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KENNEDY ASSOCIATES ARCHITECTS

THE BOWDEN CENTRE

architectural+interior review

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ARCHITECTURAL PRACTICE

Kennedy Associates Architects

PROJECT

The Bowden Centre, Mount Annan Botanic Garden

AWARDS

2008 NSW RAIA Sir John Sulman Award for Public Architecture

2008 NSW RAIA Architecture Award for Sustainable Architecture

PRACTICE PROFILE

Kennedy Associates Architects is an architectural and urban design practice based in Annandale, Sydney, specialising in residential, community, and environmental architecture. The practice was formed in 1994 by Steve Kennedy, the principal of the firm, and has since gained a strong reputation based on rigour, thoroughness and professionalism.

PRINCIPAL

Steve Kennedy

PROJECT DIRECTOR

Anthony Nolan

PROJECT ASSISTANTS

Malay Dave, Danny Le, Marika Hahn, Martin Tran

STRUCTURAL ENGINEERS

Low & Hooke (Aust) Pty Ltd

MECHANICAL ENGINEERS

Meinhardt Consulting Engineers

LIGHTING

Architectural Lighting Design Pty Ltd

BUILDER

Kinsley Construction Pty Ltd

MECHANICAL INSTALLATION

Exothermal Solutions Pty Ltd

PHOTOGRAPHERS

Bart Maiorana, Steve Kennedy, Petra Kleegraefe



Mount Annan sits far to the west of central Sydney. One of the city's outermost suburbs, it was an agricultural centre, a far-distant farming outpost of the country's largest city until the city kept expanding, eventually swallowing the fields and farms. But amongst the newly subdivided land, full of families in search of a backyard, sprawls the country's largest botanic gardens, a last remaining trace of the region's more bucolic past.

The 410 hectares of the Mount Annan Botanic Garden are a showcase for the rich diversity of Australian native flora. Encompassing specially cultivated themed areas and expanses of natural woodlands and grasslands, the botanic garden preserves some of Australia's most beautiful and spectacular heritage – the very flora that so excited Joseph Banks over two centuries ago.

Unsurprisingly, then, the garden management sees its mission as equal

parts preservation and cultivation of the garden environment, and botanical and ecological education directed at schools and the wider community.

It is this latter function that has produced the Bowden Centre, an educational building within the Mount Annan Botanic Garden, designed to be flexible enough to accommodate a wide range of functions. The award-winning building is Kennedy Associates Architects' skilful response to this brief,



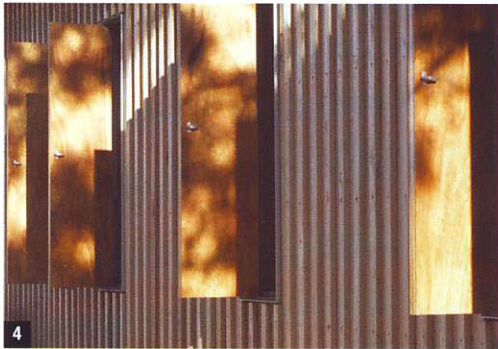
1. Southern elevation by night, hinting at the schoolhouse history of the building.

2. Northern elevation. The tank collects roofwater for reuse in toilet flushing and garden irrigation.





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3. Southern elevation. The clerestory windows permit indirect natural light, reducing glare and controlling the heat intake of the building.
4. The exposed northern façade uses these plywood clad 'winddoors' to more effectively control radiant heat gains and increase the insulation value.
5. The building's western façade features a 50m² shaded outdoor teaching area, encouraging use of intermediate and transition zones and contact with the surrounding gardens.
6. The Bowden Centre's southern façade features a generous verandah, which shades the lower windows and opens onto green lawns for a casual and nature-oriented educational experience.
7. Polished concrete floor finishes and blackbutt veneer plywood wall linings create a modern feel that retains its connection to the rustic exterior through the warm timber and generous windows.
8. The outdoor teaching area provides a genuine sense of connection to the gardens, while the benches encourage an informal use of the space.
9. The public toilets are defined by the use of a bold orange, creating a unique identity for the space.

sensitively capturing both the rustic aesthetic and the ecologically-minded philosophy of the Botanic Garden. The difficult brief – mandating both a tight budget and “leading edge ecological sustainability features” – produced strikingly innovative, resourceful solutions from the architects.

The building is located on the site of an old demountable classroom, the Garden's temporary response to its teaching needs. The new centre replaces this old classroom, minimising the impact of the building on the environment. The architects have also recycled the steel structure and aluminium windows from the previous building, significantly reducing waste and costs associated with the project.

The centre is structured around a single 105m² room, supported by staff offices, a kitchen and some public toilets. The large central space is designed as a multipurpose room, capable of accommodating large classes for teaching and multimedia

activities, as well as events as diverse as seminars and weddings. Its size and openness embraces flexibility of use, ensuring its function is unconstrained by the architect's or owner's preconceived ideas.

This central room opens expansively onto the outdoors, underscoring the remarkably beautiful location of the centre, and facilitating its emphasis on education about nature. A strip of clerestory windows lights the building from above, while protecting against glare and excessive brightness.

On the building's northern façade, thirteen plywood clad 'winddoors' act as innovative substitutes to conventional glazing. And with a higher insulation value and less exposure to radiant heat gains, they provide significant environmental benefits when compared with traditional windows. Windows to the south are shaded by a wide verandah that provides a cool transitional zone between the gardens and the building. And at the western end of this room, a

50m² sheltered space transforms this transitional area into a usable space for teaching and congregating.

As such extensive use of indirect natural light might suggest, Kennedy Associates eschews conventional passive solar design. Because of concerns about glare and multimedia visibility within the teaching space, the architects were pressed to devise new and more innovative responses to the building's heating and cooling needs.

Their solution came in the form of a highly inventive thermal management system. The system collects solar energy in the form of heat from the room, stores the energy underground in a 40,000 litre water tank, and then returns the heat to the building via a heat pump. The heat is ultimately transferred to a series of hydronic coils in the polished concrete floor, maintaining a surface temperature at floor level of 29 degrees celsius. In summer, the tank is chilled overnight when the air temperature is at its

coolest, ensuring a constant floor temperature of 19-20 degrees even on the hottest summer day.

The Bowden Centre is nothing short of a breathtakingly eloquent response to a remarkably challenging brief. As a building it is at once comfortable, flexible and open to its unique function and location.

As a testament to the Mount Annan Botanic Garden's commitment to ecologically sustainable principles, the building's environmental credentials find their aesthetic expression in the use of timber cladding. The building is inherently tied to its wooded surrounds by both the sophisticated blackbutt-veneered plywood of the interior and the rustic silvertop ash plantation timber cladding that dominates the exterior façade.

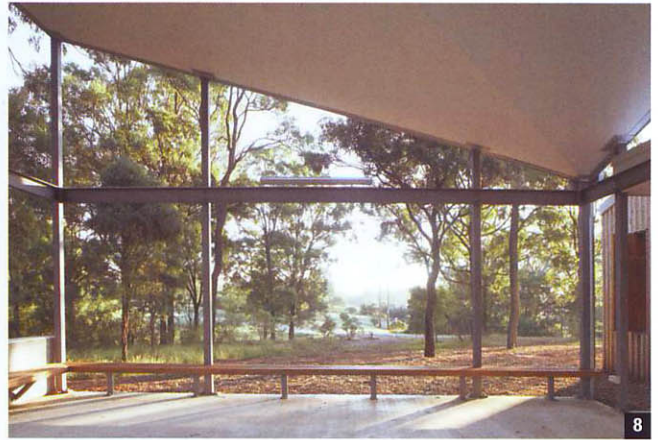
As the external cladding ages into a soft grey over the years, the building will slowly grow into its function as an education tribute to the Australian bush landscape that the garden preserves. +



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PRODUCTS

Wall Structure Recycled steel stud **Roof Structure** Recycled steel purlins
Windows Re-used existing and new windows; aluminium framed windows from Razorback **Doors** Aluminium framed doors from Razorback **Floor Finishes** Polished concrete **Wall linings** Armorpanel plywood from Big River Timbers
Ceiling linings Plasterboard **Paint** Dulux enviro₂ low VOC **Plant & Equipment** Ecothermal Solutions slab heat and cool **Sanitaryware** By Caroma **Joinery** Laminex plywood, laminate faced **Wall Insulation** Polyester bulk insulation reflective foil backing from Tontine **Ceiling Insulation** Anticon bulk roof blanket
Lighting Zumtobel ceiling recessed compact fluorescent downlights; Concord surface mounted T5 fluorescent linear battens.