



Projects library of the specialized group for construction

PUBLIC BUILDINGS

Project	Education: school complex Sri Sumangala Girls School	
Project name	Tsunami Rehabilitation and reconstruction	
Country	Sri Lanka	
Region/town	Weligama, southern Sri Lanka	
GIS data (WGS 84)	N 05.97399° E080.42433°	
Project type	Repair / rehabilitation and New constructions	
Typology	Complete school compound with 2- and 3-storey buildings, gym hall, assembly hall and sanitary buildings, students from Kindergarten to Matrix level (1 – 12)	
Approach	Contracted Planner & Engineer, Private construction firm	
Beneficiaries	Tsunami affected students, teachers & parents	
Climate	Tropical hot & humid	
Special constraint	Construction while school operation on-going, safety of students, very big school (2600 students)	
Start / end of project	xx.2005 / 30.06.2008 CP planning xx05.07.05 CP construction xx20.2.06	
Country GNP	USD/cap	



Partners

Organization (donor)	Projects Financed 100% by SDC
IO/NGO partners	N/A: Chain of hope, providing school furniture directly to beneficiary
GO partners	Ministry of Education, at central and province/district levels

Context to project

Initial Situation	School received students from tsunami-affected schools; school served as temporary accommodation for the public immediately after the Tsunami.
Goals, Beneficiaries	To add space for additional students; students, teachers, parents; refurbish the existing school buildings and complex: 2600 Students, 120 Teachers
Implementations/Results	Additional space for about 200 students available and improved toilet capacity for students, income generation by rent of Gym & Assembly Hall



Reference data (comparative)

Land plot	m2	Number of blocks	See list on page 5
Classes/rooms per block		Number of units	
Beneficiary / unit		Total beneficiaries	School: 2600 + 120
Latrines, (2 Toilet Blocks)	m2 112; 13 WC, 9 urinals	Other infrastructure	Electrical & plumbing, storm drainage
Ground floor (incl. walls)	m2	Floor (incl. walls)	
Total surface COMPLEX	m2	Surface / beneficiary	m2/ beneficiary
Volume (outside dim.)	m3	Volume / beneficiary	m3/ beneficiary
Heated surface N/A	0.00 m2: N/A	Heated surface/ beneficiary	m2/ beneficiary
Cooling with ceiling fans			
cost of complex	USD : 940'000.00	cost/beneficiary	USD/beneficiary 361.50
Total cost CHF 1'081'000.-	USD : 940'000.--	Self help (beneficiaries*)	USD/beneficiary

*) removal of temporary classrooms by Students / Parents and Teachers after inauguration and taking over of the project.

Approach to results

Initial Situation	School was over crowded, temporary classrooms were used during repair and permanent construction works.
Approach	Needs assessment in cooperation with Government; MoU with Government, planning phase with contracted local architects; implementation phases with contracted construction firms. (Implementation in 3 phases)
Problems/Constraints	<p>Price hike due to exorbitant demand on the construction industry after the Tsunami. Change towards much higher standards for schools by the Ministry of Education causing additional cost increases. Xxx</p> <p>To build while school operation is going on; during school exams building activities were stopped</p> <p>Rainy season, labour shortage, high ground water levels</p> <p>Site management and construction supervision by the local consultants was poor</p>
Lessons learned	Xxx re- evaluate also designers, do not choose lowest cost ...
Evaluation	xxxx

Legal framework

Political attachment	Matara Town; District of Matara, Southern Province
Type of ownership	Government (central government ownership)



Construction information			cost repartition
Construction			
Structure	Foundations	Single footing RCC	x%
	Walls or columns	Walls in brick / hollow blocks, columns RCC	
	Facade		
	Roof	Tiled roof	
	Earthquake protection	Standard safety factors applied	
materials	Floor surface	Mass concrete	
	Walls:	Bricks / cement hollow blocks	
	Doors	wooden	
	Windows	Wooden, no glass	
	Ceiling	No suspended ceilings	
	Thermo insulation	N/A, sunshades against direct irradiation	
	Ceiling	Ground floor: RCC, upper floor no ceiling	
WatSan	water	From overhead tank (low head)	
	Toilets		
	Waste water	Septic tank, soakage pit, percolation trench	
	Rain water	Open channel drainage	
equipment	heating / cooling system	Ceiling fans	
	Electricity connection	240 V, single phase	
	Telephone connection	N/A existed for Principal's office	
	Cooking facilities	N/A existed already (canteen) use LPG	
Total	USD:	Applied rate: Rs. 90/- = 1.0 USD	100%

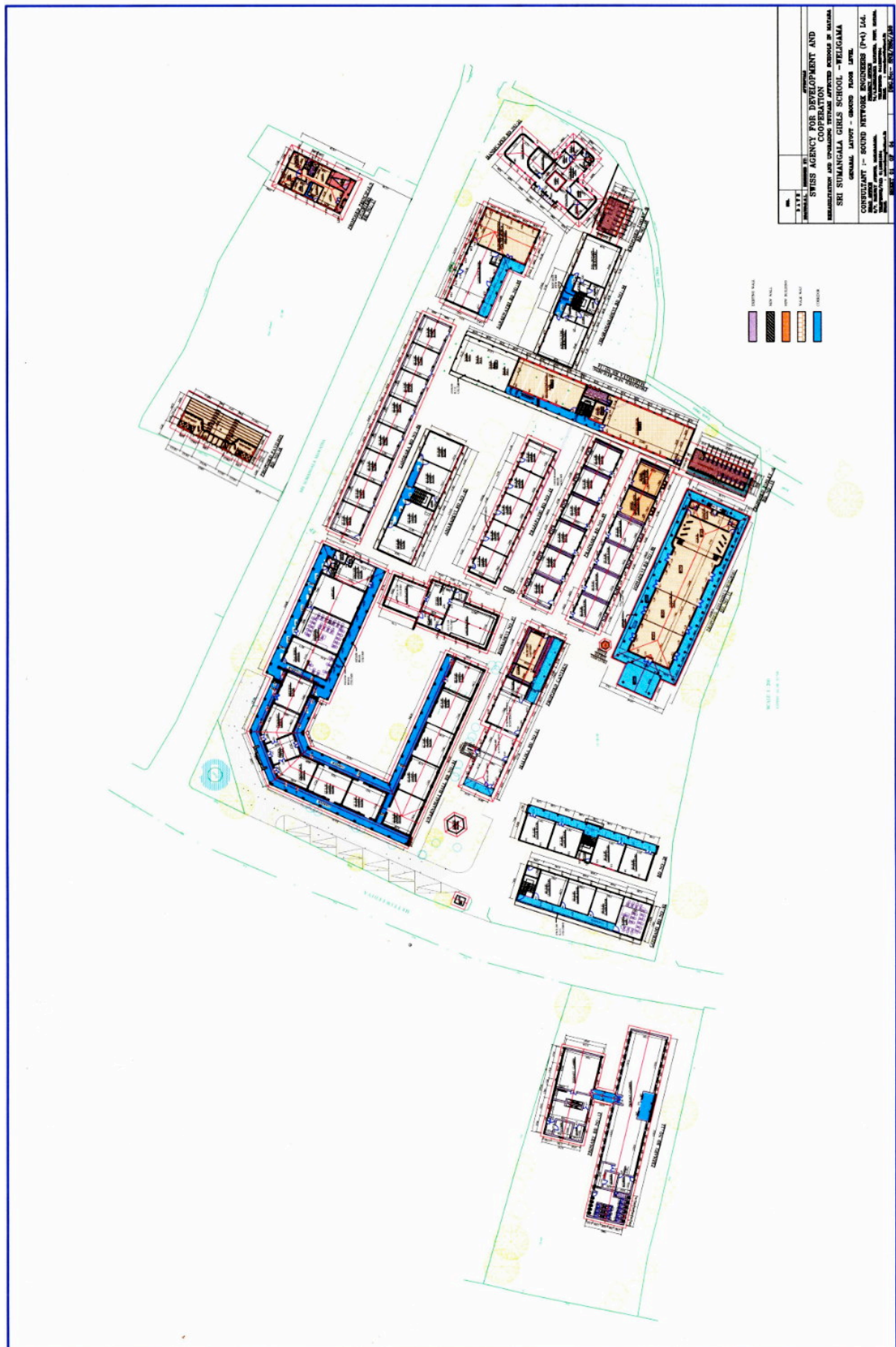
Urban planning		
Distance to :	villages	School is in town
	Public transport	Available (public & private bus operators etc.)

For further information

Involved SHA construction group consultants	Urs Rudolf, Markus Casanova, Josef Mueller
Other involved SHA consultants	Uli Salzmann, backstopping
Author / Contact:	Josef Mueller
Recommended Institutions:	
Recommended partners:	
Recommended books/reports:	
Relevant other projects (links):	



Humanitarian Aid construction group



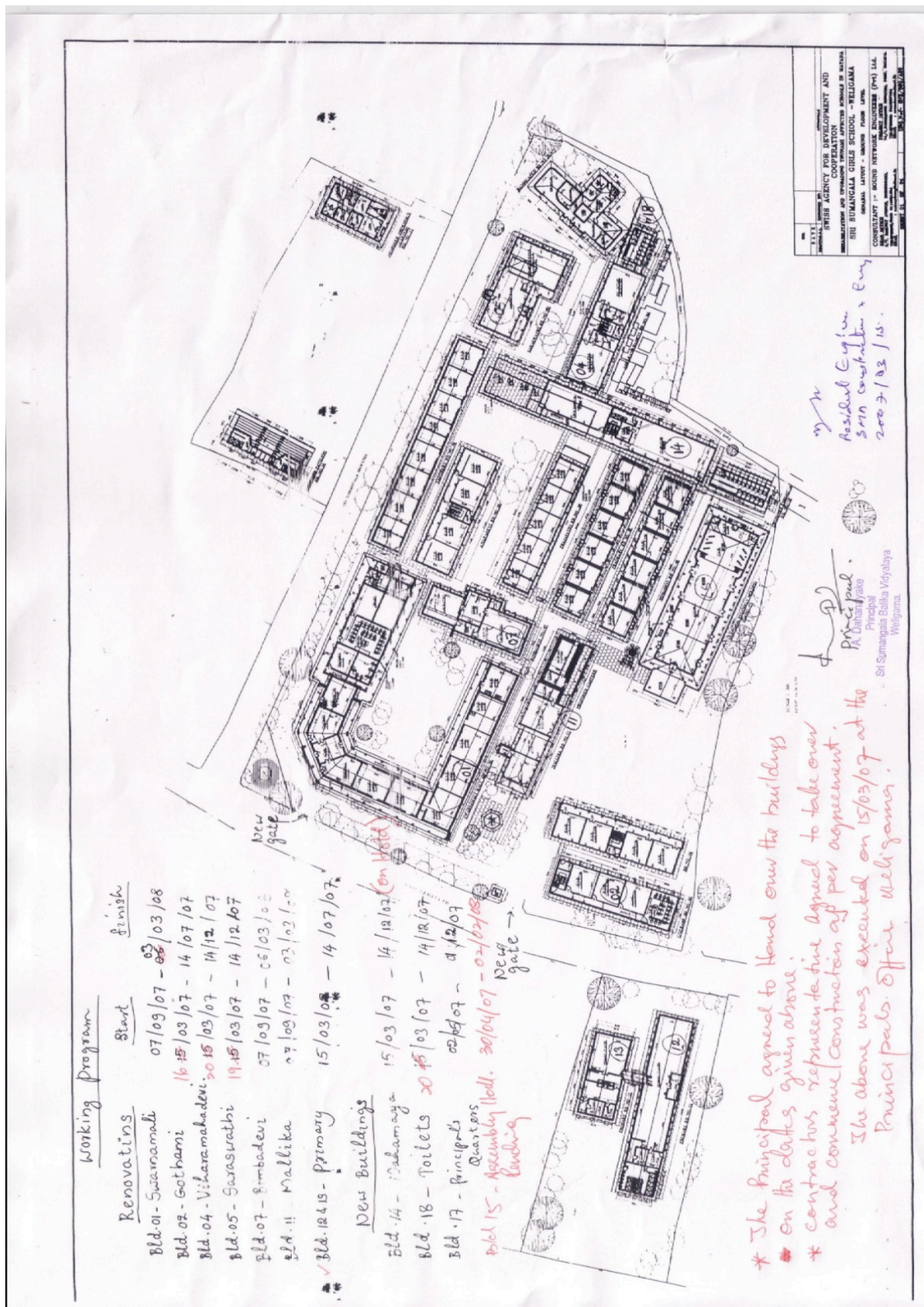


Sri Sumangala Girls School, Sri Lanka

4% for "Preliminaries" and 7% for electrical contract (labour and material, such as ceiling fans etc.) are included in costs.

PHASE 1:			CHF	CHF	
Building:	m2	m3	Costs m2	Costs m3	Remarks:
New Toilet Block	56	219			9 squatting pans, 6 hand wash basins, ground floor only
Building 3, Amaradevi, class rooms & IT Lab	219	2'232			3-storey building, simple redecoration work, existing asbestos roof not touched
Building 10, Prajapathi, class rooms Building 9, Primary, class rooms Building 8, Somadevi, class rooms Building 6, Yashoradevi, class rooms					Ground floor only, simple refurbishment
TOTALS:	1266	6453	108.60	21.40	
PHASE 2			CHF	CHF	
Building:	m2	m3	Costs m2	Costs m3	Remarks:
Building 02, Gothami	219	1'625	126.80	17.20	2-storey building, refurbishing only
Building 04, Viharamadevi	657	2'354	51.00	14.30	3-story laboratory building, simple refurbishing,
Building 05, Saraswathi	252	1'019	223.20	55.20	Ground floor, dancing and music, refurbish & major modifications to the building
Building 07, Bimbadevi	187	714	39.00	10.30	Laboratory building, ground floor only, simple refurbishing "face lift"
Buildings 12 & 13, Primary	482	2'300	163.00	34.30	Substantial modifications made from dormitory cum kitchen/ dining unit to classrooms
PHASE 3			CHF	CHF	
Building:	m2	m3	Costs m2	Costs m3	Remarks:
Building 11, Mallika	283	1'245	253.40	57.70	Ground floor only, attached new canteen building, and new home science installations
Building 01, Dulawatta & Swarnamali	1'173	6'469	253.40	25.50	Ground floor only, complete new roof-tiling, refurbishing; administration & class rooms
New Toilet building	71	317	345.60	77.50	Complete new building, 1 WC, 13 squatting pans, 5 hand wash basins, including floors and walls tiled, septic tank and percolation trenches
PHASE 4			CHF	CHF	
Building:	m2	m3	Costs m2	Costs m3	Remarks:
New Principals Quarters	113	482	372.40	87.30	Complete new building, including septic tank & soak away
Building 14, New Gym Hall					Complete new building, expensive foundation works
Building 15, New Assembly Hall with stage	580	3'245	248.30	44.40	Complete new building; no suspended ceiling in the hall, expensive foundation
External works: storm drainage					CHF 20'000,00; open channel drainage.

Add: Allow some amount for inauguration ceremony !! Add for Construction Supervision, Management of Works x%, Add SDC office = %



Relevant illustration