LUMEN ET VIRTUS

Galbinski's legacy: The design premises of the monumental buildings of the central library and the university restaurant of the University of Brasilia

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ABSTRACT

The architecture was developed in such a way as to meet the needs of society. It, which in the early days was intended to serve only as safe shelters, currently must also promote harmony, beauty, comfort and well-being. Knowing this, at the time of the construction of Brasília, an imposing university was thought of in which the library and the restaurant were of equal magnitude, to represent its professors, researchers, students and technicians. This challenge fell to the architect José Galbinski, who designed two monumental buildings: the Central Library and the University Restaurant of the University of Brasilia. In 2016, an in-person interview was conducted with Professor Dr. Galbinski at his workplace in which information was collected about the process of creating these works, focusing mainly on his design premises. Therefore, the main objective of this scientific work is to share such information from when these works were still only in the realm of ideas and to share the story of the creator José Galbinski and his creatures (Library and Restaurant). To quantify the success of these premises, questionnaires were answered by its users, who evaluated the degree of comfort of these constructions. These results of the questionnaires will be explained shortly.

Keywords: Galbinski, Project Premises, Monuments, Library, University Restaurant.

INTRODUCTION

The architecture was developed in such a way as to meet the needs of society. In the beginning, its function was to be a safe shelter to protect humans from inclement weather. Over time,

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the demands changed and the architecture ceased to have the function of being just a shelter, also becoming welcoming, and should present harmony and beauty, promoting comfort and better living conditions. By accepting the challenge of designing a house, building or monument, the architect aims at the well-being of its users.

According to Kowaltowski and Labaki (1993), the elements that, even in the preliminary project, are handled by the designer are: volume, shape, distribution of spaces, dimensioning parameters and the location of the openings. These elements, combined with the natural surroundings, largely determine the performance of the buildings. The refinement of details, the choice of materials and the inclusion of specific equipment are used to ensure a good level of comfort and environmental performance.

These elements must be considered during the premises of an architectural project. The premises are the fundamental principles and guidelines that guide the designer during the development of his creative work, establishing directions for decision-making related to design, planning, choice of materials, among others.

Knowing this, an interview was conducted with the architect José Galbinski, responsible for the design of the Central Library (BCE) and the University Restaurant (RU) of the University of Brasília (UnB), monumental buildings that represent the students, professors and technicians of this university that influences Brazilian science and architecture so much. In addition, questionnaires were answered by its users to assess the degree of comfort achieved. Therefore, the objective of the present scientific work is to share the design premises of how much these buildings were still only in the plane of ideas and, briefly, to compare and explain the perceptions of their users to see if these premises were fulfilled.

MONUMENTAL BUILDINGS

Monumental buildings are constructions of large size and historical, cultural or religious importance that, in general, are the way for a given society to express its identity, values and beliefs. Such constructions are often used as symbols of an era, a people or a culture, and carry with them a symbolic value far beyond the built space itself. In some cases, these spaces are used as a form of propaganda or landmarks of important historical events, serving as an element of preservation of the memory of an era or a people and even being left as a source of inspiration and pride for future generations.

As an example, one of the wonders of the world can be mentioned, the Pyramids of Giza, one of the most emblematic monuments in the world to this day, built by pharaohs of Ancient Egypt as a symbol of the power and wealth of the time. There is also Christ the Redeemer, a statue located at the top of Corcovado Mountain, in Rio de Janeiro, built in 1931 as a representation of Christianity and

the identity of part of the Brazilian population. And then there is the Notre-Dame de Paris cathedral whose fire in 2019 caused considerable damage to this historic symbol.

These monuments, known as built heritage, anchor the psyche of society in several ways. Firstly, as a symbol of a people's cultural identity, helping to understand the history and values of a society and showing how ancestors lived and how they thought. Secondly, this heritage is a source of inspiration and pride, showing what a society is capable of accomplishing and inspiring to be better and to build a more solid and prosperous future. Finally, the built heritage is a place of memory. It helps a people to remember the past and learn from it, constituting an important part of the cultural heritage.

Buildings can help us feel connected to the past. It gives us a sense of identity and place in the world, helps us feel part of a community, and can be a meeting point for people, enabling the creation of a sense of common identity.

MONUMENTS IN BRAZILIAN MODERNIST ARCHITECTURE

In 1917, in São Paulo, the initial milestone of the Brazilian Modernist Movement occurred with the exhibition of paintings by Anita Malfatti. His works were innovative and, for this reason, caused a lot of controversy. His works portrayed mainly the marginalized characters of urban centers, which caused great disapproval from the more conservative social classes for not presenting the painting that referred to the perfection they were used to.

In February 1922, the Week of Modern Art took place at the Municipal Theater of São Paulo, consolidating the modernist movement. In it, Brazilian artists from different areas sought innovative ideas so that the aesthetic perfection so appreciated in the nineteenth century was considered outdated. Artists craved their own freedom of expression. Because they did not follow the pattern already established previously, there was a lot of misunderstanding and dissatisfaction from the general public.

Architecture, as an expression of art that it is, was also strongly influenced by this movement. Following the new cultural trend, other factors were also decisive for the emergence of Modernist Architecture, such as the territorial dispute during the Great Wars and the consequent migratory movements, the advances in construction technologies and the advent of new materials. This new way of thinking about architecture broke with its historical condition and proposed to rationalize solutions within an objective vision.

Thus, modernist architecture was characterized by its simplified, geometric and unadorned forms. The material was valued in its essence and, therefore, concrete was usually chosen, especially because it presents ample plastic possibilities and offers great constructive potential. The "Modernist House", considered the first residence with modernist architecture in Brazil, was designed in 1927

and built in 1928 by the design of the Russian architect Gregori Warchavchik (1896–1972). The Modernist House was built to house the architect himself, who had married the daughter of a great businessman from the São Paulo elite. His work generated several discussions among society in general, even leading to the publication of articles in newspapers and magazines with contrary and favorable opinions. His work was so impactful that, in order to get approval from the city of São Paulo to build it, the architect presented an elaborate and ornate façade in the project and, upon completing the work, claimed lack of resources.

However, despite the lack of acceptance by the elite, the Brazilian government, which at the time was experiencing the Estado Novo period led by Getúlio Vargas, remained willing to invest in modernist architecture. For the construction of the new headquarters of the Ministry of Education and Health (MES), which previously worked together with other ministries, the Minister of Education and Health Gustavo Capanema refused the winning project of a competition, because the winning proposal was the neocolonial one with Marajoara decoration, and he longed for an innovative and modern building.

Then, in 1937, the building of the Ministry of Education and Health (MESA), now the Capanema Palace, began to be built and, in 1945, it was inaugurated. Currently, this work is considered a milestone of the coming of age of Brazilian modernist architecture. After the success of the MES, modernist architecture became the official style of public works, as the Brazilian government aimed at modernizing the country.

Another milestone in the history of Brazilian modernist architecture was the construction of the new headquarters of the São Paulo Museum of Art, better known as MASP, inaugurated in 1968. Conceived by Assis Chateaubriand, MASP is a large rectangle of 30m x 70m, contains two floors and is suspended 8m from the ground. Each floor has 2,100m² and the lower floor is dedicated to the administration and exhibition room, while the upper floor to the art gallery.

Between the 30s and 40s of the last century, Brazilian Modernist Architecture created strength. However, its apex came with the construction of Brasília during the 50s and 60s. Born from the hands of architect Oscar Niemeyer and the urban layout of engineer Lúcio Costa, the city is the representation of Modernist Architecture, not only in Brazil, but also worldwide.

Doing justice to its importance, the new capital was declared a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1987, which was an admirable fact, since only secular cities had been listed previously. Souza (2009) highlights this singularity when he states that "[...] the monuments of Brasília mean innovation and boldness for Brazilian engineering and architecture". Thus, Brasília becomes a place in which several studies can be done due to its architectural peculiarity.

Another great example of modernist architecture in Brasília is the Central Institute of Sciences of the University of Brasília (ICC-UnB). Made entirely of precast concrete, this building clearly shows how the simplified and geometric form, without adornments, and the material, in its essence, were valued, justifying the strong presence of exposed concrete throughout the university.

Two other modernist works present at the University of Brasília are the University Restaurant (RU) and the Central Library (BCE), both designed by architect José Galbinski. The UnB campus is a rich collection of the history of Brazilian architecture and should be explored to the fullest by researchers and scholars. Thus, these last two buildings mentioned, as well as their conceptor, will be the objects of study of the present work.

THE ARCHITECT JOSÉ GALBINSKI

Impactful in the Brazilian architectural scene, it is considered valuable to use lines summarizing the life story of architect José Galbinski. Born in 1933 in Porto Alegre (RS), he graduated in architecture and urbanism from the Federal University of Rio Grande do Sul (UFRGS) in 1957. In 1968, he moved to Brasília due to an invitation made by UnB to reopen the Faculty of Architecture and Urbanism (FAU), which had been closed due to the impasses of the military dictatorship, holding the position of executive secretary. The invitation was made because Galbinski was an architect who stood out in his profession, and also because he already had experience in exposed concrete when he lived in Porto Alegre. About two months after his move, he was appointed head of staff to do the architectural design of BCE.

In 1974 he moved to Boston (USA), where he began his studies at the graduate level at the *Massachusetts Institute of Technology (MIT).* In the same year he went to Ithaca, New York, where he studied for 4 years at *Cornell University*, where he obtained, in 1978, the title of Ph.D. He thus became the first academic architect with a doctorate in architecture in Brazil.

With his study and experience, in 1993 he wrote the book "Physical Planning of University Libraries". He taught for 25 years at UnB and was also director of the Architecture and Urbanism course at the University Center of Brasília - UniCEUB. A lover of brutalist architecture, he left his mark on several works, mainly in Brasilia, such as the Nautical Pavilion, the Thomas Jefferson House and the Inter-American Development Bank. He passed away in 2023 at the age of 90, but not before leaving his mark on Brasilia and Brazilian architecture and inspiring several professionals and students, not only for his works, but also for his person.

Figure 1: Arquitect José Galbinski.

Source: Interview channel of the Federal Court of Accounts (TCU).

THE CENTRAL LIBRARY OF THE UNIVERSITY OF BRASILIA

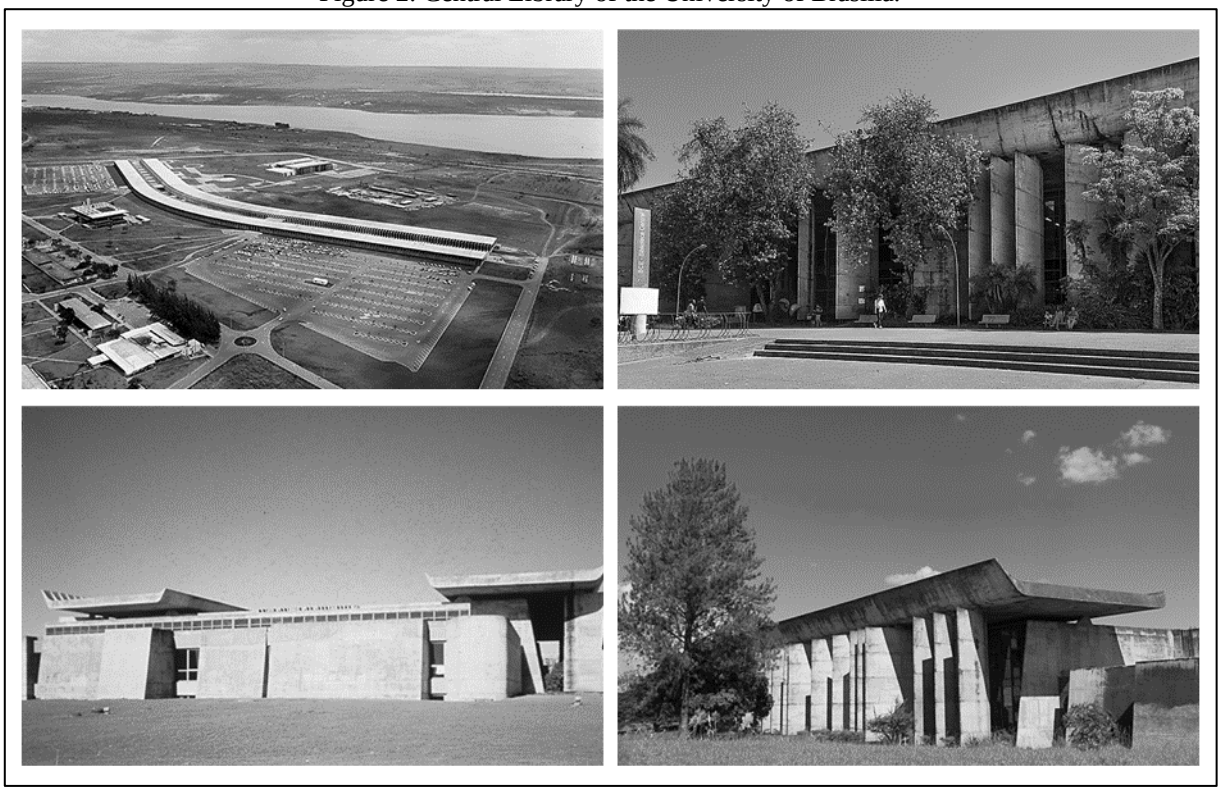
The first UnB library was opened in 1962 and operated in the building of the Ministry of Education (MEC) on the esplanade of the ministries. After the inauguration of the *campus*, its second location was in the General Services Block 12 (SG-12) of UnB, until, in 1973, it moved to its definitive building (SANTOS, 2013).

In May 2016, an interview was held in person at his workplace, at the University Center of Brasília (UniCEUB), in which it was possible to gather precious information directly from the source about the history of the projection of these two monuments that are the focus of this work. In this way, it was discovered that, delivered in 1969, the BCE-UnB project was made by Galbinski on a weekend, a time when the architect had fewer interruptions and external interference, being able to concentrate better. Occupying a total area of 16,000 m² and designed for 750 thousand volumes, it was the designer's will that this building should have monumental size. It is worth mentioning that, by monumental, he did not want the building to be large, but rather to be striking and have a presence, so that it would be a symbolic building that represented the culture of the university.

The Library is located in the Praça Mayor, a place that, according to Santos (2013), was planned to receive the library and the rectory, which are currently in place, in addition to the buildings of the Museum, the Aula Magna and the Living Center, which after all were not built.

This was the first building to be designed to be a library, and it was also the first Central Library in Brazil, that is, the first to concentrate the content of all the departments of the University, opposing the system of diverse libraries that was used until then.

Figure 2: Central Library of the University of Brasilia.



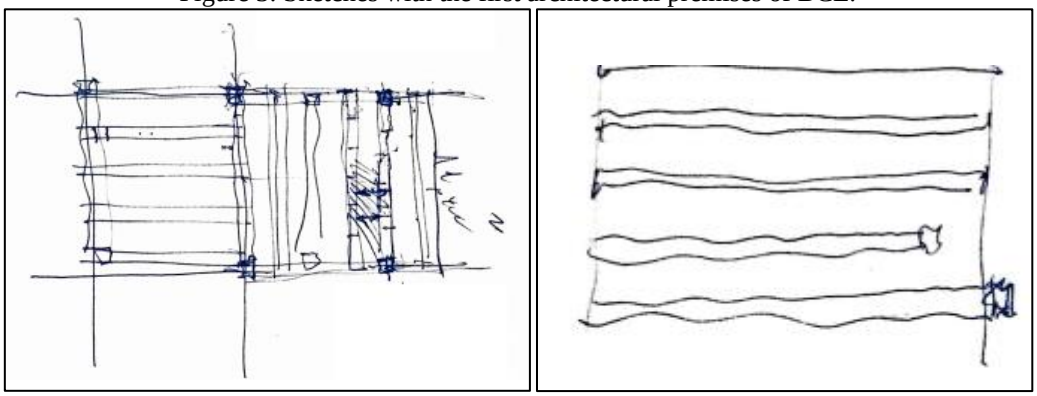
Font: Secom/UnB.

PREMISES OF THE ARCHITECTURAL PROJECT OF BCE-UNB

In the aforementioned interview, information on the project conceptions could be acquired. As he said, the main premise of the project was that bookshelves were the basic component of a library, especially at the time of its construction, when computers were not widely used.

With this in mind, already in the preliminary study, the designer's main premise was that the circulations between shelves should be clean and free of pillars, and that the succession of shelves should follow a pattern, not being chaotic. This was possible to design because, in the 60s, library shelves had a standard measurement determined by an international standard, that is, the shelves used in Brazil had the same size as shelves in other countries. Therefore, Galbinski determined that the pillars should be square, so that they would allow mobility in the arrangement of the shelves, and with 51cm wide on each side - a standard measure for the shelves. The Figure 3 presents valuable drawings made by Galbinski himself during the interview to expose what was only in the realm of his ideas in the BCE project premises.

Figure 3: Sketches with the first architectural premises of BCE.



Source: Oliveira (2017).

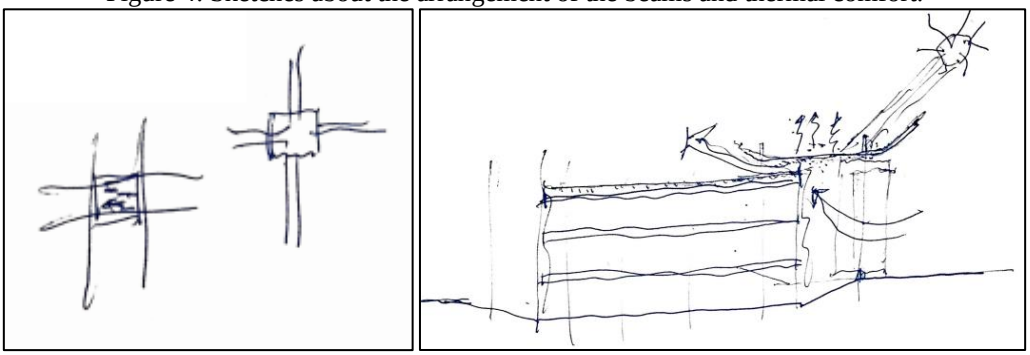
Still in order not to stiffen the distribution of the shelves, the architect determined that the intercolony modulation should also be square, allowing them to be arranged in two directions: east-west and north-south. Performing simple calculations, through the least common multiple, and based on the measurement of the face of the column, Galbinski arrived at the following dimensions that satisfied the arrangement of the shelves, regardless of their direction: measurement of the shelf plus the aisle equal to 1.47m; distance between pillars from axis to axis equal to 11.76m; and a ceiling height of 2.94m (twice the distance between the shelf and the aisle).

These were the dimensions thought by Galbinski so that everything would be harmonious. The calculator was left with the task of determining the amount of steel to be used, since the entire formwork of the structure was decided by the architect. As it is a library, the weight of the structure is very large and it should be calculated with extreme care.

Still thinking about the harmony of the environment, Galbinski decided that the beams should be at least the same 51 cm as the pillars so that they would not be disproportionate, according to the sketch in his own hand presented in the Figure 4.

The other premise is that, in order to contribute to the well-being of users and the conservation of books, the library should avoid sun and humidity. Thus, aiming at the thermal comfort of the site, two low thickness (5 cm) raised slabs, without thermal protection, were designed at the ends of the library. The elevation and narrowness of these slabs allowed that at 10 a.m. the heat of the sun had already crossed the thickness of the slab and the air present in the region just below the slab became hotter, even if only tenths of a degree, which generates a chimney effect in which the hot air must come out, imposing the entry of another air with a milder temperature. This process repeated countless times throughout the day ventilates the place. The Figure 4 presents a drawing made by Galbinski showing this ventilation scheme.

Figure 4: Sketches about the arrangement of the beams and thermal comfort.



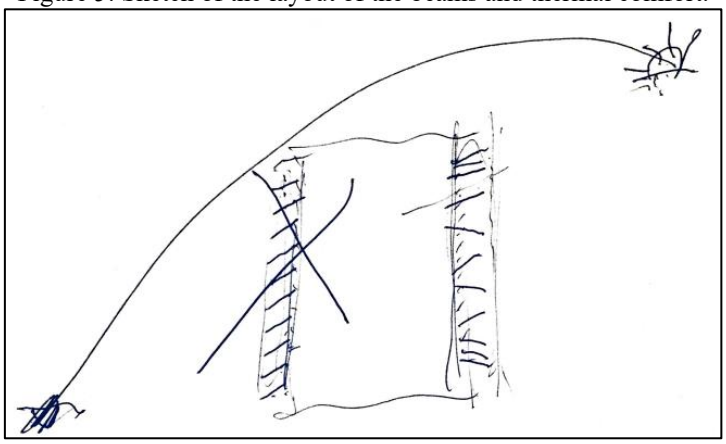
Source: Oliveira (2017).

According to Santos (2013), this building was implanted at lower levels of the land to increase the monumental character of the building and to leave it in harmony with the other buildings in the Main Square, unlike the ICC-UnB, which adapts to the natural curves of the terrain. Thus, the Central Library was left with three floors: the upper one, the high ground floor, and the lower one, in which half the height of the floor is below the ground line.

In addition, another striking component of the Central Library are the precast concrete louvers that serve to prevent the entry of the sun, which deteriorates the books and prevent the lighting from harming the students' vision, since, in a library, there are those who spend the whole day there. To prevent the entry of large natural lighting, on the southeast and northwest faces, large vertical reinforced concrete slabs function as *brises-soleil*, limiting the entry of solar radiation.

At first, Galbinski positioned these large louvers in an orderly manner, that is, all perpendicular to the façade. However, his artistic side thought that this arrangement was too systemic, reminiscent of army orders in a period when the dictatorship was at its peak. Then, in an act of rebellion against the dictatorship, he determined that the brises be arranged in an irregular but harmonious way, through the different angles that they were built. Although this decision allowed a greater entry of solar radiation, which was not desired, the architect believed that the benefits of this decision were greater than the harms. The **Erro! Fonte de referência não encontrada.** shows the architect's line of reasoning in plan.

Figure 5: Sketch of the layout of the beams and thermal comfort.



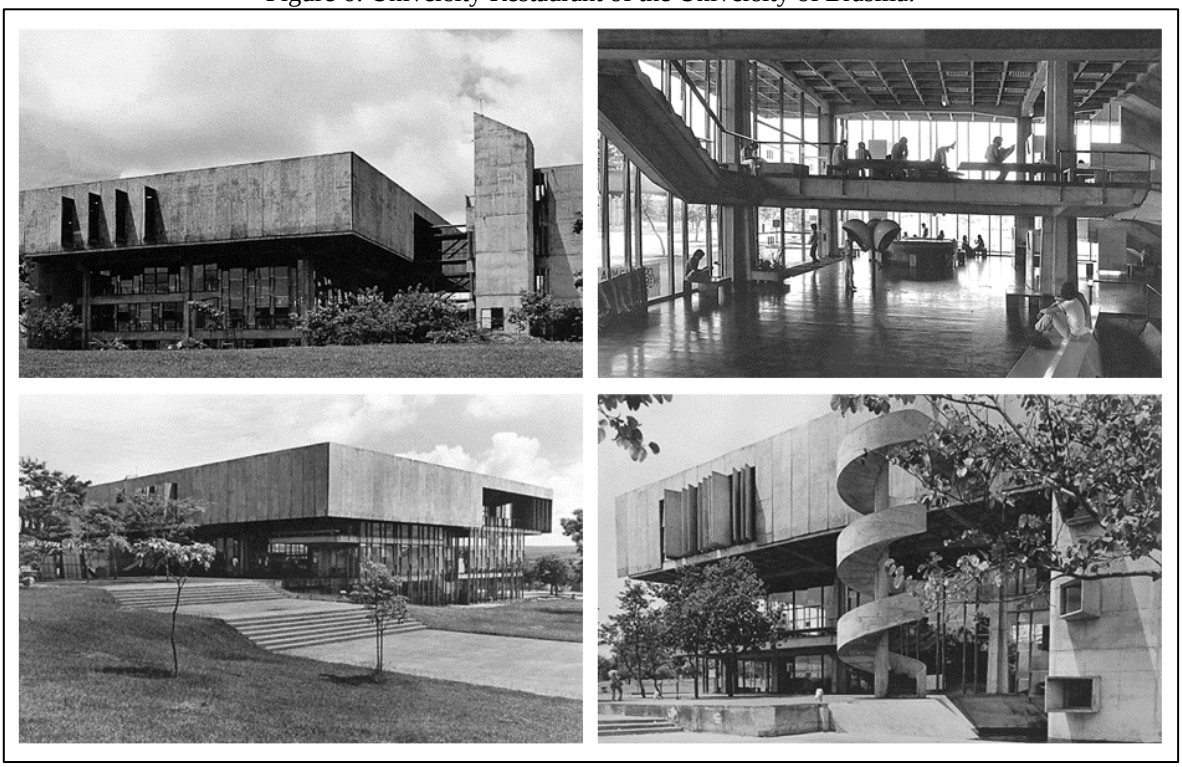
Source: Prof. Galbinki Collection

THE UNIVERSITY RESTAURANT OF THE UNIVERSITY OF BRASILIA

Although this building did not receive as much support and federal financial resources as the Central Library, since a library by itself has more status and represents more of a university, in an interview Galbinski confessed that it was in this project that he was professionally carried out and considered that he had reached architectural maturity. With the project delivered in 1972 and inaugurated in 1975, this was the first university restaurant built for this purpose in Brazil, becoming a reference for the others that came to be built later.

Located above the ICC-UnB, in the direction of its central region, the RU-UnB is a fundamental building for life on the *university campus*. Currently, the restaurant serves six thousand meals a day. According to Lima (2013), its built area is 6,300m² on 4 floors that include: 1 central kitchen, 6 cafeterias, 6 minute kitchens, 1 executive restaurant, 8 cash registers, 1 locker and toilets.

Figure 6: University Restaurant of the University of Brasilia.



Source: Personal archive of José Galbinski.

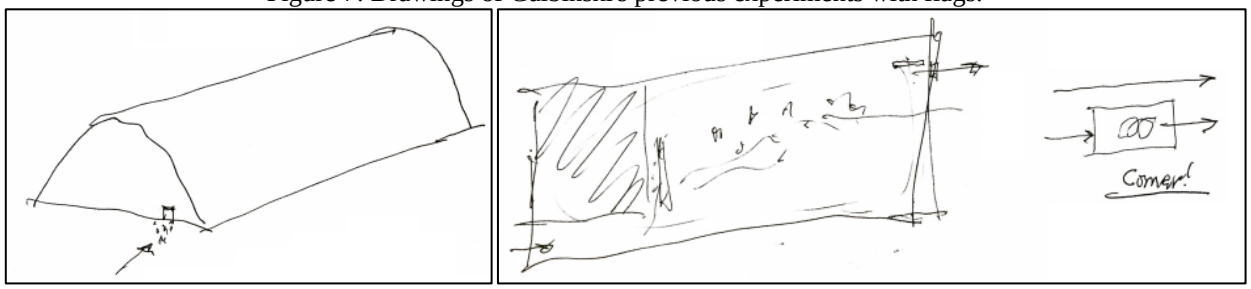
PREMISES OF THE ARCHITECTURAL PROJECT OF RU-UNB

In the same interview, the architect said that when he was taken by the challenge of designing a university restaurant, he searched in his memory for references of flags[5] he had already visited. He then remembered the flag from the Federal University of Rio de Janeiro (UFRJ), which he had visited when he went to meet his brother who was studying medicine at that university while he was still in his 2nd semester of the architecture and urbanism course.

Galbinski reports that the restaurant was located in an abandoned hangar, all closed, near the Tom Jobim International Airport (GIG). The feeling he had when he entered the place was not pleasant, living up to the nickname that the restaurant received from users: dungeon. In this restaurant, you entered through a small door on one side, circulated inside the building and left through another small door located on the opposite side. In this way, the circulation scheme of the environment was linear: they entered on one side of the hangar, ate and left on the other, as shown in their sketches in the

[5] Term commonly used by university students to designate university restaurants.

Figure 7: Drawings of Galbinski's previous experiments with flags.



Source: Oliveira (2017).

The architect also reports that, due to the great noise in the place, people could barely talk and all you could see when you looked up were people eating, giving an unpleasant manger feeling. Recalling this experience, Galbinski asked himself "what is a university restaurant?". And he realized that this was not an easy answer to get.

In order to answer this question, he recalled another experience he had had: his coexistence with dockers at the port, who also had a flag, when he still lived in Porto Alegre. Then, Galbinski began to wonder the difference that there should be between a dockers' gang and a student gang.

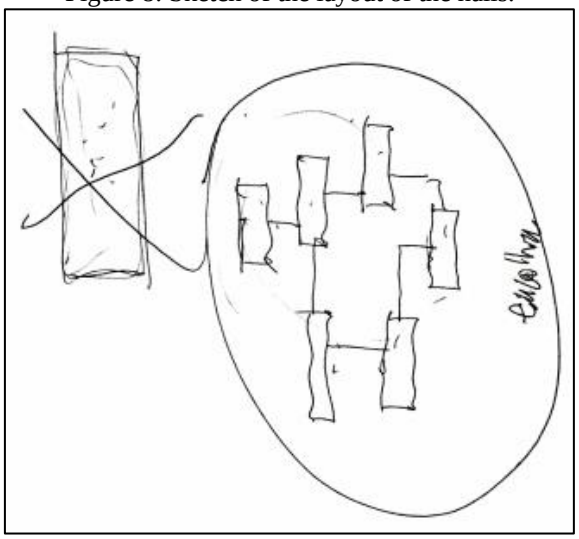
Another experience he had had that was fundamental for him to design RU-UnB was a visit to another restaurant with the same linear organization. The differential of this experience is that in this one there were wire meshes about 1 m apart that delimited the path to be taken by the students. This generated a revolt among the students, who felt driven like cattle.

Thus, through these three experiences and after much thought about the question "what is a university restaurant?", the architect found the answer: in a university restaurant, eating is essential, but much more is needed. The meeting is fundamental. At the meeting there was an exchange of culture, news, information. Socialization was paramount.

Taking advantage of this basic premise, the architect designed the RU-UnB with entrance and exit on both sides of the building, concluding that the movement in the restaurant should not be linear, but circular. This simple fact, although difficult to conclude, was the crucial starting point for the project in question and all the others that came to be built later in Brazil.

In order to make the environment pleasant, different from the large shed he had experienced in the restaurant in Rio de Janeiro, the designer divided the large hall into six so that users could choose where to sit, according to the sketch of the Figure 7. These halls have the same dimensions, but also have differences in their layout and quota.

Figure 8: Sketch of the layout of the halls.



Source: Drawings made by Galbinski himself during the interview.

Structurally, Galbinski decided to make a 10m x 10m square mesh. Being quadratic, he concluded that the pillars would be cruciform and would decrease in size as the floors evolved, and on the top floor, only the rigid core of the cross remained, to give the feeling of lightness.

USER PERCEPTION

In an attempt to quantify the degree of success of Galbinski's architectural premises, Oliveira (2017) applied a questionnaire in which 50 users from the UK and 50 users from the BCE asked about the thermal, acoustic and lighting comfort of these places. In this sense, the conclusion was that thermally and luminously, both works achieved success in their premises, or were, at least, acceptable. In terms of acoustics, the library is a big winner. However, in the UK, the noise at peak hours is quite loud and success has not been achieved.

FINAL CONSIDERATIONS

The Central Library and the University Restaurant of the University of Brasília are landmarks in the history of UnB, Brasília and Brazilian modernism and brutalism, an area in which Brazil is currently a reference. Certainly these monumental buildings were models and inspirations for contemporary architects and for future generations. Although the acoustic comfort in the University Restaurant was not completely achieved, the levels of thermal and light comfort were achieved in both buildings, although to varying degrees. Overall, environmental and visual comfort were successful. The fact is that the influence, beauty and grandeur of these works are indisputable, and it can be said that the design premises were fulfilled.

The possibility of immersing oneself in these works when they were still only in the realm of ideas and of knowing how the creative process was such beautiful and complex achievements is a

heritage that belongs to Brazilian society, and this is the great contribution of this article. With this study, it is clear that Galbinski's works, innovations and research left a Brazilian legacy that resonates worldwide to this day, both as a professional architect and as a citizen. Therefore, his mission accomplished, with Galbinski being the reference of the type of mind that Brazil should be proud of having.

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