Carlos Ramos, Radium Pavilion, Portuguese Institute of Oncology, Lisbon, Portugal, 1933, terrace. © *Arquivo Nacional de Fotografia.*

An Intangible Heritage in Use. Portuguese Institute of Oncology

BY DANIELA ARNAUT

The Portuguese Institute of Oncology (IPO) built in modern Lisbon, between 1927 and 1948, and added to until 1996, is the result of the 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 (1896-1936), Carlos Ramos (1897-1969), Raul Lino (1879-1974), Ernest Koop (1890-1962), Walter Diestel (1904-) and Raul Rodrigues de Lima (1909-1980) took part. By highlighting its cultural value this essay aims to stress the importance of achieving public and institutional awareness, in dealing with its everyday intensive use and transformation, towards a sustainable future.

IPO in Modern Lisbon: Cancer, the 1911's generation and architectural expression

The "generation of 1911" was a brilliant generation of Portuguese doctors 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 to the investigation of pathologies such as cancer. Francisco Gentil, one of the doctors, undertook the challenge of establishing a research treatment and oncological disease center.

The Government created the Portuguese Institute for Cancer Study in 1923[1], functioning in its first phase within the Faculty of Medicine in Lisbon (*Santa Marta* Hospital). Adapting pre-existing spaces did not suit the Gentil team, consequently, the evolution of science will be the alibi for the modernist expression. In 1927, the site was bought in a strategic location in the western growth area of the city, and in 1929 the first patient was admitted.

The Portuguese Institute of Oncology (IPO) would become one of the best Cancer Institutes of Europe, and the Radium Pavilion was the first European construction with effective protection against radiation.

The modernist architectural expression of the Radium Pavilion, expressed in Portugal between the last years of First Republic Regime and the end of the 1930s, had an ephemeral existence due to the "perverted relation between power and architects"[2]. The 1930s were the Golden Decade of Public Works in Portugal led by Duarte Pacheco, ending with a "monumental accent as exposed in the program of Regime Public Works approaching a new historicist and regionalist vocabulary, staked on classical roots close to the Nazi and Fascist models of the time"[3], which can be seen in the Hospital Block of IPO designed by Walter Diestel (1904–).

The process: authors and buildings

The IPO is located in Palhavã, a housing area mainly built at the beginning of the 20th century that has been transformed and renewed. The trapezoidal, slightly sloping, site is delimited by a railway on the northern and west sides, a very busy road on the northeast side linking to the city center, and next to one of the busiest traffic squares in the city, *Espanha* Square. The site's main access is from the southwest, from *Professor Lima Bastos* Street, a local road where the concave shape of the surrounding buildings announces its entrance.

Today it's composed of 10 pavilions built from 1927 to 1996, but its first construction was a single pavilion and its design process comprised several phases and authors Luís Cristino da Silva (1896–1976), Carlos Ramos (1897–1969) Raul Lino (1879–1974) together with Ernst Kopp (1890–1962), Walter Diestel with the engineer Tavares Cardoso and Raul Rodrigues de Lima (1909–1980), each one contributing for an urban master plan that changed with time.

Cristino da Silva.
The first dispensary for cancer in Portugal:
pavilion A (1927) and pavilion B (1930)

In 1927, Cristino da Silva, part of a modern generation referred to in modern architecture historiography as the generation of 1927[4], was the most "virtuous and creative, [architect] in the right sense of beaux arts values"[5]. He designed the cinema *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 emphasized the rise of the seventh art as the art of the, also new, century"[6].

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"[7]. Of Cristino's project, and due to financial constraints, only the small Pavilions A and B were built. Nevertheless together they gave form to the first Portuguese Institute for the study of Cancer in Portugal.

Placed near the southwest boundary of the site, and parallel to *Professor Lima Bastos* Street in a symmetrical composition, Pavilion A, to the left of the entrance, was the first dispensary for cancer in Portugal. It was built in 90 days, and opened to the public in December 1927. Its use was later changed to zoological and botanical research. Pavilion B to the right of the entrance, opened in 1930, was where the first medical consultations were given and the administration offices were organized. From what we know, the overall proposal of Cristino was composed of a symmetrical composition of monumental volumes where the main entrance was celebrated by a round inner square with sculptures. This proposal was never built. As we can see in the plan (Figure 02) pavilions A and B are not colored as maybe they were seen as temporary buildings, designed through a functional and pragmatic expression, as minor volumes in the monumental composition. Is also possible to observe the design of the exterior landscaped areas and tree alignments, and what could be, maybe, a trapezoidal building proposal on the western corner of the site.

Carlos Ramos.
From "one of the largest 20th century architectural complexes in Lisbon" [c.1930?], to the first European construction with effective protection against radiation: Radium Pavilion, 1933

In November of 1927, Carlos Ramos was invited to develop a new project for IPO. He accepted it and developed a new proposal that, if built, "could have been one of the largest 20th century architectural complexes in Lisbon"[8] (Figure 04).

He officially accepted the invitation in January of 1928, and was nominated by a Government Law in April of 1928, together with Marck Anahory Athias (1875–1946)[9], to undertake a study tour to understand the main cancer centers in Europe in order to bring to Portugal all the therapeutic, architectural and construction information and details to answer the requirements for a cancer treatment institution.

The study tour took place between February and April of 1929 and was of primary importance, not only for the further development of the project, but also for the thinking and future projects by the architect. During the tour he acquired 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, the Netherlands, Belgium and Spain, and from the Report[10] is possible to observe the main references and models brought back to Portugal. Besides the study concerning the capacites of the cancer institutes and radium treatment specifications, the report includes plans of the sites and buildings, and photographs where it is possible to perceive the roots and models for the master plan and for the Radium Pavilion designed by Carlos Ramos.

The hospitals in Denmark are underlined "as beyond all expectations regarding comfort, construction finishes, simplicity and practical use"[11], and as a reference on hospital 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, in Copenhagen in 1960, where "he refers to 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'"[12].

The Curie Foundation (1920), in Paris, is highlighted for "the exterior architectural simplicity of any pavilion, which constitutes in a modern way the secret of all and any construction of this nature"[13]. The Cancer Institute of the Faculty of Medicine is referred to as an example for "the separation between buildings for hygienic purpose"[14]. In Lyon, the Faculty of Medicine East / Rockefeller Domain, designed by Paul Bellemain (1886–1953), is pointed out as being a "sharply modern expression … whose construction is based on standardization principles"[15], and the Grange-Blanche/Edouard Herriot Hospital (1913–1933) is mentioned as a work from "one of the greatest names of contemporary France, Tony Garnier [1869–1948]"[16]. Both are clear models for the first project developed by Carlos Ramos considering the volumetric proportion and the design of the façades.

Presented in 1930[17] by Francisco Gentil, this project is referred to as an "admirable study" that the "ones that know hygiene principles and hospital construction can appreciate the magnificent architectural work"[18]. Gentil states, as an introduction, that all the buildings are connected by galleries, that can be underground or not, and which are all linked at the basement level of the central entrance. This reflects his desire also expressed through the Italian sanatorium given to Cristino da Silva, where all the buildings were linked. He gives a long and thorough description presenting plans and elevations, clarifying the capacity of each building and concludes by declaring his desire to build it. As in Cristino da Silva's proposal, it is also developed through a symmetrical composition aligned with the entrance, but augmented by several pavilions spread over the site. The pavilions are linked by galleries, and no internal roads are designed, except for the one connecting to the main entrance, and the direct entrance to the director and administration building. Also, no exterior landscaped areas were designed. Considered to be too expensive to be built, and too demanding to manage, this plan was never built[19].

As stated by Francisco Gentil "in 1931, the disease caused to people working with radiation therapy, by the emanations of working with it, necessitated the urgent construction of the Radium Pavilion"[20]. Consequently, the Radium Pavilion was built, and a new plan for the entire site was designed.

In the new plan, by Carlos Ramos (Figure 06), we can see the Radium Pavilion colored as Pavilions A and B (see the hatching applied on the drawing). In April 1934, he signed a contract to design the new IPO[21]. This new plan again made reference to what the architect had seen in Europe, propos-

01 Cristino da Silva, Carlos Ramos, Raul Lino, Ernst Kopp, Walter Diestel and Tavares Cardoso, Portuguese Institute of Oncology, Lisbon, Portugal,1927–1948. Urban view on the built buildings. Cristino da Silva: Pavilions A (1927) and B (1930); Carlos Ramos: Radium Pavilion (1933); Walter Diestel and Tavares Cardoso: Nurses Technical School (1944) and Hospital Block (1948). © Art Library of Calouste Gulbenkian Foundation, ***Estúdio Horácio Novais***, 1930–1980 [CFT164_057592].

ing once more a symmetrical composition, and a symmetrical single central building composed of several volumes: a larger one near the entrance, and a longitudinal one along the road and the railway on the north of the site, with a secondary entrance. Yet again this proposal was never realised as it was considered to be "full of inconveniences"[22].

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 *Second International Congress of Radiology* that took place in Stockholm in July 1928, this innovative construction was composed of walls and slabs consisting of several layers of different materials in order to assure radiation reduction. New construction techniques, such as concrete, fulfilled the construction requirements.

The Radium Pavilion is a single 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 national modernism directly affiliated with radical international principles"[23]. Program and functional demands, together with new construction technologies generated a clean and austere volume. Symmetry was the defining compositional hierarchy that was established through the taller volume containing the stairs, which was placed on the central axis of the volume. The volume's 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 2.5m x 2.5m 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, that was integrated in the construction, can be seen as the rigorous and formal compositional key to this building when compared with other contemporary ones"[24]. As stated by Keil do Amaral (1910–1975), "Carlos Ramos was the purest of the first modernists, because he was 'mainly worried with the design of the plan, and the sections and façades were simply the result of the plan'"[25]. This can be seen 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 was dismissed[26], and Raul Lino[27] was invited[28] to develop a new proposal considering four main areas: a hospital block, a Nurses' Technical School, a medical appointment building and investigation area. Ernst Kopp, from Berlin was also invited to participate in the project[29], working on Lino's design making comments in the period between 1935 and 1938[30]. It was never built and Gentil stated "Later [...] another architect did a plan that was unachievable within the City Hall urbanization settled for today"[31]. The plan considered the already built volumes, and symmetry remained the compositional rule. However, there were two clear differences from the previous proposals in that the area of the central axis of symmetry was empty, and the main central hospital block was placed near the north boundary of the site. As with Cristino, this team also designed the exterior areas, and identified the existing and proposed trees, defined local access points and the roads within the site that linked all the buildings (Figure 03).

From what we know, the proposed monumental volumes followed the symmetry rule, enhancing the entrance by a covered volume of stairs and a balcony at 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 was defined 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 site area and the street definition of the City Hall"[32] (Figure 07). It was developed with several similarities of the previous plans: from Raul Lino and Ernst Kopp the building project for the Nurses' Technical School was kept, and from the Carlos Ramos second plan was the location of the nurses' school and the central location of the hospital block with a secondary entrance on the north boundary of the site. Besides that, a chapel and a sanitorium building were added, and the access points to the Radium Pavilion and to the Nurses' Technical School were placed differently. The sanitorium building opened in 1943, not as designed in the initial plan, but was similar to pavilions A and B. It has already been demolished. The Nurses' School opened in 1944 but not in a symmetrical position, but instead it 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, but is lower, shorter, and deeper as well as being connected on its north façade to the exterior. The verticality of the main volume, which was parallel to Professor Lima Bastos Street, comprised 7 floors and a terrace, is shortened by the use of stone as the exterior finish of the ground and first floors. Two underground passages, clean and dirty, connected the Hospital block and the Radium Pavilion.

In 1951, Gentil paid tribute to Salazar and the Government for all the support in building one of the best Cancer Institutes in Europe[33].

Additions and transformations from 1957 to ...

Several additions have been made over time, such as pavilions for workshops (1957), for cobalt-therapy (1958), and the one for medicine today transformed into a medical wing building designed in 1971, 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 was incorporated into the building and, in 1996, the radiotherapy emergency center was constructed.

Due to technological innovation, or other needs, the spaces are continually being changed and transformed. This means that the building is still being used and needed, but the questions that arise are: how are those transformations done within the identity of the building? How can we contribute to a responsible and sustainable change? Who can we involve in that process?

Possibilities for the future. An intangible heritage in use

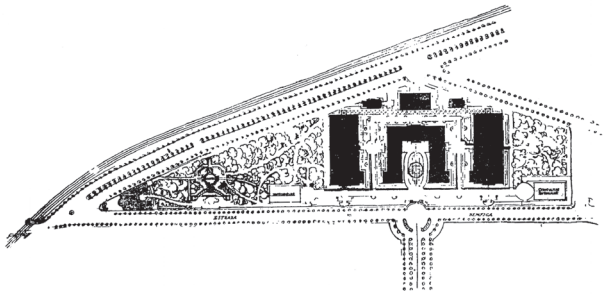
As Carlos Ramos stated, in 1929, "If there are buildings that need a permanent renewal of their installations, and a complete reshuffle of their departments, hospitals are undoubtedly, the ones where that necessity comes first"[34]. Following that understanding, it is vital to comprehend change and transformation, and to promote public awareness[35] regarding the use of 20th century heritage.

Modern healthcare buildings in Portugal aren't yet profoundly studied, most of them are still in use or were reused for other functions, and it is imperative to document and understand their cultural value in order to recognize their identity and authenticity, but also to be flexible and conscious in order to integrate permanent innovation.
The historical tangible significance of IPO is primarily known through the widespread importance of the 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 in the belief that architecture could function as a social condenser"[36]. Nevertheless, the intangible heritage is likewise essential to be known to achieve a broad 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's pioneering cancer treatments, and for the architect recognizing it as fundamental for his education; by the relevance the non-realized master plans and building projects that translate ideas and the exchange between Portugal and Germany; and by the significance of the expression of political representation that changed over time in the buildings. This was recognized by the classification of the Radium Pavilion as a "Building of Public Interest", and by the establishment of a "Protection Zone"[37]. On one hand, the Government played its role in its primary mission "to protect and value the cultural heritage as a primary instrument for achieving human dignity, and its fundamental rights, in the service of cultural democratization, and in the support of independence and national identity"[38]. 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"[39].

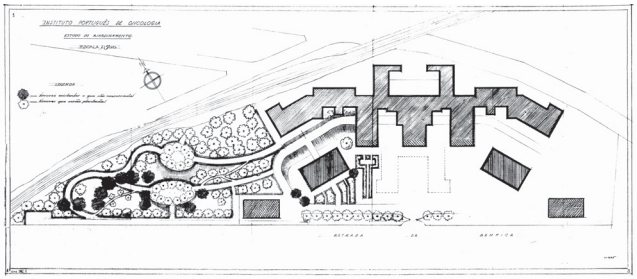
The challenge is to find a way to the "consciousness of heritage as a development factor. [...] the opposite of freezing future construction by the preservation of fragments of the past [...]"[40]. As Alexandre Alves Costa states on the work of Fernando Távora "the introduction of new functions or even new environmental needs and comfort, withdraws the 'eternal' object from abstract neutrality and puts contemporaneity as a paralleled and mandatory issue." The sediments exist, are present, are readable and constitute the scenery that defines and qualifies the space where we live our contemporaneity, and even our future, as the beginning, the end, and the pause crystalized in a timeless synthesis"[41].

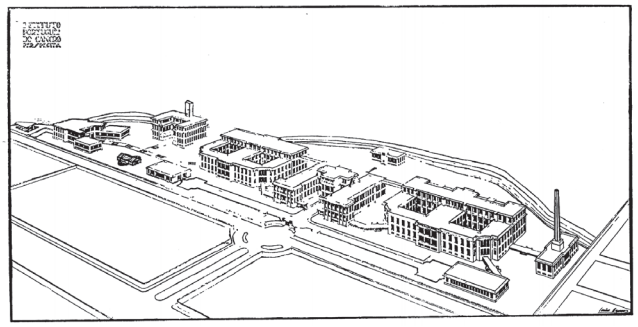
The historical intangible and tangible significance leading, or not, to classification, establishes the issues of memory and tradition as an informal safety measure of the "collective and accumulated existential wisdom of countless genera-

02 Cristino da Silva, Portuguese Institute of Oncology, Lisbon, Portugal, 1927. Plan. © Portuguese Institute of Oncology Archive, GENTIL, Francisco, "*O passado, o presente e o futuro*", in *Separata do Boletim do Instituto Português de Oncologia*, Lisbon, Portuguese Institute of Oncology, 1938, 4.

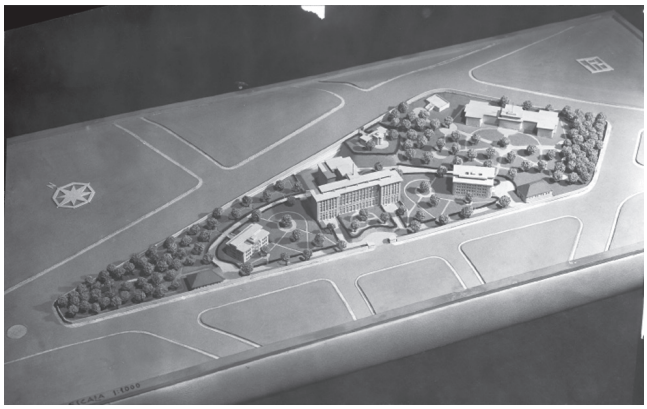


03 Raul Lino and Ernst Kopp, Portuguese Institute of Oncology, Lisbon, Portugal, 1935–1938. Plan.© Art Library of Calouste Gulbenkian Foundation. [RLDA 376_2]

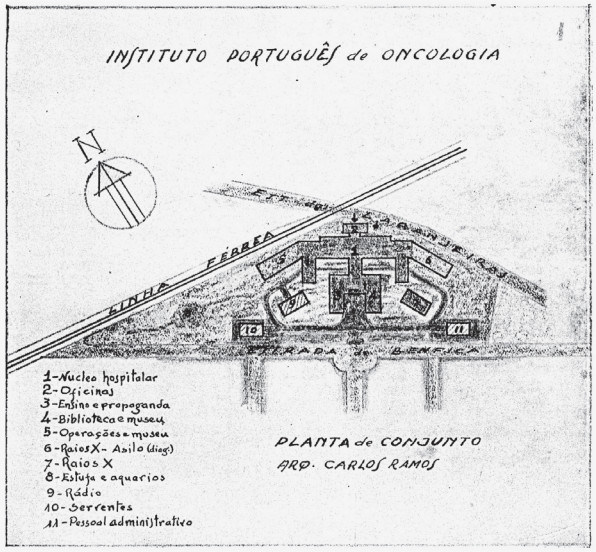




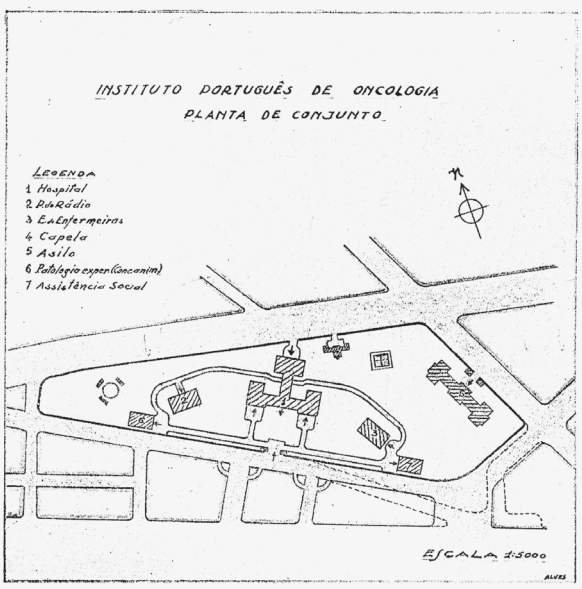
04 Carlos Ramos, Portuguese Institute of Oncology, Lisbon, Portugal, [c.1930?]. Plan. © Portuguese Institute of Oncology Archive, GENTIL, Francisco, "*O passado, o presente e o futuro*", in *Separata do Boletim do Instituto Português de Oncologia*, Lisbon, Portuguese Institute of Oncology, 1938, 7.



05 Walter Diestel and Tavares Cardoso proposal. Portuguese Institute of Oncology. Lisbon. Portugal. 1938. Model. © Art Library of Calouste Gulbenkian Foundation. [CFT003_100290]



06 Carlos Ramos, Portuguese Institute of Oncology, Lisbon, Portugal, 1934. Plan. © Portuguese Institute of Oncology Archive, GENTIL, Francisco, "*O passado, o presente e o futuro*", in *Separata do Boletim do Instituto Português de Oncologia*, Lisbon, Portuguese Institute of Oncology, 1938, 8.



07 Walter Diestel and Tavares Cardoso, Portuguese Institute of Oncology, Lisbon, Portugal, 1938. Plan. © Portuguese Institute of Oncology Archive, GENTIL, Francisco, "*O passado, o presente e o futuro*", in *Separata do Boletim do Instituto Português de Oncologia*, Lisbon, Portuguese Institute of Oncology, 1938, 10.

08 Carlos Ramos, Radium Pavilion, Portuguese Institute of Oncology, Lisbon, Portugal,1933. Southeast façade. © Art Library of Calouste Gulbenkian Foundation [CFT003_125240].

09 Carlos Ramos, Radium Pavilion, Portuguese Institute of Oncology, Lisbon, Portugal,1933, Northwest façade © Art Library of Calouste Gulbenkian Foundation [CFT003_63485].

tions. It also gives a reliable direction to the new and maintains the comprehensibility and meaning for the new"[42]. Can the modern IPO built in modern Lisbon be "meaningful for the new"?

Still in use, its economic viability is assured, its cultural value is known, however, it could be disseminated more widely in order to generate, on one hand a sense of belonging and public awareness and, on the other hand, institutional consciousness and involvement, "as a space for participation, responsibility and historical awareness, re-conceptualizing their role and representation in the contemporary city"[43].

Portuguese modern healthcare heritage could be a modern ground of dealing with these questions, since, on one hand it is still not a fully understood heritage and, on the other hand, is still in in intensive use.

What is our role?[44] Could we encourage citizen's proximity towards healthcare buildings generating public healthy behaviors? Could we simultaneously promote a sustainable future being the actors of strategic and integrated urban and architecture actions, embracing transformations and leading the modern IPO to contemporaneity? Is this a territory of intervention with potential to be "irrigated" within the contemporary city[45]?

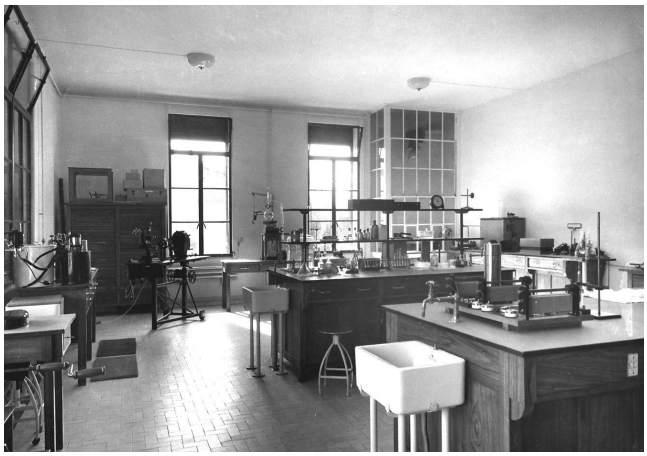
Notes

All the transcriptions are free translations from the specified references.

1 *Decreto-Lei nº9333*, 29th December 1923.
2 Ana Tostões, *Arquitectura Moderna e a Obra Global a Partir de 1900*, in Dalila Rodrigues (coord.) *Colecção Arte Portuguesa. Da pré-história ao século XX*, Porto, Fubu Editores SA, 2009, 25.
3 *Idem*, 43.
4 Ana Tostões, *A Idade Maior. Cultura e Tecnologia na Arquitectura Moderna Portuguesa*, Porto, FAUP *Publicações*, 2015.
5 *Idem*, 151.
6 *Ibidem*, 56.
7 Francisco Gentil, "*O passado, o presente e o futuro*", in *Separata do Boletim do Instituto Português de Oncologia*, Lisbon, Portuguese Institute of Oncology, 1938, 12.
8 Ana Assis Pacheco, "*Pavilhão do Rádio, Instituto Português de Oncologia*", in Ana Tostões, Annette Becker, Wilfried Wang, *Portugal: Arquitectura do Século XX*, München – New York / Frankfurt am Main / Lisboa, Prestel / Deutsches Architektur-Museum / Portugal Frankfurt 97-Centro Cultural de Belém, 1998, 170.
9 Mark Athias (1875-1946) was a doctor and researcher in biomedical sciences, pioneer in the development of histology and biochemistry in Portugal. He was a founding member of the Portuguese Society of Natural Sciences (1907), of which he was a Board member in 1916. The aims of the Society were scientific investigation, teaching and contribution to industry. In 1920 he established the Portuguese Society of Biology and, together with Abel Salazar and Augusto Celestino de Castro, promoted the Portuguese Histology School, and instituted the *Archives Portugaises des Sciences Biologiques.* From 1923 he was a member of the Board of the Portuguese Institute of Oncology, and also the director of the Histology Laboratory.
10 Carlos Ramos, Marck Athias, "*Os meios de luta contra o cancro em alguns países europeus" – Relatório de Viagem – Fevereiro-Abril de 1929*, in *Separata do Boletim do Instituto Português de Oncologia*, Lisbon, Portuguese Institute of Oncology, 1930.
11 *Idem*, 111.
12 Bárbara Coutinho, *Carlos Ramos (1897–1969): Obra, pensamento e acção. A procura do compromisso entre o Modernismo e a Tradição*, Master Thesis in Contemporary History on Universidade Nova – Faculty of Social and Human Sciences, Lisbon ,2001, Vol. I, 48.
13 Carlos Ramos, Marck Athias, *op. cit.*, 90.
14 Bárbara Coutinho, *op. cit.*, 48.
15 *Idem*, 98.
16 *Ibidem*, 99.
17 Francisco Gentil, Marck Athias (ed.), *Arquivo de Patologia*, Lisbon, Instituto Português Para o Estudo do Cancro, 1930, Vol. II.
18 *Idem*, 33.
19 Francisco Gentil, *op. cit.*, 12.
20 *Idem*, 13.
21 Bárbara Coutinho, *op. cit.*, 51.
22 Francisco Gentil, *op. cit.*, 13.
23 Ana Tostões, *op. cit.*, 177.
24 *Idem*, 180.
25 *Ibidem*, 180.
26 *Ibidem*, 181.
27 "[...] studied in his youth in England, going later to Hannover, where he studied architecture and worked until 1897 with Albrecht Haupt, an architect that knew the Renaissance architecture in Portugal. His 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 Portuguese architecture is marked by a nationalistic romanticism and by a cultural and constructive realism, contributing

10 Carlos Ramos, Radium Pavilion, Portuguese Institute of Oncology, Lisbon, Portugal, 1933, interior. © Art Library of Calouste Gulbenkian Foundation [CFT003_62553].

11 Carlos Ramos, Radium Pavilion, Portuguese Institute of Oncology, Lisbon, Portugal, 1933, laboratory. © Art Library of Calouste Gulbenkian Foundation [CFT003_3550].



from 1920 to start a kind of campaign for a definition of the "Portuguese house". [...] a man of great culture who was, throughout his life, a staunch opponent of modern architecture and its values [...].", Ana Tostões, Annette Becker, Wilfried Wang, *op cit.*.

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

29 *Idem*, [RL 376.3]. Ernst Kopp was invited, in 1935, by the Executive Commission of the Portuguese Institute of Oncology, to follow the project developed by Raul Lino. He was a German architect from Berlin, designer of the Martin Luther Hospital (1929-1933) in Wilmersdorf, Berlin, where he proposed the centralization of the traditional hospital in one single building. He designed and built 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

30 *Idem*, [RL 376.0 - RL 376.11].

31 Francisco Gentil, op. cit., 13.

32 *Idem*, 14.

33 Francisco Gentil, "*A Obra da Luta contra o Cancro e o Instituto Português de Oncologia*", Lisbon - Palhavã, 1951, 9, Art Library of Calouste Gulbenkian Foundation [AAT 3286]

34 Carlos Ramos, Marck Athias, op. cit., 99.

35 Hubert-Jan Henket, "Reuse, Transformation and Restoration", ***docomomo*** *Journal*, 52, Lisbon, **docomomo** International, 2015/01, 12.

36 Ana Tostões, *op. cit.*, 20.

37 The Radium Pavilion was established as a "Building of Public Interest" by the Portaria nº 389/2013, Artº. 1, where it is recognized as an item of national cultural value. For any intervention the *Decreto-Lei nº* 140/2009 defines a list of procedures. The "Protection Zone", defined in Artº. 2 aims to maintain the views that allow the buildings to be perceived and to maintain the functional relationships between them.

38 *Decreto-Lei nº* 309/2009, 23 de Outubro.

39 Roberta Grignolo, "*Quali "diritti" per il património architettonico del XX secolo?*/ What "Rights" for the 20th Century 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.

40 Ana Vaz Milheiro, João Afonso, Alexandre Alves Costa, *Candidatura ao Prémio Jean Tschumi – Prize Nominee – UIA 2005*, Lisbon, *Ordem dos Arquitectos / Conselho Directivo Nacional* / Caleidoscópio, 2005, 87.

41 *Idem*, 80–81.

42 Juhani Pallasmaa, "Newness, Tradition and Identity – Existential Meaning in Architecture", *Proceedings of the 12th International* ***docomomo*** *Conference*, Espoo, Finland, 2012, 25.

43 Lily Jencks, Jessica Reynolds, *Sick City Rebab. Toxicity and Health in the 12th Century City, Intermediate 13*, Architectural Association, 2014–2015.

44 *The Future for Health – everyone has a role to play*, Calouste Gulbenkian Foudation, 2014.

45 Rem Koolhaas, "What Ever Happened to Urbanism?", in Rem Koolhaas, *S,M,L,XL*, OMA, (with Bruce Mau), The Monicelli Press, New York, 1995, 959 - 971.

References

ALVES, Manuel Valente, *História da Medicina em Portugal - Origens, Ligações e Contextos*, Oporto, Porto Editora, 2014.

COUTINHO, Bárbara, *Carlos Ramos (1897-1969): Obra, Pensamento e Acção. A Procura do Compromisso entre o Modernismo e a Tradição*, Master Thesis in Contemporary History on Universidade Nova – Faculty of Social and Human Sciences, Lisbon, 2001.

GENTIL, Francisco, "*O passado, o presente e o futuro*", in *Separata do Boletim do Instituto Português de Oncologia*, Lisbon, Portuguese Institute of Oncology, 1938.

GENTIL, Francisco, ATHIAS, Marck (ed.), *Arquivo de Patologia*, Lisbon, *Instituto Português Para o Estudo do Cancro*, 1930, Volume II.

GRIGNOLO, Roberta (ed.), *Diritto e Salvaguardia dell'architettura del XX Secolo / Law and Conservation of 20th Century Architecture*, Mendrisio, Mendrisio Academy Press-Silvana Editoriale, 2014.

JENCKS, Lily, REYNOLDS, Jessica, *Sick City Rebab. Toxicity and Health in the 12th Century City, Intermediate 13*, Architectural Association, 2014–2015.

MILHEIRO, Ana Vaz, AFONSO, João, Alexandre Alves Costa, *Candidatura ao Prémio Jean Tschumi – Prize Nominee – UIA 2005*, Lisbon, *Ordem dos Arquitectos / Conselho Directivo Nacional* / Caleidoscópio, 2005.

RAMOS, Carlos, ATHIAS, Marck, "*Os meios de luta contra o cancro em alguns países europeus" – Relatório de Viagem – Fevereiro-Abril de 1929*, in *Separata do Boletim do Instituto Português de Oncologia*, Lisbon, Portuguese Institute of Oncology, 1930.

TOSTÕES, Ana, *A Idade Maior. Cultura e Tecnologia na Arquitectura Moderna Portuguesa*, Porto, FAUP *Publicações*, 2015.

WAGENAAR, Cor, "Can our hospitals survive?", 2014. (Free pdf version on: http://her.sagepub.com/content/8/1/9.short?rss=1&ssource=mfr)

Daniela Arnaut

(b. Portugal, 1980) Architect (*Instituto Superior Técnico*, 2006). PhD candidate on *Modern Healthcare Buildings in Portugal.* She has taught Architectural Design Studio at Técnico – University of Lisbon, since 2009. Since 2005 she has been a part of investigation teams on the Calouste Gulbenkian Foundation Headquarters. Until 2011 collaborated with Risco on projects as: NATO Summit 2010, Lisbon, and *Santa Filomena* Hospital 2011, Coimbra.