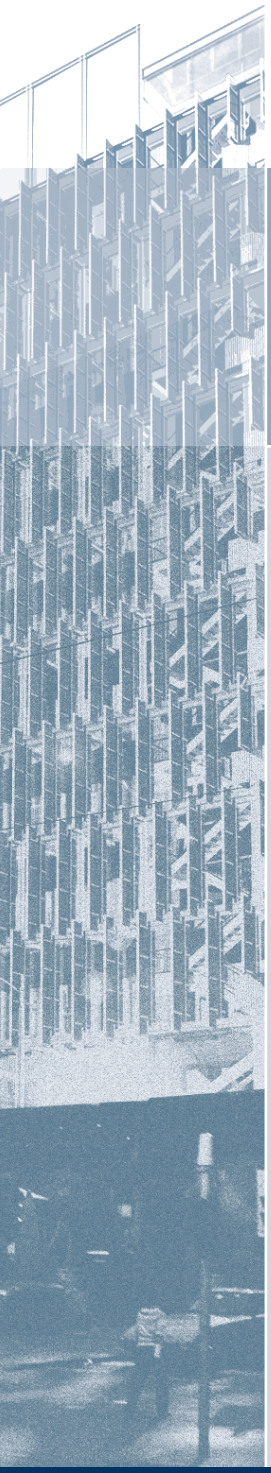
Sustainable Building Pathway



Accelerating transformation in the commercial building sector

Developed at the Sustainable Building Leaders' Project
8-10 February 2006
Melbourne Business School, Mt Eliza

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1. SUSTAINABLE BUILDING PATHWAY: OVERVIEW

Seven key elements of a **Sustainable Pathway for the Building Industry** were developed by some 50 senior executives from industry and the three levels of Government at a Workshop in February 2006. These senior executives' commitment to the Workshop demonstrates the extent to which green building has captured the attention of the building and construction industry. This follows US trends, where LEED-registered[1] projects are doubling every year, driven by growing market interest in environmentally friendly products and in potentially improved economic returns.

The Workshop developed the Sustainable Building Pathway so that individual market players could capture the benefits of green buildings, and so collectively deliver the broader benefits of a green built environment in Australia. A timeline for implementation is also included and the Workshop participants will act as advocates for the strategies and actions, and monitor progress of their implementation.

The Pathway comprises seven core strategies (S1 – S7 below), each with a series of supporting actions (A1 – A22). These are summarised below.

S1 Conduct a campaign to communicate the benefits of green buildings to customers

Only strong demand from customers – the investors, landlords, tenants and owner-occupiers – will shift the green building market from a few innovators and leaders to mainstream players. This demand will translate into increased returns which will accelerate sustainable market transformation.

Most communication campaigns to date have been targeted at the supply side of the industry – the people and professionals who develop and build, rather than own or occupy the finished buildings. However, evidence of the benefits of green buildings, combined with public and business interest in improving environmental performance, is already sufficient to underpin a major communication campaign aimed at stimulating demand for green buildings, both new and refurbished. Further evidence will strengthen the case over time, but the US LEED experience shows that we should act now.

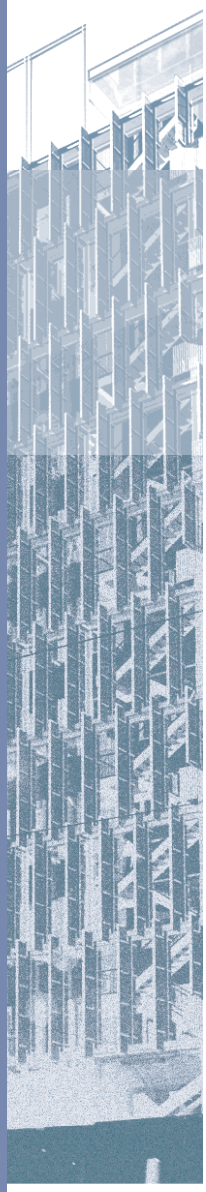
The key goal of the campaign should be to shift customers from a focus on cost to a focus on value. Value means different things to different customers, but largely, it includes the following:

- The gains derived by building occupants from good Indoor Environment Quality (IEQ), including better staff productivity and a general sense of well-being;
- The gains derived by investors from higher occupancy levels and lower tenant turnover;
- The gains derived by landlords and owners from lower lifecycle costs; and
- The gains derived by all market players from branding and from being seen as acting responsibly to protect and conserve the environment. Consumer demand for green products is growing strongly, and many companies are adopting green practices to satisfy customers, shareholders and staff expectations.

The campaign could be an industry-government collaboration, similar to the successful campaigns of recent years that achieved OH&S changes in the building industry. It should be informed by market research on the current needs and preferences of the different customer segments and should cover both new and refurbished buildings.

Action 1: Conduct an awareness campaign to promote the benefits of green buildings to investors, landlords, tenants and owner occupiers. The campaign should also target owner representatives: property valuers and analysts, real estate agents, tenant advocates, facilities managers and property insurers.

[1] *LEED, or Leadership in Engineering and Environmental Design, is a green building rating system developed by the US Green Building Council as a voluntary national-based standard for developing sustainable buildings.*



S2 Eliminate confusion in the marketplace about what is 'green'

The communication campaign in Strategy 1 will have greater impact if there is a simple, common language for all players in the marketplace that defines and describes what is a green building, both new and refurbished. In the electrical whitegoods market, for example, the Energy Rating stars have become an instant consumer guide to appliance energy efficiency. In the building sector in the U.S., the widely used LEED rating tool has achieved a common language among developers, designers, builders and buyers.

In Australia, there are a number of rating tools and the market does not have a clear understanding of what each rating tool measures. Industry and government should work toward developing a single performance rating standard which will provide a consistent methodology and language for all these tools, and require the use of this common methodology. This standard will need to be adaptable enough to take account of State to State, and even local Council variability in climate and planning requirements.

Action 2: Develop a single performance rating standard that defines a green building which is easily understood by consumers, and cost-effective to use by building professionals. Owners of existing green building rating tools should form a Roundtable to develop a consistent methodology enabling the different tools to make assessments under this single standard.

Action 3: Prepare a Regulatory Impact Statement on mandatory disclosure of environmental performance of residential and commercial buildings, including the requirement that the performance record be included in sale and lease documentation.

S3 Strengthen the business case: document investment returns

There is evidence from case studies, especially overseas, that developers and owners that focus on value rather than cost, have achieved better business and environmental outcomes. Workshop participants felt that more evidence based on local experience will help stimulate green building in Australia.

Elements of the business case that need better documentation include the willingness of different market segments to pay, the leverage points in the supply chain that enhance value, and the cost of building green. Cost analysis should include the cost-benefit profiles of green vs non-green buildings and cover refurbished as well as new buildings.

Action 4: Research the industry value chain in Australia and quantify the economic returns of green buildings over the full life cycle of the building: from design and construction, to operation and demolition. Building refurbishments should form a major part of this research.

Action 5: Document the willingness to pay among tenants and prospective tenants in green buildings.

Action 6: Develop a cost-benefit profile of green buildings vs non-green buildings.

Action 7: Develop more Australian case studies demonstrating the positive link between better IEQ in green buildings and employee productivity, including in refurbished buildings.

S4 Improve the supply and reduce the cost of green building products, materials and equipment

A number of builders of green buildings in Australia have had difficulty finding green building products, materials and equipment. This has added to the cost and time taken to deliver these projects. This barrier to green buildings could be overcome by improving information on what building materials are available and where they can be obtained. As with having a single rating tool, a single labelling system should have a cost-efficient certification process, and should disclose the ingredients or composition of products and processes, as well as their life cycles.

Action 8: Establish a one-stop shop for information on supply sources for green building materials, products and tools. The 'Your Building' portal which is currently being developed, may provide a one-stop information shop.[2]

Action 9: A single labelling system for green building products, materials, and equipment performance should be developed, in consultation with existing schemes such as EcoSpecifier and the Good Environmental Choice Ecolabel, which already provide some guidance on available green building products.[3]

Action 10: Increase representation of building material manufacturers on bodies such as the Green Building Council of Australia (GBCA), at green building events, and on peak bodies such as the Australian Sustainable Built Environment Council (ASBEC).

S5 Make better use of knowledge and technology

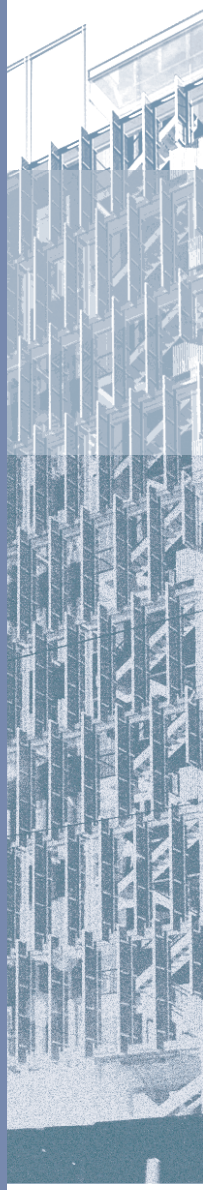
Better use should be made of Australian expertise on green buildings. Techniques such as integrated building design, energy modelling and those in the Property Council of Australia's green building toolbox, need to become mainstream practice in the commercial building sector. Unfortunately, the Australian industry is highly fragmented, with numerous sub-contractors involved in project delivery. This has impeded uptake of new technologies and management practices across a number of fields and professions.

Networks are emerging that cross disciplines and business systems. These networks are helping disseminate knowledge more effectively and are, in turn, encouraging integration of design, construction and operation. The interaction between different disciplines has been shown to facilitate better project delivery and improved economic and environmental performance. Networks and knowledge bases need to be further expanded, in particular to bring in the owner representatives (property valuers and analysts, real estate agents, facilities managers, tenant advocates, and property insurers) who will be important targets of the proposed communication campaign in Strategy 1. Building product manufacturers are another important target for inclusion in these networks. The Sustainable Building Leaders' Network is an important new network by which this expansion and integration can be achieved. This new Network emerged from the Sustainable Building Leaders' Workshop in February 2006, which developed this Pathway.

Action 11: Expand networks, including the Sustainable Building Leaders' Network, to include more owners' representatives and product manufacturers. Through these expanded networks, continue promoting integrated approaches to building design and construction.

[2] *Your Building, designed by the CRC for Construction Innovation and supported by the Federal Government, is an interactive portal containing wide-ranging information on sustainable commercial buildings: from business and technical advice on design, financing, construction and operation.*

[3] *EcoSpecifier is a commercial database of building products that have been independently vetted against sustainability criteria, and provides guidance on the environmental impact of commonly available building products. The Good environmental Choice label certifies products to ISO 14024 – International Third Party Labelling and Declaration.*



S6 Strengthen industry and Government leadership

Industry leaders have demonstrated that it is possible to achieve profitability from a sustainability-focused strategy. Industry leaders can further learn from international trends and best practice by forming linkages with the fast-growing network of international companies that incorporate sustainability principles into all aspects of their operations.

Action 12: Form a Sustainability Network of CEOs of private and government organisations operating in the building industry. The CEOs should be encouraged to join the Global Reporting Initiative (GRI)[4], both to demonstrate international leadership and to network with other global leaders.

Action 13: Develop an Accord that CEOs in the building industry can sign to gain recognition of their commitment to sustainability from employees, customers and stakeholders.

Action 14: Initiate periodic functions and meetings to help maintain the Sustainable Building Leaders' Network, which will take carriage of advocating the implementation of the Pathway.

Action 15: Use SB08 Melbourne as a focus for research, awareness raising, and education and training activities in the local market, and to raise Australia's profile as a leader in the rapidly growing global market for sustainable buildings.

Meanwhile, Governments on all three levels can accelerate market transformation through their procurement and fiscal policies. Governments occupy some 16% of the commercial property market, and a firm commitment to green buildings from the public sector would be a major demand stimulus.

A good economic case can be made for tax incentives for green buildings, such as accelerated depreciation, given the long-term economic and environmental gains they deliver. Willingness to accept the risk from leading-edge practice also needs to be encouraged.

Tax incentives have been used to positive effect overseas, especially in Europe and the United States. Introducing them in Australia, however, would need to weighed against the push to simplify Australia's tax laws. Grants, subsidies and concessional loans could be alternatives to fiscal incentives, and several existing schemes have already successfully promoted uptake of best practice in design.[5]

The following actions will demonstrate strong Government leadership:

Action 16: Develop a strategy for fiscal incentives for green buildings that recognises the economic and environmental importance of this sector and the potential to make major productivity gains and greenhouse reduction.

Action 17: Expand existing support programs for developers who integrate green building principles and technologies at the design and documentation phase – both in new buildings and refurbishment projects. These would also help build up case studies for the business case for green buildings.

Action 18: All Governments should commit to achieving best practice green building standards for government building, tenancy and procurement.

Action 19: Federal and State Government should mandate green building materials and products in their procurement programs, and monitor their performance through corporate reporting requirements.

[4] *The GRI is an independent institution that disseminates globally applicable Sustainability Reporting Guidelines. The Guidelines are for voluntary use to report on the economic, environmental, and social dimensions of an organisation's activities, products and services. GRI collaborates with the United Nations Environment Programme (UNEP).*

[5] *One successful scheme is Victoria's Commercial Office Building Energy Innovation Initiative (COBEII), a joint initiative between Sustainability Victoria and the Property Council of Australia. Under COBEII, the Victorian Government enters into financial partnerships with industry to facilitate the design process, financial and technical feasibility analysis, environmental modelling.*

S7 Use building regulations and planning controls to support green building

Regulation should create a level playing field among developers and at the same time establish minimum standards. A national approach is needed to ensure consistency in planning, rating tools and regulation. This has already been recognised at the February 2006 meeting of the Council of Australian Governments (COAG), and is reflected in the agreement to reduce the regulatory burden imposed by the three levels of government. COAG has agreed that all governments will identify further reforms that enhance regulatory consistency across jurisdictions, or reduce duplication and overlap in regulation and in the role and operation of regulatory bodies.

A national approach, however, should still accommodate a necessary measure of flexibility and adaptability for each State planning process and overall regulatory regime.

Action 20: Convene a Working Group of planning and regulatory executives from the three levels of government to examine standards and regulations, to encourage greater consistency, and to remove any disincentives to green building.

Action 21: Local governments should consider providing operating incentives to developers, such as adopting a preferential queuing system, and giving enhanced development rights for green developments.

Action 22: Expand the Building Code of Australia to include regulations that extend beyond energy efficiency to broader environmental performance, including IEQ.

Table 1. Sustainable Building Pathway: Strategies and Actions

Activity	Year 1	Year 2	Year 3	Year 4	Year 5
Strategy 1: Conduct a communication campaign					
1. Promote green building benefits					
Strategy 2: Eliminate confusion on what is 'green'					
2. Develop single rating standard					
3. Mandatory disclosure of environmental performance					
Strategy 3: Strengthen the business case					
4. Research on returns over life cycle of buildings					
5. Document tenants' willingness to pay					
6. Develop cost-benefit profiles: green vs. non-green building					
7. Develop Australian IEQ studies					
Strategy 4: Improve supply and reduce cost of green building products, materials and equipment					
8. One-stop information shop on green building supply					
9. Single labelling for green products					
10. Increased product manufacturers' engagement					
Strategy 5: Better use of knowledge and technology					
11. Expand green building networks					
Strategy 6: Strengthen industry and Government Leadership					
12. Form a Sustainability Network of CEOs					
13. Develop a CEO Accord					
14. Advocate Pathway implementation					
15. Focus campaigns around SB08 Melbourne					
16. Fiscal incentives for green building					
17. Expand existing Government support					
18. Government procurement and tenancy of green buildings					
19. Government accountability for use of green building products					
Strategy 7: Use regulations and planning controls to support green building					
20. Convene Working Group of planning and regulatory executives					
21. Preferential queuing system					
22. Integrate environmental performance into the Building Code					

2. WORKSHOP BACKGROUND

2.1 The Sustainable Building Leaders' Project

The Sustainable Building Pathway is part of the Sustainable Building Leaders' Project, a joint Industry-Government initiative aimed at accelerating the uptake of green building across Australia. The Pathway was developed by a group of 50 senior executives from both industry and government, at a two-day residential Workshop on 8-10 February 2006 at the Mt Eliza campus of the Melbourne Business School. The list of Workshop participants is in Attachment 1.

Represented at the Workshop was a wide cross section of the industry supply chain, including institutional investors, property developers and owners, architectural, engineering and construction companies, property valuers, peak industry bodies, and regulators and policy executives from three levels of Government.

The enthusiasm generated during the Workshop has resulted in a commitment from the participants to maintain a leadership network that will aim to follow through the strategies and actions contained in the Pathway, and in the process expand the network to include representatives from other segments of the building industry supply chain.

2.2 Objectives of the Workshop

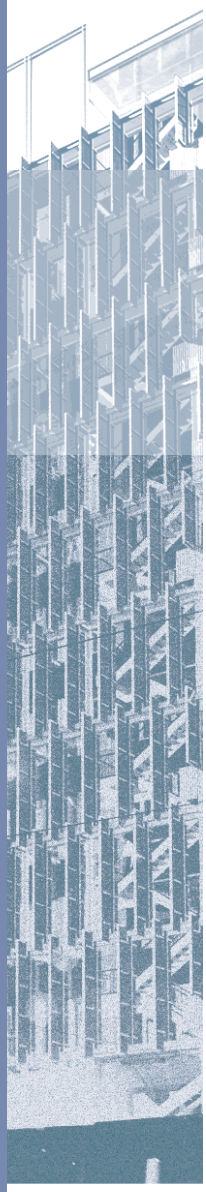
The Workshop program was designed both to develop the Pathway, as well as to apprise industry leaders of the latest international trends and best practice, which would help shape their own business models.

Workshop participants set out to create a Pathway that will:

- Maximise the economic, environmental and social amenity of Australia's built environment;
- Support a vibrant, profitable and growing Australian building industry;
- Encourage innovation and creativity;
- Incorporate efficient and effective regulation that facilitates competition while setting minimum requirements; and
- Create opportunities for the export of Australian sustainable building expertise.

The program was also designed to help individual participants to:

- Understand the long-term trends shaping the building industry in Australia and overseas;
- Interact with international and local experts from industry, government, community and academia, and help establish a network of peers;
- Incorporate environmental performance and social expectations into business design for superior returns;
- Use business sustainability principles to improve stakeholder relationships and reduce risk, lower costs and win business;
- Understand how to lead organisations and people through the changes needed to create a sustainable business; and
- Reconcile short-term business imperatives and longer term corporate interests.



2.3 Workshop design

Day One of the Workshop aimed to examine the issues and challenges facing the green building movement, including a review of the current market situation. Speakers from both industry and government presented their respective viewpoints, and there were also presentations on the business case for green building in Australia.

Highlights of the Workshop were the presentations from two U.S. experts, who presented international trends and provided international comparisons and perspective during the discussions.

David Gottfried, founder of the World and U.S. Green Building Councils, discussed how the LEED rating tool had become a widely accepted common language and benchmark for green buildings in the U.S. Having a common benchmark had helped consumers get a better understanding of what the building industry provides in the market, and had thus become a powerful tool for focusing attention on green building. For example, the estimated value of projects registered for LEED rating rose nearly ten times within just four years: from US$792 million in 2000 to US$7.73 billion in 2004.

Lisa Matthiessen, Director of the Sustainable Design department at Davis Langdon in the US, discussed her pioneering studies on the costs associated with building LEED-rated projects. These studies concluded that there was no statistically significant cost premium for green buildings compared to conventional buildings. Davis Langdon's discussion with developers suggested that building teams were finding ways of incorporating ESD features within their original budgets through trade-offs with other features.

Based on the issues raised and discussed on Day One, Workshop participants spent Day Two identifying the barriers to green building uptake and developing strategies and actions to address them.

The Workshop also heard insights from the Secretary of Victoria's Department of Sustainability and Environment, Prof. Lyndsay Neilson, on the environmental pressures on Australia's growing cities and coastal areas.

2.4 The presentations

The following presentations from key industry leaders were made at the Workshop:

Session 1 – Positioning for Change: Business

- ESD in Business Risk Assessment
  Brendan Crotty – Managing Director and CEO, Australand Holdings Ltd;
- Positioning for Change and the Green Brand
  Andrew Junor – General Manager, Property Service,Investa Property Group
- Persistent Barriers to Green Building
  Daniel Grollo – Joint Managing Director, Grocon

Session 2 – Positioning for Change: Government as Buyer and Regulator

- Sustainable Buildings: Challenges & Opportunities for Modern Government
  David Craven – Head of Sustainable Buildings, Sustainability Victoria
- Government Leadership in Green Building
  Warren Lear – Director, Project Services,
  Department of Administrative & Information Services (South Australia)
- Creating a Sustainable Township
  Brian Newman – CEO, Sydney Olympic Park Authority

Session 3 – Analysis of the Cost of Building Green

- Managing the Cost of Green
  Lisa Matthiessen – Director, Sustainable Design, Davis Langdon (US)

Session 4 – The Business Case for Building Green in Australia

- The Dollars and Sense of Green Buildings
  Romilly Madew – Advocacy Consultant,
  Green Building Council of Australia
- IEQ: Realising the Market Opportunity
  Tony Arnel – Building Commissioner, Victoria

Session 5 – Market Transformation

- Institutional and Transitional Issues
  Prof. Paul Perkins, Chairman, The Barton Group
- What Would a Sustainable Market Look Like?
  David Gottfried – Founder, U.S. and World Green Building Councils

2.5 Workshop sponsors

The following companies and government institutions sponsored the Sustainable Building Leaders' Project:

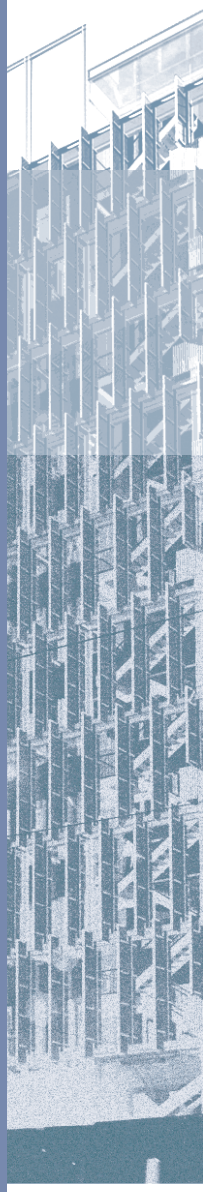
- Australand Holdings Ltd
- Building Commission Victoria
- City of Melbourne
- Davis Langdon
- Department of Administrative & Information Services (South Australia)
- Department of Environment and Conservation (NSW)
- Department of Sustainability and Environment (Victoria)
- Green Building Council Australia
- Grocon
- Investa Property Group
- Landcom (NSW)
- Lend Lease
- Sustainability Victoria
- Sydney Harbour Foreshore Authority
- Sydney Olympic Park Authority
- Thinc Projects

3. SUSTAINABLE BUILDING MARKET SNAPSHOT

The Workshop presentations and discussions on Day One explored current market realities for sustainable building, both in Australia and overseas. Key observations and conclusions are summarised below.

3.1 Green building in Australia

The base of interest in green building in the commercial sector is widening, underpinned by a number of industry innovators and so-called 'fast followers'[6] or early adapters. These include major industry players and have caught the attention and imagination of the market, which is closely watching the leaders' experiences, to see how the market might move in future.



The financial success of the projects, however, is still to be proven as few buildings have been in operation for significant periods and many are still under construction. Some projects that have embraced the principles of sustainable building include:

- Lend Lease HQ, 'The Bond' – Sydney (5 Green Star rating)
- City of Melbourne's Council House 2 (CH2) (6 Green Star rating)
- The National Australia Bank HQ – Docklands
- 500 Collins St – Melbourne (28-storey refurbishment, projected 5 Green Star rating)
- Szencorp's HQ – 40 Albert Rd, South Melbourne (4-storey refurbishment, 6 Green Star)
- Australian Conservation Foundation HQ – 60 Leicester St, Carlton Melbourne
- Kangan Bateman TAFE – Melbourne (5 Green Star rating)
- 8 Brindabella Circuit – Brindabella Business Park, ACT (5 Green Star rating)
- RAAF Richmond HQ – NSW (5 Green Star rating)
- Grocon HQ – QV precinct, Melbourne (6 Green Star rating on fitout)

The motivation for these projects has varied. Some are corporate signature projects such as The Bond, and the headquarters of the National Australia Bank, Szencorp and Grocon. Here the motivation is usually based around branding and employee benefits. Consumer preference for green products is growing strongly and many companies want to demonstrate their green credentials to customers. In a tight labour market, many companies are also finding that a company's commitment to environmental and social responsibility helps to attract and retain talented employees.

Green buildings have also been found to offer significant gains in productivity because of their better internal environment with less absenteeism and greater efficiency of work tasks[7]. The investment in a healthy environment is also a powerful demonstration of the employer's concern for the well-being of employees.

Some of the buildings are business investments based on the assessment that green buildings will offer a superior return over the long-term. 8 Brindabella Circuit and 500 Collins St have been developed on this basis. These will be critical tests of the market value of green buildings.

Similarly, Investa Property Group has introduced a comprehensive program to improve the sustainability of its entire property portfolio as part of a business philosophy that sees significant advantage in green buildings, entwined with the Group's brand value, commitment to innovation, risk management and staff motivation. While this approach has not led to increased rentals from its properties, it has delivered significant gains in occupancy rates and profitability.

A number of other projects and prospective developments around Australia have adopted environmental features at the request of tenants. These include the Southern Cross and 50 Lonsdale St in Melbourne, where the Victorian Government has set minimum environmental performance standards. Consulting firms such as Ernst and Young and Price WaterhouseCoopers, and financial services firms such as IAG, have also demanded green tenancies, all motivated by corporate brand, reputation and employment strategies.

[6] *Geoffrey A. Moore. Crossing the Chasm, Capstone Publishing, Oxford, 1999. (Moore says that the market segments based on the pace of technology uptake are: innovators, fast followers, early majority, late majority, and laggards. Plotted on a Bell curve, the early and late majorities comprise the mainstream market, and each segment requires different marketing strategies).*

[7] *See for example, the Victorian Building Commission's Discussion Paper on IEQ which noted 'substantial and rigorous international research that demonstrates a strong correlation between IEQ and worker health and productivity'.*

3.2 Green buildings: international developments

The Australian market experience reflects earlier trends in international markets. Green buildings in the United States have penetrated the market beyond just innovators and fast followers. Registrations under the LEED rating system for green buildings reached 3,000 projects during 2006, a doubling over the previous year. Estimates of green building market share by value are as high as 10%. In some countries in Europe, green building is now the norm.

3.2.1 The inexorable growth of green business

The movement reflects broader shifts in corporate approach to sustainability. Some of the world's largest companies, including General Electric and Wal-Mart, have recently perceived significant business advantage from improving their environmental performance. General Electric's 'Ecomagination' program launched last year targets increased revenue from environmental products and processes from US$10 billion to US$20 billion by 2010, underpinned by an annual R&D effort of US$1.5 billion per annum.

Wal-Mart, a company with over 1 million employees and 100 million customers per week, has recently adopted ambitious environmental goals. It has committed to move to 100% renewable power, zero waste and a shift to sell only sustainably produced products.

With companies of this scale adopting sustainability as a business opportunity, the 'tipping point' for market transformation has been passed. Indeed, even the investment community has moved.

Many institutional investors now see an understanding of environmental and social issues as reflecting a better understanding of the business itself, and therefore an indicator of better market awareness and superior business control and risk management.

Far from acting as a brake on corporate performance, an emerging body of evidence shows that companies that view their business holistically, integrating OH&S, environmental performance and social expectations into their business design, deliver superior returns to their shareholders over the medium to long-term.

3.2.2 Market value of green buildings

The first evidence of the market value of green in the building sector has also begun to emerge, although many in the market remain sceptical. A study of the US market by McGraw Hill[8] found that green buildings delivered the following added value:

- Operating Costs decreased by 8% to 9%
- Building Values increased by 7.5%
- ROI improved by 6.6%
- Occupancy Ratio increased by 3.5%
- Rent Ratio increased by 3%

A Canadian study of the experience of twelve green buildings also found improved values of a similar order of magnitude[9], although neither study could claim to be a representative sample of either green building performance or general market demand.

A key driver of this improved value is that green buildings strive not only for resource efficiency but also for improved IEQ. This improved IEQ translates into better worker productivity through reduced absenteeism and employee turnover, better concentration and energy, and higher morale and loyalty.[10]

Thus, tenants of green buildings are less likely to move and will pay higher rents once they have found a building that employees actually like. Conversely, US studies have found that the main reason businesses relocate is employee complaints about the building: hot and cold spots from traditional air conditioning systems, poor lighting and stuffy air (i.e. poor air quality).

Lower tenant churn rates and increased occupancy translates into significant added value for the building owner.

[8] *What Would a Sustainable Market Look Like? Presentation by David Gottfried to the Sustainable Building Leaders' Project Workshop, 10 February 2006, Melbourne Business School, Mt Eliza, Victoria.*

[9] *Managing the Cost of ESD: Understanding the Value. Presentation by Lisa Matthiessen to the Australian Property Institute, 13 February 2006, Port Melbourne.*

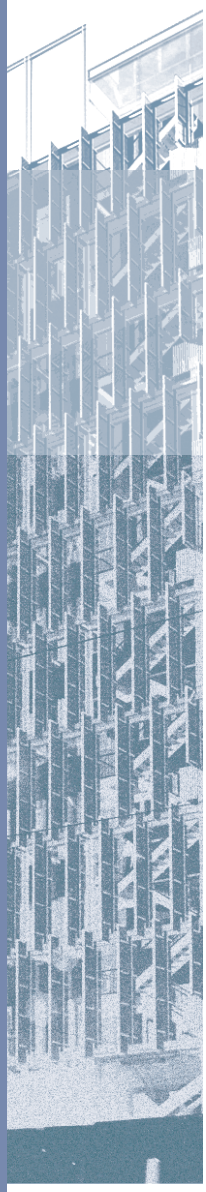
[10] *As cited above, the Building Commission Discussion Paper on IEQ.*

3.2.3 Costs of green

The improved values discussed above make a compelling case for green building investments. Evidence from the US demonstrates that this additional value also comes at little or no extra cost. Studies by the US Green Building Council show a LEED certified building costing on average of only 0.66% higher than a conventional building. A Gold LEED building costs only 2.2% more while a Platinum rating comes in at 6.8% higher.

A pioneering study of green buildings found even less impact. *Examining the Cost of Green*, co-authored by Workshop leader Lisa Matthiessen of the quantity surveying firm Davis Langdon, examined the construction cost of 45 libraries, laboratories and academic institutions that aspired for LEED certification from the US Green Building Council. These were then compared to the cost of 93 non-LEED buildings.

The study concluded that many projects 'achieve sustainable design within their initial budget, or with very small supplemental funding.' This may require trade-offs with other building features during the design phase, where leverage over final outcomes was greatest: for example, trading off lavish granite wall finishes for energy-efficient double skin facades.



3.3 Market scepticism in Australia

Capital cost is only one part of the business equation. What really counts is the value generated, and in the US the market judgement has turned decisively in favour of the value of green buildings.

In Australia, market scepticism persists as observers await the evidence from the sustainability leaders. A market premium for sustainable performance in Australia is less well established than in the United States. The experience of the cost of green buildings in Australia is also less positive than in the United States, with reported premiums ranging from 2% to as high as 22% for 'iconic' buildings that make a bold statement of the developers' sustainability credentials. According to a recent review by Davis Langdon, based on a preliminary study of a number of green buildings in Australia, the 'anticipated premium' for the construction of a 4-Star Green Star office building is just 0.49%. For a 5-Star Green Star building, the premium is between 5.84% and 11.14%.

One company that has looked at valuation impacts of sustainable building is Australand, developer of Freshwater Place in Melbourne, which has a 4 Star rating under the Australian Building Greenhouse Rating Scheme (ABGRS). Brendan Crotty, Australand's Managing Director and CEO, told the Workshop that Australand's fundamental approach to property development was to examine what clients value, and to incorporate these into new developments. In the commercial building sector, tenants value the benefits of green buildings such as better IEQ and water and energy savings, and incorporating sustainability into new office developments was no longer as risky as it was previously.

Table 2 below shows the added value ascribed to sustainability features incorporated into different building types. As the figures show, the future value of sustainability in large commercial buildings and to certain extent industrial facilities, makes green building in these sectors a good value proposition.

Table 2. Current cost of ESD for new buildings vs. future value (Australand)

Sector	ESD Initiatives	ESD Cost Range/Building	Perceived Value Added	Issues
Housing (mid-size)	NSW BASIX & Vic 5 Star	$12k-NSW $7k-VIC	$3k	Pricing of water and energy
Apartments (mid-size)	NSW BASIX & Vic 5 Star	$15k-NSW $10k-VIC	$0k to $5k	NSW Cross-flow ventilation
Industrial	Water harvesting & Energy Saving	$300k	$250K	Maintenance & management
Commercial	Recycled water through cooling towrs + energy savings	About 1% ($300k) for buildings> 15000sqm	$400k	Consent Authorities

Despite the growing market interest in green building in Australia, no-one yet is able to demonstrate clear windfall gains from green developments that would truly shift the mainstream market. Until then, scepticism will persist. As one Workshop participant put it bluntly: 'show me the money'!

The challenge of finding a pathway to profitable sustainability is taken up in the next Chapter, in which Workshop participants identify the specific barriers to sustainable building in the Australian market and propose strategies to overcome them.

4. PATHWAY TO SUSTAINABILITY

A key goal of the Workshop was to identify strategies to accelerate the uptake of green building technologies and practices in Australia. To do this, the Workshop first discussed what a sustainable market would look like, and then identified the barriers to that market operating in Australia. Strategies and actions were then proposed to overcome these barriers and these, collectively, create the Sustainable Building Pathway.

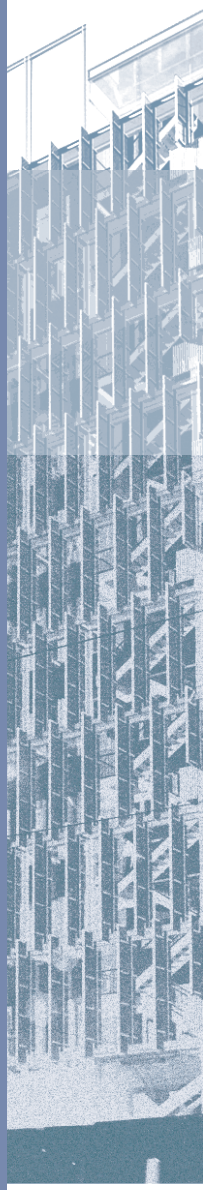
4.1 The principles underpinning the Pathway

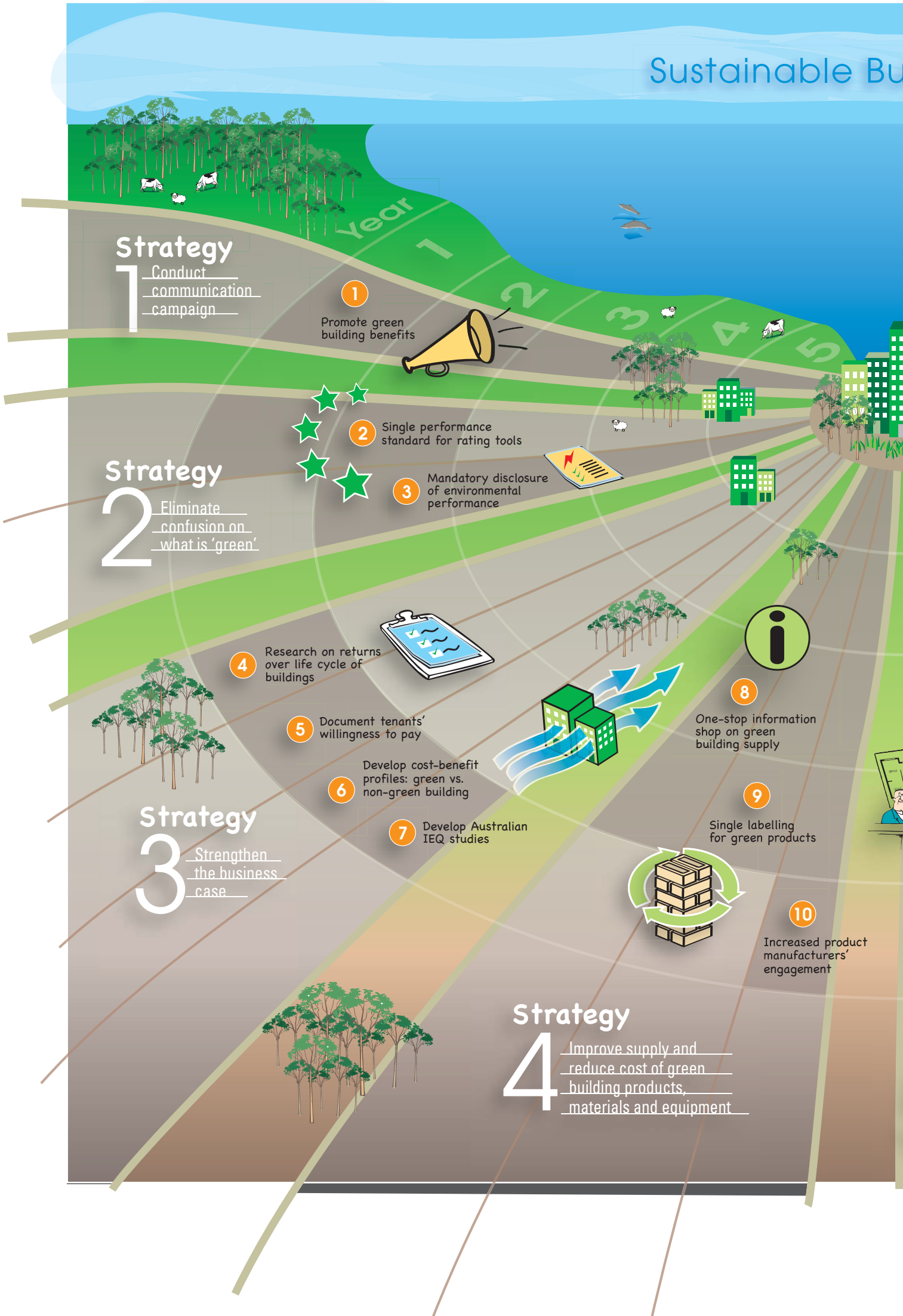
Sustainability means different things to different people. This is because people do have different values and because we do not have perfect scientific understanding of the world around us. Both a marketplace and a democratic political system accept that these differences and uncertainties exist, and accommodate them within certain legal boundaries.

The Workshop did not try to resolve this issue, but was guided by some principles of a sustainable market, drawing on those espoused by market leaders and the thinking of participants. These principles included:

- A positive role for business and profitability: business is not the enemy of the environment and is a key part of the solution to environmental problems.
- Conversely, sustainability is not a cost burden for industry and consumers but is an investment that will deliver not only public good outcomes for the environment, but also improved economic performance and profitability for companies.
- Solid commitment to finding sustainable pathways at the most senior levels of government and industry, backed by investment decisions and resources.
- Integration of sustainability into core business designs, rather than as an add-on after the core business decisions have been made.
- An informed market that understands the economic, environmental and social costs and benefits of buying decisions over the whole building life cycle, and also invests for long-term value.
- An innovative and creative community that is constantly seeking improvements and better outcomes.
- An accountable marketplace, whereby business and consumers must bear the full costs of their actions and where benefits flow to those who earn them.

The Workshop identified a number of barriers to the operation of such a market in Australia. These barriers are listed in Figure 1 and the strategies to overcome them are detailed in subsequent sections of this Chapter. The Workshop recognised that neither the barriers nor the nominated strategies are a complete or comprehensive list. Rather they are priorities that the Workshop participants will collectively pursue.




Sustainable Bu
Year
1
2
3
4
5
Strategy
1
Conduct communication campaign
1
Promote green building benefits
2
Single performance standard for rating tools
Strategy
2
Eliminate confusion on what is 'green'
3
Mandatory disclosure of environmental performance
4
Research on returns over life cycle of buildings
5
Document tenants' willingness to pay
6
Develop cost-benefit profiles: green vs. non-green building
7
Develop Australian IEQ studies
8
One-stop information shop on green building supply
9
Single labelling for green products
10
Increased product manufacturers' engagement
Strategy
3
Strengthen the business case
Strategy
4
Improve supply and reduce cost of green building products, materials and equipment

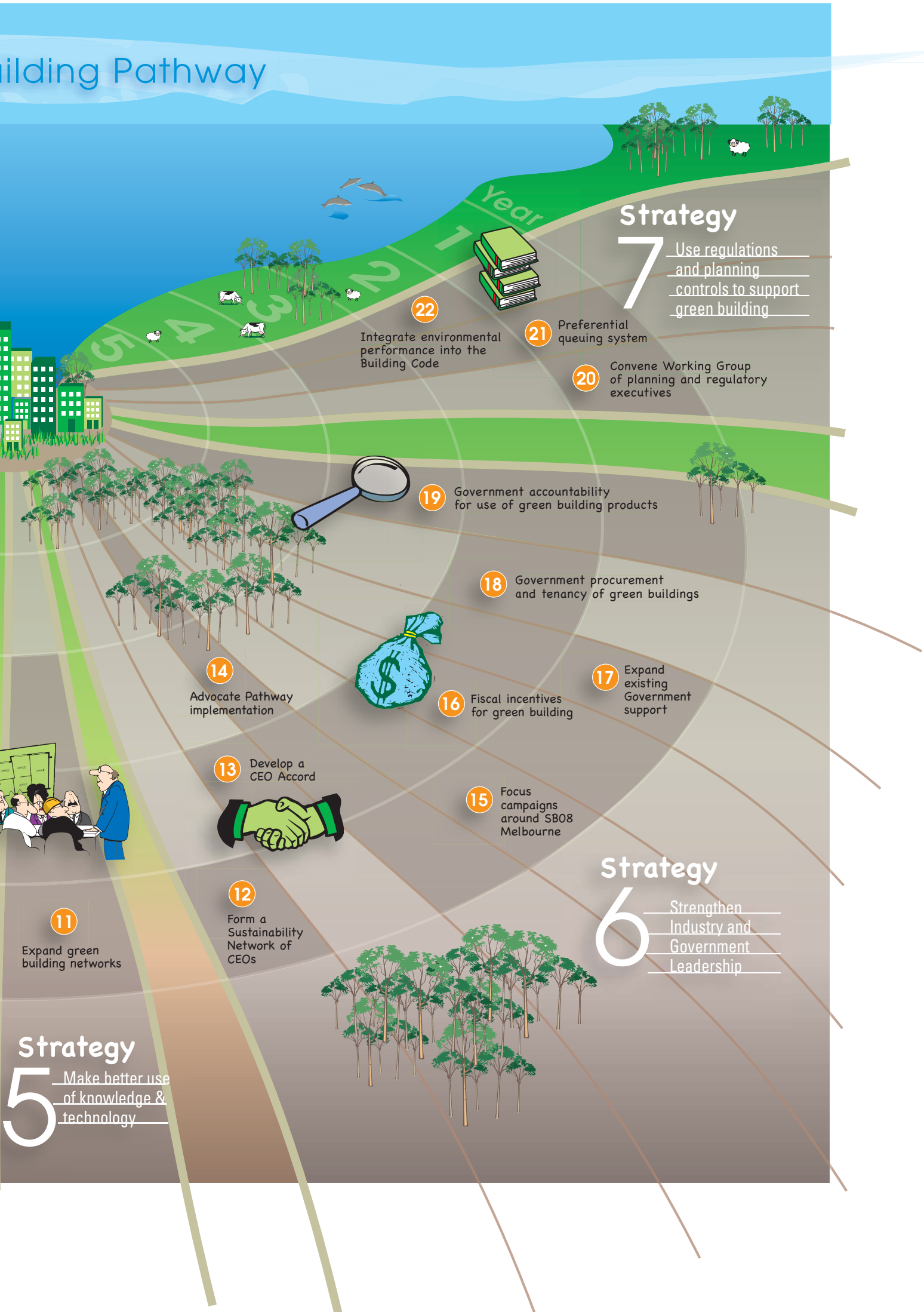

ilding Pathway
STAGE 1 Year
Strategy 7
Use regulations and planning controls to support green building
22 Integrate environmental performance into the Building Code
21 Preferential queuing system
20 Convene Working Group of planning and regulatory executives
19 Government accountability for use of green building products
18 Government procurement and tenancy of green buildings
14 Advocate Pathway implementation
16 Fiscal incentives for green building
17 Expand existing Government support
13 Develop a CEO Accord
15 Focus campaigns around SB08 Melbourne
Strategy 6
Strengthen Industry and Government Leadership
12 Form a Sustainability Network of CEOs
11 Expand green building networks
Strategy 5
Make better use of knowledge & technology

Figure 1: Barriers to a sustainable building market

Consumers have low awareness of green building benefits

- Building occupants do not fully recognise the health and productivity benefits from having better IEQ.
- There is evidence of a positive link between better IEQ in green buildings and staff health and productivity, but this is not widely known.
- Most of the evidence of the link between IEQ and productivity is based on overseas studies. Australian case studies need to be developed.

Confusion in the industry and market about what is 'green'

- Consumers are uncertain as to what a green building is. The proliferation of rating tools does not help.
- Developers and builders complain about the complex methodologies governing the different tools.

Most developers and builders are unconvinced of the business case

- Reliable performance data on green buildings is lacking, creating the perception that building green is risky.
- Conversely, risks of conventional buildings, such as liabilities for poor IEQ, have not been documented or included in the business case.
- Understanding of what value each part of the industry adds (the value chain) is poor, leading to under-investment in areas such as design.
- There is little data on consumer willingness to pay for 'green' on which businesses can base their decisions.

Poor availability of green building supply

- Local availability of sustainable products and materials is poor compared to overseas, adding to the costs of green buildings in Australia.
- There is no comprehensive, authoritative and accessible source of information on green standards, products and services.
- Labelling of products can be misleading.

Knowledge and best practice are under-utilised

- Best practice such as integrated building design is not widely applied because disciplines are poorly integrated during design and construction.

Weak engagement from government and industry leaders

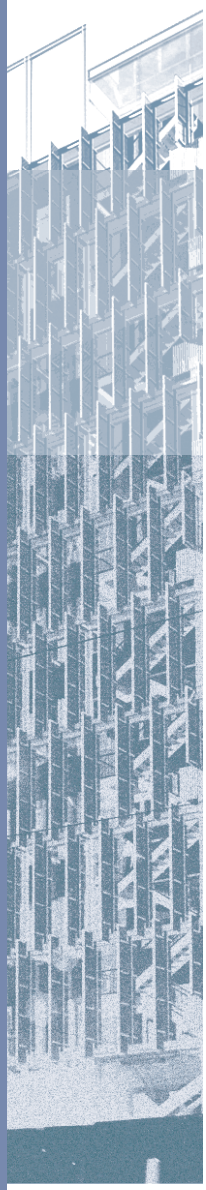
- There are few incentives for sustainability initiatives and general disincentives to innovation.
- The different roles of industry and government are not well understood.
- There is no accord that recognises and supports leaders of sustainability.
- Government support for sustainability via its own purchasing and tenancy is patchy.

Inconsistent regulations and planning

- Rating tools, regulations and planning requirements are inconsistent.
- Different jurisdictions (Federal, State, Local Government) conflict.
- Regulation to define minimum standards is still weak in most States.

Cultural and behavioural issues

- Industry and consumers do not act for long-term value.
- Management of the investment in existing building stock is poor.
- Occupants don't operate buildings to realise the full potential of the building.
- Women and minorities are under-represented in the building industry, leading to narrow perspectives.



4.2 The Strategies and Actions

Strategy 1: Conduct a campaign to communicate the benefits of green building to customers

Building customers, including investors, landlords, tenants and owner-occupiers, generally have a low level of awareness of the benefits of green building. The obvious exception is the small group of leaders and innovators who had early recognition of the value of green building, such as staff health and productivity, higher occupancy rates and lower tenant turnover.

A key lever for conveying the value of green building is the link between a building's IEQ and employee satisfaction, health, and productivity. A rule-of-thumb comparison suggests that the relative costs of employees, building cost, and operating energy differ by an order of magnitude: that is, 100:10:1.

Customers, especially tenants, must be made to understand that sustainability is not measured simply through energy and resource cost savings. Rather, sustainability should be regarded as crucial to an organisation's HR strategy. Tenants' willingness to pay for green buildings would increase if they were convinced that such buildings provide improvements to IEQ with associated health and productivity benefits to employees. Employers are already required by law to provide a safe and healthy work environment and this provides a potentially strong means of engaging employers.

The national OH&S campaigns of the past decade provide a model for promoting good IEQ – or IEQ could even become a part of those ongoing campaigns. OH&S improvements introduced over the past 20-30 years were initially seen as a cost to industry.

But the safer work practices have been proven to improve industry performance over the longer term. Direct injury costs decreased but equally, if not more importantly, corporate management practices and systems improved to meet OH&S requirements. Numerous companies have found that this delivered gains in efficiency in other parts of the business that dwarfed the new OH&S costs. The same dynamic could play out with attitudes toward green buildings.

Strategy:	A communication campaign aimed at convincing building customers of the long-term benefits of green building.
Action 1:	Conduct an awareness campaign to promote the benefits of green buildings to investors, landlords, tenants and owner occupiers. The campaign should also target owner representatives: property valuers and analysts, real estate agents, tenant advocates, facilities managers and property insurers.

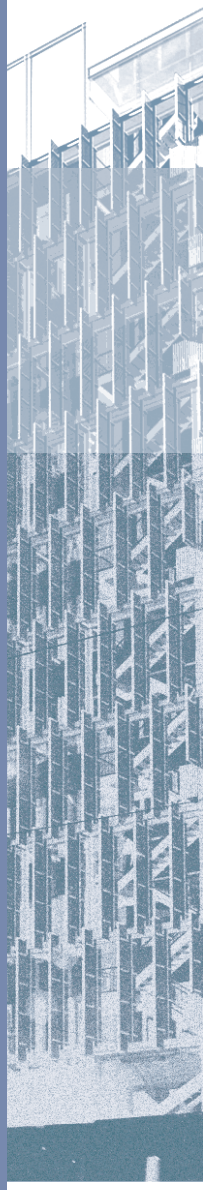
Strategy 2: Eliminate confusion in the marketplace about what is 'green'

Any communication campaign targeted at building customers will have greater impact if tenants, landlords and investors understood what a 'green building' actually meant, whether the building is new or refurbished.

In the electrical appliances market, the Energy Rating brand has become an instant guide for consumers on the level of energy efficiency of each appliance, based on the number of stars on its label. Energy Rating is a joint initiative of the Federal, State and Territory governments, and was born out of the requirement for Minimum Energy Performance Standards and for approved energy labelling for electrical appliances. In the building sector in the U.S., the widely used LEED rating tool has achieved a common language among developers, designers, builders and buyers. The U.S. Green Building Council's relentless campaign to have buildings LEED-rated has been so successful that in the U.S. market, it is now widely understood what Silver, Gold and Platinum LEED stand for.

In Australia, there are a number of rating tools used by property developers to promote their buildings as 'green'. As yet, there is no widely accepted brand that will help the market understand how green is a green building. Importantly, the market does not have a clear understanding of what each rating tool measures. Industry and government should work toward developing a brand that makes green building rating easily understood and accessible to the market. Existing tools could all be drawn underneath this brand.

Strategy:	Eliminate confusion in the marketplace about what is a 'green building' by creating a single rating standard for green buildings.
Action 2:	Develop a single performance rating standard that defines a green building which is easily understood by consumers, and cost-efficient to use by building professionals. Owners of existing green building rating tools should form a Roundtable to develop a consistent methodology enabling the different tools to make assessments under this single standard.
Action 3:	Prepare a Regulatory Impact Statement on mandatory disclosure of environmental performance of residential and commercial buildings, including the requirement that the performance record be included in sale and lease documentation



Strategy 3: Strengthen the business case: document investment returns

A persistent barrier to green building uptake is the perception that green developments cost more than conventional ones, and that this will harm profitability. As noted, Australian developers and investors still report higher capital costs in Australia, while the potential value premium from green buildings is yet to be conclusively demonstrated.

The practice of many developers of 'build and sell' also complicates the equation. It means that they do not capture the operational value of the building – be that sustainability benefits or economic benefits such as lower operating costs in terms of power, heating and maintenance. This 'split incentive' has long been cited as a key barrier to the uptake of sustainable building.

The persistence of developers' focus on capital cost is symptomatic of a market that is not really value-oriented. They are just responding to end-users' own focus on the price per square metre of the building. The Pathway aims to break this deadlock: Strategy 1, the communication campaign targeted at customers, will help shift customers' focus away from cost, while Strategy 3 will help convince developers and builders that green building pays.

A true appreciation of the business case requires an understanding of the economic returns of green building along the full life cycle of the building: from materials, design and construction, to operation and demolition. Another factor that needs to be examined when establishing the business case is the risk emerging from poor IEQ in buildings. In Australia at the moment, building owners' risk associated with poor IEQ, in terms of liabilities for occupant health and safety, are largely ignored. This is despite litigation already occurring in the United States. This risk needs to be quantified and included in the business case.

Strategy: Shift developers' and builders' focus from cost to value, by strengthening the business case for green building, based on the successful experiences of industry leaders and innovators.

Action 4: Research the industry value chain in Australia and quantify the economic returns of green buildings over the full life cycle of the building: from design and construction, to operation and demolition. Building refurbishments should form a major part of this research.

Action 5: Document the willingness to pay among tenants and prospective tenants in green buildings.

Action 6: Develop a cost-benefit profile of green buildings vs non-green buildings.

Action 7: Develop more Australian case studies demonstrating the positive link between better IEQ in green buildings and employee productivity, including in refurbished buildings.

Strategy 4: Improve the supply and reduce the cost of green building products, materials and equipment

The environmental performance of materials required by green buildings is higher than that of readily available materials in the Australian market – in terms of embodied energy, greenhouse gas emissions and toxicity. The Workshop noted difficulties in sourcing green products in Australia, understandably due to the immature market. Locally available materials are therefore imported or are manufactured as specialty products, both commanding premium prices. There is also a need for better systems and technologies that can contribute to a better overall green outcome, such as glazing and HVAC.

There is usually a lag in the supply chain's response to market demand and this could create a bottleneck for the expansion of green building.

Strategy: Reduce the cost, and improve the availability and performance of green building materials and products.

Action 8: Establish a one-stop shop for information on supply sources for green building materials, products and tools. The 'Your Building' portal which is currently being developed, may provide a one-stop information shop.

Action 9: A single labelling system for green building products, materials, and equipment performance should be developed, in consultation with existing schemes such as EcoSpecifier and the Good Environmental Choice Ecolabel, which already provide some guidance on available green building products.

Action 10: Increase the representation of building material manufacturers on bodies such as the GBCA, at green building events and on peak bodies such as ASBEC.

Strategy 5: Make better use of knowledge and technology

Australia's expertise in green building is under-utilised. Techniques such as integrated building design, energy modelling and the Property Council of Australia's various green tools, are already being used by market leaders, but they need to become mainstream practice in the commercial building sector. Unfortunately, the Australian industry is highly fragmented. The different players involved in project delivery have varying degrees of commitment to sustainability principles. This has impeded the uptake of sustainable technologies and management practices across a number of fields and professions.

Information and advocacy networks are the best forums for disseminating green building knowledge and for promoting best practice such as integrated building design and construction. The Sustainable Building Leaders Network is one such network, and while Workshop participants represented a broad cross-section of the industry supply chain, there were missing links that need to be brought in to accelerate uptake of green building. Unrepresented were building materials manufacturers, tenants, community advocates and subcontractors for the delivery of essential services such as water and electricity. They will need to be brought into the fold.

Figure 2 on the next page, was constructed from Workshop discussions, and represents a map of the core stakeholders in the property and building industry. The industry segments – ownership, production, and occupancy – are based on the roles played by the stakeholders in each segment.

Workshop participants have shown strong interest in expanding the Sustainable Building Leaders' Network to encompass the entire supply chain. The expanded network will facilitate investment in activities that help improve returns on green buildings, such as integrated building design.

Successful green building projects require considerable investment in an integrated design team at conceptual development stage with as many as possible players represented: from the project owner and architect, to engineers and maintenance managers. Inevitably, the integrated design process takes longer. However, what many developers are doing is to also incorporate integrated design with construction planning, in order to accelerate project delivery. This more than makes up for the extra time taken for integrated design.

Strategy: Make better use of knowledge and technology by disseminating information to all players in the industry supply chain.

Action 11: Expand networks, including the Sustainable Building Leaders' Network (see Strategy 6), to include more owners' representatives and product manufacturers. Through these expanded networks, continue promoting integrated approaches to building design and construction.

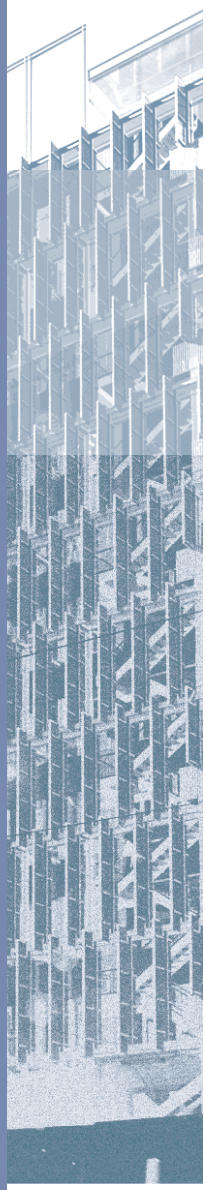
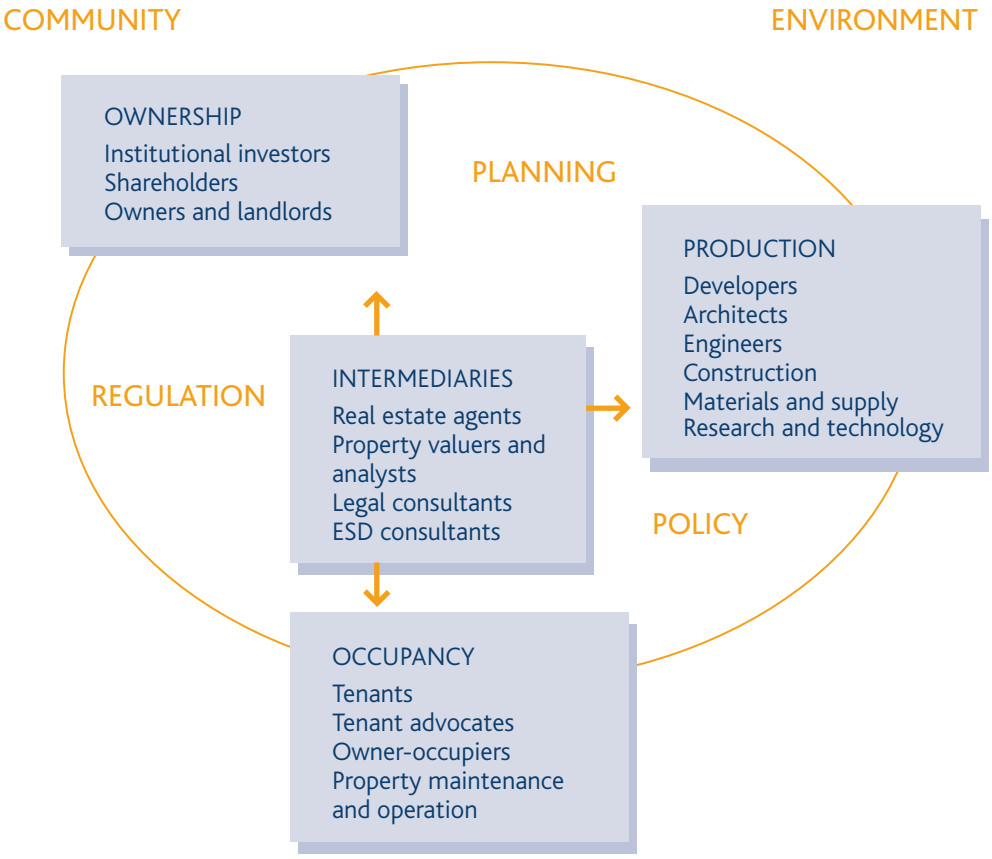


Figure 2: The building industry supply chain



Strategy 6: Strengthen industry and Government leadership

Industry leadership: champions and change agents

Workshop participants included leaders of private companies representing innovators and early adopters in the green building market, but there was broad agreement that simply increasing government regulation and incentives will not create lasting change. To achieve genuine transformation, industry leaders must embrace change and challenge conventional thinking.

To achieve a profitable green building, there needs to be a unity of interest in, and a common understanding of, sustainability principles among all the players in the industry supply chain. Workshop participants resolved to actively broaden the leadership network to include all segments in the supply chain. The network should work towards an intra-industry partnership approach, where each player understands both the cost and value to them of building green, as well as their specific roles and responsibilities in delivering and ensuring green building performance throughout its life cycle.

An effective way of achieving cultural change is to gain buy-in from industry CEOs of the total concept of sustainability.

SB08 – Australian leadership in focus

Australia has won the right to host the World Sustainable Building Conference in 2008. This presents an excellent opportunity to display leadership and demonstrate Australian capabilities to global players.

SB08 Melbourne should become a target for the technical, market and business case research proposed in the Sustainable Building Pathway. SB08 can link Australia to global markets for green buildings and be a focal point for stimulating local interest in, and awareness of best practice.

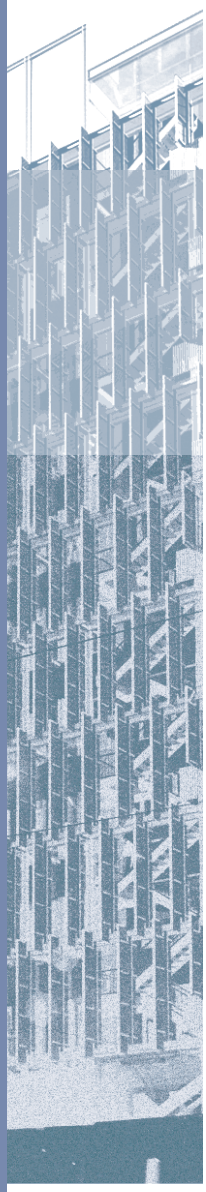
Strategy: Accelerate the integration of sustainability principles into the corporate culture by forming a CEO network.

Action 12: Form a Sustainability Network of CEOs of private and government organisations operating in the building industry. The CEOs should be encouraged to join the Global Reporting Initiative, both to demonstrate international leadership and to network with other global leaders.

Action 13: Develop an Accord that CEOs in the building industry can sign to gain recognition of their commitment to sustainability from employees, customers and stakeholders.

Action 14: Initiate periodic functions of the Sustainable Building Leaders' Network, which will take carriage of advocating the implementation of the Pathway.

Action 15: Use SB08 as a focus for research, awareness raising, and education and training activities in the local market, and to raise Australia's profile as a leader in the rapidly growing global market for sustainable buildings.



Government leadership

Governments have considerable influence in accelerating the uptake of green building. Governments occupy some 16% of the commercial property market and a firm commitment from the public sector would be a major demand stimulus.

Most Governments have introduced sustainability policies covering their building performance but only South Australia and Victoria have set minimum performance standards and flagged their intention to require best practice of their Departments. The Federal Government has issued green performance and procurement policies for its Departments and Agencies. However, a recent Australian National Audit Office found very poor compliance as Departments – other than those directly concerned with the environment – openly stated that the environment was not their priority, despite this being Government policy.[11] Remedying this would bring the massive Government purchasing power into the market in support of green building.

Governments' green building procurement policies have also had an impact on other parts of the building supply chain, such as building maintenance and green materials supply, and has served to nurture their consciousness of ESD principles.

Governments also generally employ the carrot-and-stick approach to achieve their goals in specific industries. Tax incentives are powerful tools for achieving change. In the United States, a number of State Governments, such as Nevada, have given green building a significant boost by providing tax incentives. Tax incentives are also firmly in place in some European countries.

In Australia, green buildings do not receive special tax treatment. The policy approach to green building in this country is all 'stick' and no 'carrot'. A strong economic case can be mounted for the carrot approach, given the large spillover benefits of environmental benefits and worker health and productivity. However, where the concession should apply – to the user, owner or developer – needs clarification.

In any event, the mood in Australia among business is for simplification of the tax system and so in the short-term, incentives in the form of grants, subsidies, and concessional loans from Government are more likely. However, the impact of the tax incentives in the US market should be monitored and its potential in Australia assessed.

In the meantime, direct Government support schemes could be expanded. Workshop participants noted a number of Local and State Government grant schemes that have assisted market leaders and fast followers. Examples are Sustainability Victoria's COBEII, and Melbourne's Sustainable Melbourne Fund, which provides investment and concessional loans to projects that enhance the environment, community and economic benefits for people in the City.

Targeted assistance through partnership programs, such as those that exist in Victoria, South Australia and NSW, also achieve good results. An example is the Adelaide Building Tune Ups Project, an initiative of the South Australian and the Adelaide City Council, in which the energy and water use of 10 CBD office buildings are being measured and rated under the Australian Building Greenhouse Rating System. Building owners are assisted to make improvements to their buildings.

Governments could also have a leadership impact by removing disincentives to the innovations on which green buildings thrive. These disincentives include inflexible application of regulations, slow product approval processes, and rigid planning regimes.

[11] *see www.anao.gov.au/WebSite.nsf/NewAuditReports.*

Strategy: Accelerate Government leadership of market take-up of sustainable buildings.

Action 16: Develop a strategy for fiscal incentives for green buildings that recognises the economic and environmental importance of this sector and the potential to make major productivity gains and greenhouse reduction.

Action 17: Expand existing support programs for developers who integrate green building principles and technologies at the design and documentation phase – both in new buildings and refurbishment projects. These would also help build up case studies for the business case for green buildings.

Action 18: All Governments should commit to achieving best practice green building standards for government building, tenancy and procurement.

Action 19: Federal and State Government should mandate green building materials and products in their procurement programs, and monitor their performance through corporate reporting requirements.

Strategy 7: Use building regulations and planning requirements to support green building

The Workshop noted the difficulties arising in the marketplace over the nexus between planning and regulation. Differences in approach at the planning and regulatory stages were creating significant red tape for the industry. For example, Local and State governments are progressively introducing ESD standards through their planning policies. These are in addition to the national standards being phased into the Building Code of Australia.

Many Local Councils are striving to raise the bar on environmental performance by influencing the thinking of developers from the initial concept stage. This should be encouraged, as competition between the Councils to define themselves as green is an important means of 'pushing the envelope'. And uniformity among Councils risks a 'lowest common denominator' outcome and mediocre performance.

However, in defining their requirements, all Councils should use a common language with rating tools and regulations rather than developing their own systems. Competition can then occur between those who set the highest standards within this common language.

A national approach is needed to ensure consistency in planning, rating tools and regulation, in line with the February 2006 COAG resolution to reduce the regulatory burden from three levels of government. A national approach, however, should still accommodate a necessary measure of flexibility and adaptability for each State planning process and overall regulatory regime.

Strategy: Develop a national approach to planning, rating tools and regulation, and a protocol governing the nexus between planning and regulation that creates a seamless process. Use government regulation to create a level playing field, and use fiscal policy to reward best practice.

Action 20: Convene a Working Group of planning and regulatory executives from the three levels of government to examine standards and regulations, to encourage greater consistency, and remove any disincentives to green building developments.

Action 21: Local governments should consider providing operating incentives to developers, such as adopting a preferential queuing system, and giving enhanced development rights for green developments

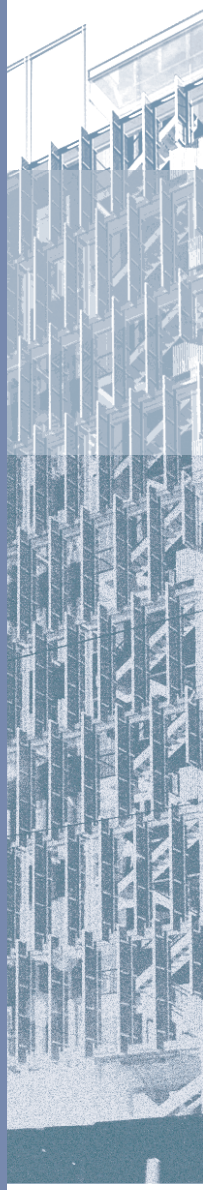
Action 22: Expand the Building Code of Australia to include regulations that extend beyond energy efficiency

4.3 Cultural and behavioural issues

The cultural barriers identified in the Workshop included:

- Industry and consumers do not act for long-term value.
- Management of the investment in existing stock is poor.
- Occupants don't operate buildings to realise the full ESD potential of the buildings.
- Women and minorities are under-represented in the building industry leading to narrow perspectives.

These cultural issues permeate and in many cases are the root causes of the barriers discussed in the preceding sections. Many of the actions recommended above, especially the awareness campaigns, will drive cultural change. Success will mean that these barriers have also been overcome.



4.4 Responsibility for action

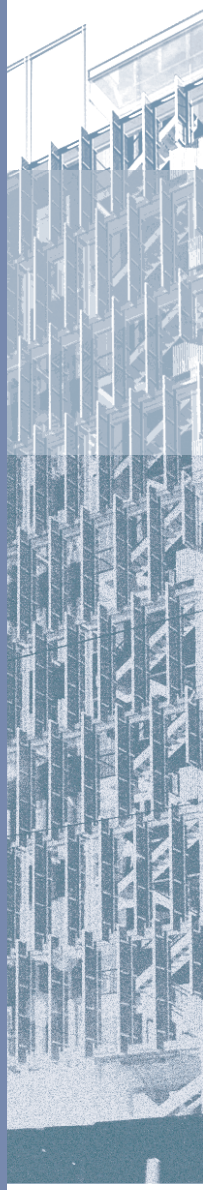
The range of actions canvassed at the Workshop transcends the responsibility of many organisations. No single body has authority for their implementation and none could therefore, take accountability for their implementation.

While this leaves a relatively weak line of accountability, this Report will be sent to a variety of organisations who will be encouraged to support action. Participants have also undertaken to meet roughly quarterly, to go forward and to review the uptake of the recommendations by relevant authorities. In this way, they will function as an implementation support group, using the significant collective influence of the group to press for change.

Already some groups have taken up the call to action. The GBCA Australia and ASBEC will act on a number of the recommendations.

Attachment 1 WORKSHOP PARTICIPANTS

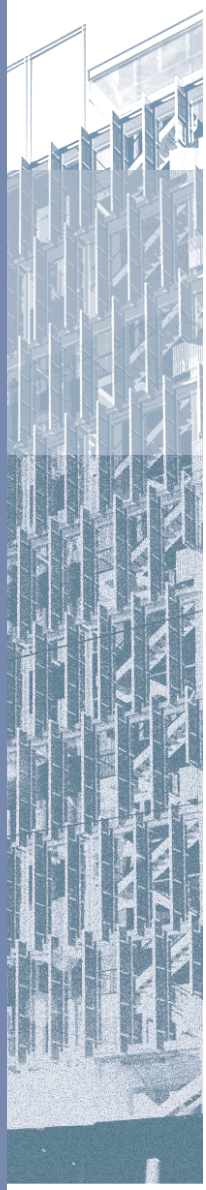
Mr. Tony Arnel Building Commissioner (VIC) Plumbing Industry Commissioner (VIC)	Mr. Janos Baranyai National Director – Building Services Meinhardt Australia
Mr. Mark Beattie Managing Director Davis Langdon	Mr. Bill Beck Director and Manager, Victoria Leighton Properties Pty Limited
Mr. Geoffrey Beck Head of Infrastructure Department of Defence	Mr. Lindsay Bevege Managing Director Business Outlook and Evaluation
Mr. David Bower State Manager, Victoria Hansen Yuncken Pty Ltd	Mr. Daryl Browning Chief Executive Officer ISPT Pty Ltd
Mr. Tim Campbell Director ISIS Projects	Ms. Sen Chee Director, Strategic Services, Building Management Department for Administrative & Information Services (SA)
Mr. Chris Chesterfield General Manager, Waterways Melbourne Water	Mr. Lloyd Collins Senior Development Manager Austcorp Group Limited
Mr. David Craven Head of Sustainable Buildings Sustainability Victoria	Mr. Brendan Crotty Managing Director & Chief Executive Officer Australand Holdings Limited
Mr. Robert Enker Manager Sustainability Building Commission	Mr. Peter Galvin Group Managing Director Thinc Projects
Mr. David Gottfried President World Build	Mr. Daniel Grollo Joint Managing Director Grocon
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Mr. Geoff Lawler Director Sustainability & Innovation City of Melbourne	Mr. Warren Lear Director Project Services Dept for Administrative & Information Services (SA)
Ms. Georgina Legoe Independent Chair, Green Assessment Panel Green Building Council of Australia	Mr. John Macdonald Director DesignInc Melbourne Pty Ltd



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Mr. Roger Poole Chairman Bates Smart Pty Ltd	Mr. Stefan Preuss Manager Sustainable Design Spowers
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Dr. Ron Wakefield Head, School of Property, Construction & Project Management RMIT University	Mr. Che Wall Chair, World Green Building Council Joint Managing Director, Lincolne Scott

Attachment 2 GLOSSARY

ABGRS	*Australian Building Greenhouse Rating Scheme. Administered by the NSW Department of Energy, Utilities and Sustainability, ABGRS rates office buildings for their energy efficiency and provides accredited assessments of the greenhouse intensity of the buildings by awarding a star rating on a scale of one to five.*
ASBEC	*Australian Sustainable Built Environment Council. ASBEC is a peak body of organisations committed to a sustainable built environment in Australia. Incorporated in May 2004, its membership comprises professional associations with members who are involved in the planning, design, delivery and operation of the built environment.*
COBEII	*Commercial Office Building Energy Innovation Initiative (COBEII). A joint initiative between Sustainability Victoria and the Property Council of Australia, under which the Victorian Government enters into partnerships with industry to facilitate the design process, financial and technical feasibility analysis and environmental modelling for sustianble buildings.*
EcoSpecifier	*A commercial database of over 1000 building products that have been independently vetted against sustainability criteria, and provides guidance on the environmental impact of commonly available building products.*
GBCA	*Green Building Council of Australia. The GBCA is a national, not-for-profit organisation dedicated to developing a sustainable property industry for Australia. Launched in 2002, it leads the adoption of green building practices through market-based solutions. GBCA is funded by corporate membership income and sponsorship.*
Green Star	*Developed by the GBCA, Green Star is a voluntary rating system which evaluates the environmental performance of commercial office buildings. Evaluation is based on a range of criteria, including energy and water efficiency, indoor environmental quality, resource conservation, and innovation.*
GRI	*Global Reporting Initiative. The GRI is an independent institution that disseminates globally applicable Sustainability Reporting Guidelines. The Guidelines are for voluntary use to report on the economic, environmental, and social dimensions of an organisation's activities, products and services. GRI collaborates with the United Nations Environment Programme (UNEP).*



Good Environmental Choice	*The Good Environmental Choice label certifies products to ISO 14024 – International Third Party Environmental Labelling and Declaration. It is managed by the Australian Environmental Labelling Association Inc, a not-for-profit environmental research and certification organisation, and a member of the Global Ecolabelling Network.*
IEQ	*Indoor Environment Quality.*
LEED	*Leadership in Engineering and Environmental Design. LEED is a green building rating system developed by the US Green Building Council as a voluntary national-based standard for developing sustainable buildings.*
SB08	*Sustainable Building 2008. The World Sustainable Building Conference, which is held every three years, will be held in Melbourne in late 2008.*
Your Building	*The 'Your Building' portal was designed and is being developed by the CRC for Construction Innovation. Supported by the Federal Government, it is an interactive portal containing wide-ranging information on sustainable commercial buildings: from business and technical advice on design, financing, construction and operation.*

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