



Case Study

HCS2



Microlibrary Warak Kayu



Microlibrary Warak Kayu

High quality plywood

Project Concept

The concept of the Warak Kayu Microlibrary stemmed from the lack of reading facilities in Indonesia. There was a realisation that the illiteracy rate in Indonesia was high and a plan needed to be put in place to address these issues. Architecture firm SHAU based in Rotterdam put forward a project proposal to make learning attractive, this prompted the 2012 '100 Microlibraries' program. The idea was to make the libraries as aesthetically pleasing as possible in the hopes to bring a certain enthusiasm back for learning again within local communities in Indonesia.

The first microlibrary 'Taman Bima' was built on a stage in a public square. The location was easily accessible and stands out in such an open space. The walls of Taman Bima were the main focal point in this project as they were built from 2,000 recycled plastic ice-cream containers which not only brings a uniqueness to the structure but also adds the important element of sustainability.



The first library build was a big success and it prompted four more structures to be built with the same purpose in mind.

Warak Kayu, situated in Semarang, Central Java City functions as a library and a mini community centre. The structure is the fifth in the microlibrary series that SHAU have designed. This project is a gift from Arkatama Isvara Foundation to the city of Semarang. The sheet material used in this project is Performance Plywood®, a product concept which is the result of collaborative work between PT Kayu Lapis Indonesia and Hanson Plywood in the UK.

Product Specification

Hanson Plywood strongly advocate that construction/architectural specifications should be satisfied with products that are fit-for-purpose after considering the actual application and the particular performance criteria required. With this in mind, the company developed a product with Kayu Lapis that is specifically intended for the construction industry and offers full technical and environmental classifications.

Performance Plywood® was therefore chosen by SHAU architects as a product which would reliably meet the criteria required for a high-performance panel which may be exposed to the elements over a long period of time.

Design Process

Warak Kayu is constructed primarily from timber based products, this decision was made by what is known as a 'Bottom-up process' which means all the materials are evaluated first and once the products were chosen, the overall design was developed from this basis.

No air conditioning is used so the structure was to involve elements of a passive climactic design. Semarang also has a tropical monsoon season which naturally brings humidity to the area. The building is therefore cooled down by means of cross-ventilation and solar heat is prevented from entering by the use of shading elements. All these aspects were to be taken into account in the initial design planning processes and a need for a fit-for-purpose plywood that could withstand dry, humid and wet conditions was identified as a priority. Performance Plywood® was the ideal solution for this project.



Various types of wood products/species were used during the construction in order to ensure sustainability.

Wood in general outperforms many other construction materials due to the embodied energy, water, air pollution, carbon footprint and it also regenerates naturally. Performance Plywood is certified fully legal under Indonesia's SVLK Timber Legality Assurance System which is the only system in the world that is recognised by a Voluntary Partnership Agreement (VPA) with the EU, meaning it can carry a FLEGT (Forest Law Enforcement, Governance and Trade) Licence. In addition to this, the product is also certified FSC® 100%.



All wooden elements of this project were prefabricated at the factory and then transported to the site to minimise noise and dust. This process also mitigated any damaging impact to the surrounding environment on-site. More precision went into the cutting of the materials in the factory as it was carried out by trained professionals under higher safety standards which ultimately led to a safer/easier construction process.

2020 Architizer A+ Awards



The Architizer A+ awards is the largest awards program focused on promoting and celebrating the year's best architect and products. It was announced on 4th August 2020 that the Microlibrary Warak Kayu was selected as the popular choice winner in the libraries category.

The winners are selected by the online voting public after a 10-day campaign gathering over 400,000 votes. With entries from over 100 categories, the innovative, sustainable Microlibrary Warak Kayu is truly a well-deserved winner.

H PERFORMANCE Plywood®



EN 636 Use Class 3



Glue bond : EN 314-2 Class 3



CE Marked for performance in all conditions



The safe and correct choice for architects and specifiers



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