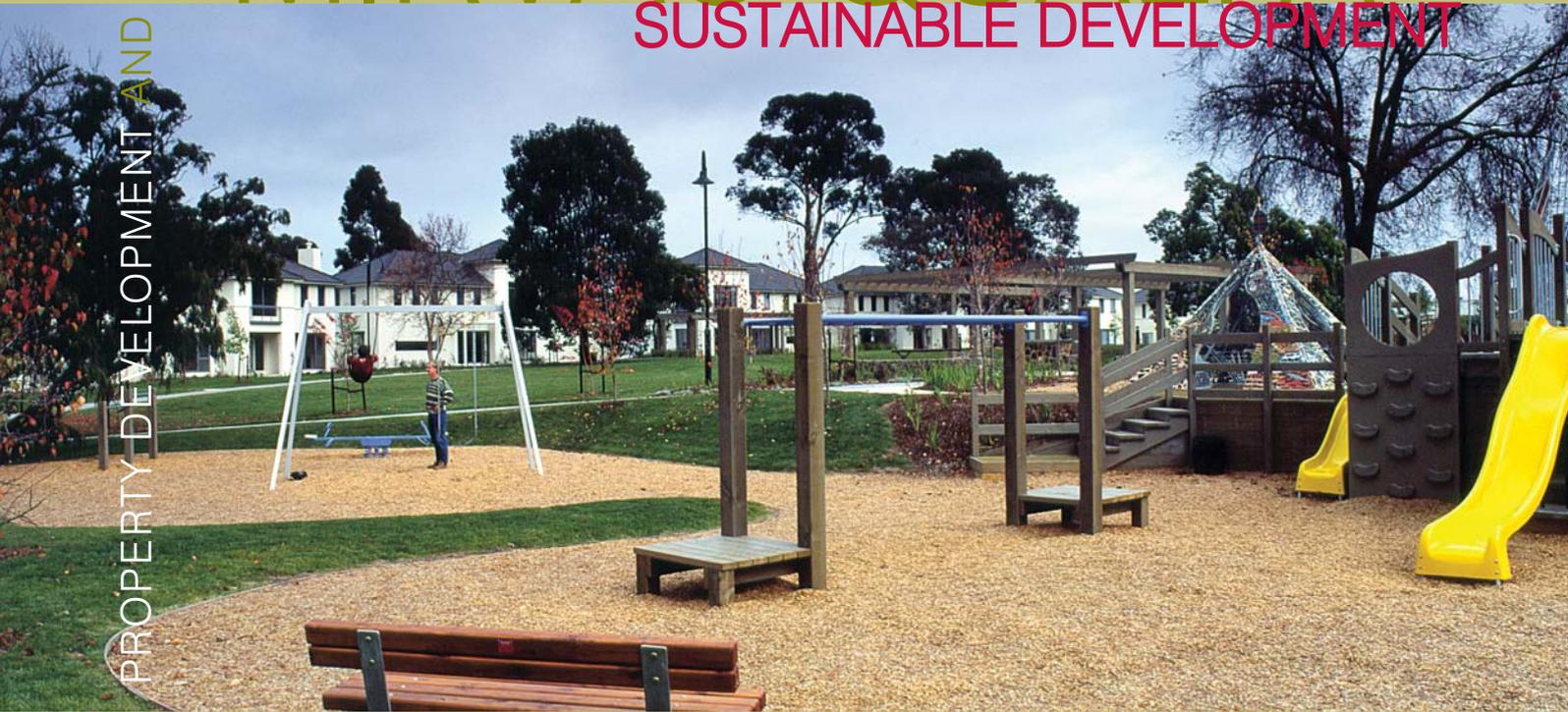


MIRVAC QUALITY

SUSTAINABLE DEVELOPMENT



The Heath - Victoria

JOURNEY TOWARDS NEW PRACTICES

Mirvac is committed to being an industry leader in introducing new technology and practical measures related to sustainability.

We are proud of the initiatives and benchmarks we have achieved as arguably Australia's leading quality brand in diversified property investment and management, property development and hotel management.

Sustainable practices are integral to Mirvac's culture of excellence - to achieve high quality and best practice in all that we do. We understand that we are not just building, but creating modern lifestyles and the communities where we will continue to live and work.

Mirvac's commitment to sustainability is to:

- implement responsible and practical sustainability management procedures
- develop and maintain a national focus on sustainability issues
- assign resources to assess appropriate sustainability practices
- participate in and develop associations with the sustainability industry
- promote sustainability education and awareness amongst all staff and users; and
- market sustainability technology and principles applied to its products, services and investments.

Robert J Hamilton
Managing Director
Mirvac Group



Newbury, NSW

MIRVAC SNAPSHOT What we do

Over the past four years, the Mirvac Group has:

- Designed and built over 8,000 new dwellings in NSW, Victoria, Queensland and Western Australia
- Owned and managed over 30 commercial, retail and industrial properties
- Operated over 20 hotels, 2,500 hotel rooms
- Grown to be one of Australia's top 50 publicly listed companies

THE MIRVAC WAY Guiding Principles to Sustainability

- Buy the best assets
- Achieve consistent high quality design
- Enhance reputation
- Instill culture of excellence
- Minimise overheads and waste
- Improve knowledge bank
- Be a good neighbour
- Act ethically
- Present well

MEMBERSHIPS AND AFFILIATIONS

- Member Green Building Council of Australia
- Member Property Council of Australia NSW Sustainability Committee
- Affiliated with Sustainable Energy Development Authority (SEDA)
- Participant in Energy Benchmarking Programs (Hotels)

SUSTAINABILITY HIGHLIGHTS

Mirvac understands that development is not just about building, but creating modern lifestyles and the communities where we will continue to live and work.

SUSTAINABILITY HIGHLIGHTS OF CURRENT MIRVAC PROJECTS INCLUDE:

- **24,000 trees** and more than **145,000 shrubs** and groundcovers
- **76ha of open space** for residents and the general public - equivalent to two and a half times the area of the Royal Botanic Gardens, Sydney, or twice the area of the Royal Botanic Gardens, Melbourne
- **3.6km of waterfront** promenade along the shores of Sydney Harbour, the Yarra and Brisbane River
- **Reduction of 9,856 tonnes of greenhouse gas** emissions from our commercial property portfolio, the equivalent of taking 2,166 cars off the road
- **Over 25 awards** relating to our sustainability achievements, including energy efficiency, resource efficiency, waste management, environmental management, green smart housing, innovative design and corporate leadership.



Public Art - Yarra's Edge, VIC



Cultural - Walsh Bay, NSW



Hands in the Air, Planting Day WA - Sponsored by Mirvac Fini



Riverfront - Cutters Landing, QLD



Tree Planting - Bridgewater, WA

PROPERTY INVESTMENT & MANAGEMENT

Sustainability has become an essential element of managing and developing commercial, retail and industrial properties. Mirvac's in-house property management team provides a genuine focus on sustainability principles and is dedicated to developing and implementing responsible and practical sustainability management.

MIRVAC & SEDA

Mirvac has been a partner with the NSW Sustainable Energy Development Authority (SEDA) since 1999. In conjunction with SEDA 5 year action plans were developed to reduce energy consumption and greenhouse emission, improving operational practices and tenant satisfaction, and providing significant reductions in annual outgoing expenditure.

Mirvac initiatives within NSW have achieved energy savings equivalent to reducing total greenhouse gas emissions by 9,856 tonnes, the equivalent of taking 2,166 cars off the road. In recognition of its reduction in greenhouse gas emissions, Mirvac has been awarded the: Bronze Energy Smart Award 2000, Silver Energy Smart Award 2001 and Gold Energy Smart Award 2002.

Initiatives that have been successfully implemented in NSW are now being reviewed for implementation across all applicable properties within the investment portfolio.

AUSTRALIAN BUILDING GREENHOUSE RATING SCHEME (ABGR)

Mirvac has also been instrumental in the development and implementation of the Australian Building Greenhouse Rating (ABGR) scheme. This rating scheme allows building owners, managers and tenants to evaluate and understand the energy usage and greenhouse impact of their commercial office buildings. The scheme can be applied to existing and new buildings. Mirvac has evaluated several existing NSW office buildings and all properties were rated at 3 stars or better (3 stars represents current best market practice). Since evaluation a number of initiatives have been implemented within these properties and on completion of 12 months of operation each property will be re-evaluated.

Mirvac has led the way with respect to new developments and 40 Miller Street, North Sydney, was the first new development to pre-commit to a 4 star ABGR. This was followed by the recently completed Bay Centre at Pyrmont, Sydney. The proposed Darling Island Pyrmont office building is designed to achieve a 4½ star ABGR.

Mirvac's extensive integrated in-house property expertise allows it to address sustainability from the 'cradle to the grave'. The design and development approach to new office buildings is to integrate energy efficient design principles at the earliest stages of planning and allows



Bay Centre, Pyrmont: A 15,000m² A-grade commercial building with 4 star ABGR, designed, developed and owned by Mirvac, completed in 2002



40 Miller St, North Sydney: 12,500m² A-grade commercial building with 4 star ABGR, designed, developed and owned by Mirvac, completed in 2000

PROPERTY INVESTMENT & MANAGEMENT CONT

HOTEL MANAGEMENT

new benchmarks to be set without commercial compromise. Energy and independent commissioning consultants are involved during the early stages of the design phase and throughout the construction phase. This allows the delivery of an asset that is 'operationally ready' at practical completion, with all systems at their optimum levels of performance, therefore reducing the typical effects of the traditional defect liability period. The flow on from this process allows Mirvac to undertake an effective ABGR 12 months from practical completion.

ABGR AWARDS - CHAMPIONS!

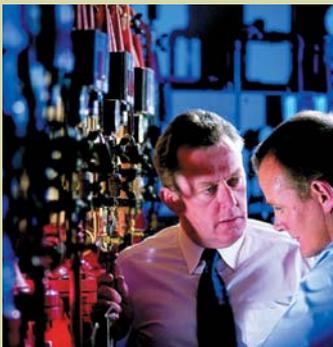
In recognition of involvement with the ABGR Scheme, Mirvac was awarded the Building Greenhouse Rating Leadership award in 2001 and 2002. Chris Luscombe, (Director - Engineering and Operations) was awarded the ABGR Champions award in 2001, and Chris along with Simon MacKinnon (Development Director Commercial), Gordon Longrigg (Operations Manager - Optus Tower and Greenwood Plaza) and Brian Hennessy (Regional Operations Manager) were, as a team, finalists in the 2003 Champions award.

ONGOING COMMITMENT

Mirvac has been identified by the Ministerial Council on Energy as a key stakeholder for consultation in the development of a national framework for energy efficiency and it is currently working alongside a number of state government and local authorities with respect to energy efficiency and the reduction of greenhouse emissions. Mirvac will continue to target energy efficiency as a means of increasing business competitiveness and harnessing cost effective greenhouse gas emission reduction opportunities.



Noel Woodward & Gordon Longrigg
inspecting a Building Management
Control Network



67 Albert Ave, Chatswood:
16,000m² A-grade commercial
building with 3.5 star AGBR,
owned and managed by Mirvac



*Harbourside view from Quay Grand Suites Sydney
designed and developed by Mirvac in 1998*

Mirvac Hotels has undertaken an internal audit for eco-efficiency benchmarking of ten of its hotels in Sydney, Melbourne and Brisbane. A range of useful conclusions has arisen giving direction to on-going ecological management strategies. The impact of hotel occupancy on energy consumption, water use and waste production, impact of efficient water fittings on water usage and impact of individual air conditioners on energy usage have now been measured, compared and targeted. The audit system is now being expanded to include additional Mirvac hotel properties.



Solar Energy, Newington

RESIDENTIAL PROPERTY DEVELOPMENT

NEWINGTON, AUSTRALIA'S FIRST SOLAR SUBURB

A joint venture between Mirvac and Lend Lease, Newington is a high quality residential suburb with over 2000 dwellings and the former Athletes Village for the Sydney 2000 Olympic Games.

With the support of the NSW Government and various industry bodies, Newington was planned as a demonstration of sustainability principles, and is a model for permanent change in the housing industry.

The result is Australia's first solar suburb, with over 800 homes collecting solar power - generating over 1 million kilowatt hours of energy annually.

Solar cells are integrated into the northern roofscapes with limited street visibility for solar hot water heating and energy harnessing.

Compared to a similar-sized, non-solar suburb, this represents a saving of 5,000 tonnes of carbon dioxide each year and a 75% reduction in consumption of mains electricity.

Other sustainability features of Newington include:

- **Dual water supply** system (to recycle grey water for toilets and landscape irrigation)
- **Stormwater recycling** and irrigation of parklands

- **Water conservation devices** (taps, showerheads, and efficient appliances)
- **Native grasses and plants** to reduce water consumption
- **NaTHERS rating 4 to 5 star for all houses**
- Approx **12,000 trees planted** - the equivalent of a 12ha forest.

Green Workforce during construction including:

- 90% of hard waste and 60% of soft waste recycled. Demolition and masonry waste re-used on site
- Life cycle assessment of materials - in terms of cost, durability, ease of construction, availability, benefits and environmental impact.

ALTURA SUSTAINABLE HIGHRISE

Moving on from the domestic scale of the suburban house is Altura, a 23 floor highrise residential building of 137 apartments, at Pacific Place, Chatswood, NSW.

Featuring many solar and water conservation initiatives which are leading edge for highrise buildings:

- **Photovoltaic Cells:** Approx 45sqm on roof to power common area lighting and solar boosted, centralised gas hot water system for all apartments
- **Water Conservation:** AAA rating for the building's hydraulic system, featuring flow control devices to conserve water supply
- **Stormwater Detention:** 200m³ on-site stormwater detention and recycling system to collect,

filter and recycle stormwater with over 1km of pipework, for all landscape irrigation and car washing needs

Other ESD initiatives include:

- time controlled / movement sensed controls for common areas lighting and ventilation
- facilities to achieve a minimum 75% on-site recycling of green waste
- provision for a resident worming farm
- through apartments for cross ventilation
- no south facing living spaces
- passive sun control devices
- bicycle parking
- plantation timbers.



Altura, Pacific Place Chatswood



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SUSTAINABILITY

recent awards

2003

Royal Australian Institute of Architects (NSW)
MBA Housing Award (Nat)
MBA National Building & Construction Award
Housing Industry Association Greensmart Award

Special Jury Award for Innovative Design
Energy Efficient Home of the Year
Merit for Energy Efficiency for Commercial Building
Smart Housing

2002

Urban Development Institute of Australia (QLD)
Urban Development Institute of Australia (NSW)
HIA
SEDA
SEDA

Advancement of Sustainable Urban Development
Excellence in Energy Efficiency
Greensmart Award
Building Greenhouse Rating Leadership Award
Gold Energy Smart Award

2001

MBA (NSW) Excellence in Housing
SEDA
SEDA

Adaptive Re-Use
Building Greenhouse Rating Leadership Award
Silver Energy Smart Award

2000

HIA (NSW) Housing Award
SEDA
MBA Excellence in Housing Award (NSW)
MBA Excellence in Housing Award (Nat)
MBA Excellence in Housing Award (NSW)
MBA Excellence in Housing Award (Nat)
MBA Excellence in Housing Award (NSW)
MBA Excellence in Housing Award (Nat)
MBA Excellence in Housing Award (Nat)
Urban Development Institute of Australia (NSW)
HIA BHP Greensmart National Award
HIA Pilkington Greensmart National Award

Energy Efficient Homes of the Year
Bronze Energy Smart Award
Waste Management
Waste Management
Energy Efficient Housing
Energy Efficient Housing
Environmental Management
Environmental Management
Resource Efficiency over \$500,000
Awards for Excellence, Energy Efficiency
Energy Efficiency
Development of the Year

1999

SEDA (Nat)
HIA Housing Award (NSW)
MBA Excellence in Housing Award
MBA Building & Construction Award (Nat)
MBA Excellence Award (NSW)
MBA National Excellence Award
MBA Excellence in Housing Award
MBA Excellence in Housing Award

Engineering Excellence (Nat)
Energy Efficient Home of the Year
Energy Efficient Housing
Energy Efficient Housing
Energy Efficient Housing
Energy Efficiency in Residential Construction
Waste Management
Energy Efficient Housing

ENERGY EFFICIENCY



External sun shading for sun control

WASTE MANAGEMENT



On-site recycling bins during construction

WATER CONSERVATION



Living verges - native, drought resistant landscape

REGENERATION



Urban regeneration

AWARD WINNING

