



Lighthouse for the knowledge society

Low-energy mediatheque

Rio de Janeiro, Brazil

Regional competition Holcim Awards Silver 2008 Latin America; jury appraisal page 79

With the 1955 building bursting at the seams, the aim of the Pontifical Catholic University of Rio (PUC-Rio) is to establish an architectural landmark as well as to reach out to the informal community that lies on the university's doorstep. PUC-Rio has a vision of a central mediatheque that provides an integrated and adequate space for its library, visitors, computer labs and staff. A small architectural studio in São Paulo has a sustainable answer to the many requirements.



“A building or room containing a collection of books or periodicals for use by the public or the members of an institution.” This definition of a library from the Oxford English dictionary leaves many things unsaid. Principally, its symbolic power – the demonstration of civilization and culture represented in what would otherwise be considered a simple collection of books.

The Italian writer Umberto Eco describes the library as “a universal brain”. The 18th century French revolutionary architect Etienne Louis Boullée believed there was no greater ideal for the National Library in Paris than to be “a worthy monument for the nation”. But no one places its value higher than Argentinean poet Jorge Luis Borges: “heaven itself is a library”. The fact that libraries are important social and political institutions is not only on the basis of quotes from eminent personalities. The

symbolic meaning lies in the physical structure itself. The 79 meter tall new National Library in Paris, designed by Dominique Perrault and opened in 1996, sets the theme for the whole city quarter in which it is located.

A beacon of learning

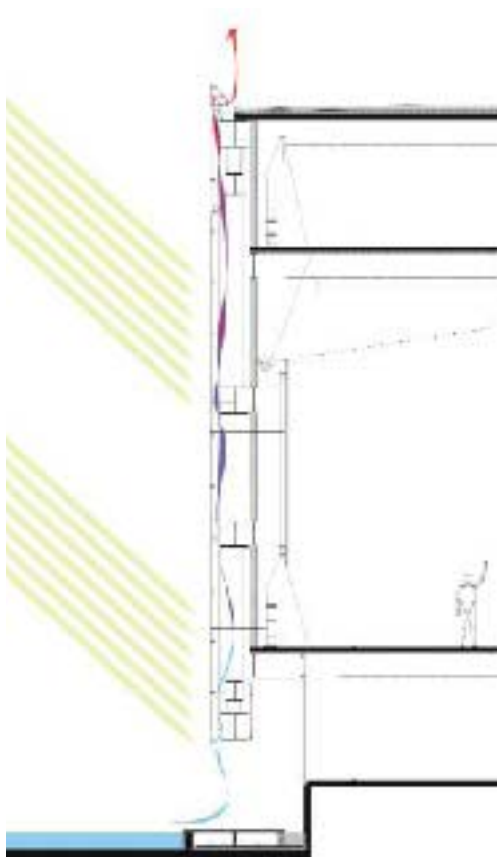
A university campus library also fulfills this iconic role, exemplifying humanity’s quest for knowledge, within its surrounding environment. PUC-Rio is the oldest private



The new mediatheque of PUC-Rio is designed in two parts – the support building houses the book collection and administration; above it is the public space.

university in Brazil and boasts a treasury of some 250,000 volumes. When the campus was originally built, more than 50 years ago, a central library to house the university’s knowledge was part of the construction. But the fast growth of the university over the years outpaced planning ideas, requiring additional library facilities to be spread across the campus in improvised facilities.

Now, with some breathing space, a competition was launched for the design of a new mediatheque. The brief: to encompass all existing collections within 7,000 square meters, including room for 800 computer terminals, exhibition spaces and an auditorium. The new building would be a lighthouse not only for knowledge on campus, but beyond.



Water-cooled ventilation from beneath the mediatheque prevents heat build-up and lowers the ambient air temperature.

Reading as a social indicator

There are hardly any libraries in Rio's south where PUC-Rio is located, but many potential readers. In the vicinity of the campus is Favela da Rocinha – with 100,000 residents, the largest informal squatter settlement in Brazil. The mediatheque is designed with these potential users in mind. As well as being a knowledge base for the university, it will be open to the general public. Reading is an important social indicator in Brazil, one that was promoted by the establishment of a UNESCO Chair in Reading at the university in 2006.

To be incorporated into the new mediatheque, the department is responsible for the training of specialist educators in reading and literacy programs for children, youths and adults. PUC-Rio's plans for an expanded central library therefore are much more than for a unified repository of its

books. A cultural and architectural landmark will be built to accommodate more than 3,000 visitors each day.

A small dynamic team

The winning design was developed by a small dynamic team from the architectural studio SPBR. Its name may appear cryptic, but stands simply for its location - in São Paulo, Brazil. Angelo Bucci leads a team of four. Not only is he a well-known designer, but a respected educator. He lectures at his

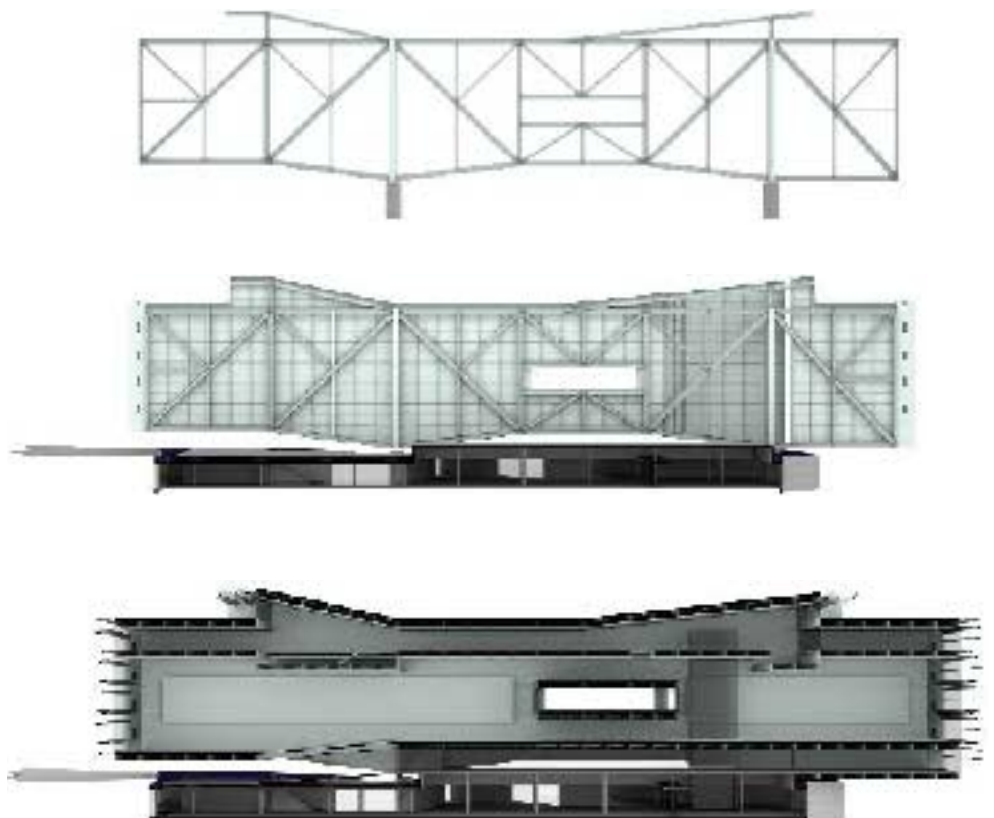




hometown university as well as at Harvard and MIT in the United States. There, surprise at the small size of his studio is often expressed, as much as at the wide variety of work they are capable of handling. Together with the architect are three former students – João Paulo Meirelles, Juliana Braga and Ciro Miguel. They work on projects as diverse as homes, schools and cultural centers. Now a landmark library will be added to the portfolio.

Two ground levels

The concept for the mediatheque is designed around its dual program needs – the housing of the university’s book and periodical collections and administration, and separately, the public space for students, researchers and visitors. The result is two buildings – stacked one on the other but connected via a communal plaza. The sloping site gives the impression of two



The structural steelwork of the upper building is fixed to the support building at only four points – appearing to float in space as well as enabling a good use of space in between.



The main reading room pays homage to the printed word, and leaves plenty of empty space for thinking.

ground levels which create an integrated effect. Via the lower-ground level, access is provided to the book collection and offices of the support building. Books are housed in a glass core surrounded by office space. This configuration reduces the energy demand for controlling the temperature and humidity of the collection.

The 90-meter long public mediatheque has been placed atop the support structure. Via its upper-ground level access this space is linked to the main university building. The mediatheque is anchored to the lower building at four points. The remainder of the roof of the support building is a huge reflecting pool over which it seems to float. Integrated into the design is a plaza which acts as a connection hub for the complex – from it are ramps and stairs to different

“This is a building for everyone.” Angelo Bucci

areas of the two buildings. Its positioning will also guarantee its use as the main meeting place on campus. It is an open space, accessible to all. “This is a building for everyone,” Angelo Bucci says.

300,000 books and 800 computer terminals

The ramp to the top of the mediatheque leads to a nine-meter high public reading room. “We want to celebrate the book,” João Paulo Meirelles explains. He cites the example of the Stockholm Public Library,



Juliana Braga and João Paulo Meirelles.



designed by Gunnar Asplund in 1928 – from the rotunda at its center radiate four wings, leaving the impression of a cathedral built in homage to the printed word. Its symbolic effect is something SPBR’s design also achieves.

While reflecting the optimism with which the centre for knowledge and learning is perceived, practical considerations have been factored into the building’s design. Space is provided for 300,000 books in expectation of the collection’s growth despite earlier predictions that the digital age would lead to the demise of the printed book. With a shift towards electronic journals and growing demand for Internet

resources, access to the online knowledge is accommodated with 800 computer terminals located within the building.

Sustainable technologies despite difficult conditions

The main reading room is open to both north and south, shaded by sun-sails. In order to prevent heating and direct sunlight, the 90-meter longitudinal façades have no windows. A void is integrated into the design, like a piece of outside space enclosed inside the building that works as a natural lamp. It also acts as a balcony to which a reader can withdraw and enjoy a view of the city. Meanwhile, two sections of glass floor on the level above allow natural

The reading room is open to both north and south. A void integrated into the building acts as a natural lamp, an attractive meeting-point of inside and outside space which also serves as a balcony with views over the city.

light from the clerestory to pass through. The rationale of this design is to reduce energy consumption – as simple as that.

An important design feature to enhance passive cooling is the pool on the roof of the support building. Poured onto the slab as soon as it is cast, the water makes the surface impermeable as well as provides effective thermal insulation. It acts to cool the outside air, the breeze circulating in and under the main mediatheque building to prevent heat build-up and lower the ambient temperature. Rio’s temperature can climb to 40°C in summer and combines with high humidity to create sweltering tropical conditions. Although air-conditioning is included in the building’s design, such

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“It’s not just about technology, a good building should always be a green building.”

João Paulo Meirelles

passive measures will help keep its use to a minimum. Angelo Bucci believes that it will be unnecessary for at least the four winter months of each year.

Single measures have little impact

The reflecting pool has another function – as part of the campus fire control system. In Brazil each building needs to incorporate a reservoir for emergency use in case of fire. In this case, the pool is an innovative solution to serve multiple purposes. Which begs the question why such an idea is not integrated into other building designs. “The topic of sustainable construction sometimes leads to misunderstandings,” Juliana Braga

explains. “A single ecological measure may be included in a design, but no thought is given to the building as a whole. At the end of the day, it can have little impact.”

“Standards or following international trends can be misleading,” João Paulo Meirelles adds. “Apartment buildings out of glass, for example, may be applauded but we find them difficult to justify from the perspective of climate control and the energy consumption needed for air-conditioning.” The young architect believes in locally adapted solutions. “It’s not just about technology,” he says, “a good building should always be a green building.”



Angelo Bucci.





The end of the book?

Is it even reasonable to build a library in today's modern context? The end of the book has been predicted for years, and it is true that the dissemination of knowledge and literature is no longer as it used to be. Today we can import entire libraries into a computer, and through the Internet the vast bulk of published texts are a mere click away.

The book as a medium continues to show its resilience. At the world's largest book fair in Frankfurt, over 400,000 new titles were presented in 2008. A new book is published somewhere in the world every thirty seconds. The Italian author Umberto Eco identified a reason for the popularity of the book: "A book to read is one of the wonders of perfected technology, such as the wheel, the spoon, or the hammer," he wrote. Humanity would not want to be without books because "books can be picked up anywhere, even where there is no electricity, and even when every battery is dead."

Typically Brazilian design

The design of the library follows the tradition of modern art in Brazil. "There has been no significant post-modern art movement here, modernism continues to reign supreme," says João Paulo Meirelles.

The best proof is the ongoing popularity of the "sculptor of monuments" Oscar Niemeyer who retains preeminence in modern Brazilian architecture. "It is no coincidence," continues the architect, "Brazilian architecture developed out of engineering, and is strongly influenced by structure".

The design of the new mediatheque is therefore typically Brazilian: the structure of the building is not hidden, but celebrated. João Paulo Meirelles continues with enthusiasm to detail the technical features of the building – such as the outer skin of

SPBR – the initials stand for São Paulo Brazil and belong to a small architectural studio (from left): João Paulo Meirelles, Juliana Braga, Angelo Bucci, Tatiana Ozzetti and Ciro Miguel (not pictured).

the horizontal façade created from a single 5 mm plate of steel which not only provides protection from the weather, but reduces heat gain by shading the wall behind it.

The strength in empty space

The upper building seems to float above its supporting structure. Yet the latter is no simple block. It is irregularly formed to adapt to the landscape and preserves the existing trees. Besides, this irregularity provides a lot of freedom to accommodate administrative spaces. "We integrated the building into the existing space to reduce its impact," Juliana Braga explains.

Niemeyer's vision of incorporating empty space into structures is also echoed by

the mediatheque design. The reading room celebrates emptiness and spacious architecture as much as it does the book. The goal, to design an architectural landmark for the city of Rio, has been achieved.

Positive reactions

A fundraising program is underway and approval by the Ministry of Culture qualifies the project for a tax bonus program. The SPBR team remains confident they will see their project built. "The problems with the book collections on campus must be solved," Angelo Bucci says. "The UNESCO Chair already exists. The opportunities to bring the public in for educational programs are waiting to be tapped."

He believes 2010, as planned by the PUC-Rio team, will see building works commence. "Our design has received positive reactions everywhere!"