

Salvador, 16 de Setembro de 2016

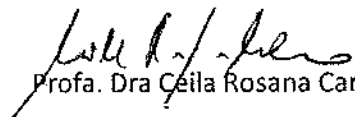
Prezada Diretora da FAUFBA

Profa. Dra. Naia Alban Suarez

De acordo com o publicado no DOU e constante em meu histórico funcional, venho me apresentar em retorno, após participação no 14th DOCOMOMO International, em que estive apresentando a arquitetura de Lelé na Bahia, registrando a participação da FAUFBA e representando o DOCOMOMO Bahia.

Encaminho atestado de participação e artigo publicado no congresso em via impressa entregue na diretoria.

Atenciosamente,

  
Profa. Dra. Ceila Rosana Carneiro Cardoso

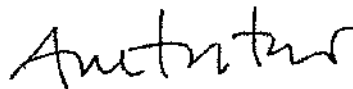
**CERTIFICATE**

**docomomo** International certifies that

**Ceila Rosana Carneiro Cardoso**

attended the 14<sup>th</sup> International **docomomo** Conference – “Adaptive Reuse. The Modern Movement Towards the Future” held in Lisbon, at the Calouste Gulbenkian Foundation, between 6 and 9 September 2016.

Lisbon, September 9, 2016

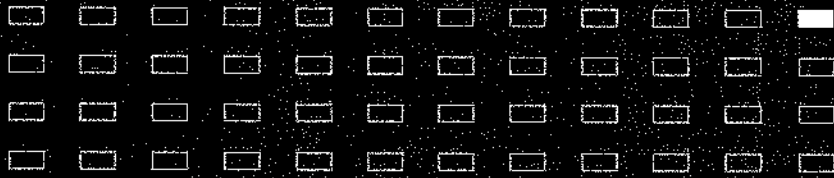


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# In (+) Tangible Heritage: The Schools of João Figueiras Lima, Lelé

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Just 2 years ago, we lost João Figueiras Lima, known as Lelé, one of the most important Brazilian architects of his generation. Beginning with the construction of Brasília, as a young architect, he worked together with Oscar Niemeyer and developed a brilliant career dedicated to public facilities, especially schools and hospitals. This paper aims to discuss his tangible and intangible heritage by presenting Lelé's architecture, with special attention to his prefabricated schools built in the 1980s, in Salvador, Bahia.

Lelé developed a special system of prefabricated buildings that arose from his analysis of the Brazilian reality: the shortage of public resources, its cultural and industrial issues, tropical climate and the challenge of constructing as a technical and industrial issue. Lelé built many schools using prefabricated mortar, lighter and more flexible than prefabricated concrete elements. Despite their importance and efficiency, some of these schools are in serious risk of disappearing; they are often disfigured and some were recently demolished by the public administration, under the assumption that they could not be recovered anymore. However, we have reason to believe they could be adapted for new programmatic needs using the same system and elements that Lelé first conceived, since he included in his designs the possibility of spatial arrangements suited to different programs and deployments. As the deeds of a man transcend his very existence, it is necessary to think about realistic efforts to ensure the preservation of Lelé's architectural ideas, maybe as something even more important than the physical integrity of his buildings.

In conclusion, this study aims to affirm the value, adaptability and efficiency of Lelé's architectural concepts, presenting his own system as a valid option to the refurbishment of his buildings, even if by changing their initial configurations, and also to affirm the importance of preserving his heritage.

## 1. INTRODUCTION

"The path of beauty does not always demand to be imbued by the fact to make something beautiful; sometimes you make something beautiful through a rational way".

Just 2 years ago we lost João Figueiras Lima, known as Lelé, one of the most important Brazilian architects of his generation. Lelé was born in 1932 and graduated in 1955 from the National School of Architecture of Rio de Janeiro. As a young architect, he worked together with Oscar Niemeyer in the construction of Brasília, the Brazilian dream of modernity.

In Brasília, Lelé developed his first studies on streamlined construction processes, starting a brilliant career dedicated to public facilities, especially urban infrastructure, schools and hospitals.

The quest for constructional efficiency and logical architecture were some of his most important commitments. Starting with practices of construction ration-

alisation, the industrialisation of architecture marked his quest for technological solutions, especially designed to fulfil the human needs in terms of functional spaces and beauty.

This paper aims to discuss Lelé's tangible and intangible heritage by presenting his architecture with regard to his pre-fabricated schools built in the 1980s, at Salvador, Bahia.

## 2. THE PLANNING CENTRE OF BRASÍLIA, 1957

Lelé went to Brasília to help construct the new capital buildings that were to be erected in a very short time. Just because of this need, he started his experiments on prefabrication at the construction site.

A few years later he became the coordinating teacher responsible for the Building Techniques subject at the School of Architecture of the University of Brasília (FAU-UNB) and executive secretary of the Planning Centre (CEPLAN), an organisation aimed at developing and establishing a standard for Brasília's buildings.

As leader of CEPLAN, Lelé travelled to Eastern Europe to investigate technical aspects of large-scale industrial production that were brought into practice and to develop construction systems compatible with the Brazilian reality: the shortage of public resources, its cultural and social particularities, the tropical climate and the challenge of constructing as a technical and industrial issue.

## 3. THE URBAN RENOVATION COMPANY, SALVADOR, 1978

Lelé left Brasília to take the post of technical coordinator of RENURB (Company of Urban Renovation of Salvador). This company was created with the purpose of establishing a broad process of public urban improvements, starting with Salvador's public transport project (TRANSCOL), financed by the International Bank for Reconstruction and Development (IBRD).

Between 1978 and 1982 the architect coordinated the office of public projects supported by a plant of prefabricated components of concrete and reinforced mortar, a technology introduced in Brazil by the engineers Frederico Schiel and Dante Martinelli in 1969 at the University of São Paulo.

From his knowledge about the potential of this construction system, Lelé developed a pilot experience in Camurupipe Valley carrying out sanitation works with minimum interference in existing sites<sup>1</sup>. The areas were characterised by disordered occupation, irregular topography and low mechanical resistance soil. It is important to mention that part of this work devised by Lelé included the empowerment and participation of the local community, working with the support of this innovative technology.

Though this process, parts were moulded for the construction of retaining walls, rainwater and wastewater drainage channels and stairways leading to bus

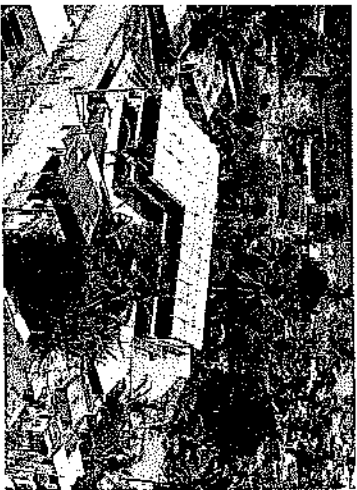


Figure 1. João Filgueiras Lima, Modular School in Pituaçu, Salvador, Brazil, Architects' file, 1988. © João Filgueiras Lima's Archive.

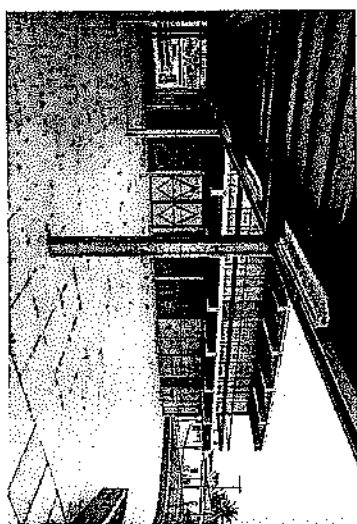


Figure 2. João Filgueiras Lima, Escola Modular in Nova Brasília, Salvador, Brazil, Architects' file, 1988. © João Filgueiras Lima's Archive.

stops and terminals distributed through the city along the watersheds. Street furniture, such as police booths, benches, bus shelters, newsstands and rubbish bins, built using the technology of reinforced mortar, were also part of the renovation program established for the city of Salvador. Also, at this time the Lapa Transhipment Station and some public schools were built using mixed semi-industrial technology.

The RENVIB experience left a big legacy to Salvador: making the city something better. All equipment deployed in various urban sectors contributed much to improve the quality of life of the population and to establish new typological standards, of which the formal language stands out in the city's landscape, becoming a landmark and the hallmark of the architect's role in Salvador.

#### 4. THE TRANSITORY SCHOOLS, ABADIÂNIA, 1982

Considering the successful experience at Salvador, the mayor of the city of Abadiânia invited Lelé to build bridges on local roads and rural temporary schools. It was at this small rural village, in the central part of Brazil, where his works with prefabricated lightweight elements were first employed in a school architecture program. By using this technology, he implemented a civil construction components industry in this countryside.

Lelé used to say it was his most important work experience. It started with an unpaid collaboration to support a community pastoral project developed by Brother Mathews Rocha. Together they faced the need to build bridges and schools, in the middle of nothing, with the help of a few townsmen, many of them having never worked as builders before.

From this very first experience, encouraged by the local community and the Ministry of Education and Culture, Lelé developed a research project to build while saving resources and reducing completion time. He conceived a simple

solution by creating a modular dimension system using a selection of small prefabricated elements made of reinforced mortar.

The Transitory Schools were to respond to local realities, to meet its particular needs. The rural models consisted of a simple manufacturing system based on fully collapsible and extensible building units for communities in need for more flexible spaces that could be enlarged or shrunk by moving partitions. This solution allowed the eventual achievement of wider spaces for multiple activities and the possibility of a total relocation of the building.

There were three standard school templates in this program: sized to fit 50, 70 and 120 students with an integrated health centre. The extensible and flexible building units featured the adopted system. The blueprints were very didactic, in such a way that communities could build without skilled labour or using machinery during the assembly process.

This extremely important research experience proved that it was possible to adopt advanced technology and obtain high quality products with the help of unskilled labour. It was successful in the search for building solutions aimed at optimising available resources, whether human, technical or material<sup>3</sup>.

#### 5. THE FACTORY SCHOOLS, RIO DE JANEIRO, 1984

Invited by the Governor Leonel Britzola, Lelé founded the Factory of Schools in Rio de Janeiro. In two years, they produced more than two hundred schools, kindergartens and community centres to meet the demand of the population of Rio's slums and suburbs.

It was a significant building experience and an important improvement in comparison to the Transitory Schools Project. The modular partitioning was the same, but there were a larger number of elements and more complex arrangements. The incorporated solutions related to ventilation issues, lighting, climatic

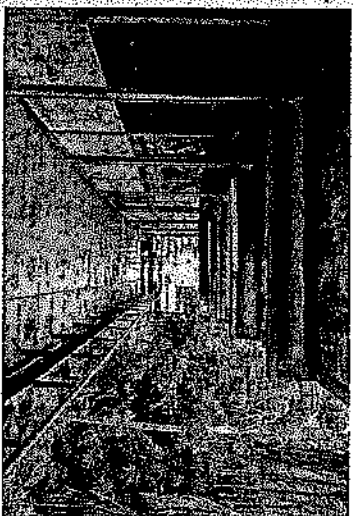


Figure 3. João Filgueiras Lima, Modular school in School of Fine Arts - UFRB, Salvador, Brazil, 1989. © Celso Cardoso, 2015.

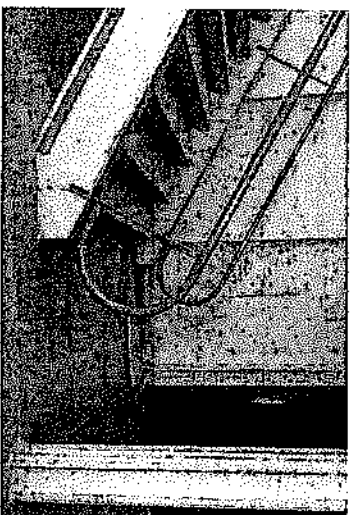


Figure 4. João Filgueiras Lima, Modular school at Faculty of Architecture - UFRB, Salvador, Brazil, 1988. © Celso Cardoso, 2015.

comfort and storm water runoff in the overall design of the building system are also remarkable in these projects.

The programs were quite flexible, presenting an architectural design that attended to the variety of needs, situations of physical implementation, and construction standards. Furthermore, a formal identity and the technical qualities and appropriate functional aspects for the proposed environment were established. The spatial conformation of the plans was adapted to the morphological conditions and terrain limitations, depending on the community needs and the disorderly physical-spatial structure of the slum areas.

At this time, Lelé incorporated the works of the artist Athos Bulcão into the industrial pre-fabricated school architecture, bringing with him his happy colors. Professor Athos was Lelé's partner since the time of his early works, and his participation not just complemented, but also engaged with Lelé's architecture.

## 6. THE FACTORY OF CITIES, SALVADOR, 1985

Lelé's experience in coordinating the Community Equipment Factory – FAEC, also called Factory of Cities – working for the municipal administration of Salvador, produced school buildings to the city's poor neighbourhoods and built them all, as well as kindergartens and community centres in Salvador's peripheral areas, especially slums. More than 40 schools were constructed in Salvador.

Difficulties with access, high population density topography and small parcel sizes were adversities that he used as motivations to continue improving the precast mortar schools, reinforcing his idea of making architecture as a process, becoming better with each experience.

The FAEC two-storey schools left the factory completely ready to be mounted at the chosen site. Its assembly was completely dry, with no need to use any workable mortar in the process.

Lelé dreamed, made and showed us, from the first schools at Abadiânia to the schools at Salvador, the way of making an ever more efficient architecture, reaching for an evolutionary state akin to "a human hand carrying a cup, something that cannot be further improved", as he used to say.

## 7. ADAPT TO PRESERVE

Despite their importance and efficiency, some of these schools at Salvador are today in serious risk of disappearing. Many are disfigured and some were recently demolished by the public administration, under the assumption that they could not be recovered anymore.

However, we truly have grounds to believe they could be adapted to new programmatic needs using the same system and elements that Lelé first conceived, since he included in his designs the possibility of spatial arrangements suited to different programs and deployments.

The systematisation of knowledge incorporated in Lelé's work leads to a professional practice with big, actual and current questions: how to produce a technologically feasible, environmentally efficient and socially fair architecture.

By recognizing its importance, in us was born and raised the interest and sense of duty, as architects, teachers, and citizens to help make his work survive as it deserves, much more than physically, but as a way to understand and make architecture.

As the deeds of a man transcend his very existence, it is necessary to think about realistic efforts to ensure the preservation of Lelé's architectural ideas, maybe as something even more important than the physical integrity of his buildings.

In conclusion, this study aims to affirm the value, adaptability and efficiency of Lelé's architectural concepts to date, presenting his own system as a valid option for the refurbishment of his buildings, even if by changing their initial configurations, and also to affirm the importance of preserving this immaterial heritage.

Architecture, thought by Lelé as something much bigger than form, "an instrument of integration, as a way of being culturally present"<sup>3</sup>, is also much bigger than materiality; it is a construction of knowledge, a legacy to the future.

## REFERENCES

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## NOTES

1. João Figueiras Lima (Lelé). In Giancarlo Latorraca (ed.), *João Figueiras Lima Lelé, Brazilian architect*. São Paulo, Blau/Instituto Bardí, 2000, 31.
2. As Lelé explains, the works with lightweight prefabricated mortar were motivated by the precariousness and singularity in the organization of parcels and the geographic and topographic peculiarities of each location, rendering the application of traditional methods of drainage and basic sanitation unfeasible due to the social problems generated by the flow of heavy machinery which could cause the removal of a large number of homes". *Ibid.*, 105.
3. See "The path of João Figueiras Lima, Brazilian architect", accessed on March 11, 2016, <http://www.vtrwvius.com.br/revistas/read/arquitextos/16.181/55924en>.
4. The idea of recurrence in architecture, as well as in nature, improving its quality, was present at Lelé's everyday speech, and is known to every person who has worked with him. The HERBERT Institute also recorded his words in video. Source: Institute Brasileiro de tecnologia do Habitat (IBRH), 2010.
5. *Ibid.*, 26.



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