

Type of Project: **Public building: Class Room Wing and Sanitary Facilities at Shariputhra School**

Project name: **Construction of a Class Room Building and a Toilet Block**

Country:	Sri Lanka
Region/town:	Matara District
Approach:	Local Contractors
Beneficiaries	pupils/teachers
Climate	hot, monsoon
Urban / rural	urban
Special constraint	
Realization Year:	2006-2007 (10 months)
Budget	300'000 CHF



Partners

Organization (donor)	SDC
IO/NGO partners	none
GO partners	Ministry of Education

Context to project

Initial Situation	SDC selected 07 schools along the Coast line of Matara district which were partly or entirely damaged by Tsunami disaster so that they had to be repaired, reconstructed and upgraded.
Goals, Beneficiaries	The aim was to provide the Shariputhra School with additional teaching space, acceptable sanitary facilities and basic furniture for 320 pupils which had been taken over from a nearby Tsunami destroyed school.
Implementations/Results	A total of 12 class rooms, 1 teacher room, 1 storage room, 1 Toilet Block with 20 units including 1 unit for disabled persons were constructed at Shariputhra School and provided with basic furniture (desks, chairs, blackboards).

Reference data for construction of Class Room Buildings

Class Room Wing:	Nos. Class rooms: 20' x 25'	12
836 M2		
CHF 204'600		
	Teacher room	01
	Storage room	01
	Number of children	420 in new wing (1500 in school)

Toilets block:
111 M2
CHF 57'400

Boys:
 06 urinals
 03 toilets

Girls:
 11 toilets

Teachers:
 03 toilets

Disabled:
 01 toilets

Total cost of constructions 262'000 CHF

Cost/child (420) 625 CHF

Cost/m2 277 CHF

Consultant fees (post-contract) (9'400 CHF)

Consultant fees (pre-contract) (9'300 CHF)

Basic furniture for class rooms (desks and chairs)

unknown 75 units (funded by "Chaine de l'Espoir")
 6'100 CHF 200 units (SDC Emergency funds 2005)

Approach to results

Initial Situation

The efforts had to be brought to provide enough teaching space the reopening of the damaged schools in a short time.

Approach

The Southern Education Authority and Shariputhra School Principal had requested SDC in February 05 for urgent support to provide an extension building hosting 320 additional secondary class students as beneficiaries which had needed to be taken over from nearby Tsunami destroyed Polhena School in Matara. To provide efficiently school infrastructure for those children, SDC built 12 units of temporary classrooms within a period of 2 months till the construction of the school classroom building was completed.

The new classroom building was built at the backside of the existing school premises, where 2 older buildings needed to be dismantled providing space for the new building. A new toilet block was rebuilt. To support the school authorities in maintenance issues (concept and equipment) was also an issue.

The Ministry of Education of Sri Lanka was the main partner as client while the Secretary of Education in Galle discussed and approved the room programmes of the school (the standards were given by the Ministry of Education). He signed also the Project Agreement. The Principal and the representatives of the parents participated also in the elaboration of the projects. Contracts for the Construction Phase had been awarded after a selection procedure amongst different contractors who had submitted offers.

The Technical Service South Province, in charge of the school buildings, approved the drawings.

A local Consultant was appointed to administrate the post-contract phase.

Construction

The type of the constructions can be considered as normal buildings known by experienced contractors. Technically no major problems came up. The quality required was held by the contractor. No major problems to provide the material had to be reported.

The school activities had to go on during the construction phase. The Project had been executed in two stages: first the new toilet block to ensure sanitary facilities to the pupils and teachers after the demolishing of the existing toilets and second the class room building. The site had to be fenced and secured for the safety of the children.

A Maintenance manual for the new buildings and the Sewerage System was established by the Consultant and will be completed with a more general approach of maintenance by introducing operational, ecological and children friendly aspects.

A special attention was drawn towards the prevention of corrosion on steel Structure and on Wood preservation (termites).

Problems/Constraints

A longer time period was experienced by rainy days (resulting in extension of time).

During the exams period in December 2006 (12 days), the works were temporarily suspended.

Periodically, the contractor had a problem of labour shortage. It is a fact that the construction boom in and around Colombo with relatively high salaries made that area more attractive for any workers especially for good skilled ones than other regions in Sri Lanka. In Matara district, the construction activities were and are fully affected by this situation.

In coordinating the tasks of the various gangs, the contractor showed a weakness.

Finishings overrun its time. Substantial efforts were needed to reach an acceptable result.

Due to the constant high and the moderate seasonal fluctuation of the groundwater level in the Matara area, the construction of a septic tank is a challenge. The concreting of the different elements becomes difficult and the required quality (permeability) is not always reached. Local contractors started to propose pre-cast horizontal cylindrical tanks with a better impermeability and an easy and quick laying in ground. The system was carried out in one of our school project.

Rain water harvesting: to use rainwater for flushing toilets can be considered when water for flushing and personal use can be properly separated. The idea couldn't be realised because the Principal was not ready to take the responsibility and the risk for the correct use of the system by the pupils.

Lessons learned

To be aware about time schedules proposed by contractors. Shortage of labour is a current problem. Finishing work was longer than planned and quality errors had to be corrected. Experienced Site and Residence Engineers should be appointed, paid accordantly.

Evaluation

After 1 year, defects have to be repaired by the Contractor during the Maintenance Period.

Legal framework

Political attachment	Ministry of Education
Type of ownership	Handover to School Principals (Ministry of Education)

Construction information

Constructions	Class room wing: 2 storey (48.80 x 8.75m) (832 M2) HGable=8.77m HGF=3.05m Toilet block : 1 storey (18.48 x 6.00m) (111 M2) HGable=4.57m	
Structure	Foundations	pillar and stripe foundation
	Columns, Beams, Walls, Slaps	Structure wise, the building stands on a fragment framework between RCC pillars, GF/UF ring beams, lintels, GF/UF concrete slabs, and pillars and stripe foundation designed and implemented as per adequate engineer design. GF H=3.05m
	Roof	Roof structure steel trusses on RCC structure cross wise all main axis each 3.81m over a free span of 7.39m, roof coverage runner beams, purlins, roof tiles. The roof space is open at the upper floor for proper ventilation, termite protection
Materials	Floor	GF: R/F concrete floor (115mm) G 20, rendered. UF: rendered
	Doors	Wooden
	Windows, Security	Wire meshes on wooden frame (class room protection)
	Walls, partition walls, sun shed	Walls, partition walls in concrete blocks (150mm). Sun shed on one side of the building.
	Tiles, roof plumbing	Calicut tiles Gutter/down pipes: in plastic with metal fixation

Watsan

Toilet block /Septic tank

1 storey building 18.50m x 6.00m

Girls bathroom : 11 Toilets, Teachers female 2 Toilets, Wash sinks

Boys bath room : 3 Toilets, Teachers male 1 Toilets, 6 Urinals, Wash sinks, Disabled 1 Toilet with wash sink.

All equipment: British standard

Roof: wooden construction, tiles, gutters

Walls/floor: ceramic tiles

Septic tank 4.70x1.50x2.25 (2 chambers) and soak pit (volume in use: 6 M3)

Storm Water

Channelling of rain water, evacuation to public system

Equipment

Each Classroom is equipped with a wash basin (British standard), standard school furniture, a black board and a teacher desk.

Urban planning

Distance to :

Town/Villages
Public transport

In suburb areas
Bus, tuk-tuk, taxis

For further information

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Recommended Institutions:	
Recommended books/reports:	
Relevant other projects (links):	
Annex	technical drawings, photos