Croix-Rouge suisse
Schweizerisches Rotes Kreuz
Croce Rossa Svizzera

Projects library of the specialized group of construction **SHELTER**

Project	**Community-based temporary shelter**
Project name	Temporary Shelter Project (TSP)

Country	**Indonesia**
Region/town	**Padang, West Sumatra, District of Agam**
GIS data (WGS 84)	
Project type	**New construction**
Typology	**transitional Shelter**
Approach	**Cash grant**
Beneficiaries	**local population, affected by earthquake**
Climate	**Hot, humid**
Special constraint	**Earthquake**
start / end of project	**01.01.2010 – 31.07.2010**
Country GNP	**USD 2'329/cap**

Partners

Organization (donor)	Swiss Red Cross, Swiss Solidarity
IO/NGO partners	Indonesian Red Cross (PMI)
GO partners	Governor of West Sumatra, Ministry of Public Works, Head of District

Context to project

Initial Situation	Indonesia and particularly the island of Sumatra are exposed to a geologically active zone of tectonic movements and volcanic activities. This exposure results in earthquakes, tsunamis and volcanic eruptions. The province of West Sumatra is centrally located on the island's West Coast. The West Coast of the island of Sumatra in Indonesia was struck by a major earthquake measuring up to 7.6 and 6.8 on the Richter scale on 30th September, 2009. The National Disaster Management Agency (BNPB) maintains its estimates that 1'117 people have died and another 2'902 were injured during the catastrophe.
Goals, Beneficiaries	1'000 HH affected by the earthquake in the district of Agam live safely in weather proof T-shelters until their permanent houses have been repaired or reconstructed by the GoI reconstruction programme. The most vulnerable members of the community are provided with T-shelters.
Implementations / Results	The TSP provided 1'000 Households with a temporary shelter trough a cash grant program implemented by the Indonesian Red Cross PMI, supported and funded by SRC and SwS. SRC provided assistance to the local PMI branch in form of financial and consulting support during the implementation. The 1'000 T-shelters were built by the local beneficiaries with the support of PMI field volunteers. The standard construction was upgraded by most of the beneficiaries in order to make the TS more durable.

Reference data (comparative)

Land plot (per house unit)	n.a.	Garden	n.a.
Ground floor (incl. walls)	18 m2	Floor (incl. walls)	wooden planks, alt. concrete slab
Occupants max.	5 persons	Occupants min.	2 persons
Total house area	n.a.	Surface / occupant	3,5 m2/cap
House volume (outside dimension)	45 m3	Volume / occupant	9 m3/cap
Number of rooms	01 room	Occupant / room	5 cap/room
Heated area	n.a.	Heated area/occupant	n.a.
cost /unit	320 USD	cost/occupant	64 USD/cap
cost/m2	17,8 USD/m2	cost/m3	7,1 USD/m3
Total housing cost	320 USD	Self help (beneficiaries)	= constructors
community development projects cost	n.a.	Comm. Dev. cost/occupant	n.a.

Approach to results

Initial Situation

Private houses were destroyed or damaged in a way that they couldn't provide save accommodation anymore. Rural population with limited means for self-help (the most vulnerable: elder people, single mothers, families with many children, poor community members, families with completely destroyed houses) suffered the most from the impact of the earthquake. For several reasons these people couldn't provide themselves with shelter.

Approach

First damage assessment by Indonesian Government. Second and revised damage assessment by Indonesian Red Cross (PMI) and community groups. Identification and assessment of community groups by PMI and SRC. Identification of most vulnerable people out of all communities by the community groups.

Division of all beneficiaries in three groups, eligible for funds one after another in order to create peer pressure.

Elaboration of fund requests by community groups, then forwarded to PMI branch, checked by PMI branch, chapter and SRC. After approval fund transfer to PMI chapter, from chapter to branch and finally to community groups. Final transfer to community groups in usually three installments so that the branch remained in control of construction progress.

Final proof of fund implementation by pictures of beneficiaries and TSP before/ after and a signed completion certificate including names and copy of ID.

Problems/Constraints

PMI: program development was in the beginning very slow and complicated, since PMI capacities didn't suffice for a program of this size. The program leading PMI chapter proofed to be insufficient in its managerial role. Slow initial progress due to necessary socialization work in the community groups. Partially overcharges for the branch volunteer team in matters of finance reporting and beneficiary supervision.

Communities: distraction of beneficiaries by daily work and social events contradicting with the tight program time line. Partial bottleneck in material supply due to limited skilled workers. Since the technical construction was too challenging for some beneficiaries, those usually hired local workers for the erection of the wooden frame and paid them with a part of their funds. Most beneficiaries improved the size and/ or quality of the TSP by using better materials and bigger plans. Technical survey and advice given by PMI volunteers for those adapted constructions might not have been fully sufficient. Delay of construction in the final group since no peer pressure could be applied anymore.

Lessons learned	In programs implemented by the national society (i.e. PMI) the capabilities and skills of the national partner can jeopardize too ambitious plans in project implementation. If the construction design of the T-shelter is allowed to vary from the program design, technical survey and advice must be carefully implemented in order to avoid insecure and unstable constructions.
Evaluation	Evaluation of a sample 200 households and all community committees showed that 100% of the T-shelters has been constructed. Beneficiary satisfaction about the funds resulting in the available construction materials was very high. Most of the T-shelters were built in an improved mode (size, materials).

Legal framework

Politically attached to	Agam District, Province of West Sumatra
Type of ownership	Completion (handover) certificate to each beneficiary; all plots and houses are property of the beneficiaries

Construction information

Construction		
Structure	Foundations	single concrete blocks, one for each column
	Walls or columns	wooden columns, plinth wall of wooden planks
	Facade	wooden frame covered by woven leaf mats, nailed to the wooden frame
	Roof	wooden frame covered by plastic sheets and leave mats
	Earthquake protection	main frame joints connected with bolts and screws, bracing in wall and roof frames
materials	Floor surface	wooden planks 2x20x400 cm, locally available, elevated from the ground by approx. 80cm
	Walls	wooden columns 5x10 cm, plinth wall made of wooden planks 2x20x400 cm, coconut and durian tree, locally available, h=1 m; mats woven from locally available leave materials (lapiak pandan)
	Doors	two doors, supplied by beneficiaries
	Windows	two windows, supplied by beneficiaries
	Ceiling	n.a.
	Thermo insulation	n.a.
	Roofing	wooden frame covered by plastic sheets and locally available leave mats
watsan	Water	n.a.
	Toilets	n.a.
	Waste water	n.a.
	Rain water	n.a.
equipment	Heating system	n.a.
	Electricity connection	n.a.
	Telephone connection	n.a.
	Cooking facilities	n.a.

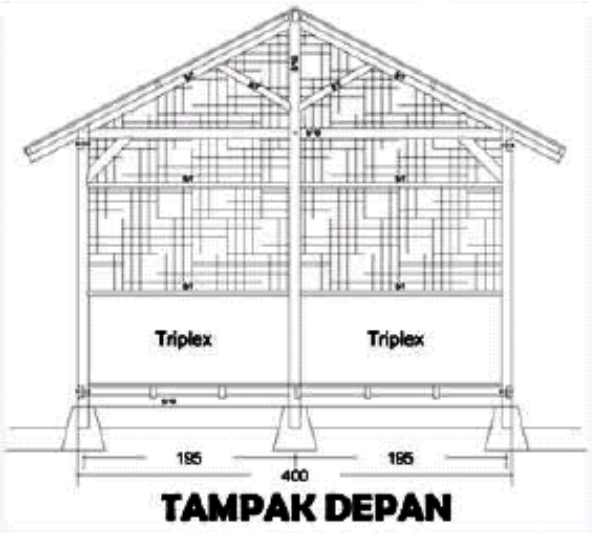
Urban planning

Distance to	Health center	n.a.
	Education facilities	n.a.
	Income activities	n.a.
	Public transport	n.a.

For further information

Involved SHA construction group consultants	
Other involved SHA consultants	
Author / Contact:	Alexander Seifert, alexander.seifert@berlin.de
Recommended Institutions:	University "Bung Hatta" of Padang, Department for Architecture (designer of the TSP)
Recommended partners:	Indonesian Red Cross
Recommended books/reports:	
Relevant other projects (links):	
Annex	Shelter construction handbook

Relevant illustration



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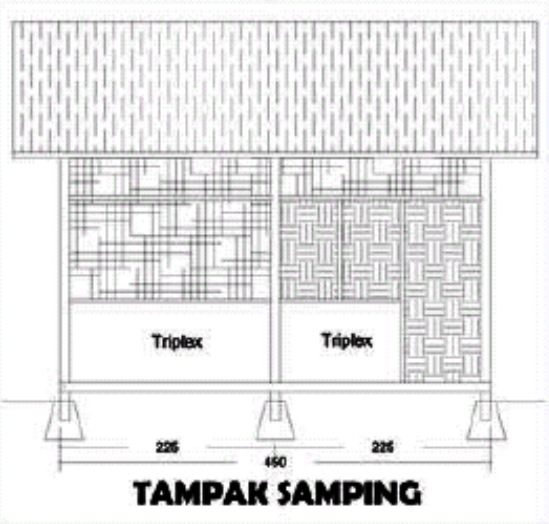

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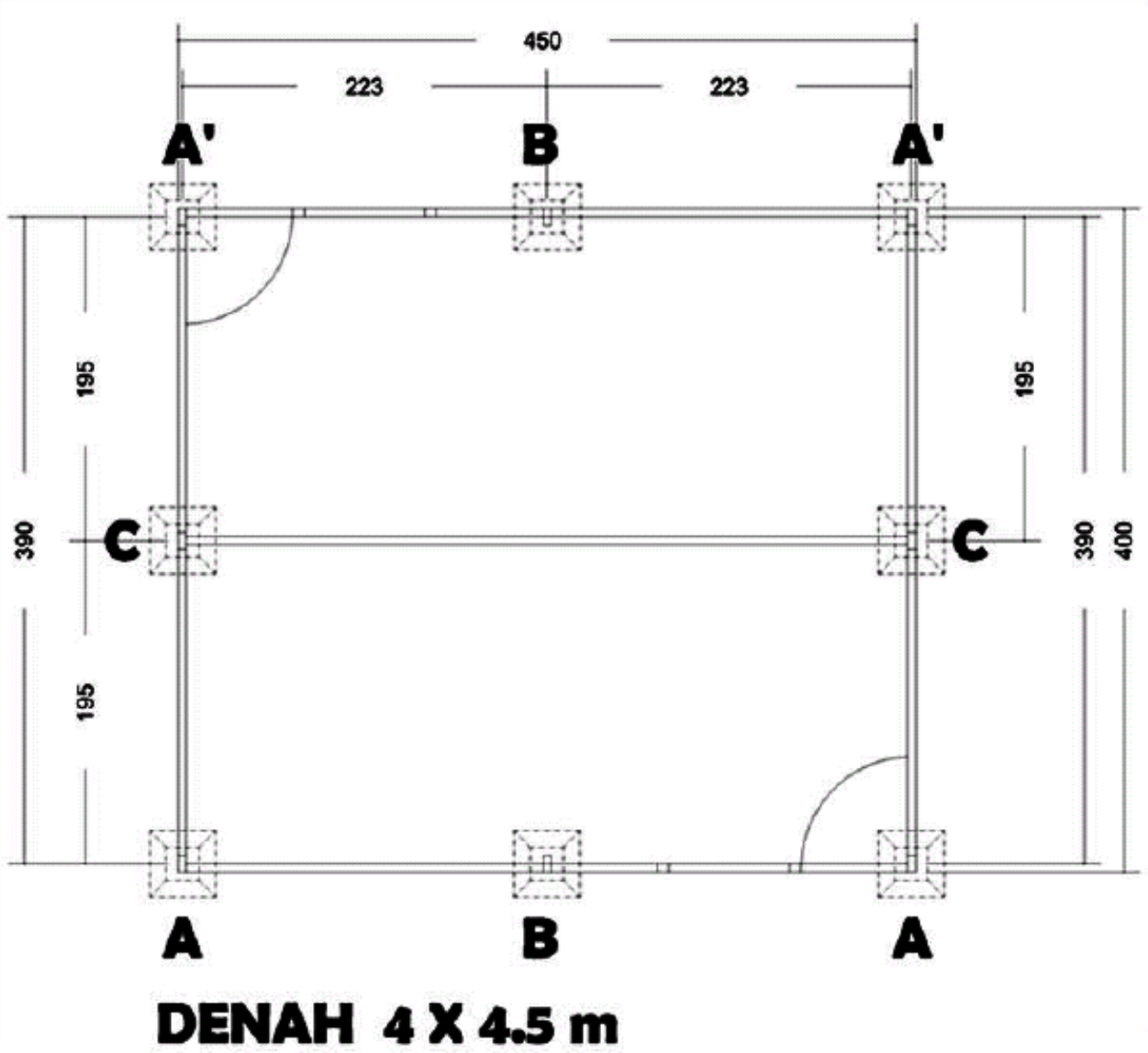

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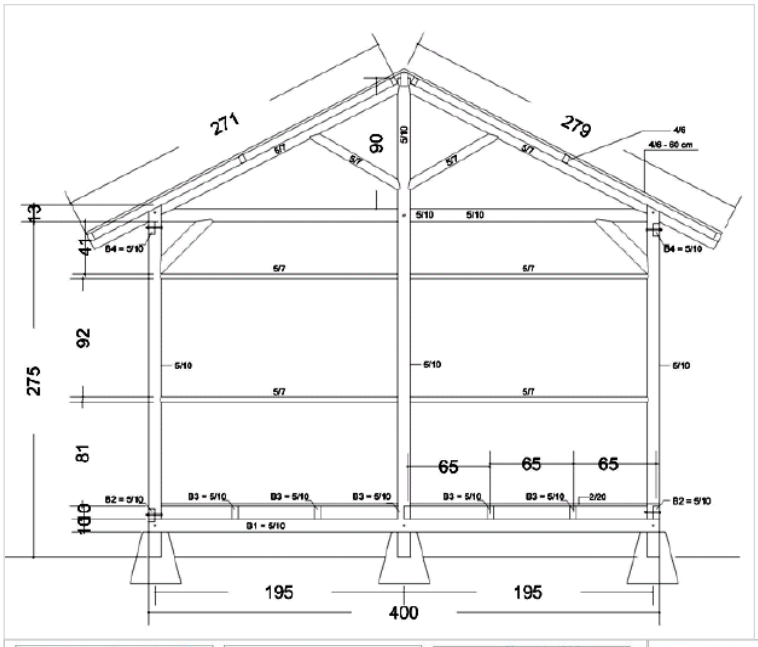
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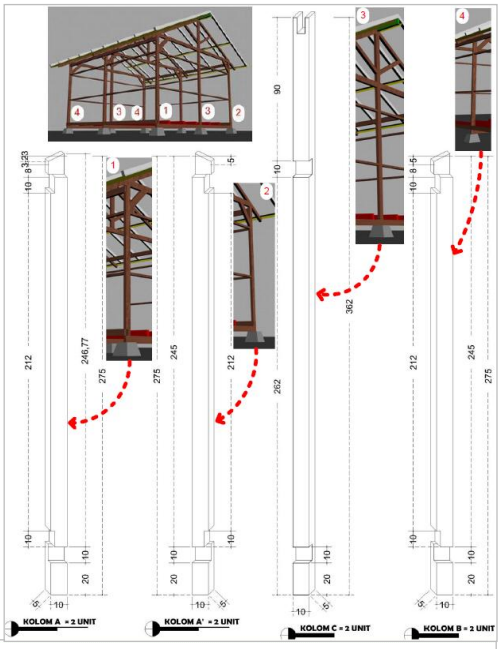
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KOLOM C = 2 UNIT
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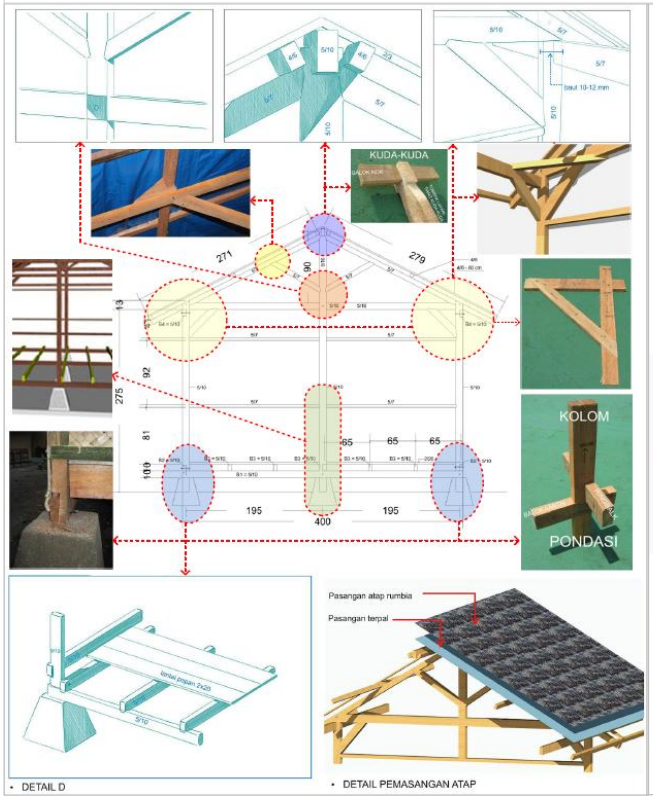
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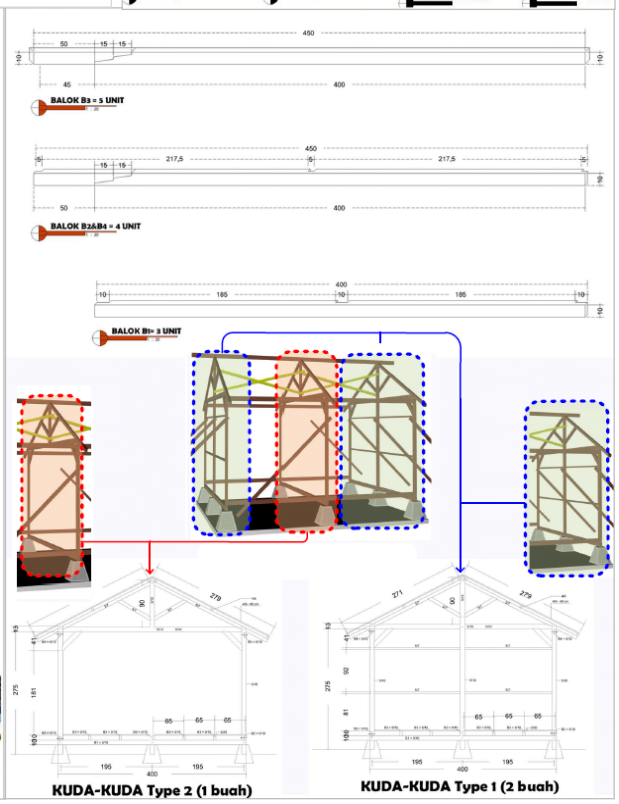
DETAIL D

Pasangan atap rumbia
Pasangan terpal
DETAIL PEMASANGAN ATAP


BALOK B3 = 5 UNIT
BALOK B2&B4 = 4 UNIT
BALOK B1= 3 UNIT
KUDA-KUDA Type 2 (1 buah)
KUDA-KUDA Type 1 (2 buah)