

Home Renovation

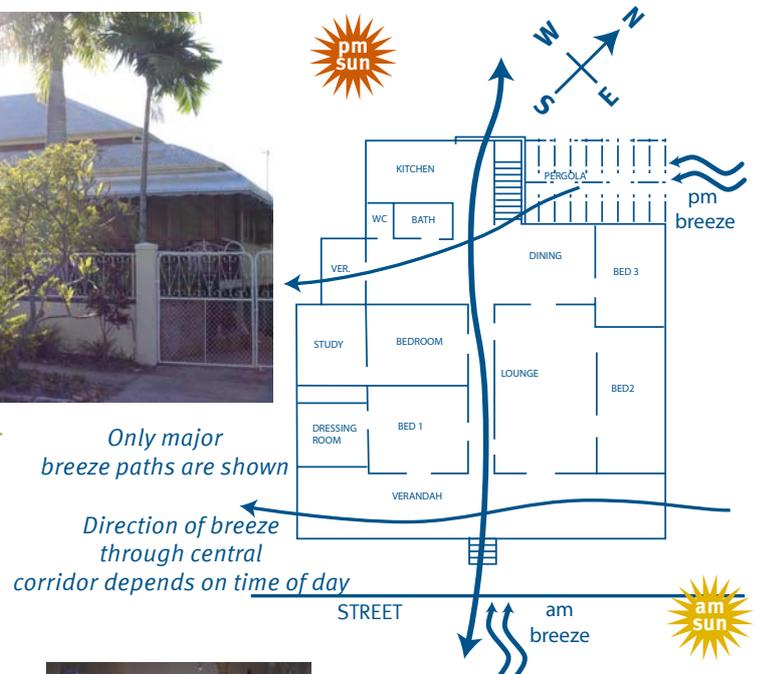
This North Ward Queenslander was originally built on the site in 1888 and has experienced a variety of renovations over the years, including an extension in 1989.

Both the original design and subsequent improvements have maximised shade and cross-ventilation, contributing to this home's excellent performance in our tropical climate. The end result is a home that is truly relaxing, comfortable year round and enables its occupants to enjoy a tropical lifestyle.

The features highlighted in this home could quite easily be adopted in principle into renovations of other North Queensland homes of any age or style.

Key features of this home are:

- Orientation
- Outdoor living
- Internal breezeways
- Ventilation panels
- Louvre walls
- Security features
- Hooded, wide-opening windows



Only major breeze paths are shown

Direction of breeze through central corridor depends on time of day

Orientation

The original timber Queenslander style home, with its wide front verandah, faces south-east. An open plan fibro extension which includes a lower storey built into the hill slope below, has a north-west orientation and is exposed to the hot afternoon sun.

Outdoor living

Facing south-east, the verandah is well positioned to receive both Townsville's morning and afternoon breezes. The area is large enough for dining, lounging and hobbies, making the verandah a highly utilised living space.

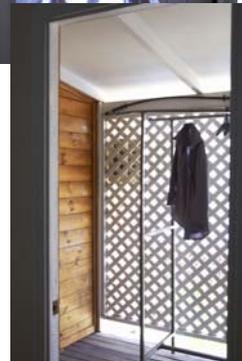
The bull-nosed overhang is both deep and low, keeping the verandah dry and well shaded with significantly less glare, all of which makes the area more relaxing and comfortable. Open balustrades facilitate good airflow through the verandah and beyond into the house.



Internal breezeways

A central hallway connects the verandah at the front of the house to the open plan extension at the rear. Breezes flow right through the hallway in the centre of the home, providing ventilation and air circulation to all connected rooms.

A small verandah on the south-west side of the home has been enclosed with lattice. The result is a partially shaded, breezy room which is also secure. When the door to this room is left open, the



lattice enclosed verandah provides an exit point for breezes from the central area of the home and is perfectly suited to drying clothes.



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Ventilation panels

Fretwork grills over internal doorways and a fanlight over the front door enable airflow between rooms and adjoining spaces, even when the doors are closed.

Lattice ventilation panels have been positioned at ceiling height on the external walls of some rooms allowing rising warm air to exit, and cooler air to circulate. Removable clear plastic sheeting that has been sized to fit the ventilation openings allows the rooms to be sealed when desired. Rain protection of the vent openings is assured by the deep verandah.



Louvre walls



Adjustable, floor to ceiling timber louvres on two of the walls in the new extension not only enhance views, but improve cross ventilation and minimise heat gain.



Solid louvres (in this case timber) block out low angle sun and heat from the east (morning) and west (afternoon).



The use of louvres maximises the breeze and has converted what could have been a hot airless inside living area into a pleasant space that is both breezy and truly relaxing.

Owner Tip: An unshaded west facing window downstairs could have been screened with slatted steel rather than simple security screening to provide additional shade and help keep the room cooler.

Hooded, wide-opening windows

The kitchen is located in the most westerly corner of the home, causing it to be a warm room.

Casement windows which open fully are used to maximise cross-ventilation.

Deep hoods that come down low are essential in keeping the windows shaded from the hot westerly sun and minimising heat gain. The hoods also prevent water from entering on rainy days.



Security features

A variety of security features are found at the front of this home.

The front boundary has a fence and gate.

The entrance to the front verandah is secured with a lockable lattice gate including fixed side panels.



When closed, the lattice provides a privacy screen that allows the breeze to flow to the

hallway beyond. The lattice also prevents unwanted access to the verandah and enables visitors to be seen before the gate is unlocked.

An external sensor light increases safety at the entrance and is a further deterrent to thieves.

A covered portico provides shelter for visitors from sun and rain.

Climate Responsive Design Tip: Cross Ventilation

Prevailing summer breezes in Townsville are predominantly from the south-east (am) and north-east (pm).

Cross ventilation is the ability for air to enter a space one way and exit another, creating air movement throughout the area.

The greatest air movement typically occurs in a direct path between the openings.

Small openings and poor orientation to prevailing breezes limits airflow.

Good cross ventilation is a key design element in the tropics, and enables buildings to be cool and comfortable without air-conditioning.

Casestudy compilation:



Photography: Kelly Goodbun Design