



Erect timber structures and features

AHCLSC304

By the end of this topic, you should be able to:

- Plan and prepare work
- Set out the site and prepare the profile and footings
- Prepare and cut timber components
- Assemble and erect structure
- Check quality of work and clean-up site

You will be directed to complete a number of activities during this presentation.
Compile your responses into one submission and email your work to training@cstc.org.au
with the subject 'AHCLSC304 Activities'

Timber structures/features

- There are a range of timber structures/features that may be built, including:

Fences



Stairs



Pergolas



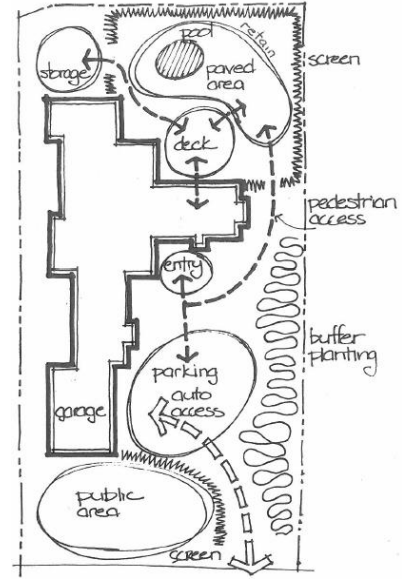
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Plan and prepare work

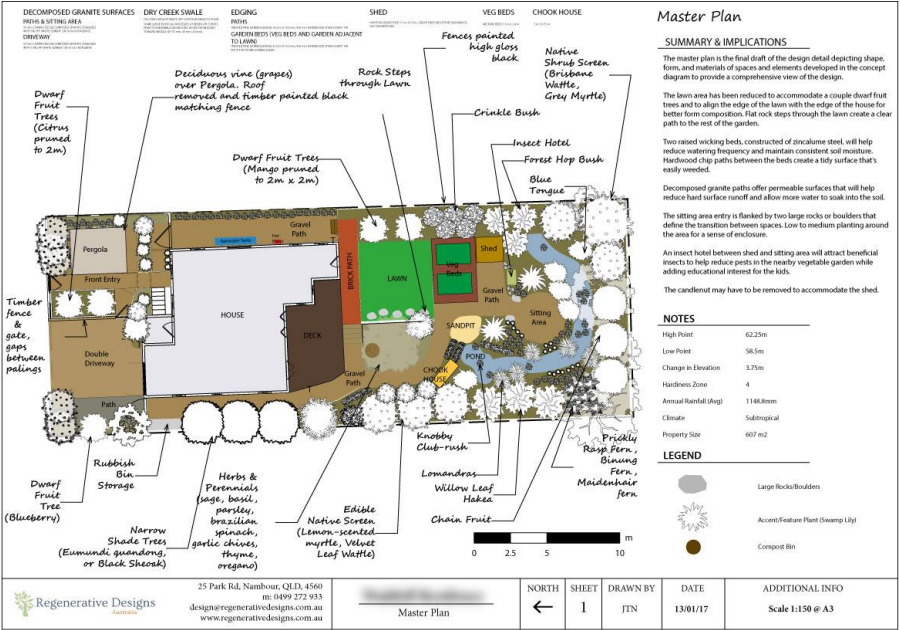
- To prepare for timber landscape projects, you should interpret plans and specifications
 - **Landscape concept plans**
 - These are a visual record of ideas
 - Usually rough freehand drawings

Activity 1: Draw a simple concept plan for a proposed landscape design which includes timber structures/features



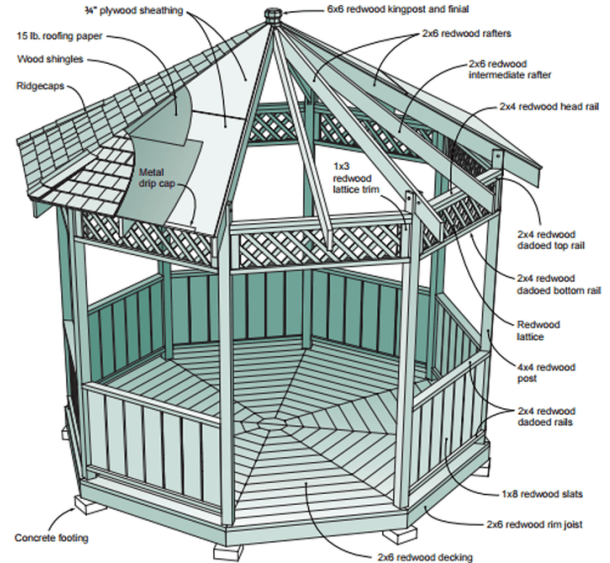
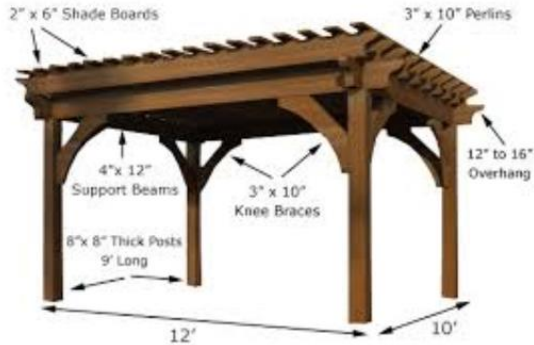
Plan and prepare work

- Activity 2:
Identify/list the detail
on the landscape
plan shown



Plan and prepare work

- To prepare for timber landscape projects, you should interpret construction details
 - Details the components of a structure and how they fit together
 - Provides material symbols



Activity 3: List the materials required for the timber structure construction plans shown

- To prepare for timber structure/feature projects, you should familiarise yourself with the task requirements
 - Location of services
 - Required materials, tools and equipment
 - Proposed site of timber structure/feature
 - Measurements (including depths)
 - Drainage requirements

Plan and prepare work

- The materials to be used for timber structure/feature projects will differ depending on the work to be completed.
- However, some common materials include:
 - Timber (timber or untreated)
 - Cladding
 - Fastenings (e.g. nails, screws, bolts)
 - Bracing
 - Steel reinforcement
 - Paint and other finishes

Activity 4: Research and identify the difference between treated and untreated timbers.

It is your responsibility to check the quantities and quality of materials matches the specifications

Plan and prepare work

- To prepare for timber structure/feature projects, you should familiarise yourself with the work area
 - Identify any WHS hazards and assess risks (e.g. unauthorised persons in work area, underground services, manual handling)
 - Consider the environmental impacts of the proposed works (e.g. noise, waste materials, degradation of land/flora/fauna)
- Report hazards to your supervisor within a timely fashion – especially emergency situations

Workplace risk assessment

- Risk is measured in terms of the seriousness of the possible **consequences** of the hazard and the **likelihood** that those consequences will occur, as in the matrix shown below:

Likelihood

- 1: Very Likely
- 2: Likely
- 3: Possible
- 4: Unlikely
- 5: Very Unlikely

Consequences

- A: Death or Permanent Disability
- B: Serious Injury
- C: Lost Time Injury
- D: Casualty Treatment
- E: First Aid

Matrix	A	B	C	D	E
1	E	E	H	H	M
2	E	H	H	M	M
3	H	H	M	M	L
4	H	M	M	L	L
5	M	M	L	L	L

Plan and prepare work

- To prepare for timber structure/feature work projects, you should organise required PPE, machinery, tools and equipment
 - **PPE may include:** Face mask, gloves, goggles, ear protection, long pants, sleeved clothing, wide brimmed hat, work boots
 - **Safety equipment may include:**
 - Bunting and barricades to reduce risks to personnel on site (e.g. marking exclusion zones)
 - Signage to convey safety messages – placed visibly in the relevant work area, at eye height
 - **Tools and equipment may include:** Crowbar, chisel, mattock/pick, shovel, spade, stringlines, levels (line, spirit), square, hammer, nail punch, saw (hand or electric), electric drill, planer, drill, sander, clamps, paint brush, putty knife, tape measure and cement mixer

Ensure they are appropriately selected, prepared and used for the task, following manufacturer recommendations

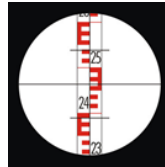


Prepare profile and footings

- Follow the steps outlined below when setting up the site:
 - Locate services (e.g. telephone, gas, electricity, water, cable, sewerage)
 - Contact Dial Before You Dig to check the location of such services
 - Mark out the position of the timber structure or feature
 - Locate existing elements/structures to take measurements from
 - Mark out the construction area
 - Use chalk on hard paved surfaces
 - Use stringlines and pegs over soil or turf
 - Marking Paint
 - A long garden hose may also be useful for marking out shapes on both hard and soft surfaces



- Follow the steps outlined below when setting out the site:
 - Establish survey benchmarks
 - Benchmarks are based on established datum points
 - A datum is a level surface above or below which all heights are measured – think of it as a ‘starting point’



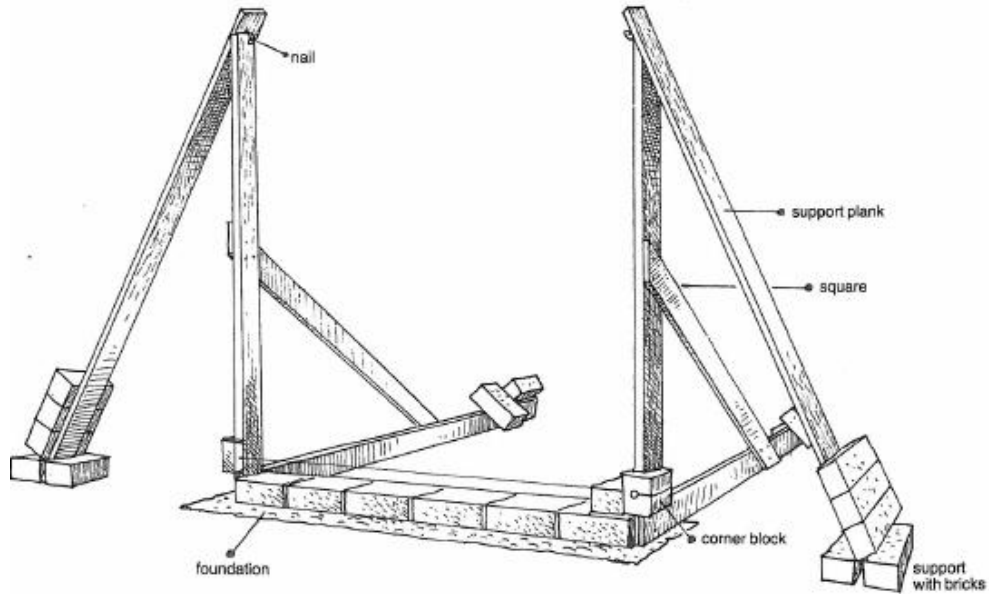
- The position of the job datum should be clearly marked on site plans
- Benchmarks are fixed points of known height to which other points can be referred
- Benchmarks should be established on positions or structures where they cannot be disturbed by construction activity

Prepare profile and footings

- Follow the steps outlined below when setting out the site:
 - Establish profiles to conform to the designated tolerances
 - A profile is a temporary fixture (e.g. timber pegs with cross boards attached) which assists in determining a structure's position and intended height
 - Stringlines are positioned from profile to profile in the exact position and height of the structure/feature. By sighting through two stringlines (i.e. one at the top of the feature construction and one at the bottom), a plane or finished face can be seen
 - This is the front face to build the timber structure/feature to



Prepare profile and footings



Prepare profile and footings

- Depending on the type of structure/feature, footings may need to be constructed to secure the structure into the ground
- A foundation is the excavated trench or hole into which the footing is placed – it is responsible for supporting the structure/feature
 - It is necessary for the foundation to be excavated to a stable base material
 - If there are any areas that are soft fill, they should be compacted and filled with a roadbase-type material
- The concrete should be poured into the foundation continuously, rather than in small sections, to avoid movement of the structure/feature



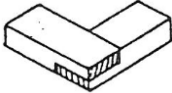
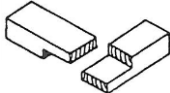
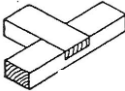
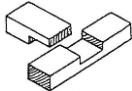
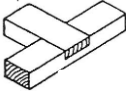
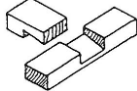
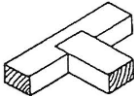
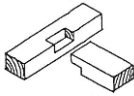
Prepare and cut timber

- To prepare timber components for assembly, you should:
 - Check your materials
 - Check packs of timber on delivery for any defects
 - Advise the supplier immediately if you encounter any issues
 - Check the delivery docket to ensure the order is complete
 - Place the timber on some timber chocks and keep the pack as flat as possible to avoid any warping
 - When selecting timber for use, determine if it is straight and identify the positions of any knots. Try to avoid joins at these points!
 - Plane and arris all timbers
 - Mark out the position of cuts and joints
 - Mark out the position of all joints on posts and position galvanised saddles
 - Depending on the structure, mark out the positions of all joints to the remaining timber (i.e. beams, joists, rafters, rails)
 - Use a pencil to square and mark out all cuts and joints
 - Line up all timber requiring cutting or jointing at the same position to check there are no errors

- It is difficult to recover from mistakes when working with timber, so check measurements and markings before you pick up the saw
- Some tips for cutting, checking out and drilling:
 - Always cut to the waste side of mark-out lines
 - When checking out for joints:
 - Use a sharp chisel
 - Work from both sides of the timber
 - Remove small amounts at a time
 - Test the join with matching timber components
 - If the fit is too tight, adjust with a saw or chisel
 - When drilling, use a nail to make a starter and pilot drill (smaller than the size required) first

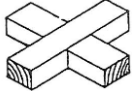
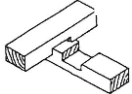
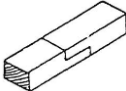
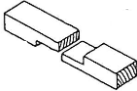
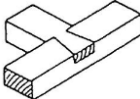
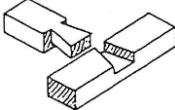
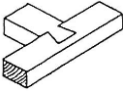
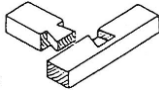
Prepare and cut timber

- You may required to implement a number of timber joints for your structure/feature, including:

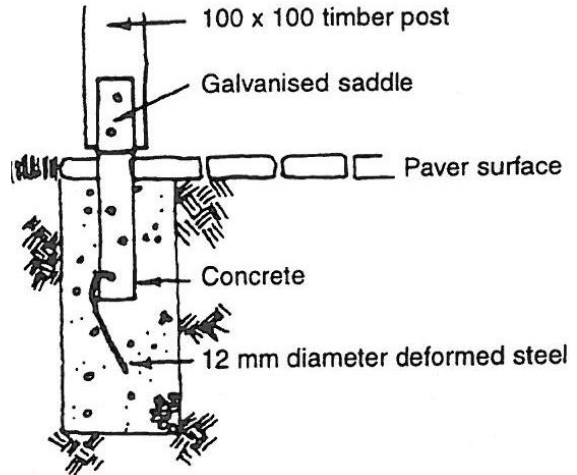
Name	Closed	Open
Corner halving		
Tee halving		
Bevelled tee halving		
Stopped halving		

Prepare and cut timber

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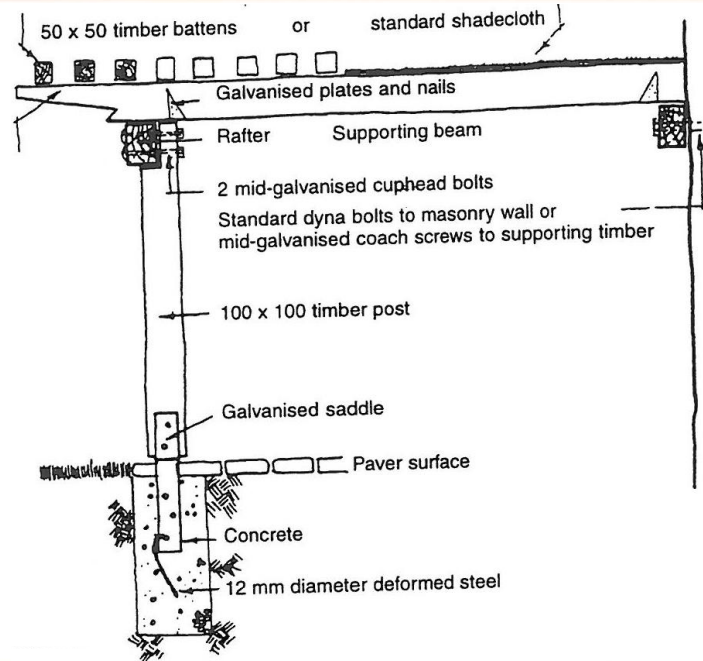
Name	Closed	Open
Cross halving		
Halved scarf		
Through dovetail halving		
Stopped dovetail halving		

- Posts will be required for almost every landscape structure/feature
 - In some instances, they will be directly footed into the ground or fastened to a galvanised saddle
 - The depth of the footings will vary according to the type of structure
 - The footing will generally be concrete, although it is possible to use rammed earth for some structures, such as fences and trellises
 - Some structures (e.g. fences) need the post and footing installed at the beginning, others can be built and supported by props and are complete when the footings are filled



Assemble and erect structure

- Beams, rafters, joists and other timber members (i.e. those joined to posts, walls or other timber components) are usually secured with galvanised bolts or galvanised plates



- Other tips with regards to assembling, joining and fixing timber components:
 - Timber bracing (temporary or permanent) may be required to hold components into place and rigid until assembly is complete
 - When the structure is finished, ensure all components are secured and complete
 - Undertake cosmetic work as required (e.g. cutting off overhangs, sanding arising, plugging holes) before any painting occurs
 - The aim of any coating is to do two things:
 - Protect the timber from the elements
 - Enhance the structure's aesthetics

- After constructing the timber structure/feature, you are required to complete the following practices:
 - Compare the quality of the finished works with the drawings and specifications standards
 - Record and/or report your work outcomes to your supervisor
 - Clean up the work area
 - Shut down, maintain, clean and store tools and equipment
 - Follow manufacturer's specifications and supervisor's instructions
 - Report faults that are discovered in logbook and/or site records

Activity 5: Have team members take photos and videos of your involvement with timber structures/features. Be sure to include all stages of construction.

- After installing the timber structure/feature, you are required to complete the following practices:
 - **Dispose of materials that cannot be reused or recycled**
 - Separate soil and waste material (e.g. organic, inorganic and recyclable piles)
 - Ensure that you follow the enterprise guidelines (e.g. JSA and SWMS for handling and disposing of waste)
 - Follow Safety Data Sheets (SDS) and environmental plans to ensure environmentally safe practices

