

Stylish multi-unit living with a small environmental footprint

A Sydney apartment block demonstrates how multi-unit developments can be designed with the environment in mind, providing better living standards and value for residents.

Completed in 2003, *Mondrian* is a multi-unit development consisting of four buildings, all of which use simple design principles to achieve a more comfortable living space for residents, whilst minimising its environmental impact.

The buildings range in height from four to seven storeys, in order to minimise the overshadowing of communal areas, and are orientated to make the most of the sun's heat.

Natural cross-ventilation has been incorporated into all the units, the majority of which have dual aspects.

Air is cooled as it passes through the cellular structure of the building, flowing from cool to hot sides to create induced air currents and natural cooling.

This approach means that no air conditioning was installed in the units and since completion more than two years ago, not a single air conditioning unit been retrofitted, a great example of the effectiveness of the cross-ventilation design.

Common areas have the same natural light and cross-ventilation amenities and energy efficient fittings and timers have been fitted throughout.

Mondrian has a natural gas hot water system, 3A-rated fittings and dual flush toilets as standard, and rainwater collected, stored and reused for on-site irrigation.

Native and low-water use plants have been selected for the site's common areas. *Mondrian's* gardens are also used as a bio-filtration system to reduce the impact of stormwater directly entering the stormwater drain.

While the communal pool does require substantial water, its location within the *Mondrian's* four building courtyard means that it receives only limited direct sunlight, minimising evaporation.

The pool is not heated in winter, reducing energy use. In the summer, the pool contributes to the cool air flow through the central courtyard.

Material selection for *Mondrian* includes sustainably-sourced timber for the gates of a number of ground-floor units and low energy-embodied structural precast concrete walling.

While *Mondrian* was designed and built several years before BASIX was introduced, the development could be made BASIX-compliant with only minimal additions and adjustments such as an increased level of insulation.

The site is a short distance to Green Square train station and close to a number of city bus routes. Restricted on-site parking and the provision of bicycle storage encourages residents to use alternative transport rather than relying on emission-intensive cars.



The Mondrian development in South Sydney is a showcase for sustainable, inner-city living.

“By considering sustainable design principles, such as those embedded in BASIX, from the beginning of the project, Mondrian greatly reduced its environmental footprint.”



Mondrian demonstrates that, not only are multi-unit developments able to achieve the new BASIX standards, but that many of the features BASIX encourages are considered good and cost-effective design by many architects.

At the time of completion, *Mondrian* units sold for between \$350,000 and \$600,000 and architect Frank Stanisic said that no additional costs relating to the sustainability features were included in the sale price.

“Cost-wise, it was absolutely business as usual for the *Mondrian* project. The developer accepted the sustainable features as part of the project and saw them very much as a positive point of difference in the market,” architect Frank Stanisic said.

Mondrian's communal pool.



“The feedback from *Mondrian* residents is excellent,” he said. “By considering sustainable design principles, such as those embedded in BASIX, from the beginning of the project, *Mondrian* greatly reduced its environmental footprint.”

“BASIX for multi-units will mean that the sustainable initiatives demonstrated by *Mondrian* will become much more common in all multi-unit developments, and that's good for the environment and for residents,” said Mr Stanisic.

Mondrian's sustainable features:

- *Good solar orientation*
- *Cross-ventilation designed into all units*
- *Natural light and cross-ventilation used in all common areas*
- *Rain water collection and storage for landscape irrigation*
- *3A rated fittings and dual flush toilets*
- *Energy efficient fittings and timers in common areas*
- *Natural gas boiler hot water system*
- *Operable sun control and shading*
- *Native and low-water use plants in common area gardens*
- *Low-embodied structural precast concrete walling*
- *Sustainably-sourced timber*

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About BASIX

BASIX is a web-based planning tool that requires new residential developments to reduce water consumption by up to 40% and energy by 25% compared with the average home. Developments of 6 storeys and over have an energy target of 20%.

From 1 October 2005, all development applications for new residential dwellings in NSW must be submitted with a BASIX Certificate. BASIX will apply to all alterations and additions in NSW from 1 July 2006.

