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Healthcare buildings and the construction of Modernity. The IPO Complex

Edifícios hospitalares e a construção da modernidade. O Complexo IPO

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Resumo:
O Instituto Português de Oncologia (IPO), construído entre 1927 e 1948, com acréscimos até 1966, é o resultado de políticas de saúde públicas empreendidas em Portugal para o estudo e o tratamento do câncer. Ele compõe o repertório português de construções modernas para a saúde, e se apresenta como uma referência em relação às inovações sociais, urbanas e arquitetônicas de sua época. Procurando explorar e valorizar seu valor cultural, este artigo almeja discutir a importância pública e institucional do IPO, tanto quanto as preocupações com seu uso diário intenso e suas adaptações frente a um futuro que se deseja sustentável.

Palavras-chave: Edifícios hospitalares; modernidade; IPO.

Abstract:
The Portuguese Institute of Oncology (IPO), built between 1927 and 1948, with additions until 1966, is the result of public health policies undertaken in Portugal for the study and treatment of cancer. He composes the Portuguese repertoire of modern constructions for health, and presents himself as a reference in relation to the social, urban and architectural innovations of his time. In order to

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explore and value its cultural value, this article aims to discuss the public and institutional importance of the IPO, as well as the concerns about its intense daily use and its adaptations to a future that is sustainable.

Key-words: Healthcare buildings; modernity, IPO.

Forewords

The Modern Movement has demonstrated its long-term legitimacy as a lasting concept endowed with longevity. Relating technology, spatial form and social commitment to one another, through an optimistic faith in progress, modern architects sought to attain new heights of functionality and flexibility in use. The current challenge is to find ways to deal with the conservation of this recent legacy in the continuously changing context of current times, including physical, economic, functional, and fast-moving socio-cultural and political values. The Portuguese Institute of Oncology built in modern Lisbon, between 1927 and 1948, and added until 1996, is the result of *Francisco Gentil* effort to study and treat cancer. It is part of the Portuguese modern healthcare network and a reference concerning social, urban and architecture innovations, where the architects *Cristino da Silva*, *Carlos Ramos*, *Raul Lino*, *Ernest Kopp*, *Walter Diestel* and *Raul Rodrigues de Lima* took part. By highlighting it's cultural value this essay aims to stress the importance of achieving public and institutional awareness to deal with its everyday intensive use and transformations towards a sustainable future.

Cancer, the 1911's Generation and the architecture expression.

The "generation of 1911", was a brilliant generation of Portuguese doctor's that emerged at the beginning of the 20th century, responsible for the reform of the teaching of Medicine, with the creation of the Faculties of Medicine in Lisbon and Oporto in 1911, and simultaneously committed with investigation of pathologies that concerned humanity, as cancer. *Francisco*

Gentil, one of the doctors, takes the challenge of establishing a research treatment and oncological disease center. The Government creates the Portuguese Institute for Cancer Study in 1923[3], functioning in a first phase in the Faculty of Medicine in Lisbon (Santa Marta Hospital). Adapting pre-existent spaces did not suit *Gentil* team, and modern architecture will be built serving the evolution of science, and using it as an alibi for the modernist expression. In 1927, the plot of land was bought strategically at the west growing area of the city, and in 1929 the first patient was admitted.

The Portuguese Institute of Oncology (IPO) will be one of the best Cancer Institutes of Europe, and the Radium Pavilion will be the first European construction with effective protection against radiation. The modernist expression, in Radium Pavilion, defined between the latest's years of Republican Regime and the final of the 1930's, has an ephemeral existence due to the "perverted relation between power and architects" (TOSTÕES, 2009, p.25). The 1930's will be the Gold Decade of Public Works led by Duarte Pacheco, finding at its end a "monumental accent exposed in the program of *Regime* Public Works approaching a new historicist and regionalist vocabulary, staked on classical roots nearby the nazis and fascists models of the time" (TOSTÕES, 2009, p.25), which can be seen in the Hospital Block of IPO designed by Walter Diestel.

The IPO is located in *Palhavã*, a housing area mainly built in the beginning of the 20th century that has been transformed and renewed. The trapezoidal slightly sloped plot is limited by a railway on the northern and west sides, a high traffic road on the northeast side linking to the city centre, and next to one of the most busy traffic squares in the city, *Praça de Espanha*. Its main access is made on the southwest limit trough *Professor Lima Bastos* Street, a local road where the concave shape of the surrounding buildings announces its entrance.

Today it's composed by 10 pavilions built from 1927 to 1996, but its first construction was a single pavilion and its design process met several phases

[3]Decreto-Lei nº9333, 29th December 1923.

and authors *Luís Cristino da Silva* (1896-1976), *Carlos Ramos* (1897-1969) *Raul Lino* (1879-1974) together with *Ernst Kopp* (1890-1962), *Walter Diestel* (1904-?) together with the engineer *Tavares Cardoso*, and *Raul Rodrigues de Lima* (1909-1980), each one contributing with, or for, an urban masterplan that changed along the time.

The first dispensary for cancer in Portugal

In 1927, *Cristino da Silva*, part of a modern generation referred in modern architecture historiography as the generation of 1927 (TOSTÕES, 2015, p.161), was, between it, the most “virtuous and creative, [architect] in the right sense of the *beaux arts* values” (TOSTÕES, 2015, p.151).He designed the cine-theatre *Capitólio* (1925-1936), “the first building that explored significantly the potential of the new technology [concrete] designing a mundane program intended for a socialization space connected with the world: a cinema that pointed out the rising of the seventh art as the art of the, also new, century.” (TOSTÕES, 2015, p.56).

Cristino was the first author of the IPO, and to whom *Francisco Gentil* gave a picture of an Italian sanatorium in order to “guide the buildings necessary organization for the Cancer Institute program" (GENTIL, 1938, p,12). From *Cristino* project, and due to financial constraints, only the small Pavilions A and B were built, nevertheless together gave form to the first Portuguese Institute for the study of Cancer in Portugal. Placed near the southwest limit of the plot, parallel to *Professor Lima Bastos* Street, in a symmetrical composition, Pavilion A, on the entrance at the left, was the first dispensary for cancer in Portugal. It was built in 90 days, and opened to public in December 1927, later was changed for zoological and botanical research. Pavilion B on the right, opened in 1930, was where the first medical consults were given and administration offices were organized. From what we know the overall proposal of *Cristino* was composed by a symmetrical composition of monumental volumes where the main entrance was celebrated by a round

inner square with sculptures, this proposal was never built. The pavilions A and B can be seen as temporary buildings, designed through a functional and pragmatic expression, minor volumes in the monumental composition. Is also possible to observe the design of the exterior green areas and trees alignments, and what can be, maybe, a trapezoidal building proposal on the west corner of the plot.

The Radium Pavilion, 1933.

In November of 1927, *Carlos Ramos* is invited to develop a new project for IPO, he accepts it developing a new proposal that if built "could have been one of the largest 20th century architectural complexes in Lisbon" (PACHECO, 1998, p,170). He officially accepts the invitation in January of 1928, and is nominated by a Government Law in April of 1928, together with *Marck Anahory Athias* (1875-1946)[4], to realize a study visit to understand the main cancer centers in Europe bringing to Portugal all the therapeutic, architectural and construction information's and details in order to answer cancer specifications.

The study visit took place between February and April of 1929 and was of primary importance, not only for the further developments of the project, but also for the thoughts and future project developments of the architect. During the visit he acquires the first editions of *Architecture* (1929) from *André Lurçat* (1894-1970), and *Vers une Architecture* (1923) from *Le Corbusier* (1887-1965). They visited cancer centers in France, Switzerland, Germany, Denmark, Netherlands, Belgium and Spain, and from the Report (RAMOS; ATHIAS, 1930) is possible to observe the main references and models brought to Portugal. Besides the study concerning the capacity of the cancer institutes

[4] Mark Athias (1875-1946) was a doctor and researcher in biomedical sciences, pioneer in the development of histology and biochemistry in Portugal. Was in the foundation of the Portuguese Society of Natural Sciences (1907), where was part of the board in 1916, the aims were the scientific investigation, teaching and contributions to industry. In 1920 establishes the Portuguese Society of Biology, and together with Abel Salazar and Augusto Celestino de Castro promotes the Portuguese Histology School, and institutes the *Archives Portugaises des Sciences Biologiques. Since 1923 is part of the board of the* Portuguese Institute of Oncology, and also the director of the Histology Laboratory.

and radium treatments specifications, the report includes plans of the plots and buildings, and photographs where is possible to perceive the roots and models for the first masterplan and for the Radium Pavilion designed by *Carlos Ramos*.

The hospitals in Denmark are underlined “as beyond all expectations regarding comfort, construction finishing’s, simplicity and practical sense” (RAMOS; ATHIAS, 1930, p.111), as a reference on hospitals construction and also on the quality of the overall design. It can be testified from the lecture by *Carlos Ramos* as vice-president of UIA, on Copenhagen in 1960, where “he refers the overall design harmony of the hospitals, laboratories and workshops ‘from the giants that arrested the buildings to the earth, to the tiny parts that fix all types from windows to doors.’” (COUTINHO, 2001, p.48).

The Curie Foundation (1920), in Paris, is highlighted by “the exterior architectural simplicity of any pavilion, which constitutes in a modern way the secret of all and any construction of this nature” (RAMOS; ATHIAS, 1930, p.90). From the Cancer Institute of Faculty of Medicine is referred “the separation between buildings for hygienic purpose”(COUTINHO, 2001, p.48). In Lyon, Faculty of Medicine East / *Rockefeller* Domain, designed by *Paul Bellemain* (1886-1953), is pointed out as being “sharply modern expression and whose construction is based on standardization principles” (RAMOS; ATHIAS, 1930, p.98), the *Grange-Blanche/Edouard Herriot* Hospital (1913-1933) is mentioned as a work from “one of the greatest names for contemporary France, *Tony Garnier* [1869-1948],” (RAMOS; ATHIAS, 1930, p.99). Both are clear models for the first project developed by *Carlos Ramos* considering the volumetric proportion and the façades design.

Presented in 1930 (GENTIL; ATHIAS, 1930) by *Francisco Gentil*, this project is referred as an “admirable study”, that the “ones that know the hygiene principles and hospital construction can appreciate the magnificent architect work” (GENTIL; ATHIAS, 1930, p.33). *Gentil* states, as an introduction, that all the buildings are connected by galleries, that can be on the underground or not, and which are all linked on the basement of the central entrance. This resembles his desire also expressed through the Italian

sanatorium of linking all the buildings. He does a long and thorough description presenting plans and elevations, clarifying the capacity of the each building, and finalizes by declaring his desire to build it. As *Cristino da Silva* proposal it is also developed through a symmetrical composition aligned with the entrance, but added by several pavilions spread on the plot. The pavilions are linked by galleries, and no interior roads are designed, except for the one connect with the main entrance, and the direct entrance to the director and administration building, also no exterior green areas were designed. Considered to be too expensive to be built and demanding to manage this plan was never built. (GENTIL, 1938, p.12).

As stated by *Francisco Gentil* "In 1931, the disease caused on the people working with radiation therapy, by the emanations of working with it, took to the urgent necessity to build the Radium Pavilion" (GENTIL, 1938, p.13). Consequently, Radium Pavilion is built, and a new plan for the entire plot is designed. In the new plan, by Carlos Ramos, the Radium Pavilion seems to replace Pavilions A and B. In April 1934, he signs a contract to design the new IPO (COUTINHO, 2001, p.51). The second plan is again referenced to what the architect has seen in Europe, proposing once more a symmetrical composition, and a symmetrical unitary central building composed of several volumes: a larger one near the entrance, and longitudinal one along the road and the railway on the north of the plot, with a secondary entrance. Yet again this proposal never became real, considered "full of inconveniences" (GENTIL, 1938, p.13). Nevertheless between May of 1931 and December of 1933 the Radium Pavilion, designed by *Carlos Ramos,* was built and was the first European construction with effective protection against radiation. Designed according to the II International Congress of Radiology that took place in Stockholm in July 1928, this innovative construction was composed of walls and slabs constituted by several layers of several materials in order to assure radiation reduction. New construction techniques, as concrete, fulfilled the construction requirements.

Radium Pavilion is a unitary rectangular prism of three floors, and a modern solarium terrace, where the “functional imperative overlaps the artistic one, establishing it as the reference work of the national modernism directly affiliated with the radical international principles”. (TOSTÕES, 2015, p.177) Program and functional demands, together with new construction technologies generate a clean and austere volume. Symmetry is the defined compositional hierarchy established through the higher volume containing the stairs, placed on the central axis of the volume. The volume walls are defined by a smooth surface where the openings were carefully defined by the structural grid and functional needs, “the plan is defined based on a rigorous 2,5mX2,5m grid, generator of all the design: from the definition of the openings, to the structural system articulated on the definition of one, two, or three modules. This project rule integrated in the construction can be the rigor and formal comprise key of this building when compared with the contemporary ones” (TOSTÕES, 2015, p.180). As stated by *Keil do Amaral* (1910-1975), “*Carlos Ramos* was the most dry of the first modernists, because he was ‘mainly worried with the plans design the sections and façades were simply the result of it’” (TOSTÕES, 2015, p.180). This can be noted in the stairs exterior volume where the openings follow the stair levels generating an asymmetric composition.

Raul Lino **and** ***Ernst Kopp:*** **Guidance from Berlin, 1935-1938.**

In January of 1935 Carlos Ramos is dismissed, (TOSTÕES, 2015, p.181) and Raul Lino[5] is invited[6] to develop a new proposal considering four

[5]"[...] studied in his youth in England, going later to Hannover, where he studied architecture and works until 1897 with Albrecht Haupt, an architect that knew the Renaissance architecture in Portugal. Its German training made him one of the few architects of his generation unaffected by the *beaux-arts* models from Paris, bringing with him a set of cultural concerns, far from the historical-progressive formalism. [...] his vision of the Portuguese architecture is marked by a nationalistic romanticism and by a cultural and constructive realism, contributing from 1920 to start a kind of campaign for a definition of "Portuguese house". [...] a man of great culture has throughout his life a staunch opponent of modern architecture and its values [...]." in *Ana Tostões, Annette Becker, Wilfried Wang*, *Portugal: Arquitectura do Século XX*, *München* -New York / *Frankfurt am Main /*

main areas: a hospital block, a Nurses Technical School, and medical appointment building and investigation area. Ernst Kopp, from Berlin is also invited to intervene in the project[7], followed the developments designed by *Lino* doing comments and proposals from 1935 to 1938[8]. It was never built, *Gentil* stated "Later […] another architect did a plan that was unachievable within the City Hall urbanization settled for today" (GENTIL, 1938, p.13). The plan considered the already built volumes and symmetry was the composition rule. However there are two clear differences from the previous proposals the central area in the symmetry axis is empty, and the main central hospital block is placed near the north limit of the plot. As *Cristino*, this team also designed the exterior areas, and identified the existent trees and the proposed ones, defined local accesses and roads inside the plot linking all the buildings. From what we know the proposed monumental volumes followed the symmetry rule, enhancing the entrance by a covered volume of stairs and a balcony of the 4th floor. On the 5th floor was a balcony along the façade, and finally a modern terrace on top. The openings seem to follow function and structure according to the plan.

***Walter Diestel* and *Tavares Cardoso:* German leadership, 1938-1948.**

The final plan was designed, in 1938, by the architect *Walter Diestel* and the engineer Tavares Cardoso "in harmony with the new plot area and the street definition of the City Hall" (GENTIL, 1938, p.14). It is developed on the new plot area and has similarities with the several previous plans: from *Raul*

Lisboa, Prestel / Deutsches Architektur-Museum / Portugal Frankfurt 97- Centro Cultural de Belém, 1998, 338.

[6]*LINO, Raul, "Instituto Português de Oncologia. Projectos de obras elaborados de 1935-1938. Descrição*." Art Library of Calouste Gulbenkian Foundation, [RL 376.3].

[7]Idem,[RL 376.3]. Ernst Kopp is invited, in 1935, by the Executive Commission of the Portuguese Institute of Oncology to follow the project developed by Raul Lino.
We was a German architect from Berlin, author of the Martin Luther Hospital (1929-1933) in Wilmersdorf, Berlin, where he proposes the centralization of the traditional hospital in one single building. He designs and builds a German Hospital in 1931/32 in Rio de Janeiro, and in Alexandria, Egypt, a copy of the Martin Luther Hospital. He planned the University Hospital in Teheran in 1936. In http://www.pgd-healthcare.com/en/modern-hospital-architecture-first-realized-mlk-1931

[8]Ibidem,[RL 376.0 - RL 376.11].

Lino and *Ernst Kopp* the building project of the Nurses Technical School is kept, and from the *Carlos Ramos* condensed plan is brought the location of the nurses school and the central location of the hospital block with a secondary entrance on the north limit. Besides that, a chapel and an asylum building were added, and the accesses to the Radium Pavilion and to the Nurses Technical School are placed differently. The asylum building opened in 1943, not as designed in the initial plan, but as similar as pavilions A and B, and has been already demolished. The Nurses School opened in 1944 but not in a symmetrical position, instead was placed perpendicular to the Hospital block that opened in 1948. In fact the built Hospital block is not that different from the one drawn by *Lino* and *Kopp*, is lower and less long, but deeper and connected at north with the exterior. The verticality of the main volume, parallel to *Professor Lima Bastos* Street, composed by 7th floors and terrace, is subverted by the use of stone on the exterior finishing of the ground and first floors. An option that is applied in all the other volumes connected with this on the north façade, and adjusted to the slope of the plot. Two underground connection galleries, clean and dirty, were assured between the Hospital block and the Radium Pavilion.

In 1951, *Gentil* pays a tribute to Salazar and the Government for all the support to build one of the best Cancer Institutes of Europe (GENTIL, 1951, p.9). Several additions have been made over time, such as pavilions for workshops (1957), for cobalt-therapy (1958), the one for medicine today transformed in a medical wing building (1971) and designed by *Raul Rodrigues de Lima.*In 1992, again several new pavilions were added: the mortuary, the molecular pathology Pavilion, new workshops, and a new administrative Pavilion. The radium Pavilion terrace space has been occupied with the enlargement of the building, and in 1996 was constructed the emergency central of the radiotherapy. Everyday due to technology innovation, or other needs, the space is changing and transforming. That means that the building is still being used and needed, the questions that rises is how are that transformations done within the identity of the building? How can we contribute

for a responsible and sustainable change? Who can we involve in that process?

How to love heritage in use

As *Carlos Ramos* stated, in 1929, "If there are buildings that need a permanent renewal of its installations, and a complete reshuffle of its departments, hospitals are undoubtedly, the ones where that necessity comes first" (RAMOS; ATHIAS, 1930, p.99). Following that understanding is vital to comprehend change and transformation, and promote public awareness[9] regarding the 20th century heritage in use. Modern healthcare buildings in Portugal aren't yet profoundly studied**,** most of it are still in use or were reused for other functions, it's imperative to document and to understand its cultural value in order to recognize its identity and authenticity, but also to be flexible and conscious to integrate permanent innovation. The historical significance of IPO is, especially known through the wide spread importance of Radium Pavilion, based on the modern movement principles of "technical experimentation based on the possibilities of new building materials. […] formal investigation […], referenced to the machine metaphor and a somewhat abstract aesthetic. […] a strong ideological component and policy supported on the belief that architecture could function as a social condenser" (TOSTÕES, 2015, p.20).

Nevertheless, the intangible heritage is likewise essential to be known to achieve wide sense of belonging: by the recognition of the importance of *Franscisco Gentil* as the dreamer and the very first author of the IPO; the impact of the travel done by *Marck Athias* and *Carlos Ramos* and its significance for the IPO pioneer cancer treatments, and for the architect recognizing it as fundamental for his education; by the relevance the non-realized masterplans and building projects that translate ideas and the

[9]HENKET, Hubert-Jan, "Reuse, Transformation and Restoration", ***docomomo*** *Journal, 52*, Lisbon, **docomomo** International secretariat, 2015/01, 12.

exchange between Portugal and Germany; and by the significance of the political representation expression change expressed over time in the buildings. This was converted on the classification of the Radium Pavilion as "Building of Public Interest", and on the establishment of a "Protection Zone"[10]. On one hand, the Government played its role on its primary mission "to protect and value the cultural heritage as primary instrument for achieving human dignity, and its fundamental rights, in service of culture democratization, and support of independence and national identity"[11]. On the other hand this classification can be a "straitjacket", since it adds another layer of invasive legislation and regulations, where "the relationship between technical standards and the opposing requirements intended to protect architectural values, evolves episodically and on the basis of negotiation"[12].

The challenge is to find a way to the "consciousness of the heritage as development factor. Nowadays, beyond the specific case of modern buildings recognized as monuments (listed or classified) subjected to substantial restoration, where a commitment is made to carefully ensure their original value and character, it is possible to argue that the experience of exclusive, unique and singular restorations has become a more widespread practice and has even led to the re-use of recent heritage.

In considering adaptive re-use as regular architectural practice, the question of sustainability seems increasingly important, as it represents a particular challenge for Modern built heritage. Interestingly, due to the economic crisis that has hit the real estate market and created a greater availability of buildings, new opportunities may emerge for the recovery and re-use of modern heritage. In many cases, new buildings are no longer economically viable. However, institutions and companies are starting to be criticized when

[10] The Radium Pavilion was established as "Building of Public Interest" by the *Portaria* nº 389/2013, Artº. 1, where is recognized as a national cultural value. For any intervention the *Decreto-Lei* nº 140/2009 defines a list of procedures. The "Protection Zone", defined in Artº. 2 aim to maintain the viewpoints that allow the buildings perception and functional relations between them.
[11] Decreto-Lei nº 309/2009, 23 de Outubro.
[12] GRIGNOLO, Roberta, "Quali "diritti" per il património architettonico del XX secolo? / What "Rights" for the 20th Cnetury Architectural Heritage?" in Roberta Grignolo (ed.), *Diritto e salvaguardia dell'architettura del XX secolo / Law and Conservation of 20th Century Architecture*, Mendrisio, Mendrisio Academy Press-Silvana Editoriale, 2014, 43.

their decisions to erect new buildings involves abandoning older ones, and this is beginning to be seen as socially unacceptable. Beyond purely economic arguments, the benefits of the adaptive re-use of Modern Movement buildings is now starting to be recognized for enhancing the identity of their neighbourhoods and the sustainability of their life-cycle. Local governments and national policies are waking up to this and beginning to develop measures and alleviate regulations that limit the alternative use of abandoned buildings, and provide legislation for temporary uses, such as affordable housing for young people, which is urgently needed. Still in use its economic viability is assured, it's culturally value is known, however it could be wider spread in order to generate, on one hand a sense of belonging and public awareness, and on the other hand institution consciousness and involvement, "as a space for participation, responsibility and historical awareness, re-conceptualizing their role and representation in the contemporary city." (JENCKS; REYNOLDS, 2014-2015).

Portuguese modern healthcare heritage could be a *modern* ground of dealing with these questions, since, on one hand is still not a fully understood heritage, and on the other hand, is in intensive use. Could one encourage citizen's proximity towards healthcare buildings generating public healthy behaviors, and simultaneously promoting a sustainable future being the actors of strategic and integrated actions, embracing transformations and leading the modern IPO to contemporaneity? Is this a territory possible to "irrigate"? (KOOLHAAS, 1995, p.959-971).

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