Timber Selection Considerations

Plantation Timbers

Plantation forests are those intensively managed stands of trees of either native or exotic species created by the regular placement of seedlings or seeds. These trees are grown so they can be cut down and used for purposes such as building materials, flooring, furniture and veneer production.

In Australia the most commonly grown timbers in plantations are the softwoods such as Radiata Pine and Hoop Pine. Hardwoods such as Blue Gum, Jarrah, Queensland Maple, River Red Gum, and Victorian Ash/Tasmanian Oak are also grown in plantations. Softwoods can generally be harvested after 30-35 years of growth. Hardwoods require at least 40 years of growth before they can be harvested for anything other than pulp wood (used for paper products).

Pine plantations are often found the be ecologically-unsustainable due to the resulting environmental ravages caused by poor management techniques, monoculturing, use of chemicals, clear felling, erosion, etc. In many cases, biodiversity has been significantly reduced through the establishment of plantations on land once occupied by native forest. One way that forest managers attempt to overcome these issues is to rotate the types of timbers being grown. When a softwood plantation has been felled hardwood seedlings are often planted in their place.

The present (i.e., dominant) methodology of plantation management also results in soil and fertility loss. Plantation owners and/or managers are rightly criticised for polluting soil, groundwater, waterways and eventually, the ocean. This is because of their systemic use of herbicides, pesticides and fungicides - many of which are bio accumulative and persist in the environment. All monocultures are vulnerable to disease and pests and soil degradation

Exotic Timbers

Exotic can mean different things when talking about timber, depending on your location. In New South Wales some species available from Queensland and Tasmania are considered exotic. Timbers available from other parts of the world are considered exotic. Timbers from tropical locations are almost always labelled exotic. Timbers that are regularly available can be considered exotic if they have a highly figured grain pattern such as fiddleback or ribbon. One thing that is consistent is that exotic always equals expensive!

Some exotic timbers include Wenge, Purpleheart, Huon Pine, Blackheart Sassafras and many others.

Recycling/Reusing Timbers

When timber and wood products reach the end of their first life in a building or other use it is possible to recycle or reuse the materials. Timber is such a versatile material that there are a variety of ways we can recycle or reuse the material. Furniture made from recycled materials is often sold for a high price, not only due to the time consuming inspection that must be done to the timber before it can be used, but also because it appeals to peoples social conscious. People want to own timber products as they are typically a 'warm' feeling product, and buying a product made from recycled materials means they have done their bit to prevent more trees being cut down. Recycled timber often incorporates features that regular furniture grade timber does not. Nails holes and wear marks can be seen to add character to the material and product. The timber is always well seasoned and can be highly figured. Recycling and reusing timber also means that some species that are difficult to source new are available again.

'Green' Timbers

'Green' or environmentally friendly timbers are those that are not derived from rainforests or old growth forests; are grown in plantations as a renewable resource; may be recycled timber; may be laminates (plywoods) and other composite woods from plantations; and has not led to animal habitat destruction.

A wide variety of certification types are available to let consumers know that timber products are 'green'.

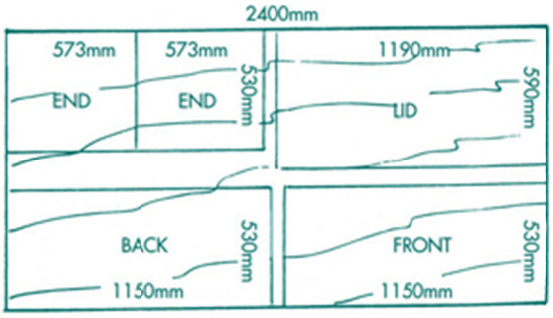
Economical Usage/Waste Minimisation

Waste minimisation will ensure the economical usage of materials. This starts with careful planning. The development of drawings and cutting lists will determine how much material is needed. It will also help determine where different timbers and manufactured boards can be used.

Careful selection of timber will ensure that pieces that cannot be used in the manufacture of your project are not purchased and then wasted. It may be decided that veneers are used in place of solid timbers. Plantation timbers such as Hoop Pine may be used for interior parts such as drawers instead of more

expensive timbers.

Marking out of materials needs to be done accurately to minimise waste. The layout of manufactured boards needs to consider the grain direction while fitting as many pieces onto the panel as possible. This will ensure that cutting is done in the most economical way.

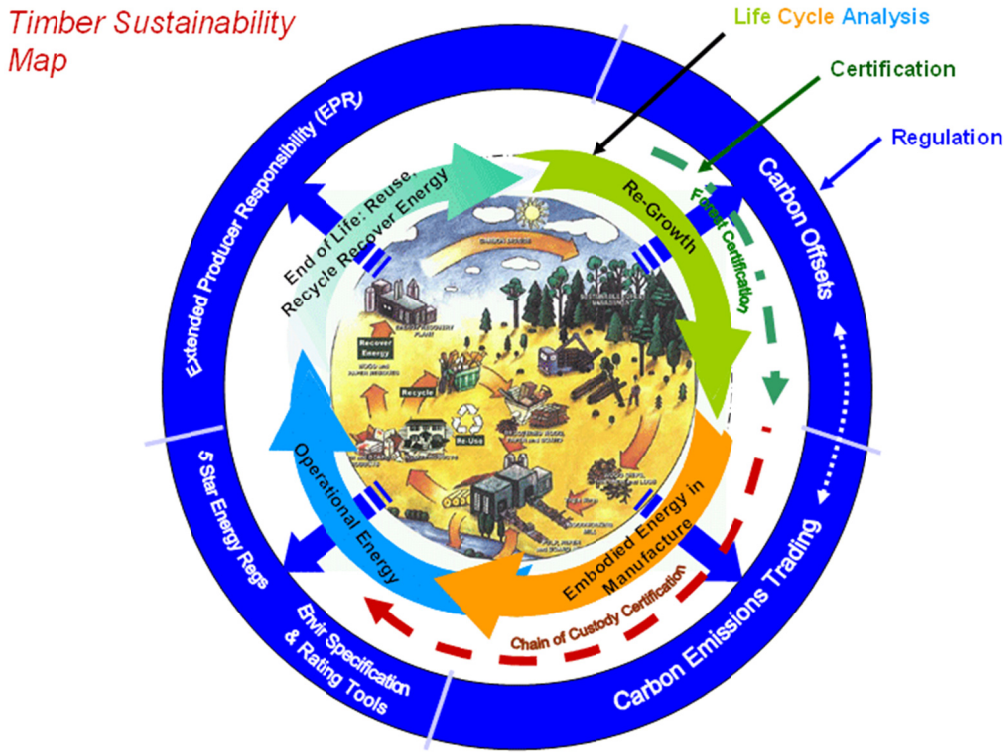


Environmental Issues/Pollution

The use of different types of materials needs to be considered when designing and making projects. Are the materials suitably certified? Are they grown in a sustainable manner? What pollution is generated during the growth, harvesting and manufacture of materials? What pollution is generated during the manufacture of the project (electricity, noise, disposal of finishes, waste materials, etc.)?

Sustainability

Sustainability is about ensuring resources are available to use by future generations. This includes timber resources, the generation of electricity, reduction and minimisation of pollution, jobs, etc.



OHS Issues

Safety when using timber is a significant concern. One of the major issues when using timber is the control of dust. Dust extractors, appropriate construction techniques and the use of PPE can all help to minimise the impact that dust from timber has on people.

Different timbers also have specific issues associated with them, either through direct contact with the timber or through inhalation of dust particles. Some general hazards are outlined below.

Timber / Hazard	**Effect**	**Symptom**
Boxwood Sap or latex	Primary skin irritant, dermatitis	Skin irritation, eruption
Timbers usually with acrid smell, e.g. Black Bean	Cumulative contact dermatitis	Dermatitis, secondary infection
Oregon and green Jarrah handling and splinters	Mechanical trauma, dermatitis	Dermatitis, secondary infection
Blackwood, Eucalyptus, Silky Oak, Jarrah, Oregon, Mulga, and Shorea sap	Mucosal irritation	Rhinitis, sneezing, asthma, tight chest and coughing
Blackwood, Stringy-bark	Pulmonary allergic and hypersensitivity reactions	Nasal inflammation, bronchial asthma
Ebony and some fungi	Pulmonary allergic and hypersensitivity reactions. 'Wood Trimmers Disease' or 'Farmer Disease'.	Severe respiratory problems within 4 to 8 hours. Symptoms similar to flu. Repeated exposure leads to fibrosis of lungs.
Certain hardwoods such as Beech and English Oak are sensitisers	Sensitisation can cause allergic reactions	Skin rash or inflammation. Nasal inflammation, bronchial asthma
Western Red Cedar wood dust is a sensitiser and probable carcinogen	Pulmonary allergic and hypersensitivity reactions. Nasal and paranasal cancer (with long term exposure)	Skin rash or inflammation. Nasal inflammation, bronchial asthma. Cancer from long term exposure may cause death
Oleander sap and latex is poisonous	Primary skin irritant, dermatitis	Skin irritation, eruption, poisoning