47th Conference of CIMUSET, pp. 7–19, 2020

Scientific Exhibitions for Historical Buildings: How Traditional Fiocruz Collections Serve Contemporary Science Communication

Diego Vaz Bevilaqua[1] and Marcos José de Araújo Pinheiro[2]

Casa de Oswaldo Cruz, Oswaldo Cruz Foundation, Rio de Janeiro/RJ, Brazil

Abstract The Oswaldo Cruz Foundation (Fiocruz) is a scientific institution devoted to public health which is highly active in heritage preservation and science communication. Fiocruz was founded in 1900 and has a long tradition in museums and collections. The Foundation is home to a historical site that is listed as a Brazilian national heritage site, partly accessible to the public through Museu da Vida (Museum of Life), the institution's science museum. This paper presents the plan for requalification of this historical site, a master plan that will reshape Museu da Vida and enlarge its exhibition galleries, with an emphasis on the museum's relationship with the public, the city, and Fiocruz collections. The plan aims to expand access to the historical buildings, make the Fiocruz collections more accessible to the public, renovate the long-term science exhibition at Museu da Vida, strengthen the relationship between the institution and its territory, and enhance the popularization of knowledge produced by Fiocruz. A major challenge for this project is to communicate contemporary scientific research at Fiocruz, integrating interactive devices with collections and historical perspectives in galleries located in the heritage buildings. A key element here is to understand the institution's tradition as a gateway to contemporary innovation and as an element to spark public engagement with the subject. We present the plan's principles and guidelines and its approaches to the new long-term exhibitions, and conclude by discussing the project's sustainability.

1. Introduction

The Museu da Vida (Museum of Life) of the Oswaldo Cruz Foundation celebrated 20 years in 2019. The museum was created through a collective aspiration to innovate in the institution's tradition of harboring museums, bringing new concepts at the time of its development to enhance interaction between the public and science. Following the model that was characteristic at the time of its inauguration, Museu da Vida incorporated various aspects from the Science Centers movement, while valuing its own collection. Another characteristic is that the museum occupies several historical buildings whose value stems precisely from their role in the history of science, and where science continues to be produced. Museu da Vida is thus a science museum in which science is alive and is produced constantly by Fiocruz, sharing space with the public that want to interact with this

[1] diego.bevilaqua@fiocruz.br
[2] marcos.pinheiro@fiocruz.br

science. This close relationship between heritage preservation and science communication gave rise to the Plan for Requalification of the Manguinhos Historical and Architectural Heritage Site (NAHM), whose principles and main exhibitions are described herein.

2. Fiocruz: 120 years of tradition in museums and collections

The history of museums at Oswaldo Cruz Foundation is nearly as old as the institution itself. The Federal Serotherapy Institute (the institution's first name) launched its activities in the year 1900, installed temporarily in the houses on the Manguinhos Farm, on what was then the outskirts of the city of Rio de Janeiro, with Oswaldo Cruz as the founding scientific director.

The years 1904 to 1922 witnessed the construction of the buildings designed by Portuguese architect Luiz Moraes Jr. to house the institution's scientific activities: the Stable (1904), Dovecote (1904), Plague Pavilion or Clock Building (1905), Teahouse (1905), Moorish Pavilion (1918), Oswaldo Cruz Hospital (1918), Quinine Building (1921), and Vaccine Pavilion (1922). This ensemble, part of which is listed by Brazil's National Institute of Historical and Artistic Heritage (IPHAN), features as its grand symbol the Moorish Pavilion (or "Castle"), built to house the institution's first research laboratories and now home to the Office of the President of Fiocruz

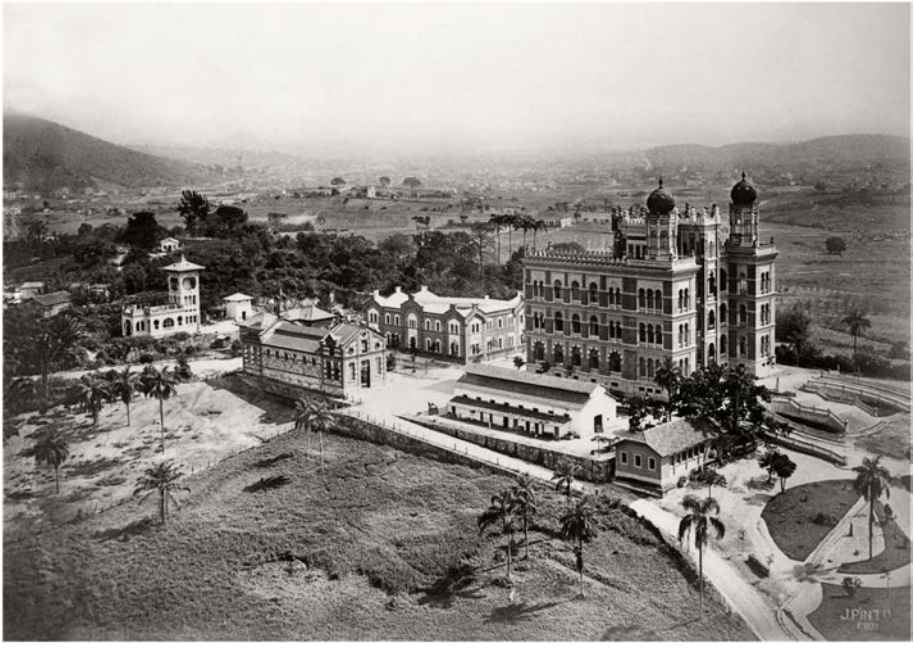

Figure 1. Buildings on the historical site around the Castle at the Oswaldo Cruz Foundation, c. 1920. Source: DAD/Fiocruz Collection.

(OLIVEIRA, 2003).

Already in its inaugural decade, the institute began to form its first in-house scientific collections, as was the practice in such institutions at the time. From the beginning, these featured the entomology and anatomical pathology collections. The Castle's original floor plan already had a scientific museum, conceived along the lines of early 20th-century museums of natural history. The collections were transferred to the Castle as soon as construction was concluded, and the museum opened its doors and became a place for research, exchange among researchers, and reception of distinguished visitors (especially scientists) (NOGUEIRA and ROCHA, 2018). In the 1960s and 1970s, the institution suffered an intervention by the military government installed in Brazil by a coup d'état in 1964, and many scientists were stripped of their positions and parts of the collections were destroyed. After Brazil's re-democratization in the 1980s, many collections were recovered and reorganized, and they now comprise the rich body of collections of the Oswaldo Cruz Foundation. There are now 33 biological collections, many of which are international references, whose tradition began in the early 20th century.

Following Oswaldo Cruz' death in 1917, his office on the Castle's second floor was preserved and maintained as a memorial room with the purpose of extolling the man who went down in history as the institution's founder and patron. His office came to be known as the Oswaldo Cruz Museum and became the memorial setting for visitors to the institution to learn about Oswaldo Cruz' feats. Over time, personal objects were added to the room, which became the original nucleus of the Fiocruz museum collection as a whole (NOGUEIRA and ROCHA, 2018).

Brazil's re-democratization in the 1980s also created new forms of democracy inside the institution. Since then, the relationship between Fiocruz and society has been reclaimed according to democratic values. From that moment on, museums at the institution have been redesigned through the proposal for the creation of Museu da Vida, which has added its museum collection to the proposal to communicate science through dialogue and innovation.

3. Museu da Vida: innovation in science communication

The proposal for the creation of Museu da Vida emerged in the early 1990s with the aim of expanding the Foundation's educational activities and establishing a bridge between specialists and a wider audience. The new museum is organized by Casa de Oswaldo Cruz, the unit of Fiocruz created in 1986 with the aim of preserving the memory of health and science, health's cultural heritage, and science communication, adding the experiences from previous museums and their historical collections, but with the perspective of introducing innovations in the models.

First of all, the idea was to build an interactive museum along the lines of the experience with the *Exploratorium*, inaugurated in San Francisco in 1969, with a focus on understanding scientific processes as part of humankind's immaterial heritage. This movement intended to lend a historical view to scientific knowledge, seeking a critical vision of the scientific process itself. The goal was ultimately to create a living museum inside an institution in full operation, coexisting with, contrib-

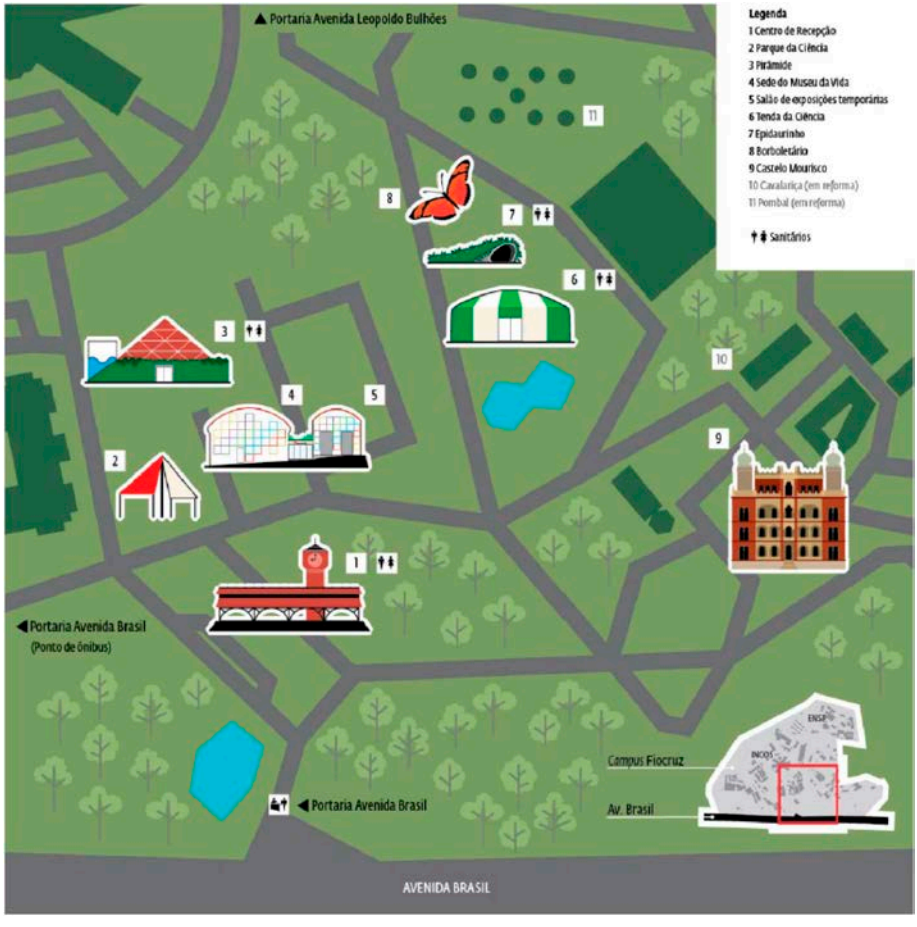

Figure 2. Schematic map of a visitor's tour to Museu da Vida. Source: Museu da Vida/Fiocruz.

uting to, and being fed by this living science.

Museu da Vida thus opened its doors to the public in 1999. Rather than occupying a single building, the Museum was structured in various spaces on the Manguinhos campus, including both indoor and outdoor spaces, interactive exhibitions, historical buildings, ecological trails, a tent for theatrical shows, and more recently a butterfly house and an archeological site, among other attractions. The Museum's exhibitions been worked with different languages and resources, with human mediation as an important part of the educational proposal (BEVILAQUA *et al.*, 2017).

Preserving history and reflecting on the current context also help light the way for the future. Museu da Vida now needs to strengthen itself as a space for dialogue between different forms of knowledge, linking discourses capable of associating scientific knowledge with personal interpreta-

tions and local contexts, as an actor capable of influencing the social territory it occupies in the city of Rio de Janeiro.

In this context, the Plan for Requalification of the Manguinhos Historical and Architectural Heritage Site (NAHM) features a proposal to reposition the Museum in the territory it occupies, aimed at lending a broader meaning to this occupation, expanding the exhibiting spaces and linking more to preservation of science communication's own cultural heritage.

4. The plan for requalification of the historical site

History has shown that ever since Fiocruz was founded, the institution has taken an innovative and active stance to its activities in research, education, production, and services, with a focus on public health and the reduction of social and health inequalities. This reveals an institution engaged in preserving and making accessible the different cultural and scientific collections built throughout the Foundation's history, understanding its memory and cultural heritage as strategic and structural elements in its organizational culture and the fulfillment of its mission. This stance led Fiocruz to take a step ahead of the state and municipal agencies in charge of overseeing cultural heritage, proposing the recognition of various cultural assets under the Foundation's custody, which led the National Institute of Historical and Artistic Heritage (IPHAN) to list the Moorish Pavilion, Clock Pavilion, and Stable as national heritage buildings in 1980. In 1985, Fiocruz requested IPHAN to extend the listing to include the green area around these buildings and other buildings from the eclectic period, the Quinine Building and the Dovecote. The polygon corresponding to this green area served as the reference for the Campus Master Plan in 1988 and for subsequent plans. This proactive approach was repeated over time, resulting in the Rio de Janeiro state heritage listing of two modernist buildings in 2001, and more recently in the Moorish Pavilion's candidacy as a UNESCO World Heritage Site, based on its value as cultural heritage of the sciences and health.

The year 2013 witnessed the conclusion of the Plan for Occupation of the Preservation Area of the Fiocruz Manguinhos Campus (POAP), an institutional planning and management tool for the architectural, urban, and landscape heritage of the Fiocruz Manguinhos campus, aimed at guaranteeing the integrity, visibility, and legibility of the relevant assets for preservation on the site's area and consolidating the campus' calling as a "Campus-Park", seen "as a healthy, safe, comfortable, and culturally enriching campus for its employees and visitors". (Casa de Oswaldo Cruz, Instituto Brasileiro de Administração Municipal, 2011, pp. 18–19)

The NAHM site was recently favored by the expansion of new areas for occupation by Fiocruz, capable of housing administrative functions that are currently installed in the historical site. This created challenges that had to be dealt with and that might otherwise jeopardize the conservation and valuation of the NAHM site, since the lack of appropriate projects would leave the historical buildings at the mercy of improvisation and occupations resulting from lack of planning. This also allowed elaborating a project for new uses of the historical spaces as they were vacated, which led to the Plan for Requalification of the Manguinhos Historical and Architectural Heritage Site, under

the coordination of Casa de Oswaldo Cruz, based on recommendations in the POAP. The Requalification Plan seeks to value the historical site through interventions that preserve its identity and uniqueness, besides generating a greater supply of sociocultural activities for society at large, especially the population in the territory of the Manguinhos campus.

5. Guidelines

Based on the participatory management model adopted by Fiocruz in its corporate decision-making process and the election of its leaders, which assumes that the decisions, guidelines, and planning result from collegiate deliberations, the first working group was set up in 2011 in Casa de Oswaldo Cruz, consisting of professionals from the areas of cultural heritage, science communication, research, and education. The working group's first task is to discuss and draft a reference document defining the values, objectives, and orientation for all the projects and activities needed to develop and implement the Plan. Joining the working group were external guest specialists from the fields of preservation of architectural heritage, museology, museography, and museum communication. The working group's composition was revised and expanded in 2013 under a ruling by the Office of the Director of Casa de Oswaldo Cruz, and strategies were created to expand the project's visibility and participation.

The working group's attributions involved the definition of uses and occupations, needs schedules, management model, and the internal and external target publics. The plan's development used project management models as the basis for its macroplanning, in order to take the various scenarios into account and to establish, for each model, the associated risks and possible alternatives. The underlying principles were defined as the project's full accessibility and sustainability, and different programs were created to lend greater autonomy and agility to the processes needed for the Plan to materialize, focused on communication, cooperation, fundraising, exhibitions, restoration of the buildings, and institutional management.

The Requalification Plan includes the buildings that comprise the institution's original site, namely the buildings constructed in the early 20th century (except for the Oswaldo Cruz Hospital and the Vaccine Pavilion): Moorish Pavilion, Clock Pavilion, Quinine Building, and Teahouse, plus the Pasteur Square, the Oswaldo Cruz Path, and the Henrique Aragão Pavilion, thus shaping a continuous intervention area. After defining the space for intervention, the working group produced a reference document, which required listening and establishing consensuses in the institution on the principles and guidelines capable of translating the values and identity of Fiocruz and intensifying the institution's relationship with the territory where the Manguinhos campus is located and with the city of Rio de Janeiro as a whole. According to the reference document, the requalification of the NAHM site incorporates the POAP in its entirety and is an integral part of the master plan that orients the occupations and interventions in the Manguinhos Campus as a whole. The central principle in the Plan's development is that the interventions should be based on the cultural, social, ethical, and scientific spheres that translate human action in that specific place over time. It means that

all the activities should be centered on the institution's artistic and historical values; symbolic aspects and memory; the right to transmission and enjoyment, from one generation to the next, of the testimonies, daily life, and individual and collective memories; and the centrality of the recognition that this is a noteworthy place for generation of knowledge, building relevant cultural and scientific collections, and living in the production of new research in different areas of science (FUNDAÇÃO OSWALDO CRUZ, 2014). The Requalification Plan should be oriented by strengthening the relationship between Fiocruz as an institution of science and technology and society in the field of health; by sustainable requalification; by preserving the institution's uniqueness and identity; and by valuing the Foundation's daily reality and work.

6. Sustainability strategies

To address the principle of sustainability, the orientation is comprehensive, integrated conservation and sustainable requalification, the latter as a more expanded concept in the issue of rehabilitation of historical areas, considering that a project of this nature should not be limited exclusively to the search for efficient use of natural resources and lower environmental impact, which are necessary but insufficient conditions. This concept was taken as a reference in the studies produced by Rehabimed[3], an interdisciplinary network in the Mediterranean Region, oriented to sustainable rehabilitation, restoration of heritage, and urban upgrading, aimed at socioeconomic revitalization of the historical centers in the Mediterranean, and these experiences are intended to back activities in other regions. It is thus necessary for the Requalification Plan to focus on improvements in the quality of work and life for staff and users of the NAHM site and the Manguinhos campus as a whole; valuation of the campus' cultural and natural heritage; improvement of social cohesion by promoting citizenship and valuing diversity; and promotion of the territory's socioeconomic vitality.

As described previously, a favorable factor is the institution's history with its active and proactive position in the preservation of its cultural assets and training teams with the skills to conserve its cultural collections and develop projects with this approach and size. Such action has been acknowledged by various national awards and the fact that three of its archival funds and a manuscript have been acknowledge by the UNESCO Memory of the World Program, at the national and regional levels. In addition to this component of institutional culture, it is necessary to act on various strategic fronts, in special two of these fronts. On is focused on production of the project's core narrative, its principles and values, and on the methodology in its development. Another focuses on the political commitment by the top management of Fiocruz. One of the lines successfully organized for the project's sustainability is the Cooperative Program, essential for the project's visibility and for sharing experiences and knowledge, having established cooperation with international institutions (such as the Museum National d'Histoire Naturelle and Universcience from France and the Science Museum Group from the United Kingdom), motivated by the interest in sharing experi-

[3] http://www.rehabimed.net/

ences in the field of heritage preservation and science communication and demonstrating the credibility built by the project. This was reinforced by the Fundraising Program, described previously as relevant for obtaining supplementary revenue to the regular budget, and which has achieved noteworthy success, for example with the agreement signed in late 2018 with the National Economic and Social Development Bank (BNDES, an important Brazilian public investment bank) for financing the services planned in the Stable and Dovecote. Fundraising from external sources is a strategic element in the institution's internal affirmation, enabling the Requalification Plan politically by minimizing the perception by other parts of the Foundation that the Plan is competing for internal resources with the research departments, education, services, and production at Fiocruz.

These components add to sustainable requalification as one of the project's underlying principles, thereby affirming the sustainability of the Requalification Plan for the NAHM site, based on the following (PINHEIRO *et al.*, 2019, p. 86):

- The Foundation's tradition in the preservation of its cultural heritage
- Recognition and attraction of core competences
- The proposal's social acceptance
- Adoption of sustainable standards in the architectural and urban planning projects
- Public-private partnerships
- Commitment by the institution's administrators

7. Thematic lines

A dialogue between staff members at Casa de Oswaldo Cruz and Fiocruz and external consultants resulted in the definition of crosscutting themes (DEAN, 2003) that will be developed in the new exhibitions that will occupy the historical spaces that are being requalified. Importantly, in principle, these themes will cut across all the new exhibitions, rather than each one materializing in a single exhibition. Each exhibit gallery's narrative seeks to connect the building's history to a cross-section of these themes.

- **Public health in Brazil**
  This thematic line deals with the history of health in Brazil, with a focus ranging from the First Republic to the history of the present.
- **Science and Technology in Health**
  This thematic line deals with contemporary research, scientific innovation, and technological development in the field of health.
- **Health, Environment, and Sustainability**
  This thematic line addresses the relations between health and the environment, with a focus on the sustainability of human development.
- **Cultural collections in Health**
  This thematic line aims to lend visibility to the wealth and diversity of cultural and scientific collections under the custody of Fiocruz.

· **Fiocruz and Cities**
This thematic line discusses the relationship between the Fiocruz campuses and its territories, with a special focus on the Manguinhos campus and local urban development.

8. New exhibitions and their buildings

Among the various buildings on the Fiocruz historical site, we selected those that will house new long-term exhibitions with their respective themes already defined.

Stables

The Stable was originally built to house healthy horses that were used to produce antisera, and particularly bubonic plague antiserum, which was produced in the adjoining building, the Plague Pavilion. The outer design was inspired by an imposing stable in English architectural style and an ornate façade, while inside it is characterized by a concern with typical laboratory and hospital hygiene, with the walls covered in while porcelain tile. The construction used state-of-the-art sustainability technologies, such as reuse of wastewater to irrigate the pasture and the manure for fertilizer and to produce biogas for lighting. The Stable was listed as a national heritage building in 1981. Since the 1970s, the Stable has housed various museums and exhibitions, the most recent of which was the Biodiscovery exhibition, one of the original long-term exhibitions of Museu da Vida.

Under the new proposal for occupation, the Stable Building will house an exhibition that will

Figure 3. Stable Building. Photo: Celeste Souza.

discuss health in its different scales and components (historical, biological, cultural, and social). The proposal is for the public to enter the exhibition and to able to explore the theme of health in its microscopic and macroscopic dimensions through different exhibit tours. The exhibition will draw on a wide variety of techniques and languages, using audiovisual modules, interactive multimedia, collections, hands-on interactivity, etc.

Dovecote

Situated at a short distance from the main historical site, the Dovecote was also known as the Small Laboratory Animal Facility. It was built to house the rearing of birds, rats, rabbits, frogs, and other small animals for research purposes. At the center of eight circular buildings, there is a ninth building originally used to house homing pigeons that were used to send messages between the institute and the Rio de Janeiro city center. There is a wall around the ensemble, surrounded by a garden. The Dovecote is now in the process of national heritage listing and enjoys the status of interim listing.

Under the new proposal for exhibitions, the Dovecote will serve as an area with a mix of museum, urban planning, and environmental interventions. The space will host activities for the open-air Museum, allowing free exploration by visitors as well as leisure activities, alongside interactive equipment to facilitate visitors' communication with nature. The built areas will present narrative tours on the Manguinhos campus' environmental history, animal experimentation in the sciences, and the use of homing pigeons. The Dovecote will also be the starting point for the historical-environmental trails to be promoted on the campus by Museu da Vida.

Plague Pavilion

Also known as the Clock Pavilion, the building was built from 1904 to 1905. As a response to

Figure 4. Dovecote. Photo: Peter Ilicciev.

Figure 5. Plague Pavilion or Clock Building. Source: COC Collection.

the bubonic plague epidemic that had struck Brazil, the Pavilion was designed for research on the plague bacillus to produce antisera and vaccine. It was built to house horses inoculated with the plague bacillus and two laboratories, one each on the north and south wings. The Pavilion was also listed as a national heritage building in 1981.

An exhibition will be installed in the Plague Pavilion to discuss the technological and social processes in the production of antisera and vaccines, from the early 20th century to today. The proposal is to feature an early 20th century laboratory for the production of antisera and vaccines in one of the wings with historical objects kept at the storage at Museu da Vida, and modern-day vaccine production in the other wing, thus establishing a 120-year journey crossing the building from one wing to the other.

Moorish Castle

The Moorish Castle or Pavilion is the third building from the national heritage listing of 1981. Considered the main building on the historical site and the symbol of Fiocruz, floor plans for the Castle began in 1903, but the construction was not finished until 1918. It was built with the most advanced technology of the time, with electrical installations and an eclectic style featuring an important Moorish influence. Located on a hilltop, the Castle is an imposing structure on the surrounding landscape. It was designed personally by Oswaldo Cruz together with Portuguese architect Luiz Moraes Jr. to house the institution's research laboratories and to be identified as a symbol of Brazilian science. It has five stories in addition to a ground floor and two towers standing out on each wing. The building now features monumental lighting for it to be visible from different points in the city.

3rd Floor

Ever since the Castle was first built, the third floor has featured an area dedicated to collections.

Figure 6. Moorish Pavilion at dusk. Photo: Peter Ilicciev.

One wing housed the institution's library, now a Rare Works Library, and the other wing housed the Museum of Anatomical Pathology in the early 20th century. The wing where the museum was located is now occupied by Museu da Vida and serves as a gallery for temporary exhibits.

Under the current project, this exhibit will feature the Fiocruz collections, exemplifying the importance of science collections in the process of science production, but also illustrating the different research subjects today in the field of biomedical and health sciences. This exhibit will mix historical objects, documents, biological specimens, digitized collections, and interactivity using new technologies to approach the theme.

2nd Floor

The Castle's second floor originally held various laboratories and the office occupied by Oswaldo Cruz. Thus, since his death, this space is dedicated to institutional memory and was occupied for most of the 20th century by the Oswaldo Cruz Museum. Since the creation of Museu da Vida, the space has been dedicated to an exhibit on the lives of Oswaldo Cruz and Carlos Chagas.

In a new reformulation proposal, the exhibition will discuss the history of public health in Brazil, emphasizing the contribution by Fiocruz in this scenario. Both Oswaldo Cruz and Carlos Chagas appear as key characters in this history, which will discuss the consolidation of the idea of a public health system, the need for the system's nationwide expansion, and the importance of technological production in this scenario, particularly vaccine production.

9. Final remarks

The Plan for Requalification of the Manguinhos Historical and Architectural Heritage Site (NAHM) provides for greater use of the historical spaces at Fiocruz by the population, shifting many activities to other locations and expanding the exhibit areas, while actively pursuing the preservation of this heritage. This will allow Museu da Vida to rethink its own relationship to its territory. This project is thus an opportunity to view the historical site as integral part of a place that experienced enormous changes in the 20th century. It is important for this Plan to be a vector for the institution to act in local social development, integrating the site in the cultural map of the city of Rio de Janeiro. In addition, through the approach between the science exhibitions and historical areas, it will foster a greater dialogue between traditional history exhibitions, with their objects and collections, and contemporary science communication, seeking to diminish these tensions and view a history that deals with both the past and the present.

References

BEVILAQUA, Diego Vaz *et al.* (Orgs.) *Museum of Life: Science and Art in Manguinhos.* Rio de Janeiro: Fiocruz/ Casa de Oswaldo Cruz, 2017.

CASA DE OSWALDO CRUZ. INSTITUTO BRASILEIRO DE ADMINISTRAÇÃO MUNICIPAL. *Plano de Ocupação da Área de Preservação do Campus Fiocruz Manguinhos: POAP—Documento Final.* Rio de Janeiro: [n.p.], 2011.

DEAN, David. *Museum Exhibition: theory and practice*. New York: Routledge, 2003.

FUNDAÇÃO OSWALDO CRUZ. Casa de Oswaldo Cruz. Plano de Requalificação do Núcleo Arquitetônico Histórico de Manguinhos. Documento de Referência. Rio de Janeiro: Fiocruz/COC [n.p.], 2014.

NOGUEIRA, Inês Santos; ROCHA, Luísa Maria. Coleção museológica da Fundação Oswaldo Cruz: Do culto à saudade à memoria institucional. IN: *XIX Encontro Nacional de Pesquisa em Ciência da Informação—ENANCIB* 2018, Londrina: Universidade Estadual de Londrina, 2018.

OLIVEIRA, Benedito T. (Coord.); COSTA, Renato G. R.; PESSOA, Alexandre J. S. *Um Lugar para a Ciência: a formação do campus de Manguinhos*. Rio de Janeiro: Editora FIOCRUZ, 2003.

PINHEIRO, Marcos José de Araújo *et al.* Arquitetura E Espaços Museológicos: Experiências a Partir do Plano de Requalificação do Núcleo Arquitetônico Histórico de Manguinhos Na Cidade Do Rio De Janeiro. *Cadernos de Sociomuseologia*, v. 57 n. 13, p. 69–107, 2019.