NADESHIKO

KYRA CLAIRE WOOD
MOUNT BARKER, AUSTRALIA. 2003

In December 2002 (just before my final year of a Design Studies degree at Adelaide University) I was offered the opportunity to design a traditional Japanese Style Building for the Mount Barker Waldorf School in South Australia. I used to attend the school and had taken lessons with the Japanese teacher, Midori, at the school. Toshiko, a Japanese Home Economics teacher from Nagoya, went to the Mount Barker Waldorf School to assist Midori for a term. She loved the school and its students, but was saddened by the lack of an allocated space for teaching Japanese. She offered to give Midori her "nest egg" in order to have a classroom built which would give students an impression of Japan, Japanese customs and provide them with a peaceful and fruitful learning atmosphere.

Despite the small budget, the spirit of generosity, which gave birth to the idea of Nadeshiko, has carried on throughout its design and construction, and has helped us to realise Toshiko's dream.

Midori wished for Nadeshiko to be built in a traditional Japanese style, however in the design and construction of this building many compromises had to be made due to climatic differences, budget restrictions, local regulations, social appropriateness and material availability. The combination of Japanese and Australian vernacular, make this building a very unique expression of sustainable design. The orientation of the building for passive solar heating and cooling purposes, it's relationship to the landscape and views to significant landmarks such as Mountains and trees were vital elements in its design. The use of local, low embodied energy materials and local labour was combined with the expertise of a traditional Japanese carpenter who volunteered to help design and construct specific Japanese details for the building such as shoji for the windows and doors.

The children from the school also participated in the building process and learned traditional Japanese indigo dyeing techniques for the classrooms cushions. Their participation inspired them to take interest in the building itself and now they care for it and maintain it as part of their Japanese lesson curriculum. The building is an opportunity for them to learn about the kind of respect, which is shown to the building and the landscape in traditional Japanese culture. The building itself is teaching the people who use it, at the same time that it provides a space for them to learn about Japanese language and culture. The building has a very small footprint on the landscape, but a very large impact on the culture of the school.

With a small budget, with lots of support from the local and international community and with environmentally sound design, this building is an extra small yet special example of sustainable design in Australia. Ultimately, the continuing relationship between Nadeshiko and the people who funded, designed, constructed and now use the space is the most unique and sustainable element of the entire project.

ECO-EFFICIENCY SYSTEM CENPES II

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Petrobras launched a national contest for the elaboration of the architectural project of its new Research Center to be built in Rio de Janeiro, Brazil.
This project was the winner for meeting the challenge of the eco-efficiency in the architecture, creating external and internal ambients that seek ambient comfort for the occupants, the operational energy efficiency of the buildings, the possibility of clean energy generation and the use of the landscape and natural elements, such as topography, climate, winds and vegetation in the composition of the spaces, added to the privileged view of Guanabara Bay.
Defined by a predominantly horizontal concept, the implantation proposes a fully constructed complex, the buildings, interspersed with open spaces, integrated by means of the great central covering, the covered and uncovered areas environmentally enriched by the landscape treatment and by the consequent formation of shaded spaces.
The adopted concept also reflects an "open construction" condition that understands the use of space relative to time in function of the evolution of future necessities, outlining solutions of great flexibility for enlargements and reforms, according to new uses.
The axis of the complex is defined by the central circulation that interconnects the orthogonal buildings, destined to be laboratories, as well as the supply axis ("pipe-rack").
The great shade covering of perforated metal plate mounted on a space-framed structure performs a lung function to enable the covered gardens to breath and preserve the transparency of the space, allowing natural illumination, maintaining the use of the ventilation.
The systems were all conceived for the best use and maximum prevention of aggression to the environment.
-Appropriate use of solar energy within cost / benefit parameters.
-Use of the rain and the recycling treatment of water.
-Use of seawater intended as an appropriate solution for cooling equipment, avoiding the use of treated or pre treated water with evaporation
The use of natural light is featured in the architectural proposal in two ways: filtering the direct light (the sun) by the coverings and vegetation and by the wide incorporation of diffuse light.
With respect to the interior of the buildings, the proposal of mediation of the climatic conditions is marked by two main objectives. Firstly, the maximum use of passive strategies for the acclimatization, in the periods of favorable external conditions. In the same way, during the occupational periods corresponding to the need of active acclimatization systems - air conditioning, the protection given to the buildings achieves the function of minimizing the consumption of energy.

CENPES II - RIO DE JANEIRO
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