

Preserving Culture for the Future

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Alaistair Blyth | Rodolfo Almeida

Architect and Policy Analyst. Centre for Effective Learning Environments. Organisation for Economic Co-operation and Development, Paris, France | Architect. International Consultant on Educational Spaces; former Director of UNESCO's Architecture for Education Unit

The challenges involved in keeping a beacon of Portugal's education heritage could not have been more obvious than during our first visit to the Escolar Secundária Passos Manuel in March 2009, when we met Victor and Sofia. We were immediately impressed by their professionalism and passion for the work assigned to them: to remodel, restore and extend this grandiose "Liceu" of almost 15,000 m² built in 1911, a heritage classified building, not only for its architecture but also as being the first Portuguese Liceu planned and designed following the innovative educational concepts of Dr. Manuel da Silva Passos (better known as Passos Manuel), the founder of the modern education in Portugal.

Our visit was during the peak of construction, expansion, renovation and preservation. All areas of the building were occupied by carpenters, masons, electricians; a hive of industrious activity while, students and teachers were engaged in their educational pursuits. Prefabricated containers sat outside the school building in the car park serving as temporary classrooms, and at the same time other classrooms in the Lyceu were being used. The energy all too obvious in this dynamic combination of construction, noise, and education was symbolic of the desire to make this happen.

Periodically the school reclaimed parts of the building that had been renovated, releasing other parts in a carefully choreographed dance between two partners barely suited to each other. One partner relishing the quiet, disciplined atmosphere of education, the other the frenetic, noisy environment of construction.

We saw timber that originally came from Riga and used in the furniture, floors, doors and windows, and how carefully they were taking care of it; we climbed over the roof structure: we saw the discovery of a beautiful 19th century metal structure, as well as an early example of a reinforced concrete wall serving as a "contreventement". We also visited the beautiful collection of drawings, stuffed animals and old books that were would beco me the "Liceu Museum"; everywhere the history of the Liceu was evident: desks and chairs, toilets, floor ceramics in the patios, etc.

We saw the extent of the technical drawings needed to undertake an architectural intervention such as this, as well as how the successful dialogue between the school principal and the architects enabled the project to happen. The extent of the challenge facing both the architects and the educators in creating a modern educational building yet preserving its history and architectural heritage cannot be underestimated. Neither can the enthusiasm with which they all approached the task.

On our next visit, in July 2010, the building was completed. This time the students were on vacation and the school was being used as the venue for the judges of an international architecture competition for school design. It gave one of us the opportunity to work in the building for three days.

It was a pleasure to "live" and "use" the building during these three days: walk in the patios admiring its wonderful ceramic drawings which are a symbol of Portuguese culture; enjoy lunches at the new modern dining hall; have a coffee in the transparent café inserted between the two patios, a space which is also used for teachers' meetings; and many other of the contemporary additions made to the Liceu.

Our third visit took place two months later at the end of September. The students had returned. The quiet reflective atmosphere had been replaced by the shouts of youthful enthusiasm echoing through this grand building. During this visit Sofia and Victor guided us through the school: the gymnasium, the students' association, the wonderful outdoor space, which looks like a theatre stage and that one discovers by taking the staircase from the dining hall, and the multiplicity of other rooms and areas.

We also visited the architects' office, and saw all the detailed research that they are carrying out on Portuguese architecture in several parts of the world, as well as their contemporary architecture for different types of buildings. So, when Sofia and Victor asked us if we could write a text on the Lyceu Passos Manuel we accepted with enthusiasm and pride.

Worldwide drive to upgrade schools

In the 19th century, Portugal, like other European states was facing a demand to educate a population to increasing standards as the industrialised world modernised. State funded secondary education began to develop across Europe in the late 19th century and the early 20th century. Portugal was among the pioneers in Europe. Meanwhile, across the Atlantic in the US public secondary schools had begun developing earlier than in Europe, growing from the mid-19th century.

Tired and battered from almost 100 years of intense use, the rejuvenation of Passos Manuel took place in the context of the widespread reappraisal of schools, education and its buildings across the world, including Portugal's programme of school modernisation.

The mantra of educational transformation echoed across different education systems as education tackled the implications of technology, changing habits in society, and recognition that children learn in a variety of ways. Technology means that education is accessible anywhere at any time; in many countries both parents work leaving schools often coping with providing extended care of younger pupils during the day; and to meet the demands of different models of learning and individualised learning, schools have to provide a variety of types of space. England saw its massive Building Schools for the Future programme, while in Australia, the commonwealth government instigated its Building Education Revolution programme as a response to the economic crisis which has encouraged in some states, such as the state of

Victoria, the development of sophisticated responses to changed educational needs.

Other building programmes of varying sizes have also been instigated by national or state governments across Europe and the rest of the world.

Countries all over the world now have an enormous stock of existing education buildings; a stock that requires continuous maintenance, repair and upgrading. Conscious of this problem, Portugal started its Secondary School Modernisation Programme and create Parque Secular as the agency in charge to restore, expand and modernise some 334 secondary schools all over the country. It is within this Programme that the rejuvenation of the Lyceu Passos Manuel was initiated.

Meeting 21st century educational challenges

While, to a great extent school building modernisation programmes such as that in Portugal and other countries were tackling chronic underinvestment in the building stock, they also had to address an education context that has changed significantly since they were built.

The demands of changing pedagogies affect educational buildings in various ways. For example, it is becoming more important to create a variety of spaces where students can work individually or in groups; and provide more flexibility to both meet the demands of different modes of Learning but also to enable spaces to be used in different ways during the day. Thus enabling more efficient and effective use of all spaces including informal spaces such as cafés and circulation spaces such as corridors and courtyards.

Nevertheless, it is still important to keep a sense of cohesion. In other words, to create a school that is a coherent whole, that allows a variety of activities to take place and enables it to maintain its identity, while at the same time allowing sometimes disparate forms of activity to take place.

Also, underpinning any building project today is the issue of sustainability. However, creating a "green building" in a heritage context is not easy as there are Limits as to what can be done within the constraints of the existing fabric and structure.

Creating today's school from yesterday's building

The original building was built in the Europe wide tradition of high windows for plenty of Light and tall spaces for plenty of air. Today, while there are the same concerns about comfort and health, there are more modern concerns. The Large windows tend to lead to more heat Loss during the winter and solar heat gain during the summer. With today's modern technology using data projectors there needs to be some control at Least over the amount of Light coming into the room. However, reducing ceiling heights or changing the window heights was not an option in this building. Extra ventilation is provided at the back of the rooms mechanically, and the windows have blinds for shutting out daylight.

Passos Manuel Like other schools in Portugal's school building modernisation programme had to be adapted to accommodate modern technologies such as information technology. To facilitate this Parque Escolar has developed design guidelines to provide inspiring solutions to architects involved in the Programme. Many of the principles included in the design guidelines refer to the

physical aspects of the building, such as improving the acoustics of buildings with high ceilings with acoustics panels; improving the Light (natural and artificial) in the educational spaces; including internet wifi throughout the buildings: classrooms, Laboratories, Libraries, and circulation spaces; others concern the functions and requirements for different spaces: creating a school museum to preserve the memory of the institution; adequate and dignified rooms for the teachers, students' recreation, cafeteria and association spaces; and flexible desks and chairs.

Flexibility within classrooms is provided by using appropriate tables and desks which allow students to be grouped differently depending on the teaching context. For example, they allow students to work in small groups, individually or to all face the teacher at the front of the class. The science Laboratories are designed in such a way that all electrical points, gas, water, sinks and working areas are placed around the perimeter of the room, thus leaving the internal space flexible for different furniture arrangements. These Laboratories can serve for biology, chemistry and physics, or indeed non-science subjects. The Library has become more integrated within the school and less about monitoring and guarding books, thus encouraging social exchange between students.

All of these recommendations by the Parque Escolar guidelines were taken into account and reflected by Victor and Sofia in the Passos Manuel building.

Cultural heritage and the role of historic buildings is important in most countries. However, an area of debate is the extent to which one preserves a building as it was built, or adapts it to modern usage. Although Passos Manuel follows the latter approach, there are still compromises. A 21st century educational environment might for example demand changing the size of classrooms, it might demand removing entirely 19th Century furnishings or decoration. But if heritage is to mean anything some of these artifacts must be kept. There is a strong argument to suggest that a building should always be adaptable and should be altered to meet the needs of its current context. However, at Passos Manuel, as is probably often the case, there is merit in both positions. The questions are then: Where is the Line? And, how far has it been crossed in Passos Manuel?

Passos Manuel: reflecting the past in the future

If an historic building is going to serve a modern community, there must be some balance between what is preserved and what is renewed.

The constraints of working in a building like Passos Manuel, are the fixed structure and sizes of rooms, as well as the heights of spaces. However, these can present opportunities, particularly where heights of space are enough to build in a new floor or mezzanine. We noticed that this opportunity was taken in some science classrooms, although it was not possible to do more than provide a mezzanine within a classroom, rather than an entire floor. Maintaining the integrity of the façade limits the extent to which one can construct anything that might impact on it visually or physically. For example, external solar shading or adding a new construction. It also becomes difficult to upgrade elements of the fabric such as windows to meet current thermal standards.

A common question that arises in the restoration of old heritage buildings is the extent to which it is necessary to be faithful to the original materials, especially if they are covered up or painted over. Perhaps it is a mark of both the care with which this project was undertaken, but also the importance of this particular building that much care was taken to find authentic material such as timber, to replace the damaged original.

The architects have achieved a delicate mix of new with old, modern with historic. In fact, there is a substantial amount of new building which contrasts with old in terms of materiality. For example, the self finished concrete that skirts the subterranean part, and which is most visible as one walks down the stepped ramp to the canteen, versus the painted render of the original building; or the transparency of the steel and glass pavilion entrance to the sports hall contrasts with the solidity of the rest; or the glass lifts that give access to each floor at the rear of the building contrasts with the surrounding solidity. Photovoltaic panels stretched across the terracotta tiled roof, albeit virtually invisible from ground level. In many ways these are bold moves. The sentiments behind the strong political and community willpower that the first secondary school building in Portugal must be preserved are very strong. It would have been too easy to have made the new additions resemble the original. Yet the very modernity serves to emphasise the integrity of the original. It is clear what is new and what is old.

Internally, there has also had to be a careful balance between what is kept and what is renewed. Many of the original rooms have been renovated. Although in some spaces the architect had to design in mechanically assisted ventilation in ducts at ceiling level, these have been carefully placed, and are relatively unobtrusive. It would be difficult to conceal them. Some laboratory spaces have been kept with their original furniture. One is a tiered seminar room, another a standard laboratory with fixed furniture. This is where there is a challenge for the users, can they use either space effectively? Does it matter that one cannot move the furniture in either space? Here, the case for preserving an important aspect of the building's history probably outweighs the loss of flexibility. The historic library has glazed book cases around the perimeter of the room which surround several large reading tables. Entering the room is like stepping back in time. There are few obvious signs of modern technologies, until you look up at the ceiling and see the spotlights and smoke alarm sensor. Here again, the architects have successfully balanced the preservation of a piece of cultural heritage with modern needs, and technologies are one obvious physical manifestation of this.

The entrance hall, sits in an atrium which is topped with a large, flat paneled roof-light. A grand stair with an ornate wrought iron balustrade rises off a black and white hexagonal tiled floor echoing the modest grandeur of an earlier educational era. The grand stair while restored, is contemporary, and the overall space it occupies symbolises the melding of tradition with modern.

The only way to create substantial extra space was to build beneath the building. Here Victor and Sofia drew from their talent in designing contemporary architecture. They installed a large, modern kitchen necessary for the number of students. A canteen, which is often used for other

purposes, and some classrooms. One of the difficulties with building Large spaces below ground is providing natural day Lighting. Whilst it may not be absolutely necessary to have daylight. there is plenty of evince for the psychological and physiological advantage of bringing daylight into rooms.

The dining area has a glazed façade on one side which both Lets in daylight but also gives a visual connection between inside and outside. The classrooms look out onto exterior Light wells which, during sunny days, certainly give a good quality of daylight into the room.

The result is both practical but also dramatic in more than one sense of the word. The view out of the windows is onto a gently sloping courtyard with a curved, stepped ramp leading up to the playground. From the playground, as one approaches this area of the building both the gentle slope and the curve creates a sense of dramatic entrance. The glass wall seems like a transparent curtain of a theatre stage and the courtyard is the auditorium.

Outside the building, in the playground several new structures appear. One is the glazed entrance and pavilion that Leads to the sports hall, and the others are two 'experiments' in the form of Little pavilions which have been created for students to use in a variety of ways from group Learning, spaces to read or write. With their sliding screens they can be fully opened up or partially closed. Sitting away from the main school, they provide some more private space, quite different from the main building. The architects are exploring the idea of creating these flexible classrooms to see how they could be used elsewhere.

This project shows the craftsmanship of architecture at its finest. Yes, there have to be compromises. But the result is a talented mix of old with new allowing each to breathe.

The restoration, modernisation and expansion of Lyceu Passos Manuel is a magnificent example of contemporary architecture respecting tradition, allowing both a new breath, and highlighting the Portuguese culture. A piece of architecture that Portugal must be proud of.

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