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Build Back Safer

one-story timber design

shelter assistance

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Build a stronger and resilient house for your family.

BADLY BUILT HOUSES KILL PEOPLE DURING DISASTERS!

This Information, Education and Communication (IEC) is developed based from Build Change Design and Construction Guideline, 8 Key Messages from Shelter Cluster and Philippine Red Cross site observations during construction.



Booklet Topics

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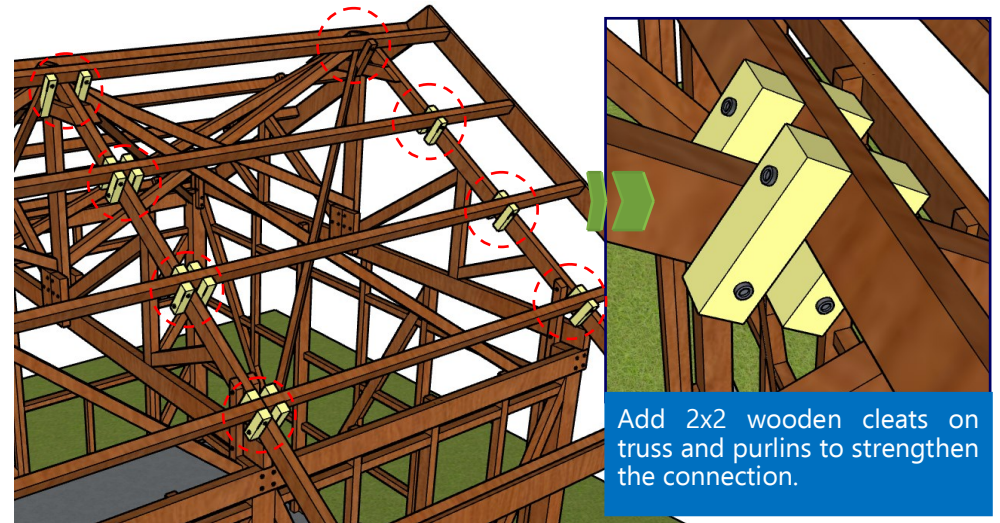
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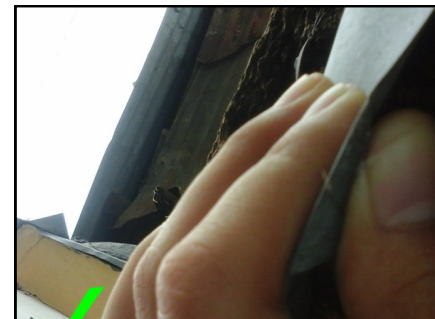
g. Strengthen the roof

Purlin-Truss Cleats



Add 2x2 wooden cleats on truss and purlins to strengthen the connection.

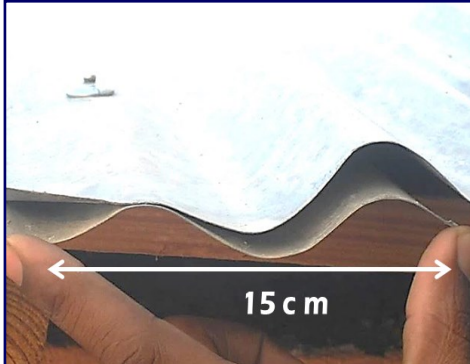
Choosing CGI sheet



Use Gauge 26 (0.48 mm) CGI sheet for roofing.

g. Strengthen the roof

Proper CGI sheet overlap



Overlap CGI sheets every 2 waves or corrugation on sides.



Overlap CGI sheets at 15 cm at ends.

Proper CGI sheet nailing

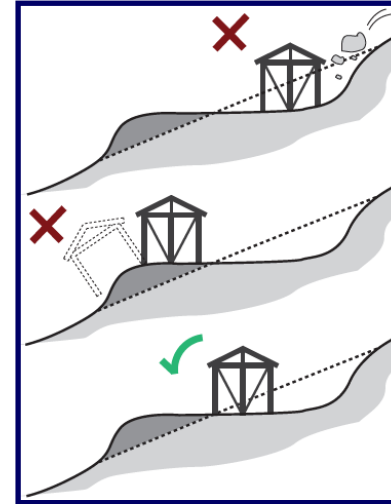


Apply umbrella nails on 3 consecutive waves at roof edges and CGI overlap, every wave at top and bottom edge of roof.



a. Choose safe and stable location

Safe Site Locations



Don't build where rocks might fall.

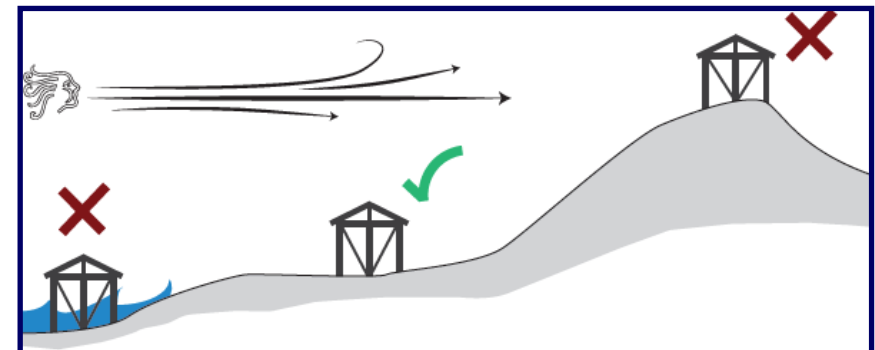
Don't build near edges of cliffs.

Keep a safe distance from the edges and build on stable ground.



Don't build too close to large trees.

Keep a safe distance from large trees.

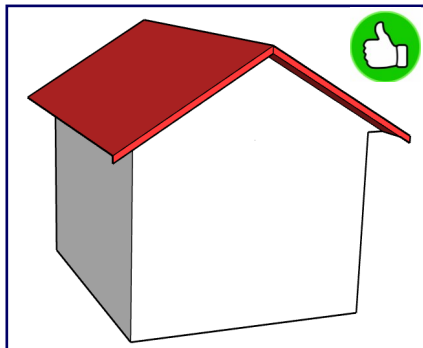


Don't build on or near bodies of water.

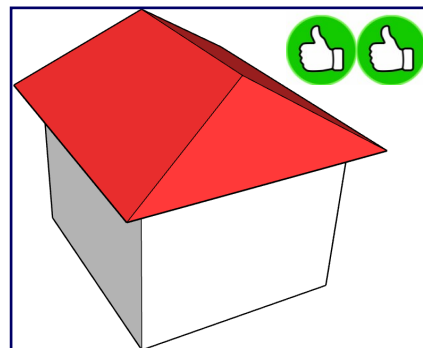
Don't build on hills that are too high.

b. Choose disaster-resilient designs

Type of Roof Designs

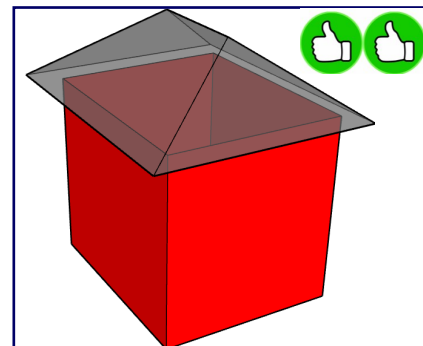


Gable / 2-sides roof

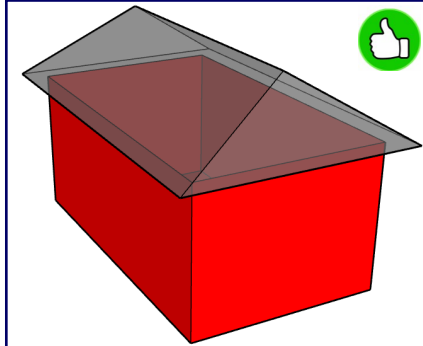


Hip / 4-sides roof

Shape of Floor Plans

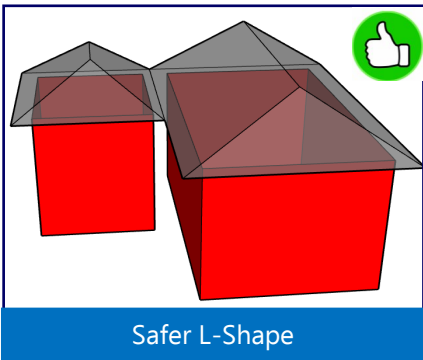


Simple Square



Simple Rectangle

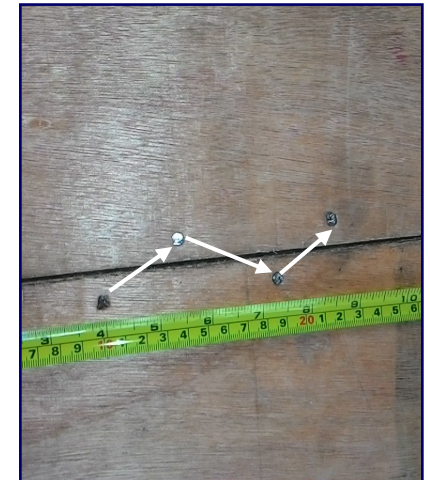
Note:
Regular-shaped house is more stable than irregular-shaped



Safer L-Shape

f. Strengthen the walls

Using 1/2" Plywood



Nail the plywood at 10 cm spacing and zigzag pattern.

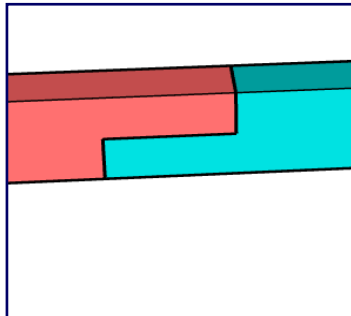
Using 1x6 wood planks



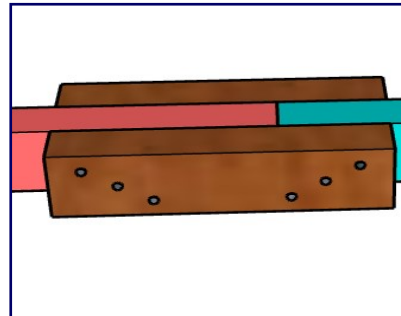
Orient wood planks at 45 degrees with 3 nails both ends.

e. Strengthen connections

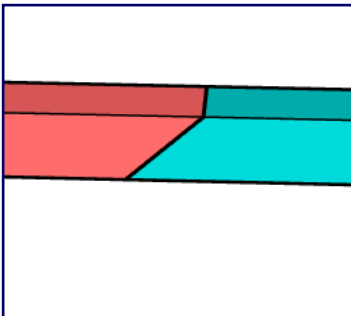
Proper wood splicing



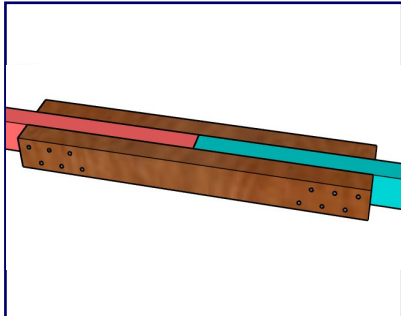
Cut 1/2 of wood depth each wood



Nail the same wood size on both sides.



Make slanting cut for both wood.

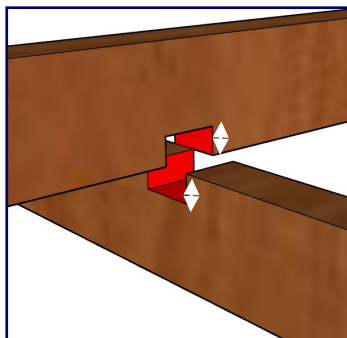


Nail the same wood size with wood.

Allowable wood cuts



Cut up to 1" maximum



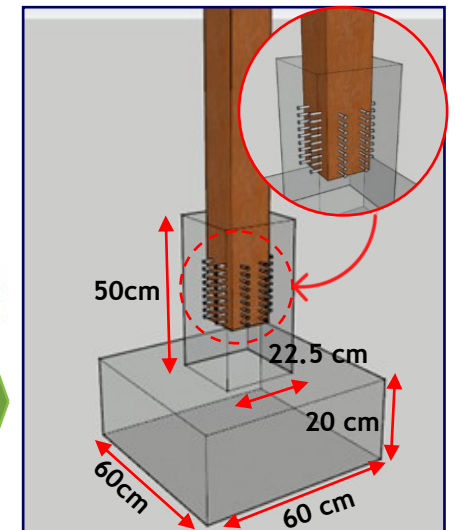
Cut up to 1" maximum

c. Build strong foundation

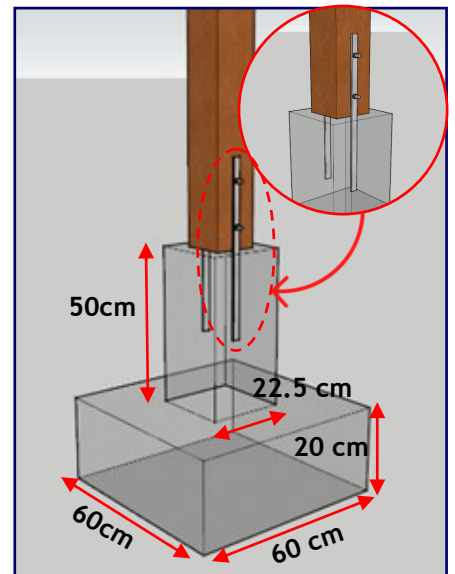


Note: Foundation on house ensures house stability and anchorage

Types of Footing



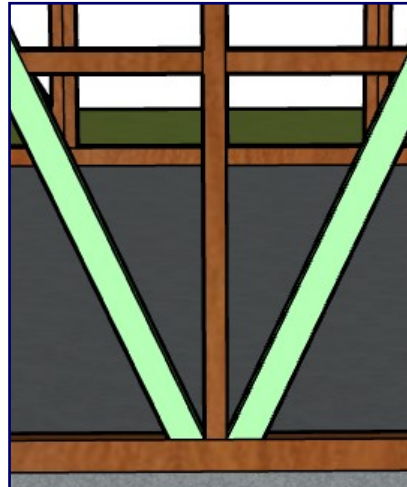
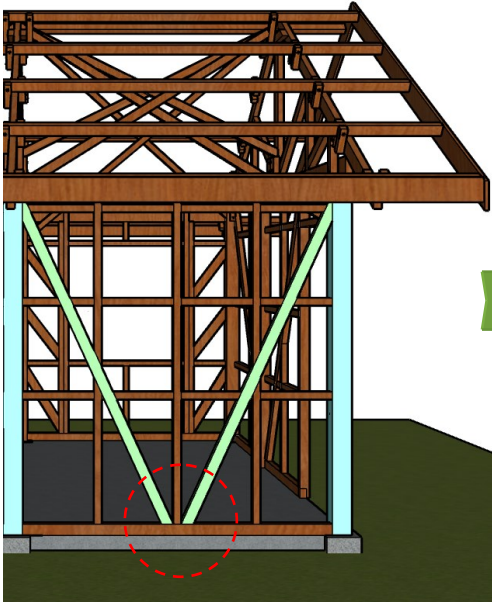
Post embedded with nails



Post with metal straps and bolts

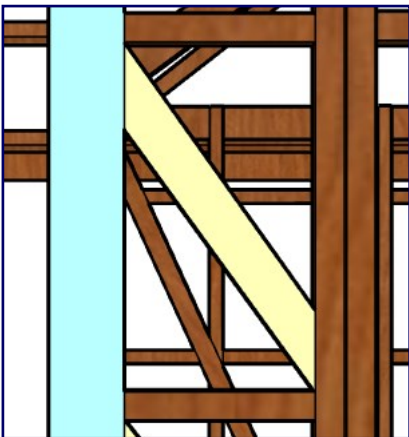
d. Strengthen with bracings

For walls without openings

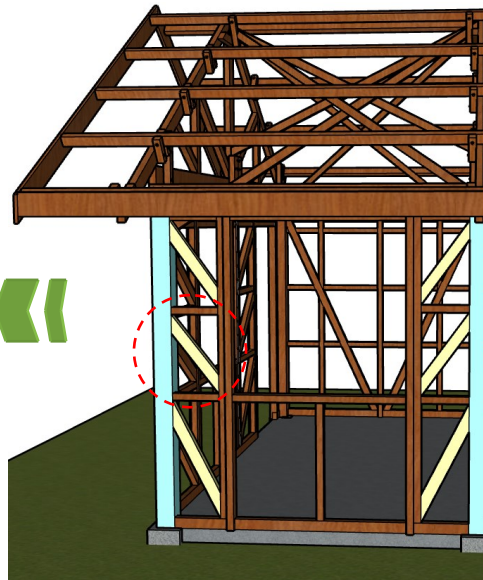


Use 2x4 braces to support the post.

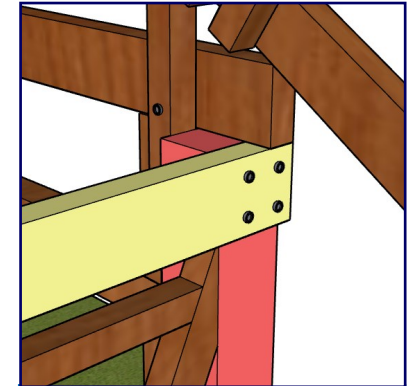
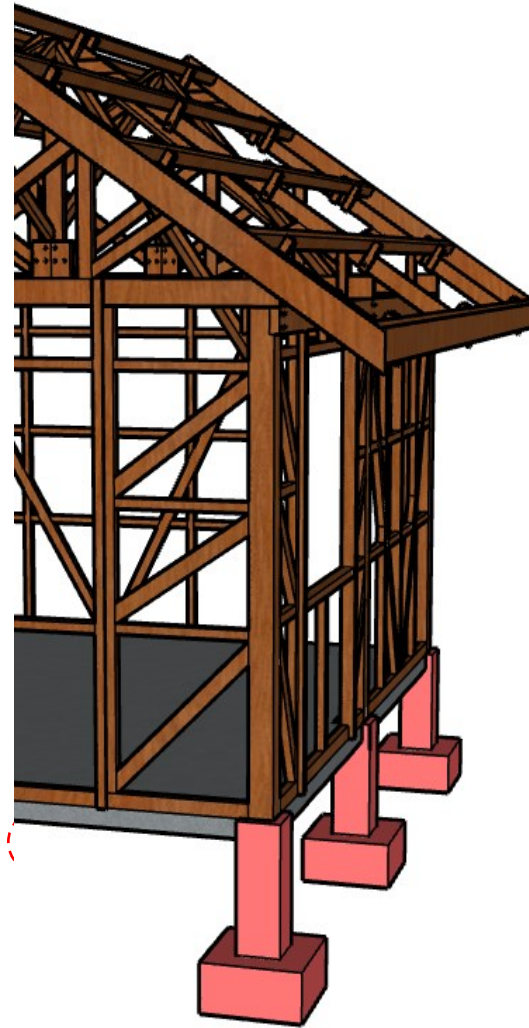
For walls with openings



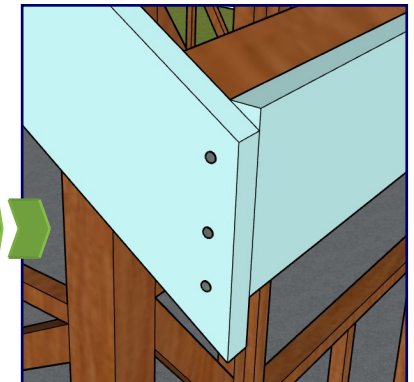
Use 2x2 brace on 5x5 wood to strengthen the walls.



e. Strengthen connections



Nail 2x5 to wood post for better connection.

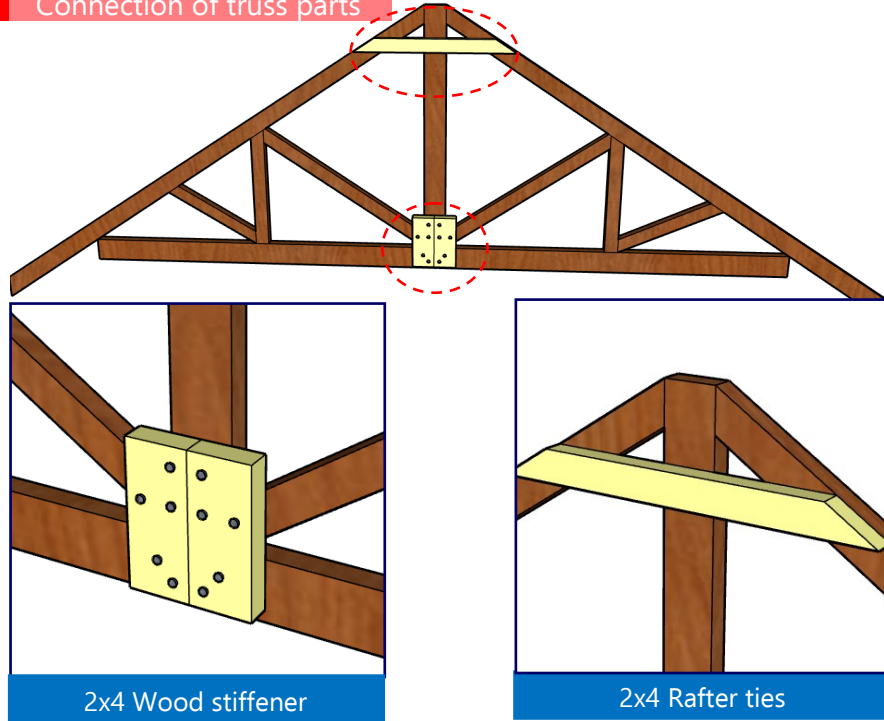


Nail 1x6 fascia boards for

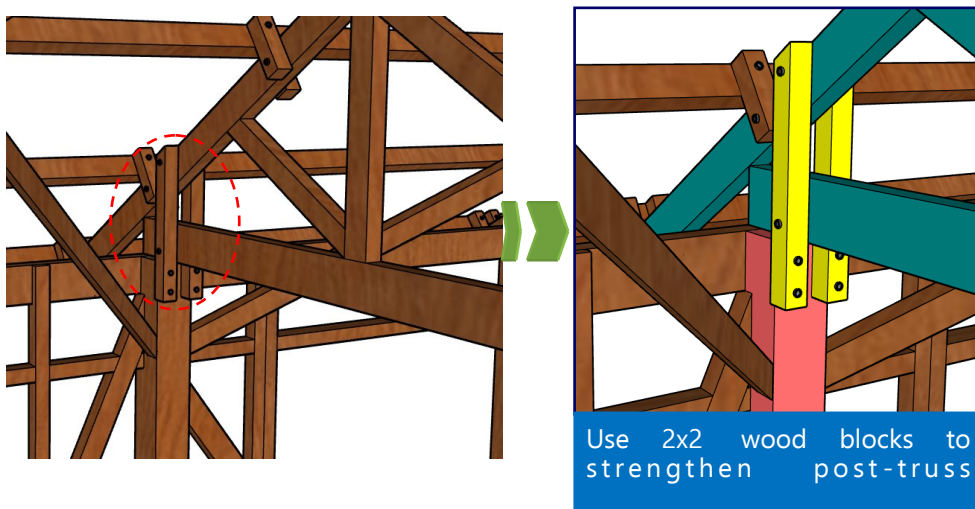
Note:
Ensure proper nailing to secure the connections.

e. Strengthen connections

Connection of truss parts

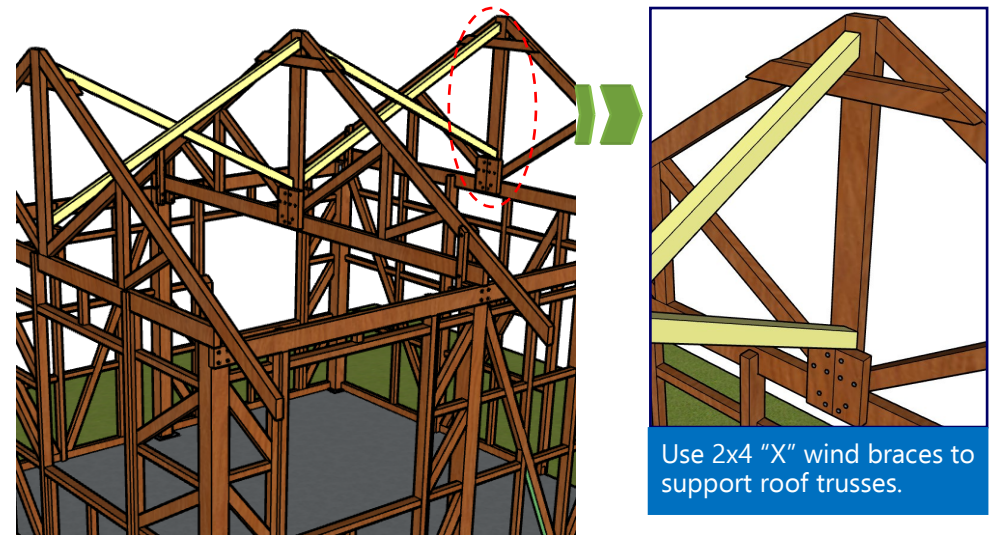


Post to Truss Connections



d. Strengthen with bracings

In between roof trusses



In roof truss' sides

