



Malawi Shelter Cluster Technical Working Group for Promoting Safer Building Practices in Malawi

a collaboration with the Global Shelter Cluster Working Group on “Promoting Safer Building Practices” and partners of the GCRF research project





Malawi Shelter Cluster
ShelterCluster.org
Coordinating Humanitarian Shelter



Agenda:

- 1. recap & conclusions last meeting (June 24th and July 15th)**
- 2. presentation communications channels analysis and comms strategy**
- 3. shelter learning day September 9th Q&A**
- 4. first conclusions of geoscience & shelter workshop and outlook on next steps**





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Recap of goals and objectives

Step 0: **Forming the Working Group**

Step 1: **Understanding the Context** (KAP analysis, building practices, construction failure mechanisms, coping strategies, available materials, etc.)

Step 2: Define IEC **Preliminary Objectives**

Step 3: Identifying **Stakeholders & Audiences**

Step 4: **Engagement pathways analysis**
(communication media analysis)

Step 5: **Develop Detailed Messaging** for Audience/
Stakeholders and Engagement Pathways

Step 6: Define **Roll-Out Strategy** and confirm IEC
objectives

Step 7: Define **Monitoring, Revision and Evaluation**
Framework

→ Suggested Communication channels:

- “Theatre for change” (or for development) performances
- Community awareness raising about safer building practices
- Basic hands on trainings and demonstrations of safe construction practices in the communities (for “self-builders”)
- Practical trainings for local artisans and builders, ideally with a “safer construction” certification
- Construction of Model houses
- Workshops and/or conferences to bring together representatives from the different involved ministries and levels (National and district level governance) and practitioners (NGOs) to discuss and exchange.
- Continue coordination through the Shelter Cluster and the TWG



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→ **Messages identified based on analysis of failure mechanisms:**

- Foundations:
- Walls and loadbearing structures:
- Roofing

- **Promote materials that have least environmental impact**
- **Focus on good workmanship**

→ different regions/context different techniques and materials are appropriate. If “green materials or techniques” are not affordable they will not be used, hence are not sustainable

→ **use the materials selection tool to check which materials is most suitable in your area.**



	economic criteria				technical criteria				
materials	"Accessibility" is the material available in local markets?	"Availability locally": is the material produced locally/come from local sources	"Affordability", how easy can majority of affected populations afford to buy this material? (maybe as percentage of average income?)	maintenance (ease & frequency): how often does the material need to be maintained/repaired? how difficult (or expensive) is it?	is there traditional knowledge of the techniques within the community?	should implementation preferably be done by skilled artisans or more highly qualified builders?	Is special equipment or machinery needed?	resistance against the main hazard (or main 2 hazards?) in the area	
alternative binders (lime, ash, ...)									
bamboo									
burnt brick	yes	5 by small local industries using wood!	5	3 very low maintenance	4 not much	3	3 simple equipment	4 Flood, storm, termites, fire	4
cement (for mortar, additive, rendering)									
CGI-sheets		4	1	2 very low maintenance	4	3	3 metal cutter, hammer	4 Flood, EQ, termites, fire	4
compressed stabilised earth blocks (CSEB)	if CSEB not produced directly nearby	3	3	3	5	1	3	4 Flood, storm, EQ, termites, fire	5
concrete (cement+sand+gravel+water+rebar), eg. For slab or columns		2	3	2	5	1	2	3 Flood, storm, termites, fire	4
concrete blocks		4	4	0	5	3	3	4 Flood, storm, termites, fire	4
earth/mud (e.g. rammed earth)									
grass/thatch	Nsanje, Chircwawa	5	2	2	3	5	5	5 EQ	3
sand									
steel									
sun dried earth blocks		5	5	5	2	5	5	5 termites, fire, storm	3
timber (construction grade timber)									
water									
wooden poles	yes, directly from owner	5 if wood taken from own plot	5 can be harvested by owner	5 renew termite treatment	2 some traditional knowledge	4 local artisans know well	4 need saw, Hammer,	4 EQ and flood	2



"Accessibility" is the material available in local markets?	"Availability locally": is the material	"Affordability", how easy can majority of affected populations afford to buy this	maintenance (ease & frequency): how often does the material need to	is there traditional knowledge of the techniques within the community?	should implementation preferably be done by	Is special equipment or machinery	resistance against the main hazard (or main 2 hazards?) in the area
the material easily available in local markets (e.g. max. xx Km or hours to walk? At least three sellers?)	5 is the material is produced locally (same community, or district?)	5 required quantity can be sourced free of cost, only investment is labour	5 no need for maintenance for more than 15 years	5 almost everyone knows how to use it	5 no need to hire skill	5 no need for, or all equipment already available	5 1 point for each type of hazard in the area that the material can resist reasonably well. Potential hazards: Flood, Earthquake, storm, fire, termites
the material can be found in local markets but not easily (max. xx Km or hours to walk? only	4 produced/brought from other district	4 required quantity can be afforded very easily (e.g. a few days income?)	4 need minor repairs/treatment app. every 10 years	4 many people know, it is easy to learn by watching or with minimal practice	4 better to contract local artisans	4 the equipment needed is easily available locally	4
available in larger markets nearby town (km?)	3 produced/brought from other province	3 required quantity can be afforded (e.g. a months income?)	3 need repairs/treatment app. every 5 years	3 only some local artisans know how to use this materials/techique properly	3 better to hire qualified builders	3 equipment needed is avaiabel in country and needs to be brought ot the project area	3
not easily available, needs to be brought from city/other	2 imported from oth	1 required quantity is difficult to afford (e.g. a years income?)	2 needs to be repaired/treated annually/seasonally	2 using this material requires expertise that is not avaiabel in the area	1 need to hire qualified builders and equipment	2 the equipment needed is not available in country	1
needs to be imported	1	0 required quantity is not affordable			0 this level of expertise and equipment is not		

Cancel criterium

Cancel criterium



environmental criteria			Social criteria		legal criteria	total rating		
estimated durability (in years?)	is the material only available during specific season?	local environmental impact (such as deforestation or exploitation of other vegetation, over-exploitation of soil, ...)	comfort & health e.g. thermal comfort, hygiene/healthy	social coherence; can the technique contribute to strengthen community solidarity	is the use of this material allowed? Are there any legal restriction on its use?	highest sum of points indicates most suitable material	highest product (multiplied) indicates most suitable material; if any criteria is rated 0 the materials are not suitable	materials
						0	0	alternative binders (lime, ash, ...)
						0	0	bamboo
5	no	3 risk deforestation	1	4	3 banned by law	0	47	burnt brick
							0	wood cancelled out because of legal restrictions
4		3	5 gets very hot & noise during rain	1	3	5	46	415 CGI-sheets
5		3	5	5	3	5	53	4556 compressed stabilised earth blocks (CSEB)
5		3	5	4	1	5	45	216 concrete (cement+sand+gravel+water+rebar), eg. For slab or columns
5		3	5	4	3	5	52	0 concrete blocks
							0	0 earth/mud (e.g. rammed earth)
2		1	1 prone to insects and pests	3	1 politically unwanted	5	43	68 grass/thatch
							0	0 sand
							0	0 steel
2		1 need to check soil use	3 soil floor not hygienic	2	5 politically unwanted	4	52	2250 sun dried earth blocks
							0	0 timber (construction grade timber)
							0	0 water
if treated against termites	3	1	3 no known negative impact on health or comfort	5	3	2	48	864

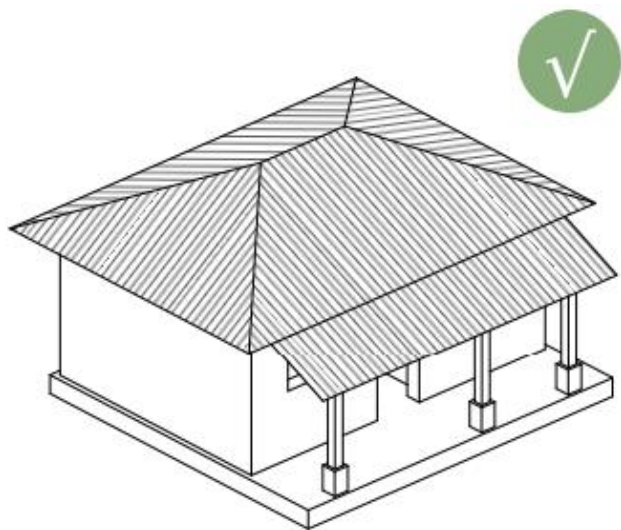


estimated durability (in years?)	is the material only available during specific	local environmental impact (such as deforestation or	comfort & health e.g. thermal comfort,	social coherence; can the technique contribute to	is the use of this material allowed? Are	
over 15 years without maintenance	5 no, it is always available	3 no known local environmental impact	5 rather positive impact on health and comfort	5 this technique is typically based on community solidarity	5 the material can be used without restriction	5
up to 10 years without maintenance	4 yes, only available/produced during season	1 limited local impact (e.g. only if larger quantities are extracted)	3 no known negative impact on health or comfort	4 this technique is typically implemented by hired local labor	3 some legal restriction (like quota) or recommendations apply to the use of this material	3
around 5 years without maintenance	3	1 considerable local impact (e.g. deforestation)	1 no direct negative impact but maybe some hygiene issues or minor impact	3 this technique should better be implemented by external contractors	1 the use of this material is controlled by government (e.g. regulated)	2
maximum 3 years without maintenance	2		2 one criteria with negative impact on comfort or health	2	0 there are legal restrictions (e.g. ban)	0
less than 2 years without maintenance	1		1 two criteria with negative impact on comfort or health	1		

0 **Cancel criterium**



Key messages for roofing from Safer Housing Guidance

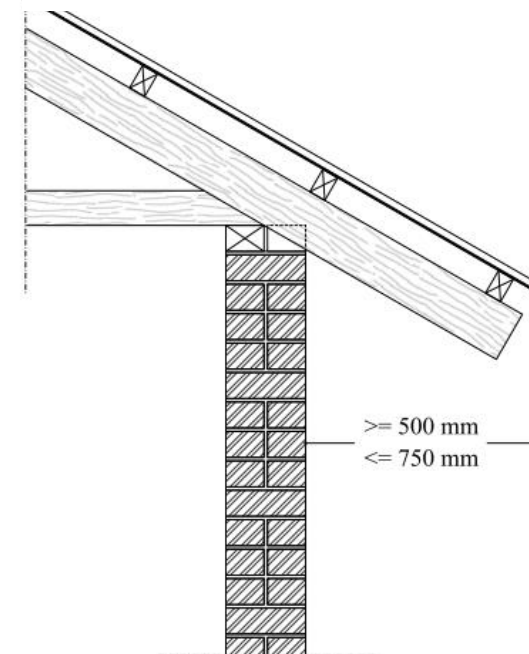


Ideal shape of roof: hipped roof
detach Veranda roof from
main roof!

A roof pitch of $20^{\circ} - 30^{\circ}$ is advised for metal sheet roofs, in order to reduce the effects of suction and uplift caused by strong winds.

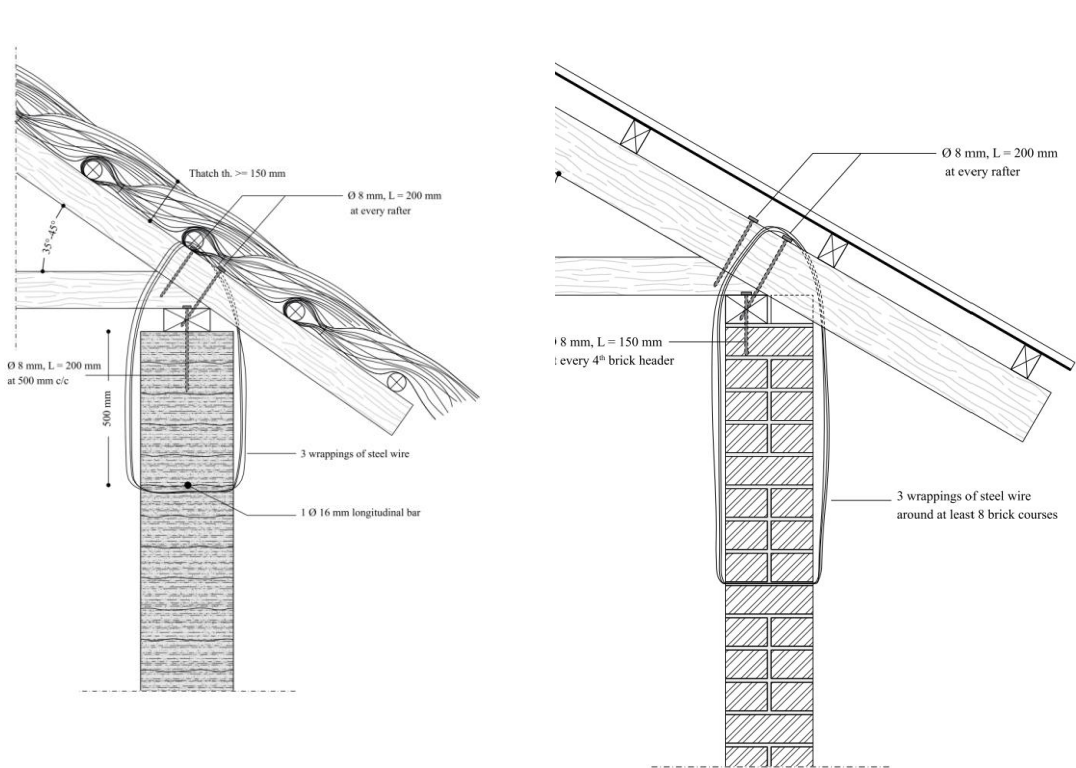
A roof pitch of $35^{\circ} - 45^{\circ}$ is advised for traditional thatch roofs, in order to reduce effects of suction and uplift caused by strong winds.

Roof overhang to
protect walls

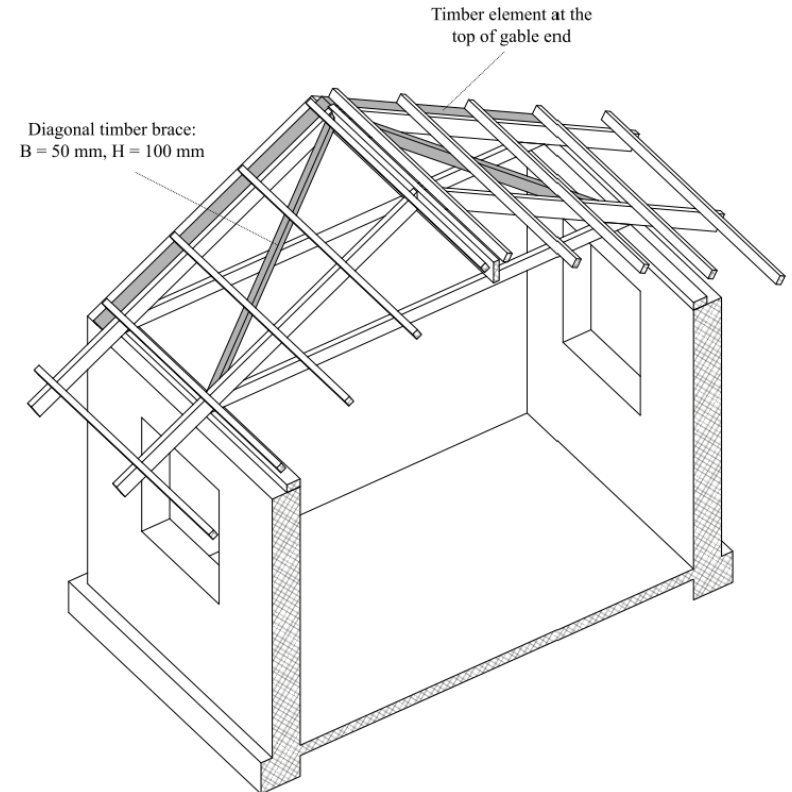




Key messages for roofing from Safer Housing Guidance



Wallplate, ringbeam and tie-down



Diagonal bracing



Meeting on July 15th

Discussion with Ike Phiri from Malawi University of Business and applied Science, Dep. of architecture on potential engagement of the university on research for alternative materials and dissemination of safer construction practices.



Further agenda:

2. presentation communications channels analysis and comms strategy
3. shelter learning day
4. sneak preview geoscience & shelter workshop on July 27th