



At the trend-setting 1 Blich St, a central atrium fills the building with natural light and reduces the need for artificial lighting and heating.

Horiso general manager Bruno Seguin says microprocessors allow each shade and louvre to be adjusted individually for maximum heat and light control. Building characteristics and location are overlaid with the architect's drawings and satellite data that factors in the sun's angle of incidence. That information is then streamed continuously to every blind and sunshade. This process interacts with the air conditioning and lighting systems to achieve maximum energy efficiency and best use of natural light at all times.

According to Seguin, using a central atrium to flood the building with natural light affords much greater control and reduces the need for artificial lighting and heating. Making better use of natural light improves the human health and dynamic of a building as well, he says.

The Blich St design isn't the first double-skin ventilated facade in Australia, but it is the first to combine all of these features. "The problem with highly reflective glazing is that people live in the dark no matter what the outside conditions are," Seguin says. "On overcast days you want to allow maximum natural light into the building and on sunny days you want to be able to manage it."

"The trend for many years was that people were hiding from the sun and using highly reflective glazing and putting a heavy load on air conditioners. Now, with the new technology, new quality of shadings and new quality of software, we can control the amount of light inside."

Blich Street developers Dexus Property Group and union super fund Cbus Property claim the building is a 40 per cent improvement on typical five-star energy-rated buildings of its size.

Among its other innovations, the building mines the Sydney sewer line and treats wastewater for use in cooling towers and for toilet flushing. A hybrid trigeneration power system using gas-fired power, absorption chillers and solar energy is used to reduce peak and overall energy consumption. And the embodied energy used in construction was greatly reduced through the use of cement-replacement technologies.

Both the Blich Street and Darling Quarter buildings are trend-setting developments. And, as is demonstrated by their rooftop gardens and living walls, the natural environment has been factored into their high-tech solutions.

"Bio-architecture and high-tech solutions can work together," Seguin says. "But we believe it is better to be flexible and be able to move with the sun. A static option has some restrictions, so I think you need to have control to adapt the shading to the environment." ■

Graham Lloyd is *The Australian's* environment editor.

# Shades of brilliance

**GRAHAM LLOYD**

INSPECTS TWO  
NEW BENCHMARKS  
IN COMMERCIAL  
BUILDING DESIGN.



Horiso general manager Bruno Seguin: Better use of natural light improves a building's human health and dynamic.

It was not so long ago that the mature banksia trees hoisted by crane onto the 28th-floor rooftop terrace of Sydney's latest commercial building would have been enough to tick the box for green credentials. For decades, gleaming towers of expensive and highly reflective glass have been considered a fitting statement of the triumph of technology over the environment. But that has changed completely.

A new generation of intelligent commercial buildings has redefined what it means to be green and the technology needed. Clear glass panels, full-height atriums with exposed lifts and services, circulated fresh air and automated shading systems are at the heart of these new creations, designed to cut demand for artificial lighting and electricity.

Two Sydney developments, 1 Blich Street and Darling Quarter, are considered the benchmarks. The buildings differ in scale and design, but they share a cutting-edge approach. Blich Street – the new head office for law firm Clayton Utz – is a transparent tower that shimmers like a jewel and overlooks Circular Quay and the Sydney Harbour Bridge. Darling Quarter's twin low-rise towers taper the city skyline to Darling Harbour's waterfront and will host the Commonwealth Bank.

Central to the success of each building is an automated shading system developed by Horiso, an international company with manufacturing facilities in Sydney. Darling Quarter's western facade is stacked with plantation cottonwood timber blinds, which constantly adjust to the sun's position. A giant skylight atop the atrium floods the indoor space with light, which is filtered with large automated blinds.

The \$667 million elliptical 1 Blich Street is constructed using a naturally ventilated double-skin facade made of clear glass panels to promote natural air flow and establish a thermal cavity. Each section within the cavity is fitted with automated blinds to control the amount of light and heat that enters the building.