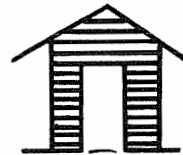
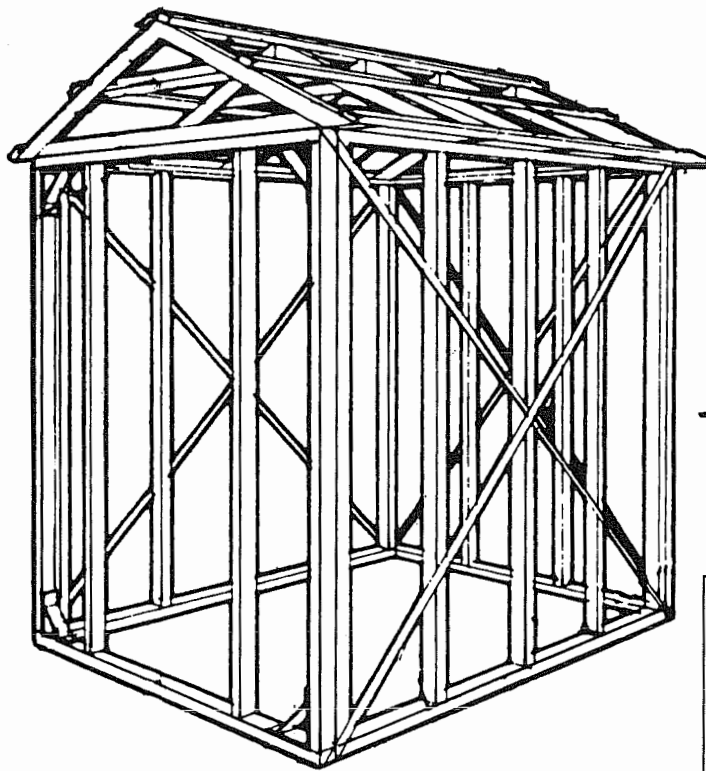


Outdoor Shed



GARDEN SHED



SHADE HOUSE



GREEN HOUSE

Here is a design for a timber framework for a simple garden shed-or for a greenhouse-or for a shade house. Whichever shed you decide to build you must be careful that you choose the right materials for each particular type of "shed" because they each offer different hazards to all building materials. Your TABMA Timber Merchant can advise you about the availability of selected structural timber products suitable for each "shed" project.

Local Council Regulations

Construction of outdoor works such as a deck, a pergola, garden sheds, fences etc., will probably need approval by your local authority and we recommend that your Local Councils be consulted early, before detailed planning is commenced.

Building System

The system of building suggested is "prefabrication"! We propose that all wall frames and the roof framework are laid out and fabricated "on the ground" and then assembled on prepared foundations and footings which ensure that the wall frames and cladding are clear of the ground.

Timber Species Selection

- Use building grades of timber for all frames, that is timber which has been **stress graded**.
- For the **Garden Shed** - in which all framing timbers will be protected from the weather and associated moisture absorption you could select any readily available structural (stress graded) timber.

- For a **Shade House** - in which all framing timbers will be affected by Sun wind, rain, dew and your plant watering system, select timber species and products which are naturally durable OR preservative treated timber (usually plantation pine) which has been preservative treated for Hazard Level 3 (H3) or better (4 or 5). (You will require that the selected timber is also stress graded).
- For a **Green House** - in which a closed environment maintains relatively high humidity and temperature and all framing timbers, while possibly protected from weather, are nevertheless at risk from decay caused by high moisture content - choose species of good natural durability or timber preservative treated to Hazard Level 3 (H3) or better (4 or 5). (You will require that the selected timber is stress graded).

Fixing and Fastenings

Choose nails/bolts/nail plates suitable for the type of "shed" you intend to build. Bright steel nails for a garden shed framework, hot-dipped galvanised (or similar non-corroding fasteners) for greenhouse and shade house .

External Cladding

Your choice will depend on the end-use of the framework. For a garden shed consider traditional exterior quality cladding products. For both greenhouse and shadehouse, consider using a protective "skirt" at about 600mm to 900mm above ground using any of the cladding materials.

Roofing

Typical roofing for a Garden Shed would be one of the roll-formed metal roofing profiles with or without a transparent panel (Alsynite/PVC/polycarbonate etc) to provide light.

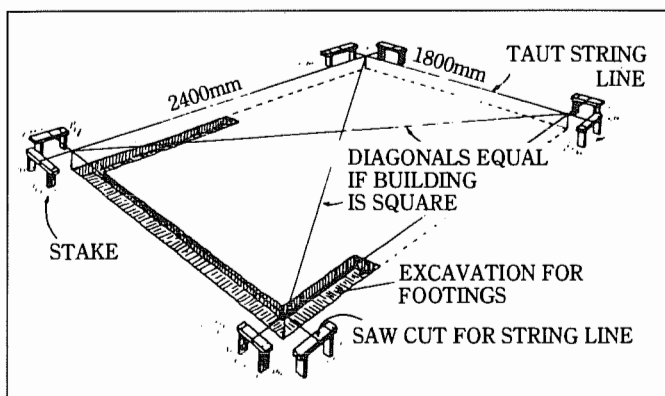
For a Shade-House, the alternatives could be battens, lattice work or shade-cloth, wire mesh, pressed metal mesh ...

For a Green House, while glass would be the traditional covering, more usual would be the various clear or coloured plastic products with different characteristics such as UV light transmission, UV light resistance, durability, hail resistance ...

▼ STEP BY STEP ▼

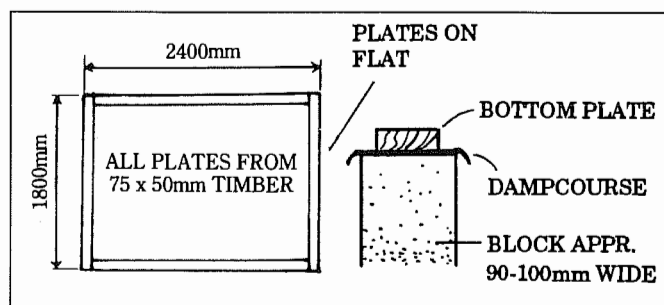
- 1 Where to begin** Laying out the site. The ground on which the shed is to be built should be firmly packed and the site on which the shed is to be located is assumed to be fairly level. Fix the outside edge of the walls using stringline and line level. (Note: These outer dimensions are 2400 x 1800mm).

Using stringline, line level, etc. and the necessary pegs and hurdles, lay out shape and height as below, clearly establishing location of trenches for footings and the line of the concrete block foundation wall.

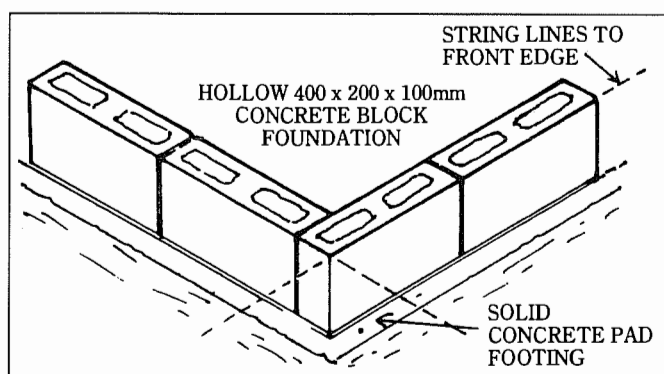


- 2 Dig out trenches** or form up as required approximately 200mm wide and at a depth to allow for positioning of a standard 90mm wide hollow cement block to required foundation wall height. (Note: This block wall is intended to elevate timber framework at least 100mm above ground line).
- 3 Pour Concrete Footings** using premix or standard cement mix as supplied in prepacked bags or equivalents.
- 4 Cut Bottom Wall Plates** From the pieces of timber nominated as wall plate material cut four bottom wall plates, namely: 2 pieces approximately 2250mm long; 2 pieces each exactly 1800mm long. (Note: Before final

cutting check measure these plates. When laid out on flat ground these pieces should be able to form a rectangle 2400 x 1800mm as in diagram).



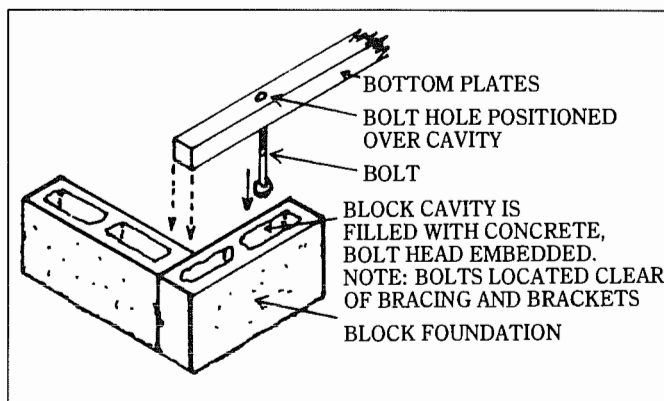
- 5 Position Corner Blocks** Locate and cement in place and at the correct height to give a horizontal wall, two formed concrete blocks at each corner using both the stringline and the precut bottom plates (step 4) to correctly line up the corner blocks, straight, level and exactly on the planned rectangle 2400 x 1800mm external dimensions



- 6 Complete Laying of brick wall** using stringline and bottom plates as guide.
- 7 Install Holding Down-Plates** Position bottom plates on corner blocks when concrete has set and locate and drill two 12mm holes through each plate to receive the 10mm bolts but take care that the bolts clear the studs.

(Note: The head of bolts will be located within a block cavity). Fill selected cavities with concrete and position bolt -again using bottom plates to both locate and hold bolt in position until concrete sets.

(Note that the two bolts in the front wall plate must be so located that they do not affect the door opening or the positioning of the bracing angle brackets).



- 8 Cut Top Plates** Cut four more wall plates equal in length to the four used in previous steps. This will give you 2 plates exactly 1800mm long and 2 plates cut to size to make up the long wall (i.e. approximately 2240 - 2250mm long)

Tools you will need

- Saws
- Hammer
- Measuring Tape/Rule
- Carpenters square & pencil
- Concrete Mixing Tools
- Spirit Level
- Spanner-adjustable
- Drill and bits
- Stringline (linelevel)
- 60/30 Setsquare

Materials you will need

TIMBER

Select species or preservative treated pine timber appropriate for the type of shed you are building. Timber should be stress graded too.

For the relatively small shed described (about 2.4m x 1.8m x 2.1m high) we have simplified the schedule of timber sizes

For **wall framing** (plates and studs) and **roof frame** (rafters and chords) in hardwood (F8), cypress (F4) or oregon (F5) use 75 x 50mm nominal size, but in plantation pine (F5 seasoned) use 70 x 45mm finished size.

Wall Frames quantities:

4 / 1.8m, 4 / 2.4m, 18 / 2.1m

Roof Truss quantities:

6 / 2.1m, 8 / 1.5m

ROOFING BATTENS

Number required will depend on roofing material used, but for rolled metal roofing in a garden shed order three battens per side thus in 75 x 38mm roofing battens you will need 6 pieces 2.4m long (2.7m to allow overhang in garden shed if desired).

WALL BRACING

Flat strap bracing on the diagonals of two long walls and rear wall. Heavy galvanised angle brackets are suggested for each corner of the short walls adjacent to the doorway.

CLADDING

Your TABMA Merchant will be able to advise on the alternative cladding materials - availability, performance, sizes, cost - and how they should be ordered.

TRIMWORK

Trimwork such as door jamb material, fascia, barge boards, architraves may be needed, depending on the

type of shed you are building. Standard door jamb material for example should be ordered to suit the door chosen and the thickness of cladding material

DOORS

The shed design will accept a standard size 2040 x 820 x 35mm low cost door - Ensure that your selected garden shed door is appropriate for weather exposure.

FOUNDATION WALL.

Pre-mixed concrete for pouring or pre-mixed dry bagged concrete for footings. Concrete blocks, typically 75 x 390 x 190, for each row about 20 blocks

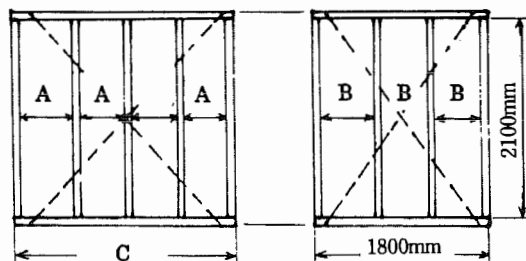
HARDWARE:

- Holding down bolts: 8 / 150 x 10mm galvanised round head, nuts, washers - or equivalent.
 - Roof truss bolts: 24 / 100 x 10mm galvanised round head bolts, nuts, washers.
 - Roof truss to end frames: 4 / 125 x 10mm galvanised round head bolts, nuts, washers.
 - Short wall bracing: 4 / 250 x 250 braced angle brackets or equivalent in heavy gauge galvanised steel plus appropriate sized galvanised screws.
 - Roof trusses to frame: 8 framing anchors 4L, 4R plus appropriate nails.
 - Frame connections: 12 / 100 x 6.5mm galvanised coach screws.
 - Framework nails:* 100 / 100 x 3.5mm bullet head nails (hardwood) or flat head nails (soft wood).
 - Batten nails:* 50 / 60 x 2.8mm
- *Note: For greenhouse and shade house use galvanised nails.
- Wall bracing straps: galvanised flat strips (speedbrace or equivalent) 2 / 3m lengths each side, total 18m.
 - Dampcourse: To cover perimeter block wall, at least 150mm wide.
 - Barge moulding: As appropriate, pre-formed to suit roofing material selected, approximately 1.3m each piece.
 - Ridge capping: As appropriate.
 - Door fittings: Hinges and catches or lock - as selected.
 - Floor material: As selected.
 - Finishing paints / stains.

9 Cut Wall Studs Cut eighteen (18) wall studs, each 2100mm long.

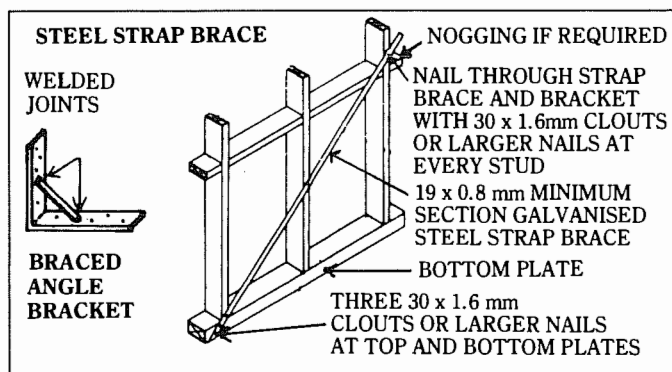
10 Apply Selected Preservative Solutions to all cut components if desired, particularly bottom wall plates and to preservative treated plantation pine if used.

11 Fabricate two side wall frames and one end wall frame using timbers and spacing as drawn here.

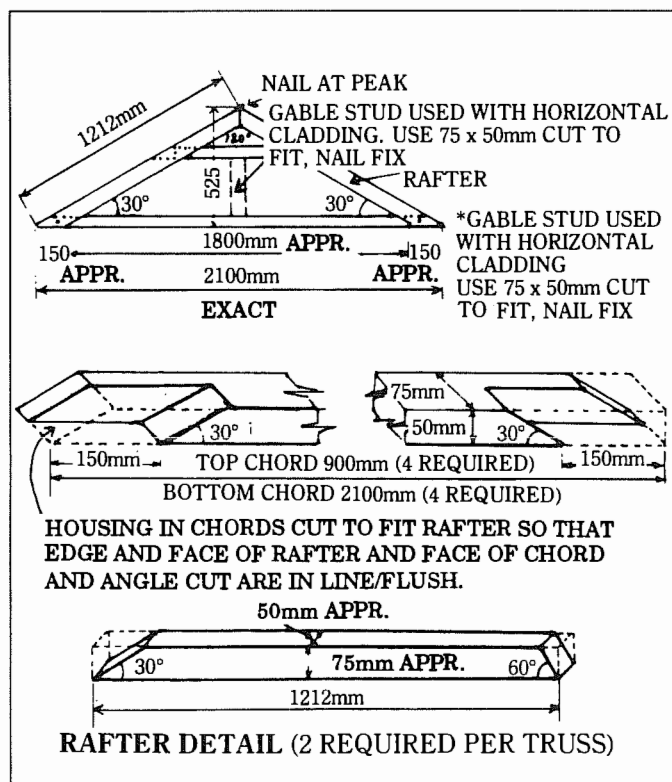


Spacing A and B adjusted to give uniform space.
Dimension C. see step 4.

- 12 Diagonally brace** squared up side and end frames using galvanised strap bracing material. (Note: Two diagonal braces are fixed to each wall but carefully check location of bolting when locating strip bracing). Cut off excess bracing material.



- 13 Fabricate four Roof Trusses** to design below using "chords" and rafters cut as shown. Firstly nail assemblies together then drill holes and insert bolts as indicated at each junction.



- 14 Fabricate Front Wall Frame** (see page 1) and install angle brackets in each corner.
- 15 Cut and fit Dampcourse** Cut dampcourse to provide continuous layer on top of foundation wall, neatly cut or punch holes to fit over embedded bolts.

- 16 Erect frames** Place frames in position on bolts in foundation wall, check for squareness and uprightness of the frames, coachscrew together using 3 screws to each corner junction.

- 17 Fix Roof Trusses** Bolt end gables to top plates and locate intermediate trusses then use framing anchors to firmly fix in place.

- 18 Fix Battens** Cut and fix three roofing battens 75 x 38mm x 2.4m to each side of roof to finish in line with outer edge of rafters. Increase length of battens to allow for some projection if necessary to accommodate roofing.

- 19 Fix Roofing** For a Garden Shed follow instructions of the manufacturer of metal roofing and fix to battens so that roofing finishes in line with face of roof trusses. (See 18) For Green houses, Shadehouse you will need to fix roofing or covering (shadecloth, polycarbonate sheeting etc.) of your choice, again using instructions of manufacturer. As appropriate, fit preformed barge moulding (metal) and ridge capping.

- 20 Fix Cladding** If required fix selected cladding to side frames, rear frame and to rear gable by normal fixing methods. At gable ends cut and fix cladding to finish up to roofing material either by fixing to battens or cutting out around battens.

- 21 Fit Door** As required fit selected door jamb material to suit cladding selected, then fit door and latch or lock. (Note that door should swing outwards to give maximum clear space in shed).

- 22 Cut and fix Door Wall Cladding.** If required closely fit (no gaps) cladding to door jamb and continue to cover gable of garden shed (or greenhouse)

- 23 Finishing** We strongly recommend that all timber products which would be at risk from weather and water should be given some protective treatment, which should be adequately maintained throughout the life of the shed.

- 24 Flooring** Install flooring selected to about 25mm below the bottom edges of bottom plate. In green house or shade house allow for drainage through gaps in block wall or provide a drained sump

- 25 Interior fit-out** Proceed to fit-out depending on your proposed end-use etc.

ADDITIONAL NOTES

This project sheet describes the design and erection of a timber framework which can be suitable for a fully enclosed, lockable garden shed, or, with some special fittings, to a Greenhouse, or by use of simple low cost covering converted to a Shadehouse. Finally, a reminder! Select the right timber for the particular "shed" you are building. See the earlier notes on Timber Species selection and discuss your needs with your TABMA Timber Merchant.

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