity of his drawing. Carlos Estevão (1921-1972) and Millor Fernandes (1923-2012) were his successors: the former using a kitschy thick outline to make people laugh, while the latter got wry smiles with his suave, sophisticated, and nervous line not unlike that of American Saul Steinberg (1914-1999). Stylization also informed comic strips and "literatura de cordel," a popular art form in Northeastern Brazil, the backward "other" of the modern, industrializing Southeastern and Southern regions of the country. Rooted in sung poetry, "literatura de cordel" means literally stories on a string: thin chapbooks illustrated with woodcuts and printed on cheap paper; they hang from strings in fairs and markets, selling by the thousands among people who scarcely could afford to buy them - or read them. Migrants from the Northeast made up most of the construction industry's labor in mid-twentieth-century Rio, São Paulo and Brasília. Recife, one of the two most important Northeastern capitals, had been a pioneer center for modern architecture. Sociologist Gilberto Freyre, who had made waves with *Casa Grande e Senzala* (1933), and its sequel *Sobrados e Mucambos* (1936), wrote *Mucambos do Nordeste* (1937) for SPHAN: notes about the most primitive kind of Northeastern house.³⁷ Fernando Saturnino de Brito, who had been Niemeyer's partner in the ABI building competition in Rio de Janeiro (1936), went to work in Recife with Luis Nunes, another ENBA graduate. From Recife came to Rio engineer Joaquim Cardozo who worked with Niemeyer in Pampulha and Brasília, among other projects. Moreover, Niemeyer had designed a house for Herbert Johnson (1942), the CEO of the Johnson Wax Co., in Fortaleza, Ceará, without any curve but plenty of opportunities for cross-ventilation.

33 Nikolaus Pevsner. *An outline of European Architecture*. 6th edition (London: Penguin Books, 1960), p. 698.

34 Surrealist group exhibitions were held in Paris (1925, 1928) and at the Hartford, Conn. Wadsworth Atheneum (1931) directed by Chick Austin, a friend of Hitchcock. Two big shows followed (1936), the Exposition surrealiste d'objets in Paris and the International Surrealist Exhibition in London. Marcel Duchamp curated the Exposition Internationale du Surréalisme in Paris (1938) and First Papers of Surrealism in New York (1942).

35 Ernest H. Gombrich. "The Cartoonist's Armoury." In *Meditations on a Hobby Horse and Other Essays on the Theory of Art*. [London: Phaidon Press, 2009 (1963)], pp. 127-142; E. H. Gombrich, (with Ernst Kris) "The Principles of Caricature," *British Journal of Medical Psychology*, Vol. 17, 1938, pp.319-42 [Trapp no.1938A.1].

36 Political and social caricature was appreciated in Brazil since the nineteenth century. See Herman Lima. *História da caricatura no Brasil*. 4 vols. (Rio: José Olympio, 1963).

37 Gilberto Freyre, *The Masters and the Slaves*, (New York: Knopf 1946); *The Mansions and the Shanties* (New York: Knopf, 1963). *Mucambos do Nordeste: algumas notas sobre o tipo de casa popular mais primitivo do nordeste do Brasil* (Rio: SPHAN, 1937).

Niemeyer was not the single modern architect coupling the erudite reference and the contemporary popular reference. But there was a twist to his performance. Niemeyer was a member of the Communist Party that rejected Social Realism. This might be his answer to it, double-coding architecture to ensure an easy communication with the masses while refusing historicism and folklore.³⁸ One of the jurors of the Brasilia Pilot Plan competition, the British planner William Holford once remarked of Costa's winning entry, which Niemeyer would develop, "for the poor and the illiterate this town building is a symbol which they can see and understand."³⁹ Indeed, the forms of Brazilian modern architecture were never as popular as in the 1950s, as Fernando Lara showed.⁴⁰ A visual shorthand which is representational but obviously contrived, stylization cannot be said to indicate a wish to fuse architecture and nature. Stylization is an ambivalent strategy. Although Niemeyer's work might recall architecture's debts to nature, the cantilevered thin slabs of concrete that characterize it leave no doubt about its human provenance. In his hands, stylization becomes a tool to remember that architecture is man-made nature that mediates between man and untamed nature while stressing this man-made nature's distance to untamed nature. Comparing the house at Canoas Road with Frank Lloyd Wright's Fallingwater (1935-1938) and the Farnsworth House by Mies (1946-51) reinforces the point.⁴¹

A TALE OF THREE HOUSES

Fallingwater is an elaborate tree house that evokes and amplifies the singular and seemingly untouched landscape where it grows. The vertical masonry masses echo the trees. The balconies mirror the rocky horizontal plane over which they float. The continuity between nature and the house is emphatic, creating an architecture that is literally based upon nature. Mies conceives his house as "almost nothing", the "high-tech" version of a primitive hut. A glass cage on stilts, it is as horizontal and almost as abstract as the swampy terrain over which it lands. Nevertheless, as a ship in the harbor, the house does not belong specifically to its site. The contact between architecture and nature is reduced to the bare minimum.

Fallingwater is the open extended building that attempts to emulate or merge with its surroundings through irregularity, asymmetry, richness of textures and contrasts of color, light, and shade. Farnsworth House is the compact cubic building separated from nature by its clearly defined, smooth homogeneous surfaces. Defined by two slabs, the roof that shelters the living quarters and the platform that extends them and shelters the bedrooms below, Niemeyer's house is something else, halfway between those extreme typologies. The horizontality of the light grey concrete roof and platform defies the plasticity of the landscape. As shows the report accompanying the design, the sinuous borders are the result of the deformation of an originally rectilinear scheme, to calibrate the sizes of diverse functional areas and to attenuate the tension between the natural context and the man-made object.

Canoas House is as dependent upon its site as Fallingwater, relaxed, expansive, airy, and sensual while Farnsworth house is tense, contained, monumental, cerebral, impersonal, and generic. However, Niemeyer does not share Wright's concern with expanding masses that are sympathetic both to the geometry and the materiality of its surroundings. Like the Farnsworth House, the house at Canoas Road seems also "almost nothing": not a primitive hut, but a petrified canopy under the tropical sun, its transparent glazing and dark pilotis blurred in the shadow of the roof slab. Moreover, neither the upper tent nor the cave beneath the platform can be understood aside from the platform, the artificial clearing that ties them both and is the foundation of the project.

This clearing rests comfortably upon the terrain, and embraces the existing rock, but totally transforms the site. Architecture and undomesticated, wild nature are as emphatically separated as in the Mies house. Although a partial accommodation of borders establishes an empathic correspondence and mediation, the rear border is straight. Niemeyer's house has been often compared to an oasis, but the very plausibility of the metaphor indicates alienation from the specificity of its lush setting

38 See Vilanova Artigas. "Entrevista a Aracy Amaral. As posições dos anos 50." In *Caminhos da arquitetura*. [São Paulo: Cosac Naify, 2004 (1980)], p. 155.

39 William Holford. "Brasilia." *Journal of the Royal Institute of British Architects* n° 67 (Mar 1960), pp. 395-402.

40 Fernando Lara. *The Rise of Popular Modernist Architecture in Brazil*. (Gainesville, FL: University Press of Florida, 2008).

41 For a developed version of this comparison see Carlos Eduardo Comas. "Niemeyer's Oasis: a Brazilian villa of the 1950s." *Arquine* 5 (Mexico City). Autumn 1998.

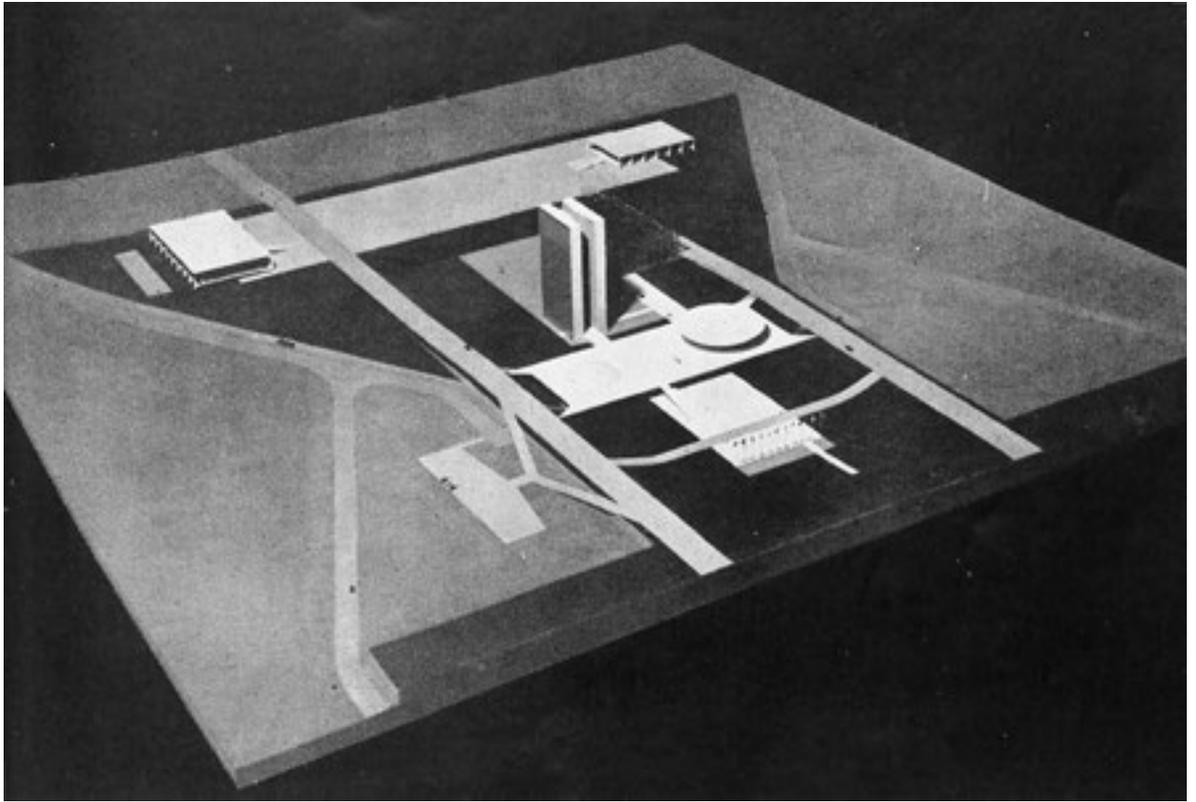


Figure 21. NA. View of the model for the Plaza of the Three Powers, with the Congress rooftop in the foreground. Photography (c.1958), Arquivo Público do Distrito Federal.

and mistrust, not to say despair, regarding the nutritional capacity of this milieu. The immediate interior-exterior interaction happens on the platform, not in the actual connection of architecture and natural ground. A significant part of the human world created to defy mortality, architecture is an act of violence against nature, as Hannah Arendt argued.⁴² At the very least it is the consented deflowering within a “mariage des contours”. Blood spilling and pain are not unknown in tropical paradises.

The Canoas platform is not an isolated case. Niemeyer- like his mentor Costa- believes that to delimit and recreate the ground is the primary architectural act, following in this Gottfried Semper’s emphasis on the mound rather than the Abbott Laugier’s emphasis on supports. Pampulha’s Dance Hall being called an Island Restaurant advertises this predisposition to reinvent topography. Documented by period photographs, the molding over water of the promontory that was to receive the two-story-high Casino is not obvious, but vital to prevent the building from being dwarfed by the four-story-high hotel at its side, and to make each appear as the other’s pendant. Brasilia is the most monumental expression of this attitude. Costa designed the earthworks configuring the Esplanade of Ministries and the Plaza of the Three Powers (1957-1960) in Brasilia (Fig. 21). But it is Niemeyer who proposes the roof slab of the Congress as a second level of that plaza, with domes and administrative spaces in analogous positions to the public and private quarters in domestic and suburban Canoas, and it is Niemeyer who invents the anti-monumental monumentality of the city, well described by the American historian Norma Evenson:

The ceremonial plaza marks an edge of settlement, defined by a retaining wall above a stretch of rough open land. It is here that one becomes most conscious of the expansiveness of the site and the enormity of the wilderness, which seems waiting without to engulf the city. The insubstantiality of the architecture is accentuated against the image of the surrounding wasteland, and one senses what an act of daring the creation of Brasilia was. The entire city reflects the bravado of a frontier town, and the gleam of marble and glass in the decorative elegance of Niemeyer’s designs defies the wilderness just as gilt and plush once brought a breath of gentility and civilization to our own western wilds.⁴³

42 Hannah Arendt. *The Human Condition* (Chicago: Chicago University Press, 1958) shows that violence is inseparable from man’s actions as “homo faber”, distinguished from his actions as “animal laboran”.

43 Norma Evenson. *Two Brazilian Capitals: architecture and urbanism in Rio de Janeiro and Brasilia*. (New Haven and London: Yale University Press, 1973), p. 205.



Figure 22. Marcos Almeida. View of the lower corner, Oscar Niemeyer building at Belo Horizonte. Photography (2007), Marcos Almeida archive.19.



Figure 23. Marcos Almeida. The covered plaza at the Ibirapuera Park: interior view, showing sloping ground. Photography (2001), Marcos Almeida studio.

At any scale, the expressiveness of Niemeyer's work is not so easily contained in lyrical limits, as Argentine critic Roberto Fernandez noted.⁴⁴ There is a darker side to it. The separation from nature that his work depicts can be taken as estrangement and imbued with all the melancholy that accompanies a situation of exile and uprooting and disorientation, the original condition of Europeans, Africans, and Asians in America. But it can also be taken as a power statement and imbued with all the arrogance that an occasion of conquest requires, as well as the fascination and fear that feed that arrogance. So, Niemeyer also designs literally against nature, as the earth and the skies can also turn hostile. And if a wholly benign nature is a chimera, a wholly benign man-made nature is likely to be a chimera too, for the creation of an imperfect being can only aspire to perfection. Architecture may be extraordinary construction, but it will never be paradise, tropical or otherwise. It is a complex posture derived from an American condition but not devoid of universal relevance.

GROUND, GARDEN, CITY

Paradoxically, the rock and pool at the forecourt of Canoas House enhance the continuity of the platform they interrupt. Given the steeply sloping exurban site, the delimited and recreated ground at Canoas does not engage with sidewalks as elsewhere, for the idea of a delimited and recreated ground working as an active element of composition applies to dense urban situations too. At the Ministry of Education, it absorbs sidewalks and stop at the curbs. It comprises the smooth gray granite esplanade that crosses the central open pilotis, the bands of sinuous planted beds that prolong the staff vestibule at one extremity, the sidewalks paved with irregular white Portuguese stone, and sidewalk extensions interspersed with the planted beds. Photographs show no curbs at the 1939 New York's World Fair. In the Brazilian Pavilion, the entry forecourt is absorbed into the asphalt of the public thoroughfares, although planted beds flanking the ramp and the diorama provide some separation. Pavers unify the projection of the cantilevered upper floor, the open pilotis, and the rear courtyard, where a sinuous lily pond among curvilinear planted beds.

Completely paved situations are found downtown. There is no discontinuity of grade and material between the sloping sidewalk and the sloping walkways giving access to shops and entrance halls of apartment buildings at the ground floor of the COPAN apartment building in São Paulo (Fig. 22). A similar strategy is adopted at the Ibirapuera Park (Fig.23). The ground beneath the marquee is inclined accompanying the natural slope but delimited by a cement floor mirroring the curvilinear borders above and reinforcing the covered plaza's character. The Niemeyer apartment building in Belo Horizonte occupies a block in the shape of a scalene triangle. The side fronting the city's main civic square is level, while the others slope down, converging on a tip that is one-story-high lower than the frontage turned to the square. The recreated ground registers and elaborates this situation through a complex play of thin horizontal and vertical planes. The main entrance hall rises amidst a triangular floor slab that extends the level sidewalk over the whole block. It cantilevers over a half-underground garage that stops short of last two structural bays at the tip. Left open to provide for vehicular access, those bays are defined by narrow elongated pillars, like those at the entrance above. The curvilinear Y-shaped apartment floor slabs project over the sidewalks at the extremities of each frontage and recede at the middle. The square in front of the Niemeyer building is green. COPAN is two blocks away from another.

Natural elements are supporting characters in the above examples. They remain so in the Yacht Club and the Dance Hall designs. Despite lawn, hedges, and pond, their adjoining open spaces belong to the typology of largo, piazzetta, or pocket park, as does the Chapel's paved forecourt. Vegetation prevails elsewhere. Niemeyer agrees with the importance given to gardens by his and Burle Marx's mentor Costa, evident in the Brazilian Pavilion and the Ministry of Education as well as in the Universidade do Brasil campus design. Costa studied Natural History, Physics and Chemistry applied to Arts at ENBA and taught a graduate course on Landscape Architecture at the Universidade do Distrito Federal (1934). In the report on his design for Universidade do Brasil, he observed that local and unmistakable character could also be conveyed by the choice of appropriate vegetation, echoing the French theoretician Quatremère de Quincy, who pointed out the similarities between the characterization of gardens and buildings.⁴⁵

44 Roberto Fernandez. "Exceso brasileño: Niemeyer y la omnipotencia del gesto." *Summa* n°. 92 (Buenos Aires, 2008), p. 123. He criticizes explicitly the use of sensualism as the key to explain Niemeyer's work.

45 Lucio Costa. "Universidade do Brasil." op. cit. Antoine-Chrysostome Quatremère de Quincy. "Caractère". in *Encyclopedie Methodique- Architecture, v 1.* (Paris: Pancoucke, 1788), pp. 518-528.



Figure 24. NA. View from the model of the Museum of Modern Art of Caracas by Niemeyer. Photomontage (1954), Fundação Oscar Niemeyer.

Gardens, however, are not nature, the very etymology of the word pointing out to enclosure set apart from undomesticated nature. “The unnatural art of the garden” was the apt title of a Burle Marx retrospective at MoMA in 1999, and the landscapist himself observed that “a garden is the result of an arrangement of natural materials according to aesthetic laws”.⁴⁶ Gardens are human creations that try to exorcise or control and maybe perfect nature through nurture, to appropriate and represent it as a suitable setting for human experience. There may be real adjacency- rather than mere visual connection- between undomesticated nature and Niemeyer’s architecture but never fusion, a misleading and equivocal idea. The exception that proves the rule- up to a point- is the Caracas Museum, which prolongs the mountain on which it sits, but also opposes it (Fig. 24). The Pampulha Casino arouses a similar but, in the end, deceptive impression, for the promontory which it crowns is a manmade one, like the lake the promontory abuts. Both the Casino and the Caracas Museum are double-faced. At the sides and at the rear they seem to reflect their surroundings. At the entrance facade they separate from them, with the Casino’s sloping front garden signaling the marriage of the automobile and the suburb with two lanes as in Savoye.

Abrupt contact may heighten the contrast between Niemeyer’s architecture and neighboring wild nature, as in the Canoas House and the Plaza of the Three Powers, or a garden may grow between them, creating a territorial progression, as in the Tremaine House. The expanded base entails an expanded ground, whether this man-made stage is hard platform or soft green. In Brasilia’s monumental sector, a peninsula surrounded by the savannah, the Plaza of the Three Powers offers a platform for the Government Palace and the Supreme Court, and the Congress rooftop doubles that platform, whereas a garden separates the exurban Residential Palace from the lake. Views of Guanabara Bay from the Ministry of Education supported its characterization as a ship. From the Brazilian Pavilion’s elevated terrace, the garden, a channel, and the fields beyond succeeded each other. Pampulha’s porticos, verandas, and galleries frame the lake, other buildings in the complex, the mass of trees in the suburban lots, and the mountains in the background. Niemeyer’s architecture involves the design of buildings and associated open spaces considering prospect.

If the fusion of architecture and undomesticated nature did not count in Niemeyer’s agenda, the interpenetration of interior and exterior spaces was a constant concern, whether sites were suburban or urban and bases were contained within the projection of the body of the building (as in the Niemeyer building) or expanded beyond it (at the rear in COPAN, in opposite façades at the

46 Roberto Burle Marx. Available at <https://quotefancy.com/quote/1314600/>.

Ministry). Porous and receding bases allow for modulated interpenetration. The see-through and/or walk-through voids of their exposed pilotis engage eyes only and/or the whole body. Inclusion of street space in the composition allows for spatial fluidity even if the whole site is occupied (as in the COPAN and Niemeyer buildings). Paving and eventual landscaping promote the visual autonomy of base and ground, so that the latter may assume the character of an expanded, receding, or congruent stylobate, continuous or debating with textured beds, green plinths, arboreal masses. Cultivated nature is part of the design toolkit, while raw nature appears as backdrop and outcrop.

The working out of half-open and half-enclosed blocks explores the urban design dimension of the interpenetration of interior and exterior spaces. It is not only a case of breaking the box, the prismatic body of the building, but also a case of breaking the perimeter block- up to a point. The Ministry of Education and the Brazilian Pavilion develop provocatively two traditional typologies, the equipped square (exemplified by the Palladian Basilica in Vicenza amidst the spatially continuous Piazze dei Signori, dell'Erbe and delle Biade), and the combo building-square (exemplified by Madrid's Plaza Mayor, enclosed on four sides, or Lisbon's Praça do Commercio and Rio's Praça XV, enclosed on three sides). Hybrid at the origin, those typologies are further complicated by the inclusion of wings, ramps, outbuildings, and natural elements in varying proportions. Typological work advances on the same direction at the block-size but two-frontage lots of Pampulha (to lake and boulevard).

Both the Dance Hall and the Kubitschek House are U-shaped in plan, but the single-frontage private house extends along the boulevard, whereas the public facility offers a forecourt to it. The Hotel and Chapel are T-shaped, but entrances stand on the opposite sides of the stem, one fronting the boulevard, the other fronting the lake. The unbuilt Hotel would hide Burle Marx's tropical version of mixed borders from boulevard view, whereas old-fashioned rose gardens would flank the Chapel and a ficus arboretum would front the altar façade; sadly, pedestrian plantings replaced the rose gardens and the arboretum. The linear Yacht Club is perpendicular to the lake and the boulevard, whereas the Casino sits at the hilltop like a villa-belvedere, in the best tradition of Palladio's Rotonda- or Burlington's Chiswick House. Seen with their lots, these follies suggest paradigms for modern public squares. Combined, they establish a waterfront park for the middle classes, a modern Stourhead that achieves formal diversity without eclecticism. Its picturesqueness contrasts with the sublime dimensions and greater formal homogeneity of the Ibirapuera exhibition complex, which in a way descends from the Crystal Palace by head gardener Joseph Paxton, built in London's Hyde Park for the Great 1851 Exhibition. For Niemeyer, metropolitan Ibirapuera, suburban Pampulha, and even the Canoas-type exurban lot belong in the modern midcentury city, together with totally built blocks and hard, soft, or mixed totally open squares.

Niemeyer's city sense was evolutionary rather than revolutionary. He did not take for granted the closed blocks, corridor streets, and lounge-like squares of the nineteenth-century Western city. He did not exalt sun, space, and greenery either. A CIAM member, he might have accepted in theory the dissolution of the whole existing city in manmade parkland. In practice, his work did not mandate it, much less the dissolution of the whole existing city in unbounded parkland. Seascrapers in the grass might be favored for residential areas, as the Copacabana project of 1953 shows,⁴⁷ but other alternatives were also acceptable. Urban land should be publicly owned to curtail speculation, and the block should be the urban unit rather than the lot. A superblock might be an even better unit for him, but Niemeyer did not confound public ownership of urban land with unrestricted accessibility everywhere. A realist, he thought society changes architecture, not the other way around. Yet, he attempted to strike a balance between chaotic multiplicity and unbridled repetition in the city- and in architecture, whatever its setting. His work promotes a controlled typological diversity, which comprises black and white along with many shades of grey (Fig. 25).

Niemeyer praised Baudelaire, for whom:

What is not slightly misshapen looks insensitive, from which it follows that the unexpected, irregularity, surprise and astonishment are an essential part and a characteristic of beauty.⁴⁸

47 "Niemeyer destrói e reconstrói o Rio". *Manchete* nº54, May 1953, pp. 29-37.

48 Charles Baudelaire. "Journaux Intimes, 13 mai 1856", in *Oeuvres posthumes* 3e ed. (Paris: Mercure de France, 1908), p. 83. Niemeyer uses the quotation in his Pritzker Prize acceptance speech, 1988. *Ce qui n'est pas légèrement difforme a l'air insensible; d'où il suit que l'inattendu, l'irrégularité, la surprise et l'étonnement sont une partie essentielle et une caractéristique de la beauté.* Translation by Comas.



Figure 25. NA. Spread, *Revista Manchete* 54 (May 1953), with drawing by Niemeyer depicting his ideas for rebuilding Copacabana. Digital image (2010), Biblioteca Nacional, Rio de Janeiro.

but Baudelaire also implied, in *L'Invitation au voyage*, that order is the partner of beauty, together with luxe, calm, and voluptuousness. Attentive to ambiguity, he observed that:

Modernity is the transient, the fleeting, the contingent; it is one half of art, the other being the eternal and the immovable.⁴⁹

Niemeyer transcribed nature, it might be said, to help create an everlasting human world challenging nature's changeability. Biomorphism relates to fossilization and mummification, whereas geomorphism recognizes nature's more permanent aspects. Mechanomorphism indicates that Niemeyer did not romanticize nature. For better or worse, he was a son of the Enlightenment. Nature is mankind's primeval habitat, but separation from nature is a prerequisite for human growth, and that involves the manipulation of nature, designing against nature even when designing with nature. Neither a noble savage nor a brute, Niemeyer saw nature as a constraint and a resource. On a pragmatic level, nature was to be cultivated and perfected in the development of the human world- technology knows no national barriers, observed Costa.⁵⁰ On a symbolical level, nature was to be used as an iconographical source to characterize an existential situation transcending location- or social constructs like Brazilianness. Niemeyer elaborated such characterization through compositional strategies that explore the interpenetration of interior and exterior space, and he did so over ground that he delimited and recreated in full consciousness of the kinship between architecture and landscape architecture, both topographic arts. At the same time, his architecture travels light, and if it defies gravity thanks to modern technology, it also shows him aware of the human world's fragility.

Concentration on the base of buildings and a specific period does not say all that there is to say about the relationship between Niemeyer's architecture and nature. The body and the crowning of his

49 Charles Baudelaire. *Le peintre de la vie moderne*. IV. 1863. *La modernité, c'est le fugitif, le transitoire, le contingent, la moitié de l'art, dont l'autre moitié est l'éternel et l'immuable* Translation by Comas.

50 Lucio Costa. "Universidade do Brasil", op. cit.

works deserve more attention that could be given here, particularly regarding environmental control. Brise-soleil figure prominently among the elements of architecture used by Niemeyer until the early 1950s. Philip Johnson, who came to São Paulo for the II Architecture International Biennial in 1953, reported having had a conversation with Niemeyer at the time, in which the latter said he was tired of brise-soleil and no longer wanted to use them, presumably considering that air conditioning had arrived on the scene to stay.⁵¹ Yet, no matter how Niemeyer's attitude towards air conditioning is assessed, the observations made here seem enough to suggest that it is about time to recognize that there is more to Niemeyer's work than naturism, naturalism, nativism, and flamboyant tropicality.

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