Designing for Education

COMPENDIUM OF EXEMPLARY EDUCATIONAL FACILITIES 2011

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Introduction

The objective of the Compendium – since its inception in 1996 – is to record the latest developments in educational facility design as well as to present exemplars from which policy makers, educators and architects can draw to inform and inspire decision-making.

CELE’s fourth Compendium, Designing for Education not only does this. It also presents an opportunity to celebrate the advances made in educational facilities since the last edition five years ago and to look at how the development of educational facilities has led us to this point.

The publication of Designing for Education coincides with the 50th anniversary of the OECD and the 40th anniversary of the Centre for Effective Learning Environments (CELE). Much has changed in educational facilities over that time, both in how they are designed and what is expected from them.

Part 1, entitled Meeting the needs of education, includes a retrospective that looks back at the development in education during the life of CELE and its predecessor, the Programme on Educational Building (PEB). It reaches back even further to include the period immediately before PEB. This retrospective is seen through the eyes of PEB and latterly CELE, and so records the preoccupations of its members – largely national and subnational authorities – as well as experts involved in CELE/PEB. The context and the drivers of educational facility planning largely stem from the perspective of how governments can meet the changing needs of education, such as demographic shifts, individualised learning approaches, greater community use of facilities, and integration of ICTs.

Following the retrospective, three experts advance different viewpoints, providing thought-provoking reflections for all those who have a stake in creating an infrastructure that will enable tomorrow’s learning environments to develop over time.

The second, by Julia Atkin, explores how the learning space can be better designed to support teaching and learning, identifying the essential qualities of that space. Two case studies illustrate the application of these ideas.

The third perspective, written by Teresa Heitor – who works for Parque Escolar which is responsible for Portugal’s secondary school building modernisation programme – explores the challenges of remodelling existing buildings to meet the needs of education.

Part 2 showcases 60 exemplary educational facilities. The contribution of the physical environment towards improving the quality of education is the focus of the exemplars selected for the Compendium by an international jury. There are projects from 28 countries including both OECD member countries and non-member economies; together they illustrate a wide variety of solutions and provide a range of ideas for reflection.

The needs that an educational facility must satisfy are complex. Ultimately, the facility must provide an effective learning environment in a given context. To create such environments requires the participation of all involved from those setting policy, to those managing, using and designing the environment. A publication such as this provides a language for communication between these different stakeholders. In doing so, it aims to assist them in meeting both the demanding needs of the present and the uncertainties of the future.

Chapter 6: Commendations

- Fuji Kindergarten, Japan
- Bertha von Suttner Schule, Austria
- Instituto Tecnológico de Iztapalapa, Mexico
- Liceo Técnico Profesional La Florida, Chile
- Art Building West, School of Art and Art History, University of Iowa, USA
- Secondary school in Dano, Burkina Faso
Fuji Kindergarten
LOCATION | TACHIKAWA, JAPAN

Designed to facilitate play and child development based around Montessori principles, Fuji Kindergarten is an elegant new school. One of the largest pre-primary facilities in Japan, the kindergarten can accommodate more than 600 children, providing welcome capacity in a city that has a long waiting list for nursery places.

The oval-shaped building makes full use of the tight urban site. The design maximises the space available for secure but unconstrained play, with a roof deck running around the entire single-storey structure and a large enclosed central courtyard. Three mature zelkova trees have been incorporated into the building, protruding through the roof to form a green canopy that provides welcome shade for part of the roof deck in summer.

The roof deck
The roof deck is an innovative play resource. It slopes towards the inner circumference, which at a height of only 2.1m allows staff at ground level to keep an eye on children playing up above. Railings have been placed at each edge to keep children safe, and the spaces between the balustrades are sufficient to allow children to sit on the roof and swing their legs over the eaves of the roof.

This design is striking, in many ways spectacular, and also playful. It succeeds in combining a clear and legible form while integrating the mature trees into the building. It is a building where play and learning are intelligently nurtured, where the building is grounded in the earth and linked to the sky. 

CELE jury
With no obvious start and end, children need no encouragement to run about on the roof. Staff calculate that some of the older children cover as much as 5km over the course of a day. Skylights allow children to look down into the rooms below. The three trees embedded in the building also form a play feature. Children can clamber in the branches or play in the nets that are placed around the trunks to prevent anybody falling through to the rooms below.

In keeping with the school’s educational ethos of non-directed play and discovery, there is no fixed play equipment on the roof or in the courtyard, with the exception of a slide linking the roof to the ground.

Open interiors
The school has been designed to allow children to mix and move around at will. There are no fixed walls between the classrooms, and children can move between class groups. When they have a problem, they can ask any of the staff for help, and they can join a group or play alone as their mood and curiosity dictates.

All furniture can be easily rearranged to accommodate different group sizes and different activities. As well as chairs and desks for the children, there are many wooden
D: Teaching spaces open out onto the courtyard.
E: Children playing on the roof deck.
F: Site plan.
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boxes that are used to partition smaller areas or to provide additional benches for seating. These boxes are also used to store play items, learning materials and children’s coats and shoes. This provides great flexibility, and the interior space is frequently reconfigured through the year.

For most of the year, the large sliding screens that form the inner wall of the building are pushed back, opening up the interior spaces to the sheltered courtyard in the centre of the school. This provides unobstructed views throughout the kindergarten. It ensures that the rooms are always well ventilated and, as a consequence, there is no need for an air conditioning system.

Other systems have been carefully designed to work in the open interior space. In the winter, when the sliding wall screens remain closed, the rooms are kept warm using a Korean underfloor heating system. Lighting can be adjusted using ceiling-mounted pull chords, allowing teachers and children to control the level of lighting in their part of the building.
Chapter 7: Multiple levels

- Complexo Escolar dos Arcos, Portugal (74)
- METI School of Rudrapur, Bangladesh (77)
- New Roundhouse, United Kingdom (80)
- Scuola primaria e secondaria Stefanacci, Italy (83)
- Schulanlage Leutschenbach, Switzerland (86)
- École Internationale de Manosque, France (90)
- Hazelwood School, United Kingdom (93)
- Holzkirchen Realschule und Grundschule, Germany (96)
- Sint-Gerardusscholen and Dienstencentrum Sint-Gerardus, Belgium (99)
- Tervaväylän koulu, Lohipadon yksikkö, Finland (102)
- Liceo Aldeas Educativas Rapa Nui, Easter Island (105)
- Escola Secundária Gabriel Pereira, Portugal (108)
- Ekonomiska šola Murska Sobota, Slovenia (111)
- Red de Innovación y Aprendizaje, Mexico (114)
Liceo Aldea Educativa Rapa Nui

LOCATION | EASTERN ISLAND

Rapa Nui is a Polynesian island in the Pacific Ocean, better known to the world as Easter Island or Isla de Pascua in Spanish. More than 2000 kilometres from the nearest inhabited land and 3500 kilometres from the South American continent, the island only has a population of around 5000 people.

Liceo Aldea Educativa Rapa Nui provides secondary and tertiary education on the island and it is an important community resource. The site for the new school was carefully chosen. The Rapa Nui community has strong ties with nature, and the school faces the ocean so that the “air of the ancestors” flows into the building.

Situated some three kilometres from Hanga Rau, the main town on the island, the school enjoys a large degree of privacy. This is important in an economy dominated by tourism, which often makes it difficult for local inhabitants to maintain their traditional routines.

Referencing local styles
The architecture of this new school respects and is inspired by all aspects of Rapa Nui culture. The school is organised around an oval courtyard. The shape and position of this courtyard echo ritual sites on the island and specific elements of the design are inspired by a local historic stone village and ceremonial centre of the southwestern tip of the island.

The shape of the classroom block is reminiscent of the shape and layout of moais, the famous monolithic human figures that are set on stone platforms along the island’s coastline. High, thin windows regularly punctuate the roof line, demarcating each classroom. They give the building a vertical rhythm and, viewed from the courtyard, the block appears like a line of moais looking at the sky.
With its clean white façade and ovoid shape, the computer room is the most distinctive building on the campus. This room is the focal point of the school. It is a meeting point and a symbolic “cradle of wisdom”. Its shape deliberately evokes that of the egg of the manutuira bird (the Polynesian name for the Sooty Tern).

Largely built of stone, with some concrete and laminated wood, the school has a very discrete profile and it does not detract from the island’s monuments. Furniture and equipment is designed to make students feel at home. Wooden sculptures and paintings have been commissioned to decorate the bare walls of the classrooms.

**Building on traditions**
School practices also adopt or build on Rapa Nui traditions. Many lessons are taught outside and when it rains students retreat indoors, taking off their shoes so that they do not dirty the white floors. There is no bell to signal the end of a class. Instead drums announce the breaks between lessons.

Part of the mission of the school is to rebuild respect for the sacred places on the island and to increase understanding of the legacy of the founding fathers. It encourages the participation of the community in educational activities and provides a meeting place outside school hours.

This respect for Rapa Nui culture, evident in the architecture and in the school ethos, is appreciated by the students. As one noted: “In this school we feel free, and we can learn and respect our teachers, but at the same time we feel they respect us as Rapa Nui people.”
B: The classrooms look out onto the central courtyard.

C: The site plan.

D: A school assembly.