



## Le Corbusier's Legacy: Modern experimentation in Mario Bonito's work

**Abstract:** This paper investigates the path of, third generation Portuguese modern architect, Mário Bonito (1921/1976), in order to understand and clarify his contribution to the maturity process of Portuguese modern architecture, that began at the end of the 1940s, strongly influenced by Le Corbusier. Through the understanding of his final academic work, CODA (Concurso para Obtenção do Diploma de Arquitecto / Competition to Obtain the Architects Diploma), designated Pavilhão das Ilhas Adjacentes, located in Jardim do Palácio Cristal (Crystal Palace Gardens) in Porto, dated 1947/48, we intend to deepen his relationship, with the modern premises of Corbusier's architecture, framed by Portuguese reality. However Le Corbusier's legacy in Mario Bonito's work is not formal but thematic, in understanding the main issues that guide the intent of progressive man in molding a modern and just society.

The academic proposal covers themes characteristic to Portuguese modernist architecture such as the dialogue between craftsmanship and technique, compositional rigor and rational design issues resulting from the systematization of the construction processes, with the search for standardization of architectural and constructional elements. This dialogue emphasizes the compromise between tradition and modernity that will be present in all of Mário Bonito's designed and written work, announcing the experimental temperament and formal coherence of his subsequent works.

**Keywords:** legacy; Mário Bonito; Portuguese architecture; universality.

### 1. Introduction

An observation of Corbusier's contribution to the dissemination of modern architecture discloses two legacy conceptions – the works equivalent in formal plasticity reproduction and those inspired by the progressive social intent and composition notions/themes but free from formal restraints. Together, these two conditions are similar in notion but distinctly different in result; one, placing the issue on universality of architecture, the other universality in architecture.

This paper, admitting the possibility of both intakes, discusses the latter, as the one with more consequence to the understanding of contemporary architecture's possibilities, through Mario Bonito's final academic project, emphasizing the construction of a coherent narrative that identifies its main issues, through the eyes of Corbusier's political and cultured *universal man*.

The present essay derives from a PhD thesis, *Experimentação do Moderno na Obra de Mario Bonito*, presented in 2013, at FAUP and a current investigation on the design process in Porto between the 1940s and 1960s, an experimental period in the Portuguese modern architectural scene, integrated in Study Centre of Architecture and Urbanism (CEAU\_FAUP); group: *Atlas da Casa\_Identity and transference*.

To address the third generation of Portuguese modern architects<sup>1</sup> we have to take into account framing Portuguese cultural and social context of Republican matrix, in the early 1900s,<sup>2</sup> with their academic training period, during the thirties, based on the confirmation of a military dictatorship<sup>3</sup> and respective validation of the

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<sup>1</sup> The third generation corresponds to architects born between 1917 e 1927, to which Mario Bonito (1921/1976) is part. It's important to emphasize that in Portuguese architecture we consider the first generation between 1890 and 1907; second generation between 1907 and 1917.

<sup>2</sup> The *first Portuguese Republic* characterized by an elitist politician body with progressive socio-cultural policies, is a democratic regime that spans from 1910, after the fall of the monarchy, to 1926.

<sup>3</sup> On 28th May 1926, general Gomes da Costa's up rise in Braga will lead to the establishment of a military dictatorship (1926-1933). Ramos, Rui (Dir.): *História de Portugal*. Lisboa: A Esfera dos Livros, 2009, p. 862.

*Estado Novo*<sup>4</sup> political state. In the late forties, they will assert their professional practice conscious of the national circumstances, and in the next decade they will present unique architectural work in the implementation and dissemination of modern architecture, based on the ideas deepened and transmitted by CIAM.

Mario Bonito, born in 1921 on the east side of Porto, submits his admission exam at the School of Fine Arts of Porto (EBAP) in 1936 and terminates his academic studies in 1945, presenting his CODA in 1947, with the consequent architect's diploma in 1948.

His professional career is associated with the cities of Porto and Lisbon, at different times, 1921-1963 and 1964-1976, respectively. These cities represent two different phases, both in its architectural and artistic production, and in the knowledge and dissemination of his work.

Mario Bonito's path is strongly characterized by his vocation and multifaceted action in artistic, cultural and social activity, with a passionate relationship with life and with those who surrounded him.

His artistry, clearly inspired by the Bauhausian man, with direct influence of Carlos Ramos' approach to teaching architecture and the arts, enabled and encouraged him to engage in other artistic and social areas with the same relevance and quality he dedicated and manifested in the field of architecture.

*"Identified with the principles of Athens Charter, in the complexity of his personality, Bonito was finding other identities and other passions. (...) The intellectual dimension of Mario Bonito did not run out, in his action as a planner and activist of a new idea of architecture. His wide knowledge and passion for the art of his time, as well as his civic sense, led him not only to expand his interests, but also to diversify his fields of intervention."*<sup>5</sup>

The thematic versatility - architecture/art, theater and cinema<sup>6</sup> - that Mario Bonito addresses and deepens, through writings and designs, is a preponderant factor to unveil his humanistic character and his intellectual restlessness on the need/search for progress in Portuguese society through the understanding of the modern movement masters, such as Le Corbusier.

His proposals will always be conceived in modern syntax vocabulary,<sup>7</sup> integrating progress and industry innovation through the use of abstract composition - geometric tracings and conceptual metric - reinterpreting his social relevance as an architect, ie, the condition and the significance/meaning of *universal man* and notion of *progressive habitat* in the city's constructed landscape.

This *modus operandi* and understanding of the discipline of architecture will be shared with much of the architects in the defense of modern architecture in particular those who shared his daily routine at EBAP/ESBAP and formed ODAM group or participated in meetings of the UIA and CIAM-Porto group, led by Alfredo Viana Lima.

In Europe, the condition of modern architecture, inspired by the in-between wars experimentation, in the late forties and, specially, in the fifties, began to find growing opposition, with masters such as Le Corbusier, moving

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<sup>4</sup> On 11th April 1933 enters into play the new Political Constitution and on 29<sup>th</sup> August is created the Surveillance and State Defense police. Thus, *Estado Novo* regime is initiated, freezing all progressive ideas or social policies, spanning until 25th April 1974. Ramos, Rui (Dir.): *História de Portugal*. Lisboa: A Esfera dos Livros, 2009, p. 862.

<sup>5</sup> Costa, Alexandre Alves: *Textos Datados*. Coimbra: Edições do Departamento de Arquitectura da FCTUC, 2007, p. 87-88

<sup>6</sup> Mario Bonito has a strong connection to cinema, 1949-1963, both in criticism/debate and dissemination, with a decisive role in the life of Portuguese Cinematography Club / *Cineclube do Porto*, from 1949 to 1963 and participates actively in the life of local theater company, *Círculo de Cultura Teatral – Teatro Experimental do Porto*, from 1962 to 1964. He was invited, by Carlos Ramos, , with three other young architects, Fernando Tavora, Agostinho Ricca, Carlos Loureiro, to teach at ESBAP, from 1950 to 1957.

<sup>7</sup> Applying Corbusier's modular in his later works.

definitively away from the delicate *white architecture* to interpret the textures of new materials, resulting from the systematic construction and standardization of its constructive elements while maintaining the *functional city* premises in the urban structure. In Portugal the pursuit for these modernistic ideals, linked to European and Brazilian modern architecture, were much into play with the younger generation of architects, imposing on the political regime different public interventions. Thus, after the Second World War, Portuguese architecture finds itself in an anachronic position, due to the temporal discrepancy associated to the pursuit of these premises linked to 1920s experimentation, when Europe had started to question them, with particular emphasis to the CIAM meeting at Bridgewater (England) in 1947<sup>8</sup>.

In this evolutionary process, the term *modern* will be replaced over time, in different contexts by terms as *alive or true* that is, reinforcing the perception of architecture as a direct response to society's problems - reflection of the culture of its time, one of Le Corbusier's key premises. In fact, Mario Bonito wanted and believed in the transformation of his time, but only through the social responsibility of the/as an architect and citizen both in the ethical performance of his duties and as a daily experience.

The collective consciousness manifested in the formation of the two platforms ICAT (Iniciativas Culturais de Arte e Técnica) in Lisbon in 1946 and ODAM (Organização dos Arquitectos Modernos) in Porto in 1947, will reveal a common ground between the different architects, where the sharing of objectives will also be defended by Mario Bonito.

The Portuguese publication of the *Athens Charter*, in 1944, and Le Corbusier's *Manière de Penser l'Urbanisme*, in the following year, with the disclosure of L'Architecture d'Aujourd'hui's special issue, October 1932, dedicated to the Perret brothers, Auguste and Gustave, and their aphorisms/architectural poem with the original title *Contribution à une théorie de l'Architecture*, first published in 1945 in the French magazine *Techniques et Architecture*, may also be considered primary influence or source for Mario Bonito.

Other important publications are the set of articles entitled *The modern Dutch architecture* that resulted from Francisco Keil do Admiral's trip to the Netherlands in 1936, for the monitoring of the construction of the Portugal Pavilion at the Paris Universal Exhibition of 1937. The way that various topics will be addressed in these texts, especially given that these publications correspond to Mario Bonito's initial formative years, will have two direct relationships with his thinking and future architectural research, i.e., the decisive trip to Europe (1950) that included the Spain, France, Netherlands and the knowledge of a fundamental reference for his project submitted to the CODA - Le Corbusier and Pierre Jeanneret's *Des Temps Nouveaux Pavilion*, conceived for that Universal Exhibition, with the objective to disseminate the ideas and experiences of Congrès Internationaux d'Architecture Moderne (CIAM).

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<sup>8</sup> The change of atmosphere of postwar CIAM 6, themed "*the human community in modernist civilization*", is clear for Kenneth Frampton: "*The postwar reunion congress, that is to say CIAM 6, which took place in bucolic Bridgewater in Somerset, England, in September 1947, could hardly have been more removed from the radical political themes that had dominated CIAM, some eighteen years before. In first place, the common language of the congress momentarily shifted to English; in the second, despite the continued leading presence of both Giedion and Le Corbusier, the most dominant wing of CIAM, namely the MARS group (founded in 1933), was now not only the host but also the most active national contingent within the organization. (...) Thus CIAM 6 began to go beyond the four functional categories of 1933 Athens Charter as formulated by CIAM 4, affirming that «The aim of CIAM is to work for the creation of a physical environment that will satisfy man's emotional and material needs».*" Frampton, Kenneth: "Foreword", Mumford, Eric: *The CIAM Discourse on Urbanism, 1928-1960*. Mass: MIT Press, 2002, p. xiii.

Mário Bonito will publish an important set of 16 texts, from 1948 to 1971, that express his awareness and sense of modernity in the role play of a democratic and progressive society, with emphasizes to the two communications – *Regionalism and tradition* and *The architect's tasks* – presented at the First National Architecture Congress (1948), the main text in the ODAM exhibition catalogue (Porto, 1951), and manifest driven *From Abstract Architecture to Realistic Architecture (1956)*, *Universality in Architecture (1971)* and *You were saying...* (1971).

In 1947, the proposal for the *Ilhas Adjacentes* Pavilion presented to the *Competition to Obtain the Architect Diploma (CODA)* begins to outline in an extremely clear way, the idea of architecture that Mario Bonito aims to support and develop.

The opportunity of drafting an ephemeral building inserted in an emblematic public garden is a rare occasion in Porto's urban landscape. The specific context of the *Crystal Palace Garden* and lack of programmatic complexity sets into play the relevance of temporary architecture as an experimental foreground and complementary themes/issues on the dialogue with the site/natural landscape, as an enriching interpretation of its significance and the established geometric relationships with preexisting elements in the construction of *a sense of place* inhabited by corbusier's *Universal Man* and *Perret's structural truth notion*.

## 2. Taking part of the modern intent

Twenty-six year old Mário Bonito affirms with the *Ilhas Adjacentes* Pavilion an architectural notion that will accompany him throughout his professional practice: interpreting an architectural work as an *object of art* that seeks to reflect originality and counteracts false or preconceived assumptions, i.e. architecture as "*a mix of intuition and technical expertise*"<sup>9</sup>.

The option of developing a work like the *Ilhas Adjacentes* Pavilion, an ephemeral building with "*a three month reign – duration of the exposition*"<sup>10</sup>, inserted in a public garden is not only a rare opportunity in Porto's urban landscape but also an uncommon programmatic theme in the proposals presented to ESAP's *Competition to Obtain the Architect Diploma (CODA)*, but as Mario Bonito refers "*it was a logical deduction, the conception of ephemeral architecture is rooted in the laws of definitive architecture*"<sup>11</sup>.

The choice of this project/theme can also be interpreted as a deliberate way to join the controversy surrounding the approval of Artur Andrade's modern proposal for the new Exhibition Palace, against the criticisms of public institutions and government agents, can be interpreted as Mário Bonito's first documented public manifestation, in the defense of modern architecture and the ethical practice of architect's profession.

Mario Bonito's proposal, respecting the exposition's proposed layout, will be drafted in parallel to the afflicted design process of Artur Andrade's (1946-48) *Palácio de Exposições da Associação Industrial Portuguesa*, called publicly into question for its architectural modernistic expression and subsequently will not be approved by authorities.

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<sup>9</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>10</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>11</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

The first publication that addresses and disseminates the works presented to EBAP/ESBAP's CODA, the *Ilhas Adjacentes* Pavilion, together with over 21 examples<sup>12</sup> will be framed by a text entitled *40 Years: The ethics of aesthetics and the aesthetics of ethics*, by Manuel Botelho.

The text, structured in four points, tests and explains, at first, the adversity of the forties towards architecture of modern premises and the affirmation of the official political agenda with the *Portuguese World Exhibition* (1940) - celebrates the fascist state ideals - concluding with the characterization of the circumstances surrounding the exercise of the architect's profession:

*"Addicted interpretations of the past, combined with ideological ambiguities, difficult modernity and no wonder that the repression of the regime would combat modern architecture, as has happened in all political totalitarianism. The spirit of modern architecture is distorted and the architectural reflection, confined to mediocre content and debate on Portuguese national style, is guided by what we call aesthetic ethics"*<sup>13</sup>.

However, the second point highlights the new conditions and paradigms that characterize this decade, especially in the post-war period, synthesizing them into four main ideas:

*"To talk about modern architecture is inevitably to speak of a political problem. The First World War changed the socio-economic conditions in Europe, accelerating industrial development and bringing out new technologies. (...)*

*Architecture changes face: from the object builder architect we go to the architect urbanist and construction in series cannot occur outside the industrial technology.*

*(...) It was not so much about the renewal of architecture but the obtaining of a better world.*

*(...) The conclusion of the war and the awakening of democracies provide a higher cultural upheaval climate, which makes the 40s particularly important reflection for modern architecture in Portugal"*<sup>14</sup>.

The growing political awareness in Europe and the evolution of the construction industry and techniques, with their respective influence and incorporation into the creative and architectural process, will not have the corresponding echo in Portuguese reality, except for small groups of architects and students, who will in some cases, with the projects presented to the CODA, be their first manifestation against the architecture advocated by the *Estado Novo* regime. These projects can be considered the first reflections of Carlos Ramos at EBAP and the consequent attempt of pedagogical renewal proposing a modern education, within the existing Beaux-Arts curriculum.

In the late forties, some CODA projects begin to evoke a possible condition associated to industrial modernity, but other proposals continue to submit a response, based on operative conditions according to dominant taste and objective state commissions - emphasizing *"eminently practical national modernism and the adoption of modern vocabulary used as an eclectic language"*<sup>15</sup>.

The proposals, in the late forties, João Andresen (1948), Vasco Vieira da Costa (1949) and Luis Oliveira Martins (1950), reveal the search for a design that incorporates imported models, but its Delfim Amorim's "My House "

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<sup>12</sup> The various cases are spread over thirteen public buildings of various themes, five detached houses, a multifamily building and a urban project. In this publication Mario Bonito's pavilion will be the only example to address the issue of ephemeral architecture, not only in the 40s, but also the next two decades.

<sup>13</sup> Botelho, Manuel: "A ética da estética e a estética da ética". *rA Revista de Arquitectura*. October 1987. Porto: FAUP, p. 7.

<sup>14</sup> Botelho, Manuel: "A ética da estética e a estética da ética". *rA Revista de Arquitectura*. October 1987. Porto: FAUP, p. 7.

<sup>15</sup> Coutinho, Bárbara: "Carlos Ramos, Comunicador e professor – Contributo para a afirmação e divulgação do Moderno", Tostões, Ana (Dir.) *Arquitetura Moderna Portuguesa 1920-1970*. Lisboa: IPPAR, 2004, p. 49.

(1947), with two different interpretations of the same program, that reveals the ambiguity of the period, even for those who defended a new architecture.

Although Alfredo Viana de Lima's CODA (1941) already referenced Le Corbusier's work, be it versions of "Centrosyos Moscow" (1928), "Palais de Nations" (1927/28) for Geneva, and "Palais de Soviets" in Moscow (1931) or even the proposals for the new capital of Punjab, Chandigarh, initiated in 1950, both in the fragmented solid-void dialectic plan draft, formal configuration and urban meaning expressing a solid-void dialectic. The example of "La cité de refuge of l'Armée du Salut" (1929-33) in Paris, will be another shining example of the building's fragmentation into several bodies, scale and varied geometry, with proportional settings and compositional balance promoting, through the configuration of diverse shapes, an architectural promenade which organizes and distributes the ensemble.

These corbusian experiences will also have a particular progress in Brazilian architecture, a constant reference to Portuguese reality, through Affonso Eduardo Reidy, Henrique Mindlin, Lucio Costa and Oscar Niemeyer, among others, with emphasis on *plan and facade libre* with modular grids and free form ramps and portico or canopies that unify the compositions.

However, despite these specific experiences and cultural unrest, the atmosphere was hostile to the Modern Movement architecture, as implied by Manuel Mendes:

*"In 1948, Porto lived years of lead, brutishness with regard to the imposition of style rules/values coercive to free-circulation/exploration of the idea and the artistic practice of architecture"*<sup>16</sup>.

The opening of José Carlos Loureiro's technical description presented with his CODA, after the First National Architecture Congress 1948, expresses the difficulties and preconceptions existing in the architect's practice, as opposed to the pedagogical work encouraged by Carlos Ramos in CODA projects.

*"The standardization does not exist in our country because it is dogmatically assumed that we should only use stone, tile, wood and in certain forms and principles. (...) It is time to make experimental buildings where technicians have, as well as freedom of design, analysis possibilities of new materials. But since it is known that the educational orientation in this school gives ample freedom and cherishes the attempts of renovation, it's beyond the scope of this CODA to deal with this external problem"*<sup>17</sup>.

It's this search for concrete responses to problems or questions with the corresponding deepening of necessary free exploratory-circulation of ideas and the artistic practice of architecture, as manifested by Manuel Mendes, that the *Ilhas Adjacentes* Pavilion, presented to the CODA, six months before the First National architecture Congress, acquires importance and a specific space for reflection on modern Portuguese architecture.

Through the proposal's technical description we can formulate three key issues: the clarification of the significance of architecture as a creative act and social phenomenon, the interpretation of place in the formulation of a proposal and the meaning of form through construction systematization – *structural truth*.

The text structured in four parts presents, the first point, an introduction that discusses and defines the project's main theme - ephemeral architecture - framing the meaning of the permanent and provisional constructions; the

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<sup>16</sup> Mendes, Manuel: "Errância poética", *Jornal de Notícias*, Outubro 2000. Porto: *Porto 2001, Capital da Cultura*.

<sup>17</sup> Loureiro, José Carlos: "CODA". *rA Revista de Arquitectura*. October 1987. Porto: FAUP, p. 33.

second, an objective analysis of the program, with the presentation of a direct reference; in the third part, the form - "*Which form to take?*"<sup>18</sup> - fits an accurate reading of the site conditions with full explanation of the proposal's strategy and, in the fourth part, the materials and constructive solution explains the form's conformation with its respective spatial materialization.

The structure of the text tries to mirror the deductive methodology of the creative process deploying the presentation of the pavilion in successive reflections and conclusions until the final shaping of the building's ideas.

In the introduction Mario Bonito alerts, on the academic relevance of the chosen subject/theme for his CODA emphasizing that an architectural object "*is not measured in length, but in depth, by the way it performs and by the emotion it arouses*"<sup>19</sup>. The lack of programmatic complexity is evoked as a means to accentuate the meaning of feeling- *poetics* - in the creative process: "*We agree that with the chosen theme some may struggle in the field of functional organization. But it also seems that, more than any it lets the imagination a wide range of resources, even a certain justifiable plasticity of forms. Starting from a formed and accepted concept that an exhibition should express itself in spectacular ways, we try not to forget and care for what in them must be unique and speculative*"<sup>20</sup>.

He clearly states that there are points of contact between permanent and temporary architecture, with the first representing the greatness of a society through the wealth of their materials and constructive options and the second, in this case, "*by its own ephemerality, it must first translate the greatness of a show on which irreducibly the curtain shall close*"<sup>21</sup>.

Hence, Mario Bonito sustains that shaping space or modeling form - architectural composition as the main response to the posed problems, regardless of the programmatic purpose, size, temporal durability or cost - embodies a work of architecture.

*"May the very spectacle created by the architecture's originality be the reason for their perpetuity"*<sup>22</sup>.

This claim has a particular significance when framed by Auguste Perret's statement about the *L'Esprit Nouveau Pavilion*<sup>23</sup> reported by Le Corbusier, "*there is no architecture here!*"<sup>24</sup>; showing that the issue, even between modern architects, hasn't always been peacefully welcomed.

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<sup>18</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>19</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>20</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>21</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>22</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>23</sup> The Pavilion integrated the *Exposition des Arts Décoratifs*, held in 1925, with Auguste Perret as vice-president of International Architectural Contributions Jury. "*The exposition was planned by the organizing committee as an opportunity to demonstrate the emergence of truly modern architecture. They specified that there would be no copies, imitations, or counterfeits of past styles.*" Although the result of the exposition will oblige Perret to state, in the same year: "*In 1900, it was the triumph of marconi, twirls and ornament. Now they have the air of suppressing ornament, but only the air. Nobody speaks of anything but straight lines, essentials and construction; but if one looks closely, it is obvious that ornament is still the only thing that matters, so that there are finally more useless things than ever before. These useless elements are so rigid and bare that the uninitiated assume them to be necessary; thus the error is all the more serious for being dissimulated, and there will have to be an earnest reaction if we are to get out of the rut in which we are being bogged down.*" Britton, Karla: *Auguste Perret*. London: Phaidon Press, 2001, p. 65.

<sup>24</sup> Le Corbusier: "Perret par Le Corbusier", *L'Architecture d'Aujourd'hui*, special number "Perret". October 1932, Paris. p. 9. This episode occurs with a large time frame nevertheless Auguste Perret is one of Bonito's main references.

These prepositions place the proposal as a *conceptual project*, i.e. above all interested in arousing design issues or investigating/testing drawing principles.

The technical description focuses on the characteristics that portrait the Crystal Palace Gardens and the specific site settings, identifying the garden's geometric layout, natural elements – vegetation/trees, lake, walkways/paths, avenues - and relationship with existing or planned buildings for the Commemorative Exhibition. The identification and characterization of these various elements, with their respective architectural significance and sensorial interpretation, will not only be preponderant to the proposed general layout but will also play an essential part in the geometrical conception of the pavilion.

Mario Bonito considers the volumetric tension between Artur Andrade's Exhibition Palace and existing small chapel articulated by the lake's formal expressiveness and the path defined by the main Avenue as the four main compositional elements. The option to deploy the pavilion on the lake as a way to explore its sensorial attributes and the plasticity of a natural element is reinforced in the technical text: "*only the placing on the water would create the right environment, by association of ideas; the reflection on the lake, the very sound of submerged aquatic gardens and fountains, would be a guaranteed successes of emotion*"<sup>25</sup>.

Consequently, the volume of the pavilion is carefully organized alongside the main avenue freeing the Exhibition Palace's glassed front permitting a broad view of the lake and the foreseen light fountain. The pavilion appears on the west side, as a natural backdrop to the lake framing the view from the new Exhibition Palace.

Thus the pavilion's siting, through the lake's sensorial interpretation, is directly displayed by the geometry of the lake, the limits of the existing chapel's platform and the parallelism of the main avenue, moving away, in terms of scale and composition, from the dominant volumes of the new Exhibition Palace. The pavilion is centered between the lake's boundary line, on the north, and the chapel's platform perimeter at the other end, allowing the reading of a geometric composition that defines a square with the pavilion's width and the main avenue. This composition drafts a complex system of *regulating lines* that draw successive circles that inscribe and set the pavilion's volume, defined by converging lines, linking and providing mediation space with the main avenue. The center of the circles will be marked by the plasticity of a vertical element that announces the pavilion on the main avenue and inside the Crystal Palace garden.

These notions underline the placing of questions on interpretation of a context and its significance on the building's siting and its respective volumetric and spatial modulation through structural integrity and geometric composition – *regulating lines* and *force vectors* – emphasizing *universality in architecture* associated to the corbusian notion of *primary mathematics* governing architecture and *site significance*.

This notion is stressed in his *toward an architecture*: "*There is no primitive man; there are primitive means. The idea is a constant, potential from the start.*

*Notice in these plans how a primary mathematics governs them. There are measurements here. In order to build well and distribute the labor properly, so as to assure solidity and utility of the work, «measurements» condition the whole*"<sup>26</sup>.

In relation to *site significance* the recent exhibition *Le Corbusier, an atlas of modern landscapes*, brings into light the question of landscape as a fundamental tool in thinking Corbusier's architecture. Jean-Louis Cohen

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<sup>25</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>26</sup> Le Corbusier: *Toward an Architecture*. London: Frances Lincoln, 2008, pg. 133.



stresses his relationship to landscape “which provided him with scenes to observe, stimulation for invention, horizons against which to set his projects, and a fertile field of metaphors”<sup>27</sup>.

It appears that, in a context composed mainly of natural elements, the interwoven geometric layout and the proportional relationship of the different parts/elements that comprise the architectural composition is a design method that emphasizes Bonito’s notion “the *splendor of truth will lend beauty to the building*”<sup>28</sup>.

We can consider that the evoked *splendor of truth* will be translated not only by the proposal’s constructive and technical systemization but also by a symbolic interpretation of a structure representative of the project’s main theme – a canvas cover, i.e., the tent.

The *canvas cover principle*, with its free forms coating the structural elements, that are apparent from the inside, characterized by their ties in constant tension, helps to strengthen the direct dialogue with the context’s natural forms. Unlike the new Exhibition Palace and the existing chapel, the pavilion is not intended as a volume that imposes on the garden, but one that establishes a close dialogue with all its elements, complementing the composition in formal and symbolic terms. This metaphor - *tent versus temporary structure* - is also present in the project referenced for the distributive principle: Corbusier’s *Des Temps Nouveaux Pavilion*.

The pavilion, structured by this conceptual idea, presents all its structural elements, coating surfaces or shapes that mold the interior space, avoiding being parallel or orthogonal to each other. The composition avoids orthogonality between the vertical and horizontal elements with the raised floor of the pavilion as two ramped surfaces in dialogue with the modulated structural arc, accelerating the perspective of the interior space. Through the cross section we can verify that the pavilion’s composition presents a convergence track points, structured by an axis, creating a volume in constant tension in all viewpoints. The pavilion’s volumetric modulation and plan settings reinforce this reading and interpretation in the molding of interior and exterior space with the same architectural intent.

On a closer analysis we can conclude that Corbusier's proposal for *Des Temps Nouveaux Pavilion* will be decisive not only for the functional organization but also for the conceptual principle and the building’s formal modulation. This project will have a strong ideological influence, i.e. it assert its temporary condition modulated with a metal structure to support in tension a canvas that conforms an exhibition space with the programmatic objective to disclose, for the first time, the ideas and investigations undertaken by CIAM, since 1928.

Here we can also evoke Corbusier’s volumetric and formal manifestations of the Ronchamp Chapel in the relationship with the landscape and the meaning of the programme – initially an informal settlement of prayer.

The fact that we can establish links to future corbusian works puts into play the notion that Mario Bonito understood his main themes/notions of design and applied them to different situations arriving to compositions with similar interpretations that will be explored in the future by Corbusier himself.

The recreational pathways will also be a main theme in the interwoven dialogue with the garden’s functional layout and sensorial ambience. From the main avenue, which interconnects with the various natural and artificial elements, the two pathways enter the pavilion on the opposite side outlining a possible central path in the exhibition area inside.

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<sup>27</sup> Cohen, Jean-Louis: “In the Case of Landscape”. *Le Corbusier, an atlas of modern landscapes*. London: Thames & Hudson, 2013, pg. 23.

<sup>28</sup> Bonito, Mário. “Pavilhão Ilhas Adjacentes”, technical description. EBAP, 1947.

This continuum, evoking once again another corbusian theme - *architectural promenade* - promotes a sensory experience of freedom in different indoor spaces and outdoor forms embodying the spirit of a small pavilion in the middle of nature, but nevertheless reaffirming the contemplative and festive character of the exhibition.

Complementarily, the response to the exhibition programme is based on the single vaulted space principle, with access on the opposite extreme, organized by movable exhibition furniture which would allow flexibility and spatial fluidity permitting a full reading of the interior volume at all times.

This organizational and expository layout/principle, according to Mario Bonito's technical description is directly linked to the ideas conveyed in the *Des Temps Nouveaux Pavilion*, determining the formulation and quantification of the programme. He emphasizes the Pavilion's characteristics as "*a documentary proof*" of the expression of an idea by a huge void organized through removable furniture - "*light screens*" - that allow "*a suggestive catalogue of industrial products to be exhibited*"<sup>29</sup>.

Mario Bonito considered the Pavilion as a machine that transformed his visitors, educating them and exposing them to new ideas of urbanism and architecture, emphasizing that "*it was, indeed, perfect in the art of developing and presenting a thesis*"<sup>30</sup>.

As mentioned, the importance of an Exposition Pavilion that not only discloses for the first time the message of CIAM, but also with an experimental structure imposing its modern language in the center of Paris,<sup>31</sup> has an huge ideological effect, particularly in the Portuguese political atmosphere, that may have been decisive for its direct quote in his text.

Hence, Mario Bonito proposes an elegant volume, with "*slim and rhythmic support*" on the water, whose shape is reduced to an intelligent organization of open spaces, built entirely of wood, as described in the technical description: "*To satisfy all these requirements, and because the limited dimensions of the lake so advised, it imposed a construction on slender and rhythmic support, that would fall within the own wooded park environment*"<sup>32</sup>.

The volume's configuration and interior space are modulated by the definition of a structural element - arched portico - which, through its formal individualization, is repeated modeling the interior space, deployed by a strict geometric composition articulated with a *constant basic metric*.

The visual complexity of the volume settings stems from a rigorous compositional layout based on a *measurement* systematization, which results as a harmony instrument of *form and space*.

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<sup>29</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>30</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>31</sup> In a period of political unrest, before Second World War, Corbusier writes to his mother: "*The Exhibition opened the first sunny day. Despite the despicable criticisms of all those bastards, it's marvelous to think that we've done this, in the hearth of Paris, and in the midst of a social revolution. It's very instructive. Everything's possible! You can create a new city right in the vigorous hearth of an ancient one, without wrecking its life, without halting its life. And you can do it while the biggest, most serious struggle between workers and bosses is starting. In the midst of a revolution. I hope the others do the same. There is amazing worker discipline here. A wisdom.*" Le Corbusier. "Architecture and Revolution: Pavillon des Temps Nouveaux, Le Corbusier and Pierre Jeanneret, 1937, International Exhibition in Paris" Catalogue (letter extract, dated 25th June 1937). USA: Columbia University, 2009.

<sup>32</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

The premise of structural integrity, defining and characterizing the inner space, is clear: "*The bone that is to the building as the skeleton for the animal and it was our intention not hide (...)*"<sup>33</sup>.

The structure's modulation – comprised of arched porticos - complies with the geometric and metric layout present in the building's general schematic layout. The geometric composition of the porticos will determine the modulation and proportion of the vaulted interior space. The drawing is based on the definition of several concentric circumferences that, as they multiply, they determine the alignment between the various architectural elements and define their respective positions within the symmetrical composition.

The center of the circles coincide with the lower node that, from this point, disciplines the compositional settings, including, relationships that do not participate directly in the volume's characterization or definition, like the setting of the structural foundation or the definition of the pavilion's distance to the lake's water line.

This composition has the same geometric design principle used in the pavilion's siting with all the relationships it establishes with the natural landscape and surrounding buildings/elements. This design, takes into account the general notion of the assembly to the detailed definition of the portico revealing rationality and precision that that will reflect the proposal's quality and consistency.

The wood as the dominant material will be crafted in all structural and plastic dimensions with different sections - associated, juxtaposed or individual - presenting a formal consistency in the detail, from general to particular situations.

*"And the designed structure, would not be the only viable one but the most significant, under the preconception of the elements in play, the design process would push forward the solution"*<sup>34</sup>.

The definition of specific repetition elements introduces the issue of prefabrication - standardization of the constructive elements and its coating - despite the use of a material with traditional connotation, unlike concrete and iron with modern meaning. The first is excluded by the provisional nature of the construction; the second would introduce a complexity framed by the inefficiency of Portuguese technology or construction industry. However, this option is also associated with the dialogue between the site's characteristics and the desired rigorous and technical machine like expression associated to prefabrication.

The possibility of a single material for the design - structural/building system and the inner and outer lining - will be another determining factor in the equilibrium of such a complex structure, allowing a formal and plastic continuity between the various parts of the pavilion.

Mario Bonito with this double intake – material versus expression - associates the artisan craft with the idea of construction standardization and the systematization of technical solutions, which reveals the intentionality of his design in the transmission of a coherent and rigorous architectural idea.

### **3. Conclusion**

Mario Bonito's proposal incorporates compositional principles and design processes that seek to explore new ways of industrial and constructive progress. References to Auguste Perret and Le Corbusier, in terms of architectural thinking and program interpretation, are emphasized in specific passages of the technical

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<sup>33</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>34</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

description. However, we may extend these influences to images of several works by Auguste Perret in Paris, where the autonomous concrete structure assume through its plasticity the characterization of space, such as the Studios-Olivier Metra, 1921/25, and the amazing interior of Esders factory in avenue Philippe Auguste, 1919, with elegant arches inscribed in the central voided space<sup>35</sup>.

The lifting of the pavilion, frees the bottom of the arched porticos, alluding *pilotis*, with several directions and geometries according to the viewing angle. This intent refers not only to one of Corbusier's *five points*, but reflects mostly the deepening of a formal freedom in the design. In this case, the *pilotis*' design and rhythm refers to a dialogue with nature, expressed in the technical description: "*To satisfy all these requirements, and because the limited dimensions of the lake advised, it had to be a building on slender and rhythmic support what fine would fall within the own wooded park environment*"<sup>36</sup>.

The formal *pilotis principle* experimentation will be present in Corbusier's work in an outstanding manner, exploring different configurations and scales, from which we can highlight, in this case, St. Marie Convent of La Tourette's structural design, in 1953/57. The apparent randomness of the structure/*pilotis* will also be explored by Corbusier, when faced with the need to place the building in dialogue with the natural landscape, in this case with the sharp topography and the distant woods.

For Mario Bonito, the purpose of an architectural object does not reside in the direct functional response but in the knowledge of immediate and future feelings that the object transmits to its user. The intention to endure the feeling is part of architecture's main condition, i.e. to (re)establish new architectural/cultural references to harmonize man's daily routine and qualify society culturally. "*We want to be sincere. The splendor of truth will lend beauty to the building. And if, in closing of the curtain on the exhibition, perpetuates in everybody's memory a powerful emotion, we will have achieved our purpose, conquering through architecture the forgetfulness of man*"<sup>37</sup>.

The process that searches for original sources as a basis for the formulation of an architectural culture will be fundamental to the sustainability of a response that is to be genuine and of its time.

In his writings, the defense of the architect's profession through social dimension with the identification and reading of "occasion" as a way to give an updated response to concrete social problems, far from the architect as "*lyrical visionary able to conceive by grace, or by interference from an anonymous intuition*"<sup>38</sup>. Mario Bonito asserts that "*architects of our time reach different architectural solutions, because urban planning consents or imposes and because it's a reflection of his century's social climate, scientific and economic information*"<sup>39</sup>.

"*The Portuguese architect cannot waste time around easy and hollow plasticity and aesthetics, purely decorative*"<sup>40</sup>.

Therefore, "*The past does not receive - gives. The present receives and transforms. The future will transform the legacy of the present. It's the chain*"<sup>41</sup>.

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<sup>35</sup> These two works are present in the magazine dedicated to the Perret brothers; *L'Architecture d'Aujourd'hui*, nº VII, Outubro 1932, p. 54-56.

<sup>36</sup> Bonito, Mário. "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>37</sup> Bonito, Mário: "Pavilhão Ilhas Adjacentes", technical description. EBAP, 1947.

<sup>38</sup> Bonito, Mário: "Um arquiteto de luz e celulóide". *Vértice – Revista de Cultura e Arte*. Nº 83, Volume X, July 1950, p. 43.

<sup>39</sup> Bonito, Mário: "Palavras de introdução a uma exposição de arquitectura". *Exposição de Arquitectura*. Póvoa de Varzim: Tipografia Frasco, 1956.

<sup>40</sup> Bonito, Mário: "A universalidade na arquitectura". *Notícias da Amadora – Semanário Popular*. Nº 505, May 1971.

It will be with this persistence that his willingness to seek the path of *new architecture* without losing, however, the sense of continuity in the reading of architectural history. This insight into the modern architecture's framework as a natural and evolutionary moment in the History of Art, will be highlighted in most of Mario Bonito's texts, and will be associated with Le Corbusier's *Vers une Architecture*, 1923, highlighting the approach of architecture through three themes "*volume, surface and plan*" and the chapter "*architecture*" with its "*The Lesson of Rome*", "*The Illusion of the plan*" and "*Pure creation of the mind*" with constant references to the forms of history and their meaning/significance.

Hence, for Mario Bonito this process transpires two key themes: the notion of *place* and of *time* as a vehicle for an educated/cultured position in response to society's everyday problems.

*Place* will always be the condition of Porto, of the country plunged in a regime, in a society that cultivates the mental and physical oppression, advocates cultural stagnation, revivals contrary to progress, i.e. that feeds the ignorance of a people and of a *nation*.

*Time* will be a key to read, study and understand specific concerns, through the apprehension and comprehension of the past, to better respond to the problems of the present.

Mário Bonito, the militant architect and participant citizen, believed that we can only provide a complete answer to today's problems with a full understanding of the options of the past, framed in a progressive perspective of a democratic society and a cultured man:

- an intellectual restlessness approach to architectural themes based on a collective attitude or social response to urban issues – *universal man*;
- the intent to conceive not a universal architecture, like the international style - but to introduce/include universal themes in architecture associated with the interpretation of the conditions of place - *universality in architecture and not universality of architecture*;
- the proportions of the human body and spiritual concerns of man as a fundamental condition on drafting and understanding spatial notions, will also be a dominant subject in his design and will decisively define his architectural poetics
- the *conceptual truth* of the modern vocabulary and syntax through compositions that emphasize measurement, proportion, rhythm and tension between different elements - a search for a harmonious and coherent compositional whole.

Understanding of Mario Bonito's *Ilhas Adjacentes* Pavilion, permits us to recognize today how to transport, through an interpretative process, Le Corbusier's main design themes and architectural interpretations with a conceptual and formal consistency that strengthens the design process, through the identification of the posed problem and its respective formulation through an architectural concept/principle, based on a disciplined logic interpreted by the physical and symbolic conditions of the context, programme and commission.

Thus the work highlighted can be interpreted as an artistic practice about the importance of architecture and the evolution of a design process, with its respective sense of composition, formulating a proposal that questions and

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<sup>41</sup> Bonito, Mário: "Palavras de introdução a uma exposição de arquitectura". *Exposição de Arquitectura, Póvoa de Varzim*. Póvoa de Varzim: Tipografia Frasco, 1956.

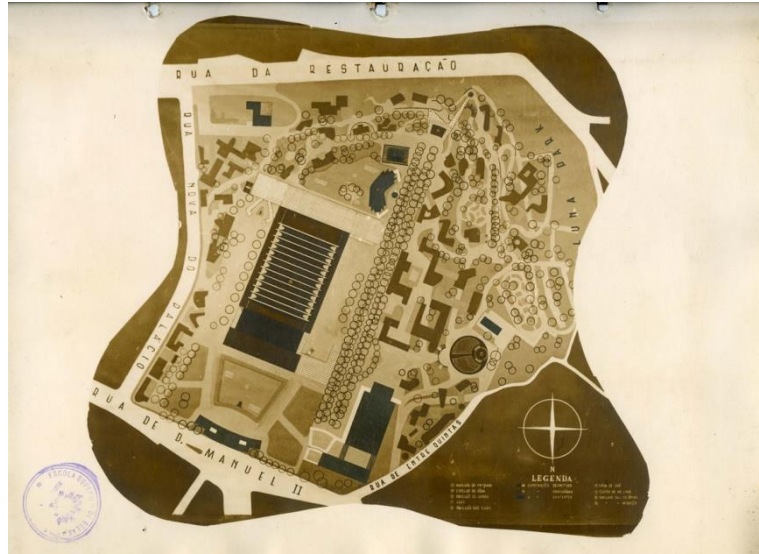
interprets a given reality - how to integrate modern architecture's premises with its respective heritage in today's conditions without losing its transforming and inspiring condition of a new future.

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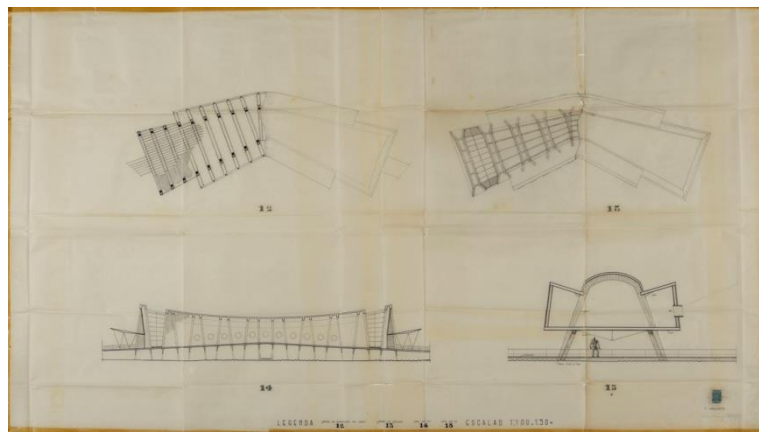
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#### 5. Source of images

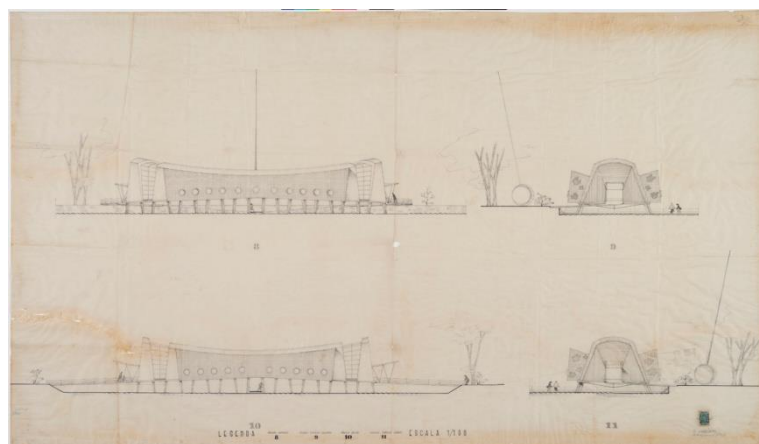
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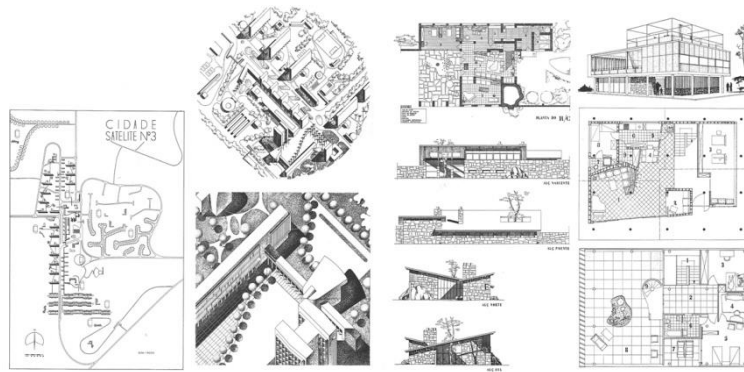
1. Original sheet with General layout plan, *Pavilhão das Ilhas Adjacentes*, CODA, 1947.



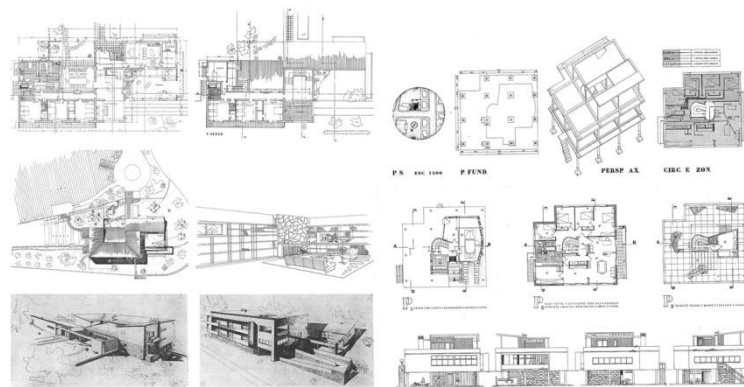
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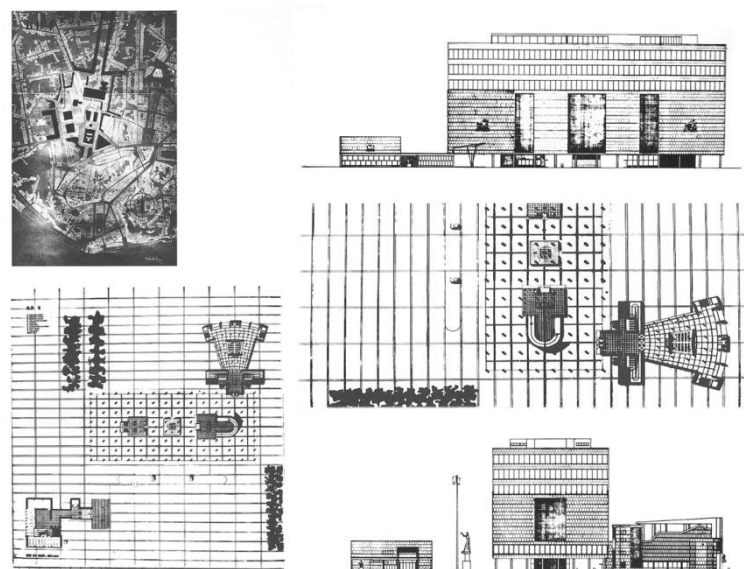
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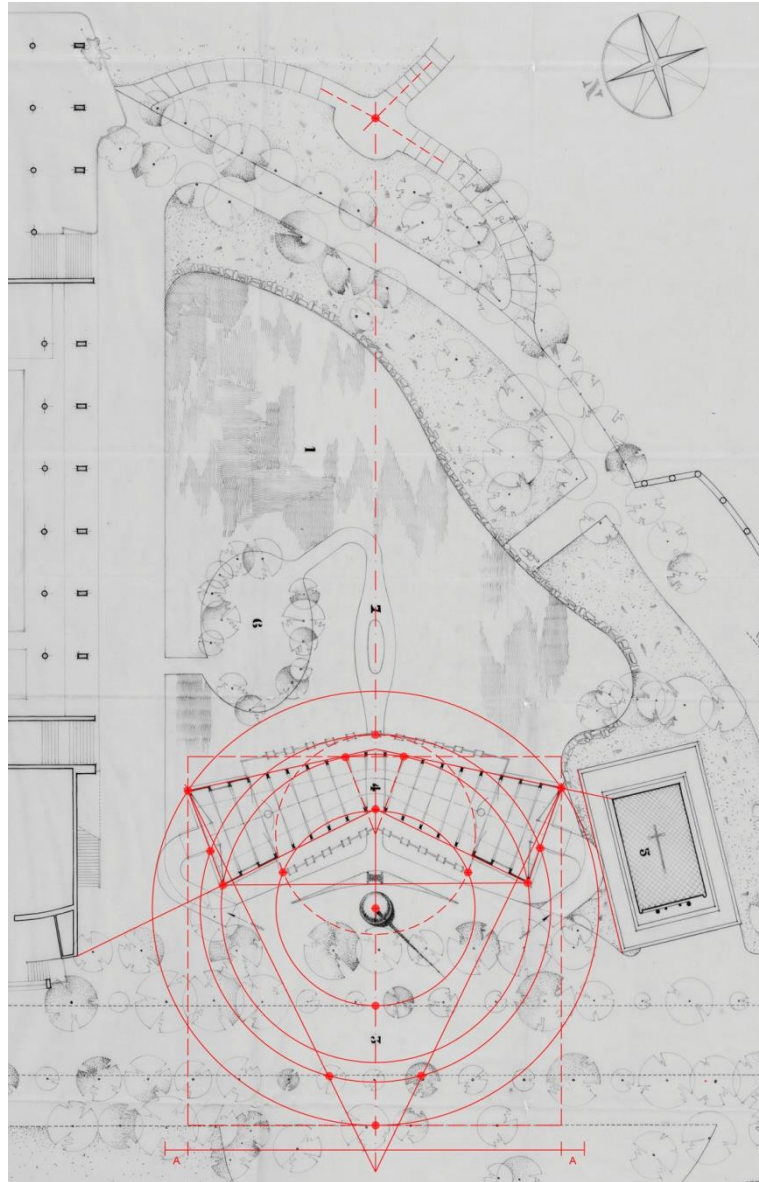


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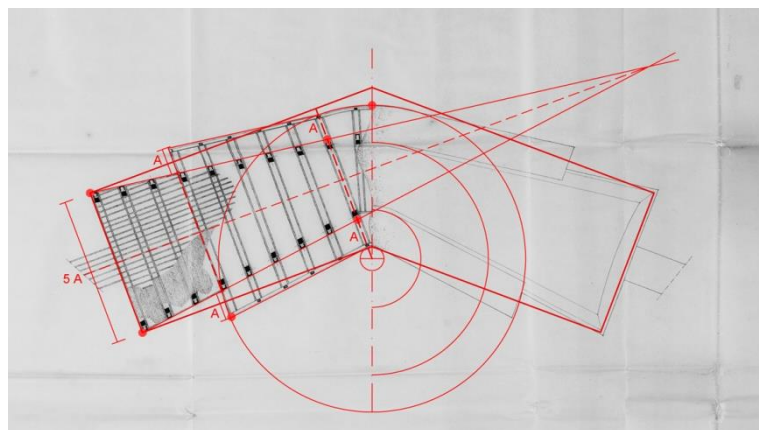


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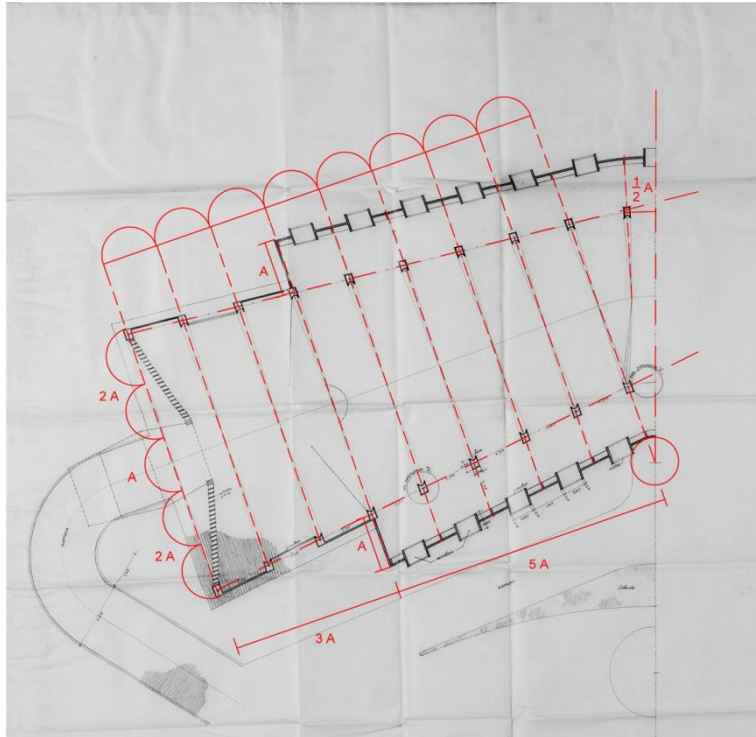




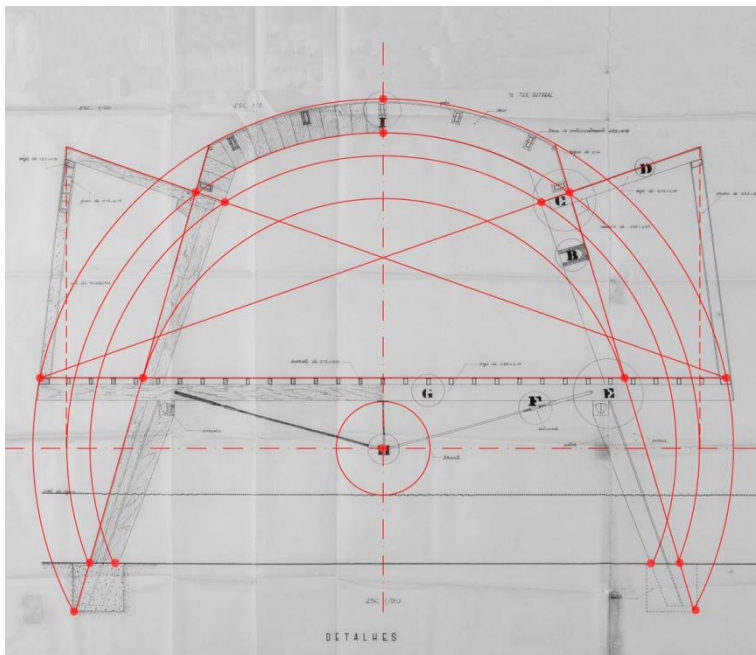
9. Juxtaposition of regulating lines/ force vectors on general site plan.



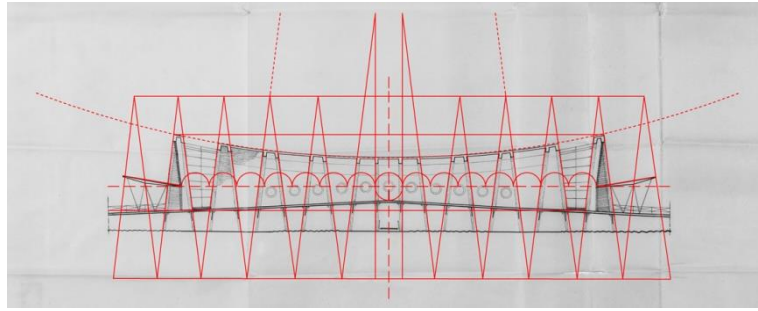
10. Juxtaposition of regulating lines/ force vectors on pavilion's floor plan.



11. Juxtaposition of regulating metric composition on pavilion's floor plan (extract).



12. Juxtaposition of regulating lines on pavilion's cross-section – arched portico.



13. Juxtaposition of regulating lines on pavilion's longitudinal cross-section.



14. Photo of original model, *Pavilhão das Ilhas Adjacentes*, CODA, 1947.



15. Photo of original model, *Pavilhão das Ilhas Adjacentes*, CODA, 1947.