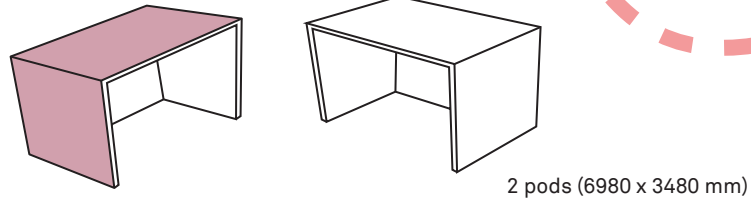


building blocks prefabrication



2 pre-cast concrete modules form the basic building structure and primary envelope to the classroom space.

This means that building work on site can be significantly reduced as the modules are delivered to site and then craned into position.

Roofing

The prefabricated pod incorporates a concrete roof which is covered with a series of simple galvanized roof trusses with colorbond roof sheeting. The air space between the colorbond and pod roof serves to naturally cool the classroom by drawing through shaded air. Rainwater can be harvested if required by connection of a water tank.



Flooring

Particle board

Particle board flooring provides major cost savings through its economy and through lighter construction allowing reduced foundation cost. Installation times are reduced since dry trades only are involved. Particle board floors offer better wearing characteristics than some other flooring materials because of the dense surface layer.

Dalsouple rubber

DalNatural rubber flooring contains over 90% natural ingredients with all the rubber content being pure rubber. Rubber trees qesuester CO2 from the atmosphere. We believe it is the most environmentally-friendly and sustainable resilient floorcovering in the world.

Sub floor

Particle board can be installed over timber or metal joists.

Footing / foundations

Conventional concrete pods/footings or Low impact alternative using rammed car tyres.

Ram-filled tyres can be placed around the footprint of the building in a continuous line. They are laid directly onto the subsoil, or trench. Once all the tyres are in place, the floor is then laid on top.



low impact, transportable teaching spaces

reduced construction time on site
means minimum disruption to the school

Each module is cast to include window & door openings
Pre-installed servicing and electrical conduits can be installed within the thickness of the concrete walls ready for connection

orientation
careful placement of the
classroom to ensure maximum
natural light and cross ventilation
of teaching space to aid natural
cooling

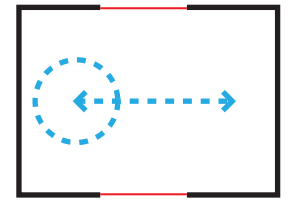
Overview

The primary inspiration for our design is the concept of prefabrication, strongly informed by an indigenous response to the land and climate; an acknowledgement that upward of 40,000 years of occupation of the land resulted in little or no impact on the environment. The idea of touching the ground lightly, of respecting the land whilst providing much needed space for teaching and amenity space for the school. Through prefabrication of the structure and space the design addresses wider issues relating to flexibility, relocation and recyclability.

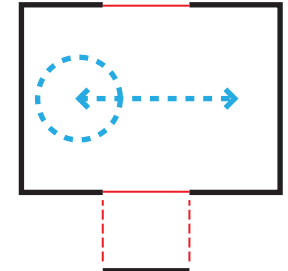
Construction

The primary structure is made from two concrete precast 'pods' which are made 'off-site' and delivered to site. These pod units may also include recycled aggregates within the casting process. The pods are then craned into position onto either a poured floor slab or metal deck which is supported on either concrete pad bearers or preferably rammed car tyre foundations. The space between the pods is then in filled using semi translucent lexan panels or more conventional stud walls. The building can then be wrapped with a number of different façade options such as painted fibre-cement sheet or painted weatherboarding. Internally the building will not require lining as the concrete pods provide a durable and aesthetic interior finish which can then be painted as required. Above the pods a secondary corrugated metal roof canopy is supported on lightweight pre-formed trusses.

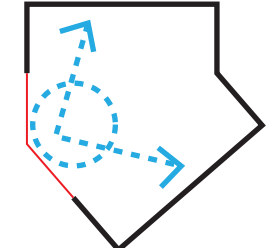
teaching space configurations



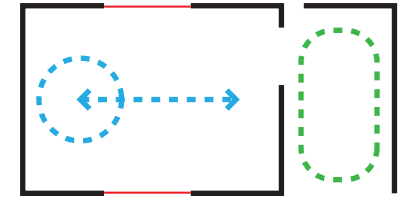
teaching space - conventional space



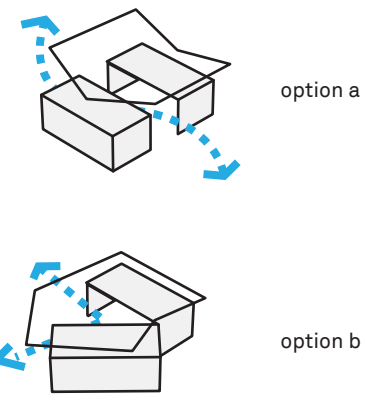
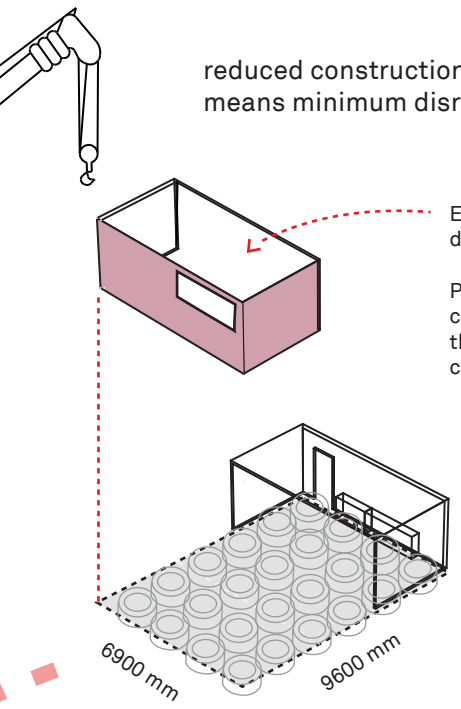
extending infill wall outward to create an entry space / shade/ wet area



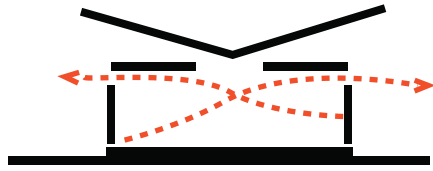
pods rotated to create amphitheatre style teaching space



3 pods combined to form semi-outdoor space

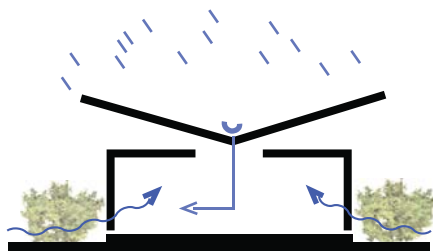


heat extraction



High level openings allow for heat extraction from the classroom

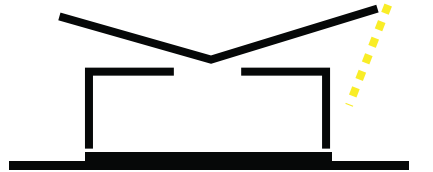
passive cooling + water management



Rain water collection allows maintenance of landscaping to the building perimeter.

Plants can provide additional shade whilst trapping cooler air at night, helping in moderating internal temperatures via internal ventilation.

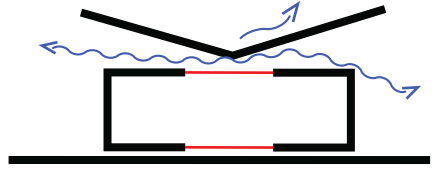
solar shade



The design of the upper roof minimise direct solar gain whilst providing sheltered external min areas.

Eaves to extend to 750mm to east, south and west elevations.

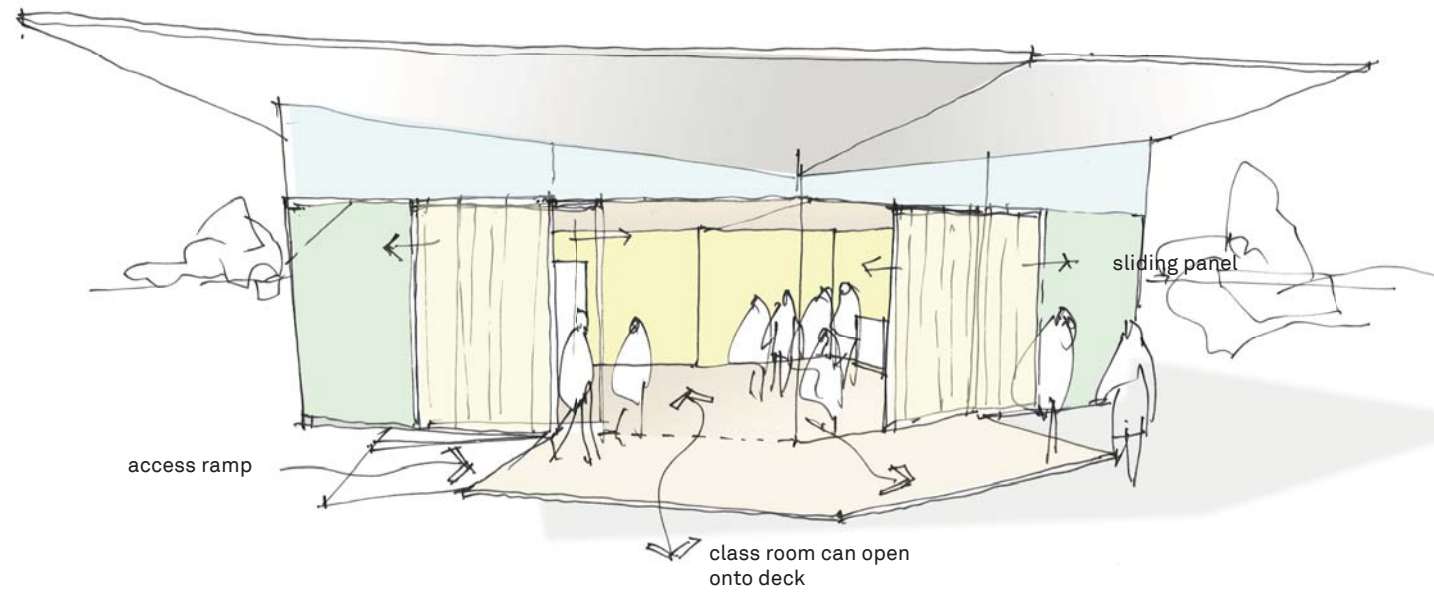
natural ventilation



Natural ventilation between the roof structures helps maintain a moderate temperature and minimise solar gain to the classroom

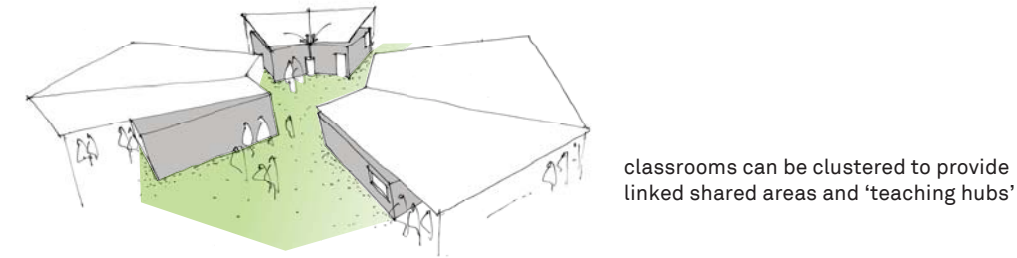
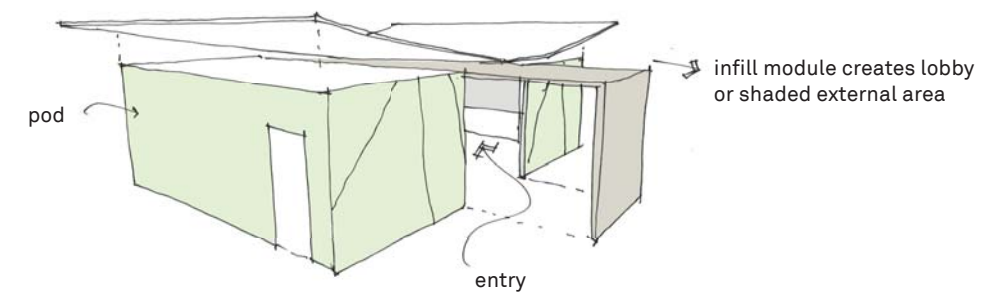
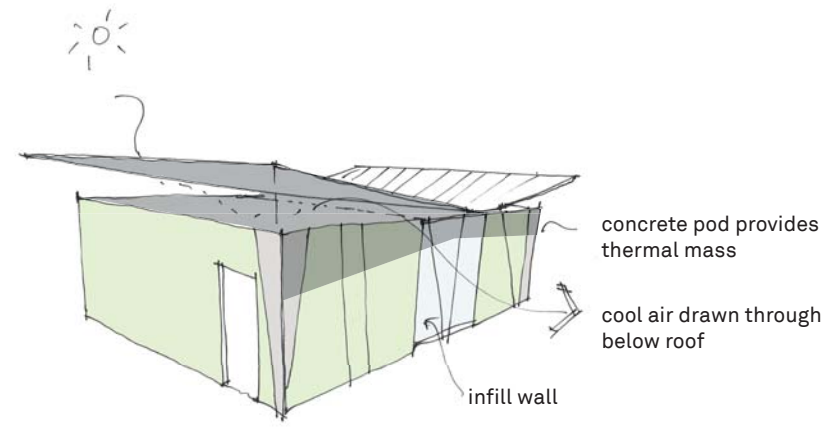
Operable windows to the classroom and high level air vents allow for user operated cross ventilation.

low impact, transportable teaching spaces

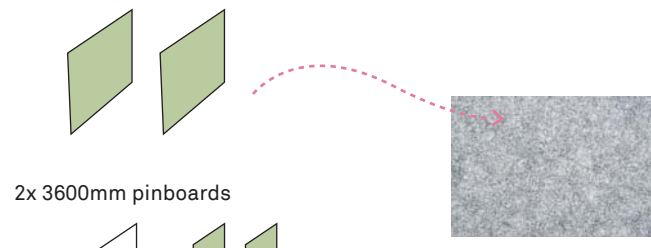


Passive Solar Design

A connectedness with the outdoors throughout the year is a feature of the classroom design and a key consideration in the design of the plan. The flexible infill element provides opportunity to open out onto the surrounding landscape or to create additional semi-outdoor teaching spaces. The butterfly-roof form overhangs are configured to admit low angle winter sun and shade from summer sun. The concrete pods provide thermal mass. Small south-facing windows facilitate cross ventilation and the necessary "relief valve" to combat over-heating in summer. Windows are generally awning type allowing for good sealing when closed and to act as large louvres when open. Fabric blinds are provided for additional thermal comfort and to secure warm ambient temperatures on cool nights. Our expectation is that the design will not require complicated intervention by the occupants to enjoy the passive solar benefits of the house. While energy self-sufficiency is an ideal, the classroom will require electricity and power as well as a reverse cycle air conditioner to provide both heating and cooling to supplement the proposed passive controls.

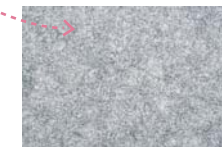


classroom equipment

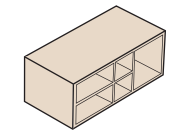


2x 3600mm pinboards

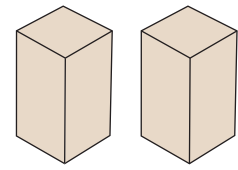
3000 x 1200 mm whiteboard + 1200 x 1200 mm pinboards either side



EchoTMPanel is highly recyclable and also features approximately 60% post consumer waste source from recycled PET bottles, it also acts as an acoustic dampener reducing reverberation within the teaching space.



bench open shelving 3650 x 350 x 900 mm



2x cupboards 1000 x 500 x 2100mm



Birch Multiply is a multi-layer panel manufactured from plantation grown Birch logs.

external cladding options



metal sheet



composite & painted timber weatherboard



fibre cement sheet



lexan polycarbonate (infill)



colorbond



pressed metal