

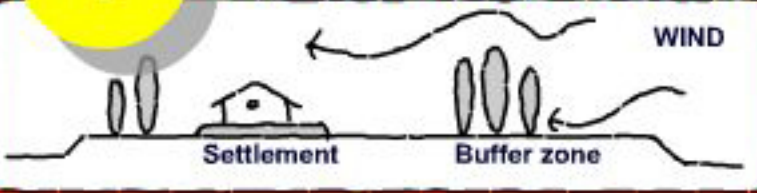
How do we make our houses cyclone resistant? How do we built back better?

Some important design features of a cyclone resistant structure, it can be made of any material, but it is always good to use the local available materials for construction, the provisions given here are intended to reduce the damage to the building and the structure in the event of a cyclone

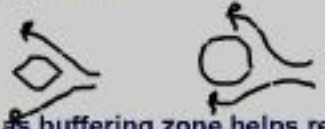


1

Orientation and Siting



- The orientations of the settlement shelters in a cyclone prone area should be such that it allows the wind flow through it and not oppose the prevailing wind direction, a circular form structure or a tilted 45 degree layout of the house to the direction of the prevailing wind is a good design



- layers of plantations as buffering zone helps reducing the impact of wind pressure on the settlement buildings

Notes:
Tying down of the roof may be made out of different optional material, some of them are as follows:
J hook, MS Wires, bamboo, long nailings, MS clamps.

Remember that all the structural joineries should have sufficient overlapping at the point of joinery.

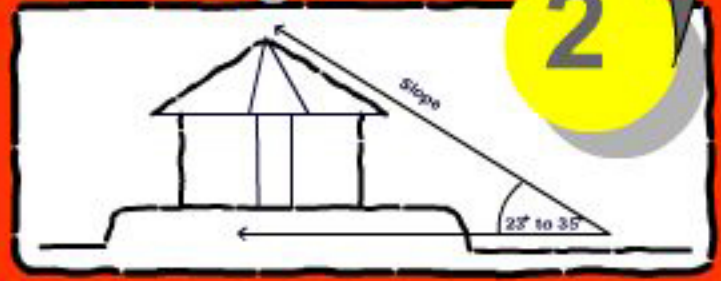
Ensure that all the materials used in the construction are of approved quality and standards

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Roofing



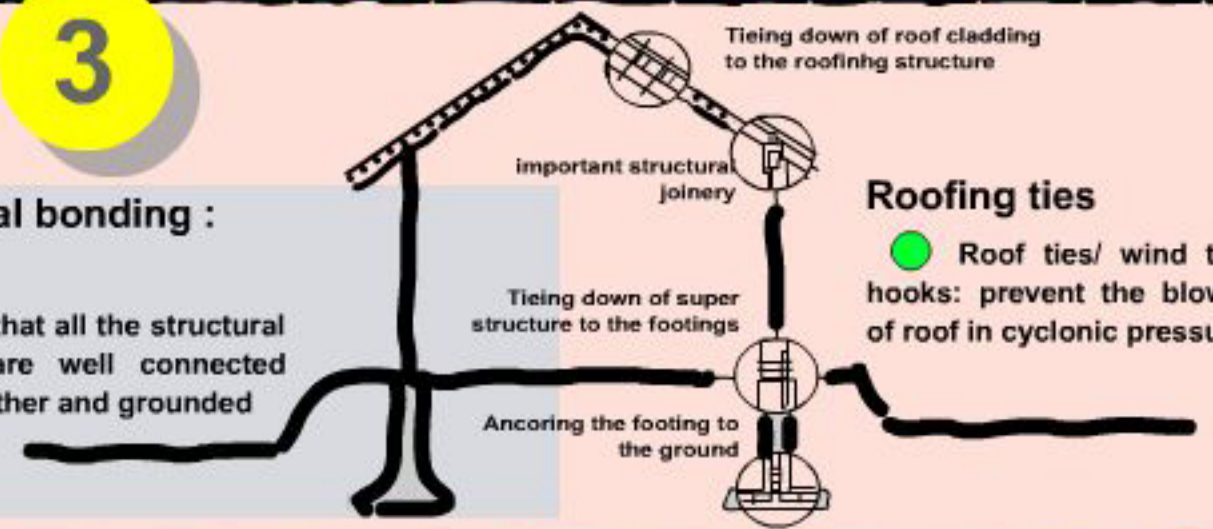
- Roof slope between 23° to 35° is recommended in a cyclone prone zone, the higher the slope the higher is the lift of the roof structure during the cyclonic winds
- A four way hip is more appropriate than a two way slope roof in a cyclonic wind zone

Structural Joinery and Footing

3

Structural bonding :

- Ensure that all the structural members are well connected with each other and grounded



Roofing ties

- Roof ties/ wind ties and hooks: prevent the blowing off of roof in cyclonic pressure

Openings and cross ventilations

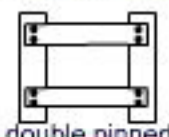
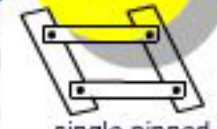
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- The openings of the structure should facilitate cross ventilation
- Openings should be avoided close to the corners



5

- Proper structural bracings, trusses and wind breakers reduces the deformation and collapse of houses, helping reduce the structural impact of wind pressure



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Sidr Shelter Response

Plantings play a very important role in reducing the impact of cyclonic wind, it also helps prevent soil erosion

Bamboo, the fastest growing plant in the earth, an excellent buffer to the cyclonic wind, converts CO₂ to O₂ very fast, thus help control global warming

Properly Woven/ matted and erected bamboo or similat material's walls surfaces in the rural housing can act as an effective wind breakers.

The concept of resilient vs recovery may be feasible and more practical in many coastal communities living in cyclone and flood prone zone

ideally no permanent buildigs should be constructed on the wrong side of the embankment,

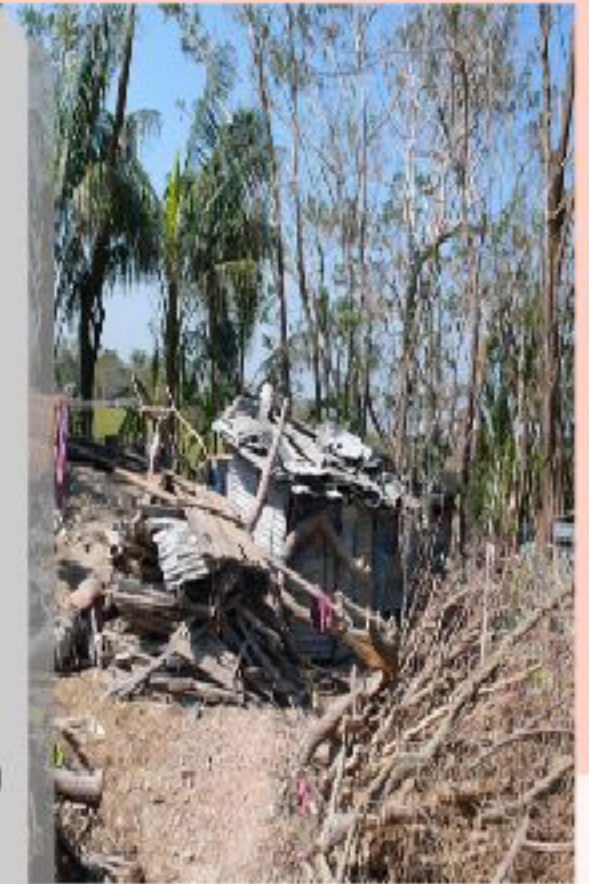
The height of the building should be kept as low as possible in a cyclone prone zone

It is recommended that the roof overhangs of the building do not exceed 50cm outside the structure line

Plinth protection of mud plinth prevents the weakening of foundation, stabilised apron and drainage around the buildings help protect the plinth

SCG
Bangladesh

Building Back Better!



Technical Tips