Cyclone-Flood Tolerant Housing

Purba Shridharpur, Nagendrapur, Raidighi, Sundarbans

Initiative By
Issues & Concerns

• Sundarbans Delta areas are highly vulnerable to cyclones
• Each year the destruction due to cyclones in India is estimated at around 2% GDP.
• Sundarbans area witnessed 4 cyclones (Fani, Bulbul, Amphan and Yaas) in last short span of 2 years only
• Damaging the houses and devastating the life of the people.
• Sundarbans villagers can not afford pucca house budget
• Non-availability of the material
• Lack of knowledge to construct cyclone – flood tolerant houses

WAY FORWARD

• Mukti decided to explore on Cyclone Tolerant Houses on prototype basis.
The Aftermath of Cyclone
<table>
<thead>
<tr>
<th>Goals and Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>To provide affordable Cyclone-Flood tolerant housing to Sundarbans people</td>
</tr>
<tr>
<td>House would be min of 300 Sqft with two bedrooms</td>
</tr>
<tr>
<td>To make sure that people should not leave their home even if there is 15ft of water in the area due to Flood, Every house with 2 story building</td>
</tr>
<tr>
<td>House should stand against 150 km/hour cyclone</td>
</tr>
<tr>
<td>Use of local material as it is more eco friendly and local economy boost.</td>
</tr>
</tbody>
</table>
Housing – Design
• Double Level Small Home on Stilts
  ○ Built up Area - 200sft (ground level) + 100 sft (upper level)
- Twin Compact Home
  - Total Plinth Area - 475 sft
  - Built up Area -
    - Total Plinth Area - 25ft x 19ft - 475 sft
    - Total Built up Area - 673 sft

  Lower Level: 19ft x 11ft - 209 sft x 2
  Upper Level: 9ft x 11ft - 99 sft x 2
  Shared Space: 19ft x 3ft - 57 sft
Housing – Prototype -3

**Project By:** Blue Planet Sustainability Consultancy
**Name of Programme:** Design Exposition
**Date of Presentation:** 2nd and 3rd October 2020

**Type of Unit:** Prototype 6 - Single Family Unit
**Name of Project:** Design and Build Project for Disaster Reconstruction & Rehabilitation, Sundarbans
1st House – Prototype

Project By: Blue Planet
Type of Unit: Prototype 5 – Single Family Unit
1st House- Progress
1st House-Construction Progress

STEP - 8

STEP - 7

STEP - 6

STEP - 5
1st House – Final Constructed Model
2nd House – Prototype
2nd House - Progress
2nd House – Construction Progress
2nd House – Final Constructed Model
3rd House Prototype

Project By: Blue Planet
Name of Programme: Sustainability Consultancy
Date of Presentation: 2nd and 3rd October 2020

Type of Unit: Prototype 6 - Single Family Unit
Name of Project: Design and Build Project for Disaster Reconstruction & Rehabilitation, Sundarbans
3rd House Progress
3rd House – Construction Progress

**STEP - 5**

**STEP - 6**

**STEP - 7**

**STEP - 8**

**STEP - 9**
3rd House – Final Constructed Model
Inauguration
Way forward plan for next 12 months

Oct 2021- Sep 2022 Plan

- Support 200 housing to adopt the model. Each Housing will be getting 50000 INR plus Architecting/Engineering support.

- An Engineer and Architect team will be on site to guide and complete all these 200 House in a year.

- New build from scratch and already built house would be retrofitting to confirm Cyclone and Flood tolerant.
### Cost and Funding Breakup

#### A
Cost of build up 350 Sft Cyclone - Flood tolerant House

<table>
<thead>
<tr>
<th>#</th>
<th>Items</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Materials</td>
<td>₹175000</td>
</tr>
<tr>
<td>2</td>
<td>Meson/ Skill labour</td>
<td>₹25000</td>
</tr>
<tr>
<td>3</td>
<td>Labour</td>
<td>₹40000</td>
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</tbody>
</table>

#### B
Funding Breakup for 350 sft of Housing

<table>
<thead>
<tr>
<th>#</th>
<th>Items</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Pradhan Mantri Awas Yojana</td>
<td>₹145000</td>
</tr>
<tr>
<td>2</td>
<td>Owner Contribution (mostly labour part)</td>
<td>₹45000</td>
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<tr>
<td>3</td>
<td>Donor Support needed</td>
<td>₹50000</td>
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</table>

#### C
Funding requirement for 200 units in 2021-22

<table>
<thead>
<tr>
<th>#</th>
<th>Items</th>
<th>Rate</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Support to villagers to adopt new model house</td>
<td>50000</td>
<td>200</td>
<td>100000000</td>
</tr>
<tr>
<td>2</td>
<td>Architecting and programme supervising</td>
<td>15000</td>
<td>200</td>
<td>30000000</td>
</tr>
<tr>
<td>3</td>
<td>management, training, promotion, Accounting and Contingencies</td>
<td>10000</td>
<td>200</td>
<td>20000000</td>
</tr>
</tbody>
</table>
Thank You