



## MAYAN LUXE VILLAS – BUILDING AND SUSTAINABILITY

*In total, 80 per cent of the timber used for constructing Mayan Luxe Villas was either recycled from Mayan Farm or milled on-site using local timber from neighbouring properties. Each piece of timber that is seen has its own history and story to tell!*

### Background

Mayan Luxe Villas was designed and constructed from rammed earth and recycled timbers by owners Brett Gowley and Jodie Williams, with the assistance of local Kin Kin builder, Anthony McDonough and his team. The accommodation took two years to build and perfect, with significant thought, research, skill, dedication and attention to detail.

Originally designed to be Brett and Jodie's family home, the idea to make it a bespoke accommodation destination came soon after Covid, when their café restaurant and catering business, **BlackAnt Gourmet @ Kin Kin General Store** had to adapt to the new rules and regulations regarding operations. While the restaurant and catering is now fully operational again, Brett and Jodie decided in 2020 to complete their dream abode and offer it to guests who would like a bespoke country experience in the Noosa Hinterland.

### Rammed earth

Mayan Luxe Villas showcases the benefits of rammed earth homes not just for the occupants, but for the planet. Stabilised Rammed Earth Construction is an environmentally-sustainable building method that has a CSIRO fire rating of 4 hours and high thermal mass properties which is highly desirable in the Australian climate.

Combined with good solar passive design, rammed earth structures can provide the ultimate in 'green' construction and even eliminate the need for additional heating and cooling. With a low carbon footprint and unlimited design capabilities, rammed earth offers beauty and practicality. It is an incredibly durable medium and requires little to no maintenance – no insulation, paint or carpet here.

As one of the oldest forms of construction, rammed earth dates back to the time of semi-Nomadic man in the Middle East, predating mud brick and was used in the construction of the Great Wall of China and other monumental structures of ancient times. Rammed earth is still being used all over the world and is known as *taipa* in Portuguese, *tapial* or *tapia* in Spanish, *tàpia* in Catalan, *pisé (de terre)* in French, *bijenica* in Serbian, and *hāngtǔ (夯土)* in Chinese!

Mayan Luxe Villas' rammed earth walls were constructed from the earth dug on-site to create a dam to service Mayan Farm. By adding decomposed granite, sand and white cement to the earth from the property, the ideal blend was created to provide perfect consistency for this building process and to meet engineering and certification requirements.

Steel reinforcement was used in the building as extra security, similar to core fill block walls. The timber lintels above the doors and windows are local recycled old bridge timbers collected over the years by Brett. Old bridge timbers are also used as garden seats and even off-cuts formed to create the television cabinet.

The large front entrance doors comprise timbers from the old slab hut on Mayan Farm when it was dairy country and are 200 years old. Off-cuts were used to finish the kitchen island bench.

The hand-crafted barn doors, tables, seats, pool fencing and alfresco gateways are constructed from old railway sleepers and showcase how old timbers can be brought back to life by using different skills to obtain completely different finishes and outcomes.

The railway sleepers as garden borders and steppers are practical and aesthetically pleasing next to the local blue metal rock finishes.

Electric cabling is run outside the walls instead of internally, hence light switches were chosen to be a feature of the property and made-to-order by melting down recycled metals only available from England. The lighting is all LED reducing unnecessary power consumption.

The polished concrete floors are a combination of local crusher dust and blue metal rocks with cement that has been ground and sealed for a low maintenance and hard wearing floor.

This home provides 100% of its own water by way of rain water catchment and storage and also provides its own waste water system.

Due to the natural thermal benefits associated with rammed earth walls, no air conditioning or heating is required, however ceiling fans are provided for extreme cases, with a timer allowing fans to automatically turn off after an allocated period of time.

Solar is the next project to complete this sustainable building, with plans to provide a small solar farm at the base of Mayan Farm where the power feed is located. These solar panel frames will also provide shelter for livestock when hot or raining.

Dam water is pumped to the back water tank providing non-drinkable water for the garden when required. The garden features many drought tolerant plants with a focus on low maintenance to reflect the theme and design of the house, and herb gardens provide fresh greens with full flavour for meals.