

## Shelter Technical Working Group 26 October 2018

10:00 – 12:00

Attendees: KBC, Shalom, KMSS-MKN, KMSS-BMO, UNHCR

Absentees: NRC, DRC, ICRC, METTA, KMSS-LSO

	Agenda	Responsible partner
1	<p>Sharing of analysis of Shelter design survey.</p> <ol style="list-style-type: none"> <li>1) Better quality of roof (CGIs) and suggest for timber flooring if the cost can be managed within 15-20% raise in overall cost.</li> <li>2) Insulator below the roof; types of materials to be listed.</li> <li>3) Raise the height of the shelter and provide space/ partial attic for storage space, consider the depth of the foundation accordingly</li> <li>4) Add/align window /ventilation.</li> <li>5) Increase kitchen size.</li> </ol>	
2	<p>Partners Feedback : to the proposed Shelter design</p> <ul style="list-style-type: none"> <li>• Add one window at kitchen's square mash walling.</li> <li>• 4 angle color sheet dwarf walling at kitchen instead of color plain sheet.</li> <li>• Add one window each in the shelters between kitchen and main door</li> <li>• Short diagonal wind bracing at every walling and long wind bracing at ceiling level are required.</li> <li>• Door size = 6'-6" x 2'-6", Window size = 3'-6" x 2'-6".</li> <li>• 20% of the total shelters must have handrails in stairs which needs to be constructed near the WASH facilities where PSN should be prioritized.</li> <li>• Room head of shelter to be increased to 9ft and agreed.</li> <li>• Attic for storage space to be provided 4'-0"x 11'-0".</li> <li>• Depth of foundation should be 1'-6".</li> </ul>	

	<ul style="list-style-type: none"> <li>• Removed middle short post and increase Girder and Beam size to 5"x 2" instead 4"x 2" in timber shelter. But it is required in metal frame shelter.</li> <li>• Agreed standard insulation material is foam sheet. Bamboo mat is optional where there materials are not available.</li> <li>• 0.36mm thick 4 angle Aluzinc color sheet roofing agreed.</li> <li>• The height of plinth level will be adjusted in metal frame shelter base on the length of metal post.</li> <li>• Material of flooring; 9mm thick plywood in NSS and NGCA. 6"x 1" plank is available in GCA except Sumprabum and Hpakant area where bamboo can be used. Transportation cost for the delivery to those area will be very expensive.</li> <li>• Door at attached kitchen will be consider as per the land structure.</li> <li>• Verandah space added in Individual housing design for long term.</li> </ul>	
3	<p>Discuss and Agree on shelter materials' specification and BOQ</p> <p><i>For timber shelter:</i></p> <p>(Type of Timber = Gyiland- Kenyin / local Wood)</p> <ol style="list-style-type: none"> <li>1. 1:2:4 Cement Concrete footing. ( 2'x 1'x 1' )</li> <li>2. 5"x 2" Timber Girder and Beam. (Main building and Attic).</li> <li>3. 3"x 2" Timber Joist. (Main building and Attic).</li> <li>4. 6"x 1" Timber plank flooring if not 9mm Plywood or 4" dia Bamboo. (Main building and Attic).</li> <li>5. 4" x4" Timber Post.</li> <li>6. 3"x 2" Timber Frame.</li> <li>7. Bamboo mat walling for main building. 4 Angle Aluzinc color plain sheet and square mat walling for Kitchen.</li> <li>8. 4"x 2" Timber Tie Beam, Roof Beam.</li> <li>9. 4"x 2" Timber Wind Bracing.</li> <li>10. 4"x 2" Timber Rafter.</li> <li>11. 3"x 2" Timber Purlin.</li> <li>12. 4 Angle Aluzinc Color Sheet (0.36 mm) Roofing.</li> </ol>	

	<p>13. Foam Sheet insulator if not Bamboo mat ceiling.  14. 6" x 1" Timber Eave-board.  15. Bamboo mat Doors and Window leaf with 3" x 2" Timber frame.  16. 5"x2" Stringer, 5"x2" Tread, 3"x2" Handrail, 3"x2" Newel, 2"x2" Baluster (for stair)  17. Earth Oil coating for outer space.</p> <p><i>For metal shelter:</i></p> <p>(Type of Metal = Hollow)</p> <ol style="list-style-type: none"> <li>1. 1:2:4 Cement Concrete footing. ( 2'x 1'x 1' )</li> <li>2. 4"x 2" Iron Hollow Girder and Beam.</li> <li>3. 3"x 1.5" Iron Hollow Joist.</li> <li>4. 9mm Plywood flooring.</li> <li>5. 3"x 3" or 4"x 4" Iron Hollow Post.</li> <li>6. 2"x 1.5" Iron Hollow Frame.</li> <li>7. 5mm Plywood + 4 Angle Aluzinc Color Sheet double layer walling for main building. 4 Angle Aluzinc color plain sheet and square mat walling for Kitchen.</li> <li>8. 3"x 1.5" Iron Hollow Tie Beam, Roof Beam.</li> <li>9. 4"x 2" Iron Hollow Rafter.</li> <li>10. 3"x 2" Iron Hollow Roof Truss.</li> <li>11. 2"x 2" Iron Hollow Purlin.</li> <li>12. 4 Angle Aluzinc Color Sheet (0.36 mm) Roofing.</li> <li>13. Foam Sheet insulator under the roof.</li> <li>14. 6" x 1" Timber Eave-board.</li> <li>15. 5mm Plywood + 4 angle sheet + metal frame Doors and Windows.</li> <li>16. 4"x 2" Stringer, 4"x 2" Tread, 3"x 2" Handrail, 3"x 2" Newel, 2"x 1.5" Baluster (for stair)</li> <li>17. Red Oxide for frames.</li> </ol>	<p>All partner to share the BoQ based on agreed materials and shelter design.  Timeline is Last week of November 2018.</p> <p>On basis of the BOQs, the changes to be prioritized if the cost would rise more than 30% considering the shelter gaps and funding limitation.</p> <p>The Ceiling amount per shelter with attached kitchen to be 15,00,000 as agreed among partners.</p> <p>The proposed design once finalized to be shared with Global shelter cluster and partners.</p>
4	<i>AOB : Meeting to be held in need basis.</i>	