





Solar panels on second floor slab when completed, the space underneath the panels will be used as meeting places for the various departments.

CONNECTING SRI LANKA – TO THE SUN?

Introduction

As a nation frequently caught up in the throes of power crises, the need for Energy Efficiency and Environmental Sensitivity is keenly felt; now more than ever.

Buildings account for 50% of global CO₂ emissions; hence promoting and adopting sensitivity towards a healthy, energy-efficient and Eco-friendly atmosphere in their buildings is the onus of all Designers and building owners.

The Media Centre at Pelawatte, Battaramulla, Sri Lanka provides a unique experience in the manner in which traditional and modern technology has been employed, to provide methods of natural ventilation, cooling & daylighting, waste recycling, and for the first time in Sri Lanka's history, feeding the national grid with Solar PV electricity produced within the Media centre – a small, first step to the future.

Green Garden Concept

The entire design has been conceived as a space within a lush tropical

garden, whose colourful, architectural setting, not only serves as the backdrop for a pleasant work-environment, but also provides inspiration to those engaged in creative work. The vegetation is placed to ensure natural cleaning of the air; cooling extract ducts of the building are placed strategically to collect the air which is filtered through the lush flora. Vehicular access within is not permitted, thereby reducing noise and air pollution.

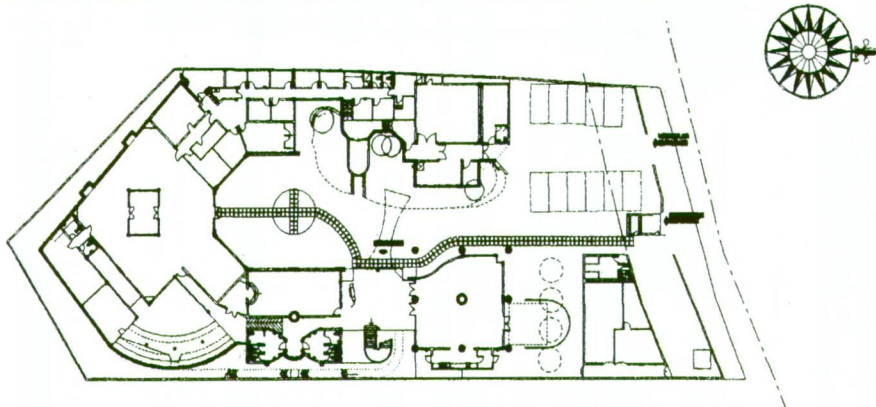
Natural and Safe Building Materials

Wherever possible, toxic and harmful building materials have been avoided. Timber, which is a bio-degradable, renewable material has been used but in minimum possible sections for doors & windows; the timber which has been used has been extracted from forests with ecologically-balanced felling programs only.

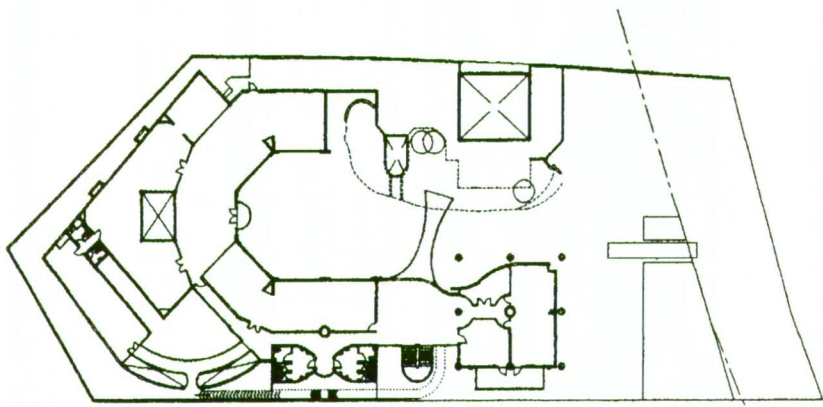
Imported Lead-free paints based on natural non-toxic materials, which cause minimum health hazards, are used in air-conditioned, confined spaces.

ARCHITECTS

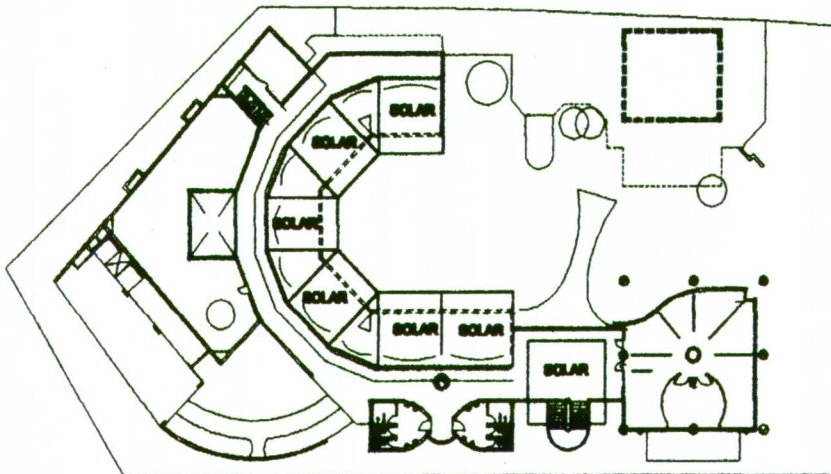
Lead Architect/Environment **Harold N. Rostvik**, Sunlab, Stavanger, Norway
Local Architects/Consultants **Kahawita De Silva & Associates (Pvt) Ltd**, Colombo, Sri Lanka



Ground Floor



First Floor



Second Floor

Layout Plans

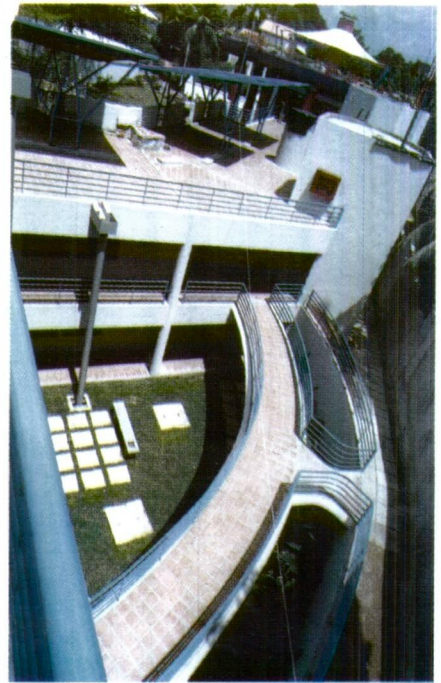
Optimum Use of Area & Material.

The Users, who are a group of Companies dealing with Media, Television production, Software Engineering and Information technology, are presently scattered throughout Colombo in six different locations. By gathering these different units together, an efficient use of time & energy in terms of communication, transport, etc., as well as a more rational use of space has been introduced by sharing common areas; this process has resulted in an area & material reduction of upto 30%.

Wherever Building Regulations do allow, concrete is substituted by less-harmful, locally manufactured brick work, while the use of Steel / Aluminium is limited.

Wastewater Handling.

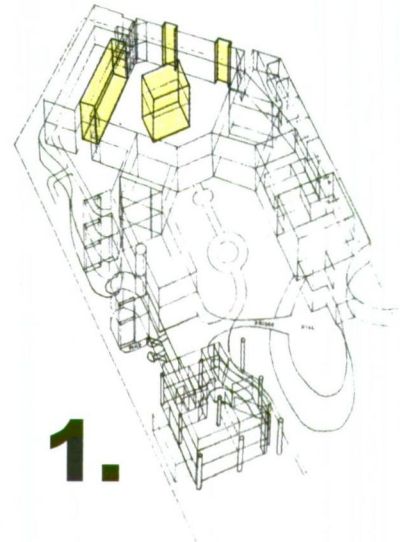
A public sewage system does not exist on site. All sewage from up to 450 people is treated on site in an Extended Aeration underground-type Sewage Disposal Unit.



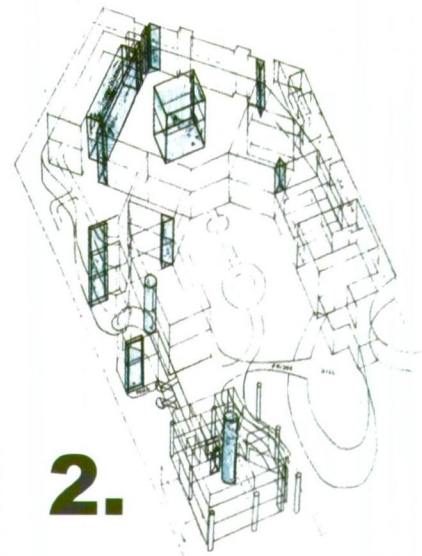
View from Terrace of Corporate Block



Light Well



1.



2.

The waste water treatment plant on site will recirculate “clean” water for the purpose of watering the garden and to flush the toilets. All basin taps in the building are automatic, water saving, self-closing push taps. Such devices in the toilets further reduce water consumption by upto 40%.

Daylighting

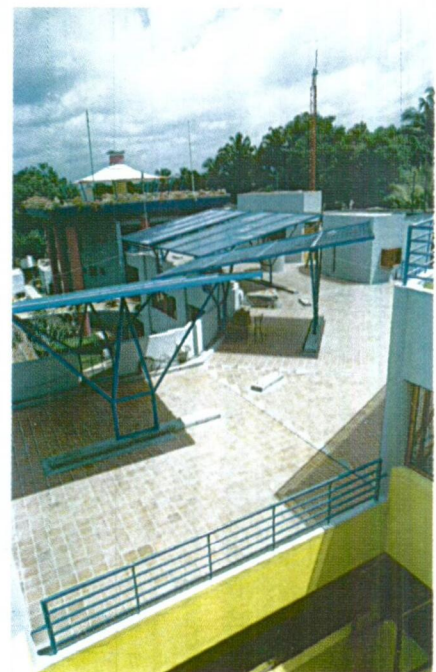
The energy consumption for lighting is considerably reduced by the manner in which the building is designed to allow maximum indirect daylight penetration into rooms via courtyards, yellow-painted lightwells,

and patios cutting right through the building mass. Vegetation in the form of trees & shrubs, Sail cloths and Solar PV modules act as shading devices, wherever necessary.

Benches have been placed in shady nooks & corners, creating little gathering spaces in which to hold informal discussions, or act as a refuge for those seeking respite after a long, hard day.

Natural Cooling

Areas which do not possess equipment requiring air-conditioned



Solar Panels on Terrace



cooling, are naturally ventilated. Fans on top of architecturally visible extract ducts assist in naturally cooling air-conditioned spaces, most of which have been located against the existing hillock used as a birm and areas filled in order to provide insulation, minimum heat gain, and thereby reducing the AC load.

Energy Efficient Equipment

Large air-conditioned areas are equipped with "Cooled Air Recovery Units", whose extra costs will be recovered within a period of two years, through the energy saved by reducing the AC load of this area. Similarly, the usage of energy-efficient light bulbs not only reduces the electricity consumption by 25%, but also eases the cooling load, by emitting less heat into the surrounding environment.

In computerised spaces, Uplights have been used to avoid screen reflection. These combined with individual Task lights, provide the adequate lighting levels for the type of usage of this building.

Solar Electric PV

For the first time in the history of Sri Lanka, the Ceylon Electricity Board (CEB) has accepted a Solar PV grid inter-tie system of 25KWp expandable upto 75KWp, in a building. Expensive and bulky energy storage systems like batteries, which require constant

maintenance, have been avoided, as the grid itself becomes the "storage". The Solar PV has a double function as a shading device over office areas, windows, staircase and walkways.

At the entrance to the site is a electronic board continually being updated, which shows the energy production from the Solar electric PV system, along with the CO₂ reduction.

Accessibility to the Handicapped

Careful and conscious planning have resulted in 70% of the building being accessible to the handicapped. Ramps, which lead upto the first floor, wide threshold-free doors, handicapped toilets and low-level electric switches provide easy access by wheelchair to all the major areas of the building.

Future flexibility

All Electric, Telecommunication and Data cables are located in, trunking ducts embedded in the concrete floor. At intervals, these cables enter a connection box, into which sockets have been connected. Work tables are clustered around -such boxes, providing them all with electricity, telecom and data facilities.

Not only does this system allow maximum flexibility in locating work stations, it also minimises the unsightly exposure of cables, and the time-

consuming camouflaging methods. Structurally damaging and energy-consuming changes are also avoided.

Know-how Transfer

Together with both foreign and local consultants and assistance from the University of Moratuwa, a valuable exchange of information has taken place in the frame work of this Project.

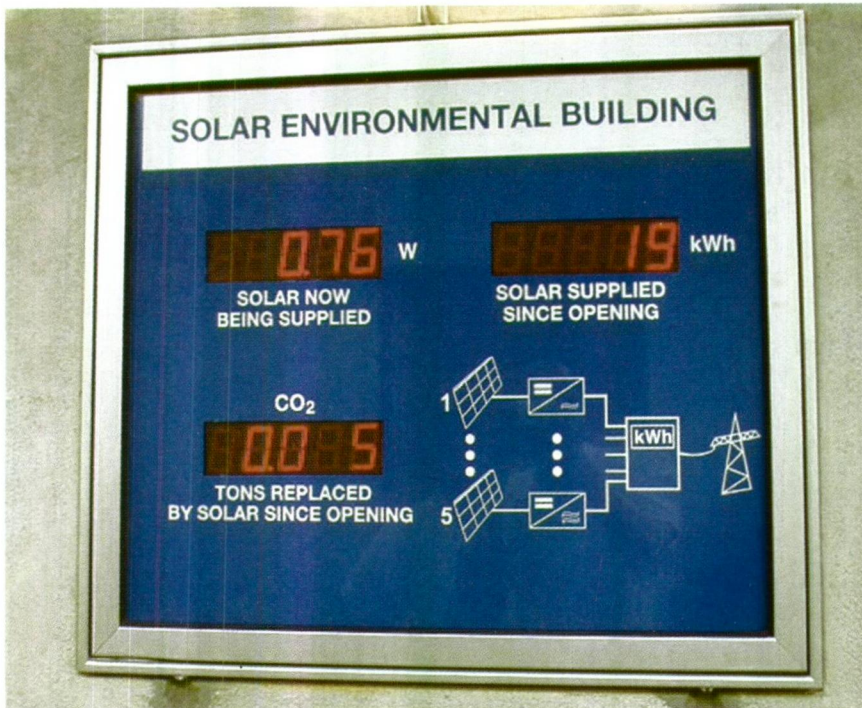
It has also provided a great opportunity for local professionals, to gain knowledge in this specialised area of building technology, and is seen as a worthy experience in view of the future "Energy Efficient Building Code" that has been presented by the CEB as a strategy to conserve energy, and increase energy efficiency in future buildings.

Sri Lanka, being a developing country is in need of getting constantly updated in the Energy Technology sector, especially in view of the current power crisis faced by the country.

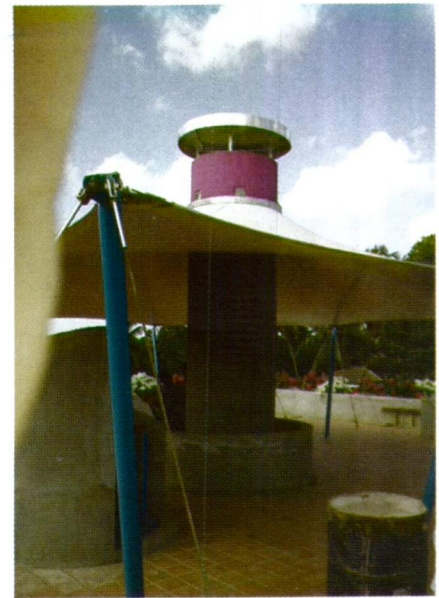
In such a sun-blessed nation, the use of solar energy as an alternative to the ever-increasing demand for hydro-power, could become the key to a bright, ecological future...



Solar panel above second floor



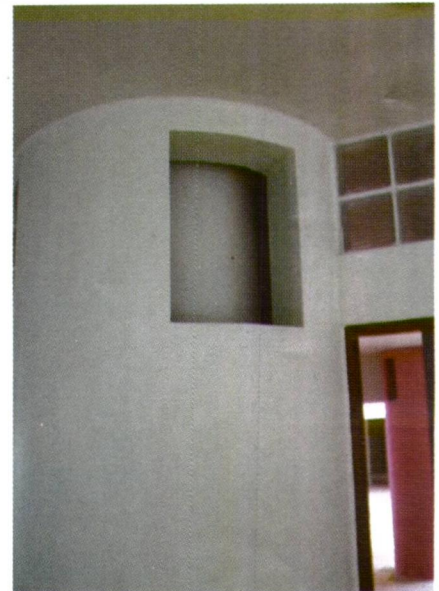
Digital panel indicating solar power supplied to the national grid and reduction of co2 emissions



Sail and vent on third floor



Inverters convert the DC current generated by the solar panels into AC for supply to the national grid.



Vent in office space

On the 11th of January 2002 the Minister of Power and Energy Hon. Karu Jayasuriya inaugurated the Solar Power Generation System supplying 25KW of Power supply will from the second stage and the Client is investigating the possibility of increasing the Solar Power Generation Within the next two years.

This is the first time in Sri Lanka and the East where Solar Power is being fed to the National Grid and is a landmark for the CEB, the Client and the Architect.



Bridge leading to birms created over air conditioned areas for insulation of the areas against heat gain