HOW-TO-BUILD GUIDE
GAZEBO

WHAT YOU CAN BUILD USING THIS GUIDE

This guide shows you how to build a free-standing timber garden gazebo. The design is suitable for an open-framed structure only. It is not suitable where a roof cladding such as shingles or corrugated roofing or a sold wall cladding is required.

BEFORE YOU BEGIN BUILDING

Contact your local territorial authority and confirm that the height, type and location of the gazebo you intend to build comply with all local planning and building rules. Check whether a building or resource consent is required before construction. The gazebo design described here will not generally require a consent.

PLANNING YOUR GAZEBO

These instructions are for a simple 2.4 m square, tent pitch-roofed re-locatable timber garden gazebo. The materials you require will need to be calculated based on the actual size and type of gazebo you intend to build.

MATERIALS

Joists	100 x 50 mm H4 treated radiata pine timber
Packers	H4 treated timber to level the floor after construction
Floor	100 x 40 mm H3.2 treated timber decking
Posts	100 x 100 mm H3.2 treated radiata pine timber
Beams	150 x 50 mm H3.2 treated radiata pine timber
Rafters	100 x 50 mm H3.2 treated radiata pine timber
Purlins	50 x 50 mm H3.2 treated radiata pine timber
Trellis	H3.2 treated pre-framed diagonal timber trellis manufactured with stainless steel staples (measure-up for framed units after the main gazebo structure is completed)
Nails	100 mm jolt-head hot-dip galvanised nails
	75 mm jolt-head hot-dip galvanised nails
Bolts	M12 hot-dip galvanised coach bolts (x 4)
Anchor	75 x 4 x 700 mm long flat hot-dip galvanised steel plate (x 4) drilled one end

CONSTRUCTION

Floor

1. Cut six lengths of 100 x 50 mm timber joists to 2.3 m in length and two joists to 2.4 m in length. Nail a 2.3 m joist between each end of the two 2.4 m joists with 100 mm jolt-head galvanised nails. The nails should go through the face of the 2.4 m joists into the ends of the 2.3 m joists, to form a 2.4 m square. Mark out 400 mm centres within the square on the inner face of the 2.4 m outer joists and nail the remaining 2.3 m joists at each mark to form a 2.4 m floor platform with joists at 400 mm centres. (See Figure 1.)

Posts

2. Cut four 2.4 m long 100 x 100 mm timber posts and bolt them vertically through the face of the 2.4 m outer joists at each corner of the floor frame with 12 mm galvanised bolts and washers. (See Figure 1.)

Beams

3. Cut two 150 x 50 mm timber beams to 2.4 m length and two to 2.3 m length. Nail the two 2.4 m lengths opposite each other, on edge as beams to the top of the posts. Then drill a 12 mm hole through the centre of the beam and the post, and bolt with 12 mm galvanised bolts and washers. Nail the two 2.3 m beams to the top of the posts between and at right angles to the two 2.4 m bolted beams with 100 mm jolt head galvanised nails. Nail through the face of the 2.4 m beams into the ends of the 2.3 m beams, to form a ring beam to the top of the gazebo. (See Figure 1.)

Rafters

4. Determine the pitch of the roof you would like on the gazebo. Cut four 100 x 50 mm timber rafters to the right length to form diagonal (hip) rafters from the beam at each corner post to the centre of the gazebo. Make an allowance for each rafter to overhang the beam by 300 mm. Cut the rafters plumb at the outer end and form a bird's mouth to suit the beam location and pitch angle. Make a plumb cut at the apex to join all the rafters evenly at the apex of the pitch. Lightly chamfer each external corner of the beam for the rafters to sit on. Pitch the rafters and nail to the beams with a skewed nail each side of the rafter and to each other at the apex, all with 100 mm jolt-head galvanised nails. (See Figure 2.)

5. Mark the top of each beam for intermediate rafters at 600 mm centres. Carry this line at right angles to the beam and mark a position on the diagonal rafter where the new rafter will butt into it. Measure and cut each 100 x 50 mm rafter to suit. Allow for the 300 mm overhang at the beam. Cut the rafters plumb at the outer end and form a bird's mouth at the beam and a compound mitre cut where each rafter butts into the diagonal rafter. Pitch the rafters and nail to the beams and to each other with 100 mm jolt-head galvanised nails as per the other rafters. (See Figure 2.)

Purlins

6. You may also wish to add some 50 x 50 mm timber purlins to the top of the rafters to help hold the rafters straight and as extra decoration. To do this, measure and cut the number of required purlins to run parallel to the exterior beam across the top of the rafters. Make a mitre cut at each corner junction and then nail the purlins in place with a 100 mm nail through the top face of the purlin into each rafter. (See Figure 2.)

Flooring

7. Cut lengths of 100 x 40 mm timber decking to suit the size of the floor platform. Nail the decking to each joist with two 75 mm jolt-head galvanised nails. Use a nail to evenly space each board. Cover the entire floor platform to form the gazebo floor. (See Figure 3.)

Trellis

8. Measure the distance between the posts and between the floor decking and the underside of the beam on three sides of the gazebo. Ensure that the posts are plumb and the gazebo is square before measuring. Have the three framed diagonal trellis panels manufactured out of timber to the size and style you require. One side of the 2.4 m square gazebo will remain open for access, so you may also want to incorporate a 300 mm deep trellis screen that is fixed directly below the beam to form a decorative doorway head. Ensure that the trellis is manufactured from H3.2 treated timber with stainless steel staples, and incorporates a rebated edge frame into which the trellis is fitted.

9. Ensure that the gazebo structure is plumb and square and then fix each timber trellis panel between each post and the beam and floor on three sides of the gazebo, by nailing with 100 mm jolt-head galvanised nails through the trellis frame. Nail at each corner and twice at equal distances along each side and the top and bottom of each screen to the posts, beam and floor joists through the decking. The trellis screens must be well nailed as they form the braces that will keep the gazebo square and plumb. (See Figure 4.)

Anchor

10. Pack under joists with H4 timber packers as required to ensure the floor is level and the gazebo is stable and well founded. Drive a 75 x 4 x 700 mm long flat hot-dip galvanised steel plate securely into the ground at each corner of the gazebo, leaving 100 mm of the rod above ground level, and use a galvanised coach bolt to fasten the rod to the face of the joist platform. This will hold the gazebo in place against the wind while at the same time allowing future relocation. (See Figure 3.)

MORE INFORMATION

Refer to the New Zealand Standard for light timber frame construction, NZS 3604:1999 *Timber Framed Buildings* for more detailed information if your project varies from these instructions.

Figure 1

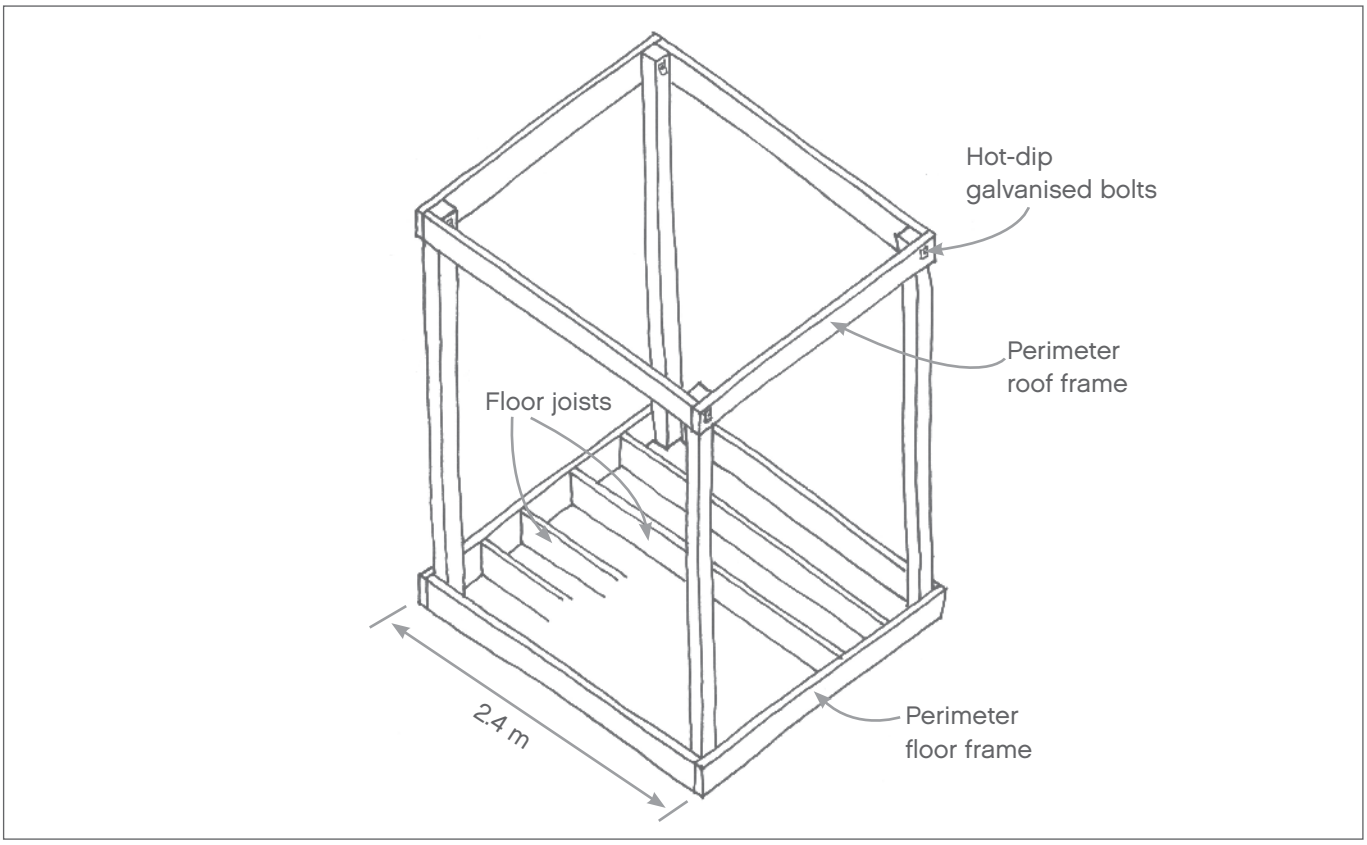


Figure 2

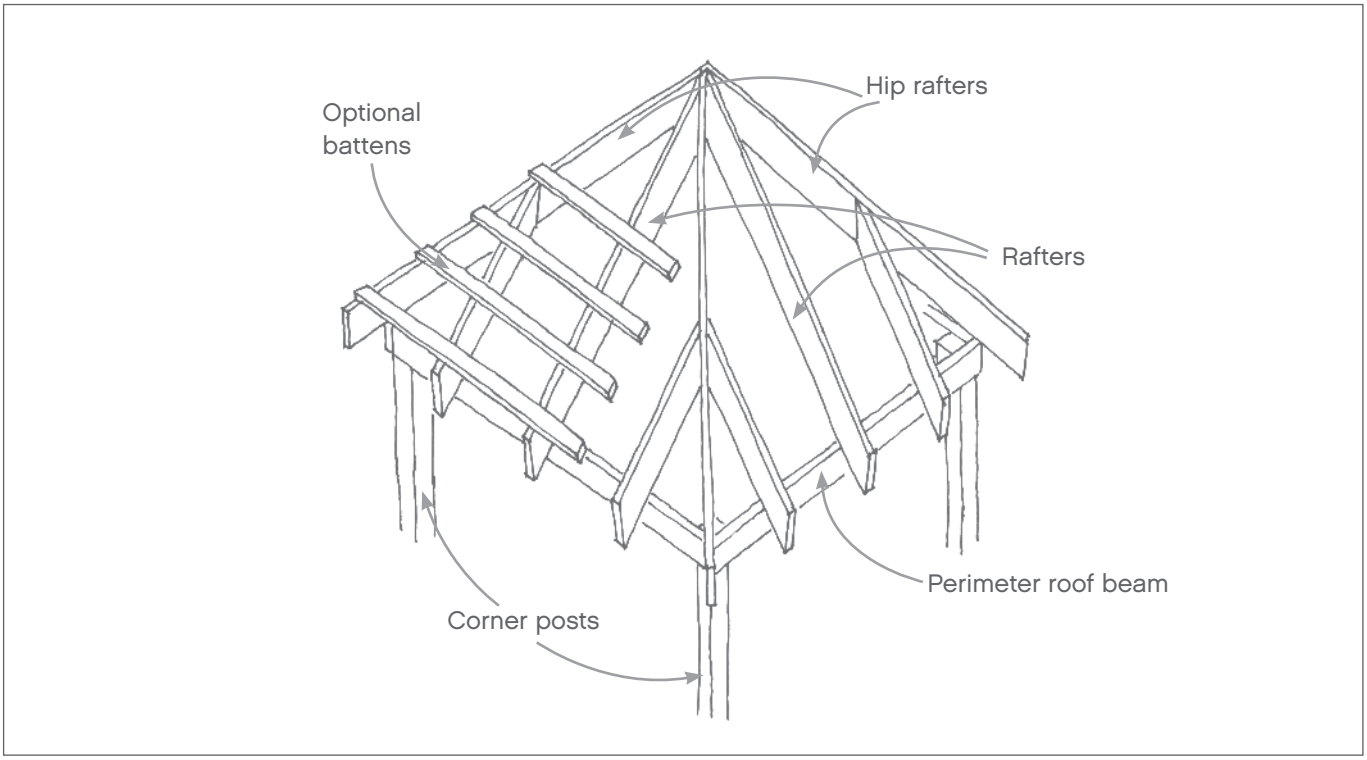


Figure 3

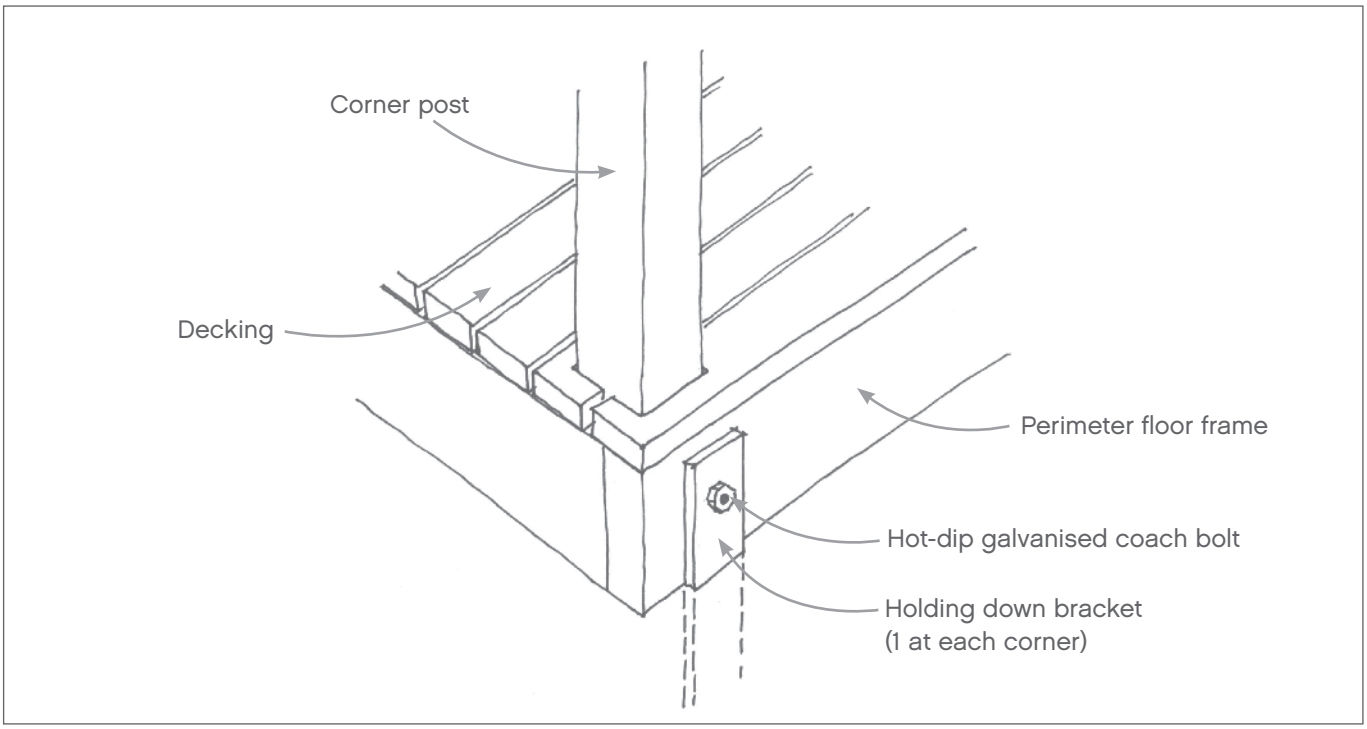
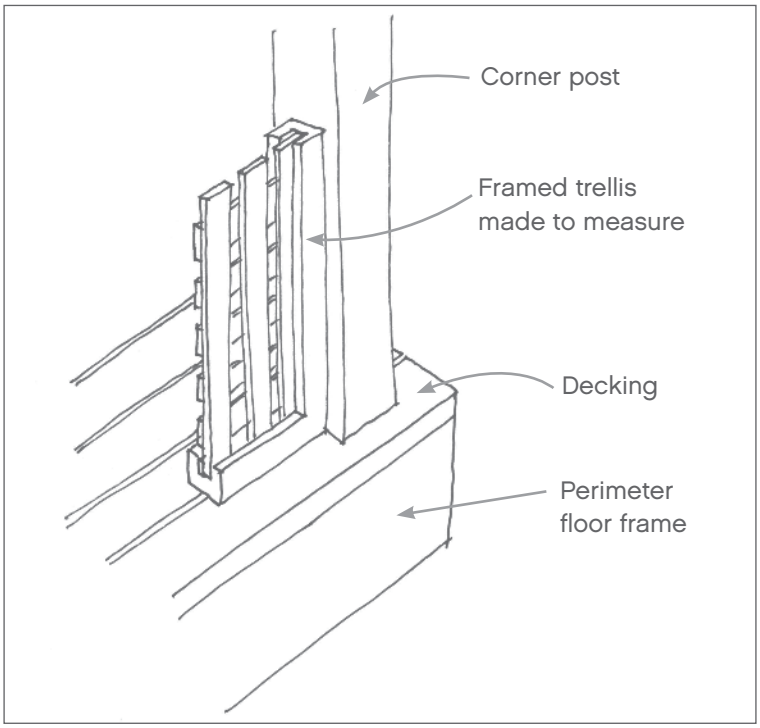


Figure 4



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