

Headline	WOOD IS GOOD		
MediaTitle	The Edge		
Date	01 Mar 2021	Color	Full Color
Section	Supplement	Circulation	25,910
Page No	22,23	Readership	77,730
Language	English	ArticleSize	1012 cm ²
Journalist	N/A	AdValue	RM 17,424
Frequency	Weekly	PR Value	RM 52,272



WOOD IS GOOD

Unique, hardy and the ultimate expression of form and function, there is much to be said for wood's many enduring and beautiful qualities

The great architect Frank Lloyd Wright once said, "Wood is universally beautiful to man. It is the most humanly intimate of all materials." Wood is Mother Nature's gift to man and we are hard-pressed to find architects or builders who fail to appreciate its many ideal qualities for use in creating shelter and dwellings that are as beautiful as they are long-lasting.

To truly make the most of wood, education and understanding is necessary. After all, it is a biological material and therefore subject to environmental factors that influence its growth and formation. But it is also what makes it unique for no two pieces of wood are the same. It is the enlightened architect or builder who knows how to make the most of this accommodating material, which naturally lends itself to a huge variety of uses and applications. In the first of a four-part series, the Malaysian Timber Council aims to share technical research done by the Forest Research Institute Malaysia on how different Malaysian timber species can be treated, cured, dried and best utilised.

The scientifically inclined would wax lyrical about its biological make-up and anisotropic and hygroscopic properties, which basically refer to its cell structure, strength and dimensional movements and how it is subject to change according to the moisture content of its surroundings. Living in the tropics, many of us are aware that wood can shrink or swell according to retention or loss of water vapour. But wood is also inert to the action of most chemicals, making it ideally suited for many industrial applications where resistance to corrosion is important. When wood is exposed to atmospheric conditions, it will only erode at a rate of 0.25 inch per century. Even this can be easily prevented by applying coatings or treating the wood surface properly.

Advances in R&D by many research agencies globally have contributed to a rich and growing repository of knowledge on timber, resulting in the development of various treatments and techniques as well as recovery and engineering solutions to manage timber's natural properties to enhance its usage, enabling timber to be used more intelligently with a lot less wastage.

SEVEN POSITIVE ATTRIBUTES OF WOOD

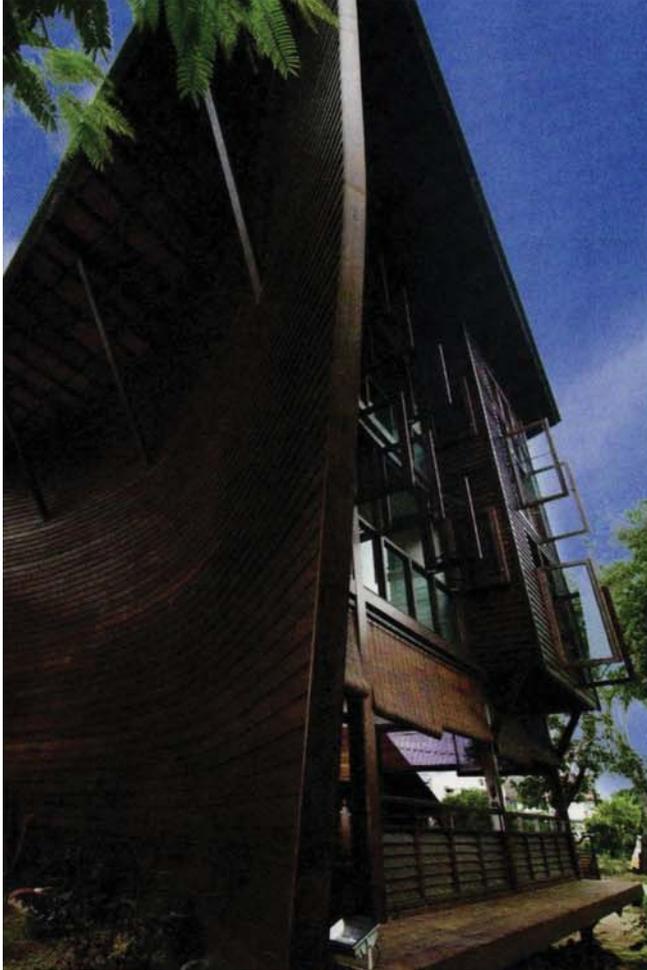
Strength

Wood has a high strength-to-weight ratio, that is, for the same strength required for a given structure, the weight of the timber material to be used can be as much as 16 times less than steel, or five times less than concrete. Weight for weight, wood can be designed to carry a heavier load than steel, that is, one tonne of wood can carry a heavier load than one tonne of steel. Modern engineered timber products like Glued Laminated Timber (Glulam) and Cross Laminated Timber (CLT) allow wood to be used in constructing high-rise buildings. Currently, the world's tallest timber building is an 18-storey apartment called Mjøstårnet in Brumunddal, Norway.

Durability

There is a great variety of timbers with a wide range of properties to suit various outdoor and internal applications, and for both aesthetic and structural purposes. While some timbers are perishable under uncontrolled conditions, many species can last for a very long time. Timber can be treated to make it harder and termite- or weather-resistant. Treatment can be easily and affordably done by impregnating wood with certain chemicals which are effective yet

Headline	WOOD IS GOOD		
MediaTitle	The Edge		
Date	01 Mar 2021	Color	Full Color
Section	Supplement	Circulation	25,910
Page No	22,23	Readership	77,730
Language	English	ArticleSize	1012 cm ²
Journalist	N/A	AdValue	RM 17,424
Frequency	Weekly	PR Value	RM 52,272



safe for use by humans. Treated timber will often outlast naturally durable timbers.

Excellent insulation

Wood is an excellent insulating material because of the presence of the empty cell walls, which act as tiny traps that resist the transfer of heat. This characteristic is deemed ideal as an insulator. Other building materials such as brick, steel and concrete are not as good as wood, which requires minimal external energy to keep a building within the thermal comfort zone of its inhabitants. Wood is six times better than brick as an insulator; eight times better than glass; 15 times better than concrete; 390 times better than steel and 1,700 times better than aluminium.

Performance in fire

Research has shown that using timber in structures, such as columns in large buildings, enables them to perform better during a fire compared with those made of steel or concrete, as steel will buckle and concrete will crack and crumble very suddenly under high temperatures. Thick timber columns, on the other hand, will initially ignite but the charring of the outer layers of wood will cut off the oxygen supply and effectively slow down the burning of the deeper

layers of the timber. The slow rate of burn is important because it gives the occupants enough time to evacuate during a fire. Timber columns have been found to be still standing and functioning after intense fires.

Acoustic properties

Timber has good acoustic properties, with better sound dampening capacity than most structural materials such as concrete, which reflects sounds with stronger echoes. The natural acoustic properties of timber control this excessive echo by reducing the transmission of sound vibrations. Wooden panels and timber flooring are commonly used to improve the acoustic properties of a room while also used to reduce noise and improve the quality of sound in spaces such as auditoriums and theatres.

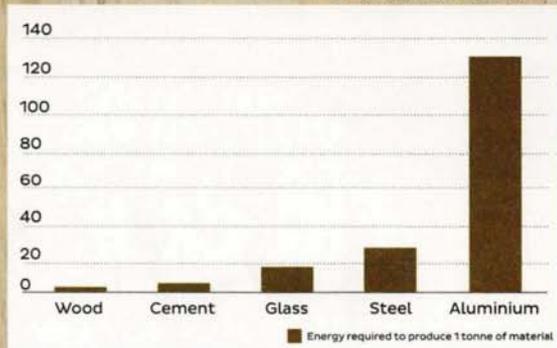
Versatility

Timber is the most versatile of building materials. It can be used for both structural and decorative purposes, as well as for outdoor and internal applications. Timber exudes warmth and adds character to a place. Understanding timbers and their properties is important to help us select the right species for the right application. The fact that trees grow according to the natural environment they are in means that there are thousands of grains and shades to choose from globally, providing an excellent choice for architects, builders and interior designers.

Energy efficiency

Processing wood is a highly energy-efficient task. Compared with the production of one tonne of wood, the production of one tonne of cement requires five times more energy; one tonne of glass requires 14 times more energy; one tonne of steel requires 24 times more energy and one tonne of aluminium requires 126 times more energy.

SOURCE: MALAYSIAN TIMBER COUNCIL



Information for this article is extracted from "TIMBER – Facts That Figure", which is published by the Malaysian Timber Council in collaboration with the National Committee on Utilisation of Timber in Construction