

DAINTREE LIVING FACTSHEET

Structures (beta ver. 1.0)

Many properties in the area have been abandoned by their owners leaving behind structures that you may or may not find useful. This guide will assist you in assessing and developing these and new structures for your own particular situation. You may also find that there are great heaps of rubbish and old structures that have to be removed before you can actually do anything with the block.



Is the construction designed for the Daintree environment? Ideally roofing should be sunlight reflective in order to minimise heat intake (NO green roofs!) . Roofs should also be fastened properly for cyclone season and in good repair. Low mass construction materials such as timber walls and raised floors also keep heat loads down. Homes with an open design with large windows will maximise light, allow free air flow ventilation for a cooler, dryer living space and minimise your power requirements.

Related Factsheets

Driveways (pdf, [file size]) *Design and construction; assessing slope, rain runoff, creek crossings, existing erosion, overhanging branches as well as anticipated vehicle usage.*

Water Sources (pdf, [file size]) *Water table and rainfall fluctuations; contamination and filtration; water conservation and recycling, Water system installation and maintenance issues for rain, stream/creek, and bore sources.*

Power Systems (pdf, [file size]) *Estimating your energy needs. Requirements, installation, and maintenance of solar and other renewable energy source options. Batteries, inverters, generators.*

Erosion (pdf, [file size]) *Land clearing and habitat fragmentation; weather, wind and rain; regeneration.*

Waste Management (pdf, [file size]) *Grey water systems, composting, recycling non-organics, e-waste options, creative reuse, burning or, as a last resort, the dump.*

Weed Control (pdf, [file size]) *Weed locations, identification, herbicides, and control methods.*

Many existing structures do not share these characteristics. Note also that some species of trees such as the Black Wattle, giant cluster figs and Alphitonia are known to be prone to falling in cyclones. So either prune back hard or seek advice about removal from DSC. **Are you prepared for the cyclone season?**

Have invasive weeds taken over the native plants? See ***Daintree Living - Weeds*** (pdf, 1.4 MB) **fact sheet** for how to identify and control problem weeds.

If the property has existing structures there are several issues for you to consider. First, has the Council approved the structure(s)? If not, strictly speaking the structures cannot be sold as part of the property. See [council link] for further information.

Design

Having the long axis of the house oriented E-W reduces sun exposure on walls and makes it easier to install solar arrays on the North facing roof.

In the past "A-frame" buildings were all the rage .. problem is, that while you might gain a

mezzanine floor (or bedroom) unless you install lots of ventilation at the apex, it will get very hot, even with insulation (they were designed for snow!). There is another critical issue maintenance - steep sloping roofs can be **extremely dangerous** to work on. Especially here where fungus growth can make things very slippery. So cleaning your solar panels or HWS or even fixing leaks in roof top plumbing, can become quite hazardous. OK they don't collect leaves, maybe that's their only plus. Consider flat roofs - with a 5 to 10 degree slope. Yes, you will have to get up there and rake or blow off leaves, at least before the wet, but in dry conditions they are quite safe to wander around on, maintain etc. "Color-bond" steel has become the universal roofing, it's amazing stuff, but not "bomb-proof" in this environment. Accumulations of leaf litter can breed fungi that will digest the paint layer and attack the roof.

Position all structures some distance away from the creek (and higher), so it doesn't wash away should the creek flood during heavy rain.

Floors

A raised floor construction provides for ventilation and surface flow drainage. Use metal stirrups in individual concrete foundations to raise timber poles off the ground and avoid termite infestation. It is best to use properly designed dip-galvanised RHS posts for your floor support. Give yourself plenty of crawl space (at least a meter)! You will find that you will need it!

Second, buildings not raised above the ground invite the locals in. Both **termite** and **black ant** infestations can compromise the integrity of wooden frames. **Rodents and cockroaches** leave droppings and other detritus can accumulate. Third, it is very difficult to modify a concrete slab foundation. For example, if you want to install a composting toilet.

Metal frame houses can have hidden issues particularly with the accumulation of rotting material on the lower wall "bottom plate" (cockroaches, ants and melomys) which can rot in high humidity and rust out the bottom plate. If there is a cyclone the whole house could blow away (as its no longer tied to the cement slab). Not easy to check, unless you are prepared to remove wall cladding.

Construction Materials

High thermal mass cement block construction is common here as it is cheap and cyclone proof. However being on the ground creates three problems. First, this type of construction tends to create serious moisture problems. Heavy rains can send fast flowing messy brown water pouring under and through your house. Excess moisture can lead to interior **fungal infestations**. Further, **moisture** that has been able to penetrate wall cavities can result in steel corrosion and wood rot resulting in **structural weakness**.

The use of lightweight materials on the external skin of your home and appropriate insulations will reduce heat gain. Brick and block are not recommended.

Insulation – unless you have a large west facing wall – you don't need wall insulation here. You DO need roof insulation – as the solar radiation can be very intense.

Roofing

Dark roofing, which was in the past required by local planning regulations, can absorb substantial amounts of heat from the sun. These require well insulated interior and verandah ceilings to keep the heat out. Keep your roof clean, light coloured roofs grow less mould. Entrances and stairs should have wide gutters installed above them (even if you are not collecting the rainwater).

Rain here tends to fall almost vertically, we rarely have wind driven rain, which makes designing roofing much easier. However, **check the cyclone rods and bolts to make sure they are secure (they should be tying the rafters to the floor bearers)**. There may only be a few widely spaced screws or nails holding the roofing in place. Are any nails notably old and rusty that need to be replaced? Removing old cap-nails (c. 1950s) without denting the roofing can be very difficult.

Verandahs

Verandahs and large eave overhangs of 700 - 900mm provide protection for walls and living spaces from rain and the heat of sun but don't forget to insulate them too! Hot verandah roofs can radiate lots of heat into the interior of the house.

Screening

All openings, especially to the roof space, should be well sealed or meshed to prevent rodents and snakes taking up residence in the roof and walls. Most snakes here are non-venomous, and 60% of snakebites occur when people are trying to kill them. If a snake comes into the house, try to encourage it to leave with a broom, or just stay out of its way until it finds its own way out. If it doesn't leave, or you think its venomous, you can phone 1300 130 372 for a list of snake re-locators. They may charge as much as a couple of hundred dollars, depending on how local they are.

Fly-screens will keep the bugs out, but will also reduce the amount of breeze that gets in. Make sure that they are easily removeable so you can give them a yearly scrub.

Make sure you have screen doors (with a "kick plate") on you doors. The "kick plate" discourages rodents from chewing their way through your screen!

- Austrop Foundation
