



Roadmap of a Sustainable Building

Tools to progress sustainability
for SMEs

May 2009



TOTAL ENVIRONMENT CENTRE



Prepared for St James Ethics Centre

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General tools

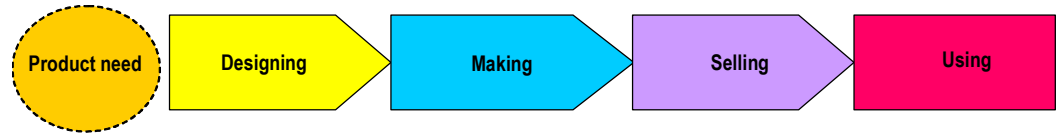
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Tools for the Building Industry

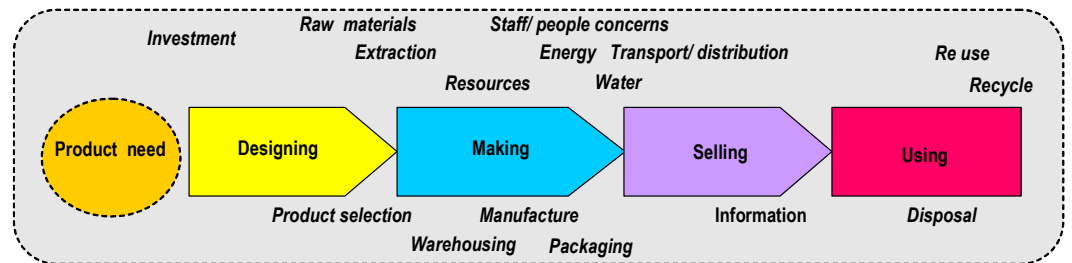
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General Roadmap

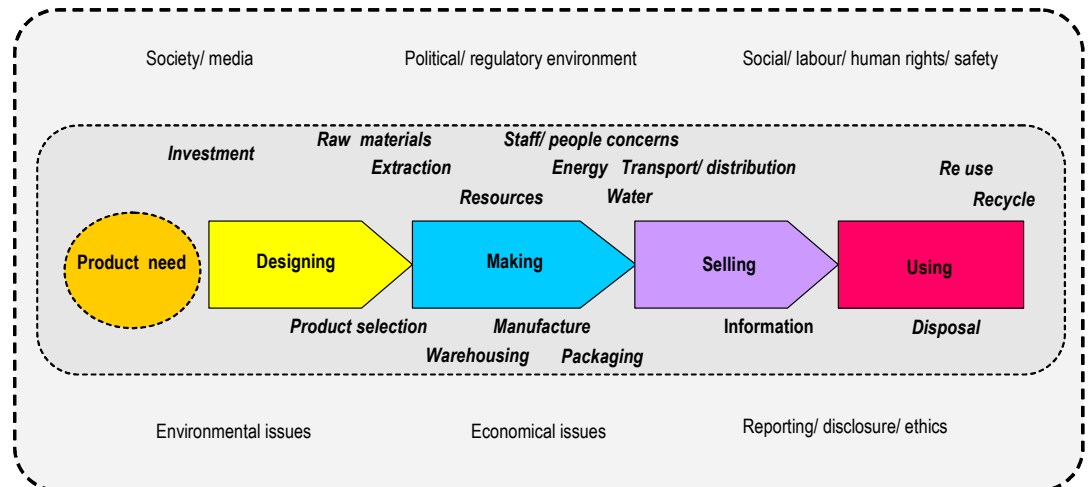
1. All products will go through a sequence of activities in their life. Below this sequence of *product need, designing, making, selling* and *using* is shown.



2. The direct roadmap of a product is surrounded by activities related to the five roadmap phases, such as investment, raw material extraction, product selection, disposal and can be viewed below.

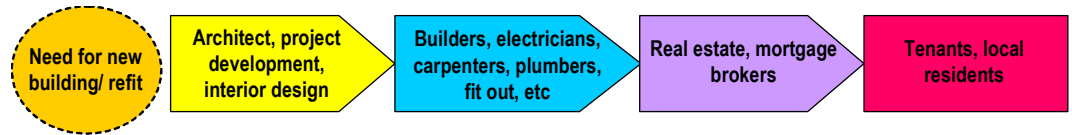


3. The external environment of a product roadmap/ supply chain is depicted below including such influences as societal, politics, economic and ethics.

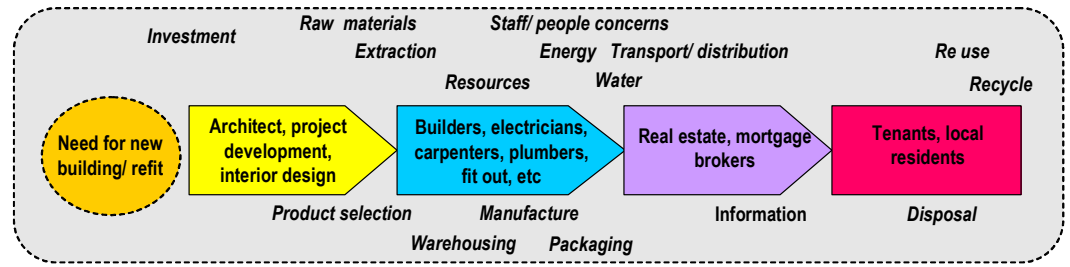


Building Road Map

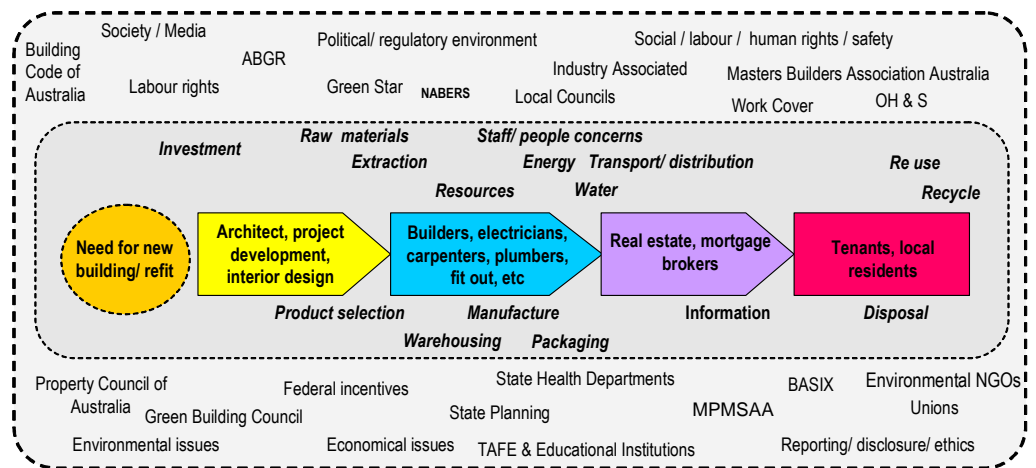
1. Below an overview of the different stages and players in a building roadmap/ supply chain can be viewed.



2. The direct roadmap of a building product is surrounded by activities related to the five roadmap phases, such as investment, raw material extraction, product selection, disposal and can be viewed below.



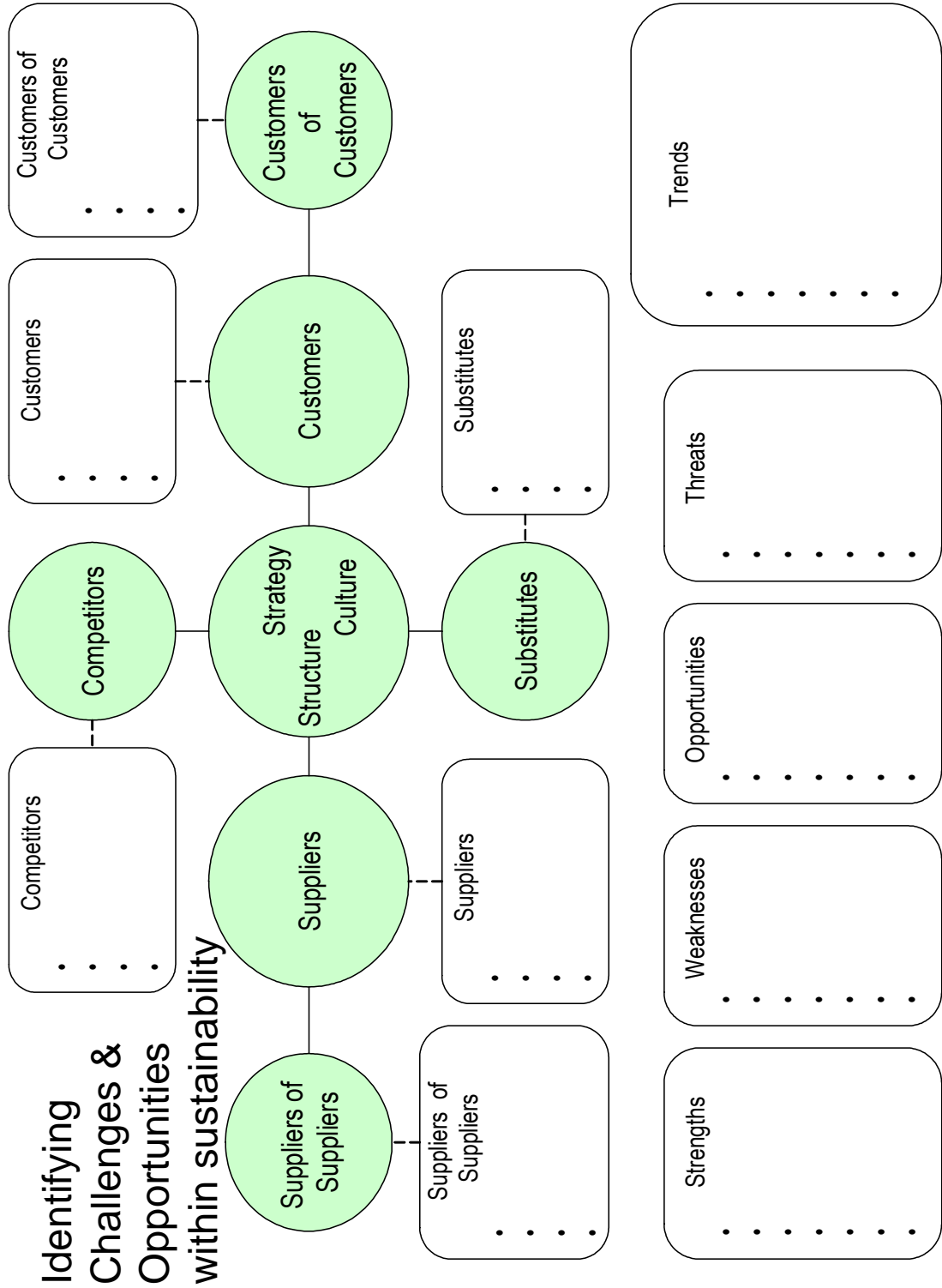
3. Below the building roadmap/ supply chain within its complete external environment is shown.



Building Roadmap is developed by Irmine van der Geest and Danielle Domone (TEC)



Identifying Challenges and Opportunities within Sustainability



Developed by Danielle Domone and Irmine van der Geest (TEC), based on Porters' 5 forces

Steps to build the business case for sustainability

The business case for sustainability deals with improving the competitiveness and business success of a company through environmental and social performance – the contribution to company profit, risk, business continuity and personal values and beliefs.

The following steps can help with building the sustainability business case.

Step 1: Identify your supply chain/ key stakeholder issues

Who are your suppliers, customers and other important stakeholders? Engage with the stakeholders and map the complete path of your service/ product from the beginning to the end. What are the issues along the way? What do they see as the key sustainable features?

Step 2: Measure and understand your significant business impacts

Identify, measure and understand your business's social and environmental impacts. What is actually happening and how big is, for instance, your organisation's environmental footprint. What are the resulting material risks and opportunities?

Step 3: Make sustainability part of the business strategy

How will sustainability contribute to the long-term survival of your organisation? For instance, how will risks such as climate change, resource depletion, staff retention, innovation and market profile influence your organisation and how can you shape sustainability for your business's future? Identify how it relates to your business objectives, business plan and culture.

Step 4: Identify and evaluate initiatives in the organisation

Identify what initiatives within the sustainability scope are already happening or have been done in the past in your organisation. These initiatives can have a broad range for instance: internal programs such as green office initiatives, staff development and operational improvements or external initiatives based on risk strategies, investments, partnerships, community programs and customer initiatives. Evaluate all these initiatives for their effectiveness in reaching sustainable outcomes.

Step 5: Develop understanding of internal/ external risks and opportunities

Further develop and analyse your identified risks and opportunities, build data, research and supporting information. Include costs and benefits over a longer period where possible.

Step 6: Keep it dynamic and up to date

Ensure the business case is dynamic, core to your business and develops over time. This will help with flexibility, adaptation, communication and employee awareness. Try to embed it further into the business culture. Also evaluate outcomes and include learnings in the business case.

Steps to build the business case for sustainability developed by Danielle Domone and Irmine van der Geest (TEC) and based on the following references:

- Kendra L. Wasiluk, Sep 2007. Introduction to business cases for sustainable commercial buildings. Sep. 2007 <http://www.yourbuilding.org/display/yb/Introduction+to+business+cases+for+sustainable+commercial+buildings>
- Geest, Irmine van der, Domone, Danielle. Snapshot on a Sustainable Supply Chain. April 2008 http://greencapital.org.au/index.php?option=com_docman&task=doc_download&gid=137&Itemid=166

Business Case Checklists for Sustainability in the Building Industry

Material risks in commercial property

Regulatory Risks		Weather Risks		Market Risks	
✓	Energy performance standards for new buildings	✓	Increased insurance premiums or inability to get insurance	✓	Competitive and reputation risks from actions
✓	Increased energy costs due to higher electricity/ gas prices resulting from a carbon price signal	✓	Decreased asset value due to increased flooding potential for low-lying and coastal properties	✓	Demand risks from clients setting sustainability condition on leases
✓	Increased construction costs passed through the chain	✓	Increased costs for building cooling in warmer areas as air-conditioning demands rise	✓	Increased natural resource prices due to scarcity
✓	Increased costs due to cement and steel industry covered by a carbon price signal (such as an emissions trading scheme)	✓	Increased demand for construction materials and labour due to increased property damage	✓	Investor demands
✓	Increased demand for energy efficient goods and services				
✓	Increased costs due to labour conditions improvements				

Green Buildings and Possible Organisational Performance links

Financial Outcomes		Business Process Outcomes		Stakeholder Relations		HR Development	
✓	Cost of building-related litigation	✓	Process/ product innovation	✓	Improved public and internal image/ reputation	✓	Improved quality of work life
✓	Reduced resource utilisation	✓	Increased work process efficiency	✓	Customer satisfaction	✓	Improved productivity
✓	Reduced operating/ maintenance costs	✓	Product quality	✓	Community outreach and education	✓	Improved work satisfaction
✓	Reduced risks/ avoided costs	✓	Supply chain transparency, engagement and management	✓	Improved ability to work with stakeholders	✓	Reduced turnover and increased ability to attract high quality workers
✓	Increased overall productivity			✓	Knowledge transfer		
✓	Increased resale value of property			✓	Community livability		
✓	Reduced absenteeism						
✓	Rental/ resale value of property						
✓	Reduced churn						

Business Case Checklists for Sustainability in the Building Industry is based on the following references:

- Edgerton, Nick, Sep 2007 An investor perspective on sustainability and commercial buildings. Sep. 2007 <http://www.yourbuilding.org/display/yb/An+investor+perspective+on+sustainability+and+commercial+buildings>
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Building life cycle considerations per phase

This list, with questions below, can help organisations in every phase of the building life-cycle to consider the relevant sustainability questions. Most of the considerations take place in the earlier phases of a building project, because these are the most important phases for sustainability to succeed.

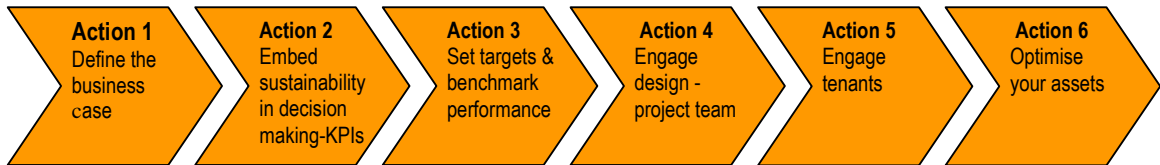


¹ Photos on flickr 1. by eshm, 2. by dlangendorf, 3. by billjacobus, 4. by melodramababs, 5. by eir@si (photos not for commercial use)
Building life cycle considerations developed by Irmine van der Geest and Danielle Domone (TEC)

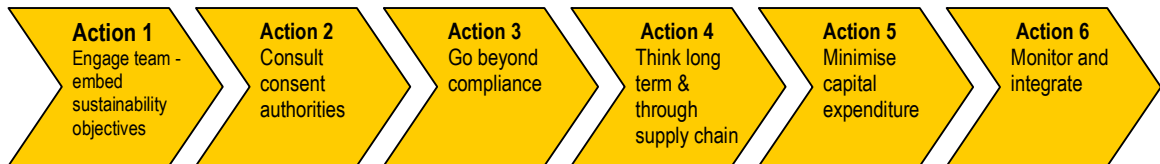
Actions for Building Roadmap Players

Product need

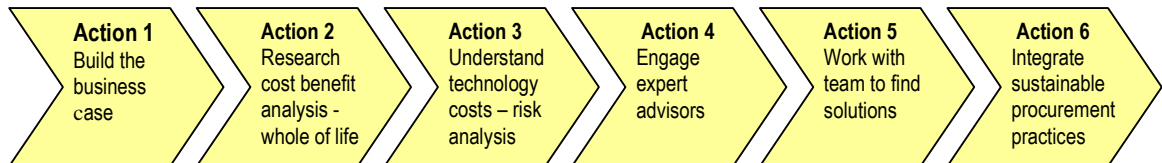
Actions for Owners/ Investors: Define your sustainability objectives and develop the business case. Explore and consider life-cycle costs of the building, set sustainability expectations for the building and engage your design and project team and other important stakeholders to deliver your sustainability plans. Engage with tenants or prospective tenants, understand their needs, consider marketing opportunities and build them into the business case to maximise potential of your assets in the marketplace.



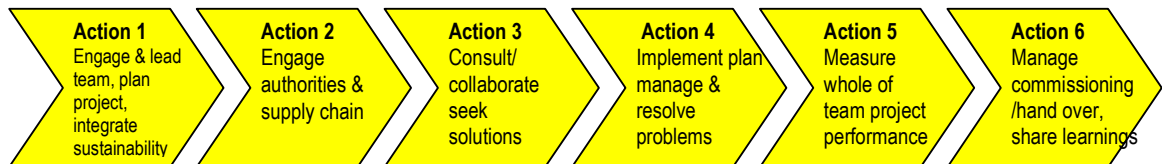
Actions for Developers: Engage your project team, include sustainability intentions in tender process and embed sustainability objectives in Key Performance Indicators (KPIs). Engage and consult with consent authorities early, seek to exceed mandatory regulatory requirements, understand the whole of life and long term impacts/ costs of the building. Optimise project expenditure and integrate sustainable procurement practices.



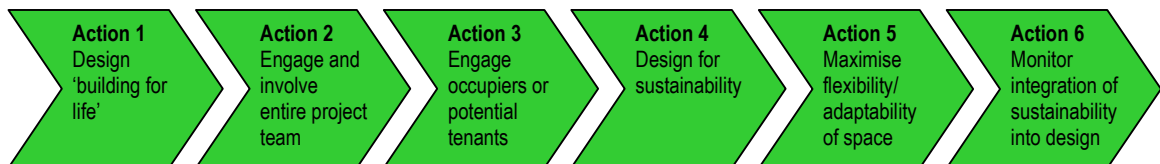
Actions for Quantity Surveyors: Commit to sustainability objectives. Engage with team and experts to understand life cycle costs and risks of proposed sustainability technology and features. Alongside optimising project expenditure, integrate sustainable procurement practices.



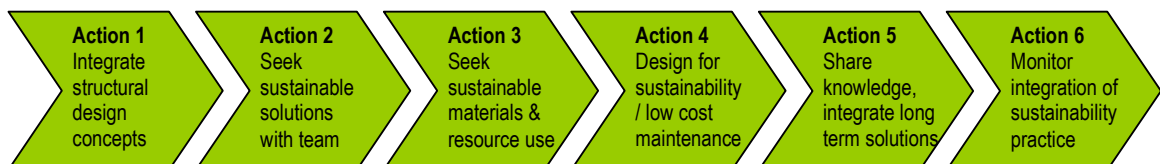
Actions for Project Managers: Implement sustainability objectives. Engage with team and experts to understand implementation, seek solutions, consult with consent authorities early, engage whole of supply chain, manage and resolve problems. Optimise project expenditure and integrate sustainability practices throughout project delivery.



Actions for Designers: Engage your project and construction team and experts as well as occupiers in the design process. Understand the reality of maintenance and use of the building. Design 'building for life', address sustainability criteria in design, materials, waste and end-of-life disposal, embodied energy and procurement processes. Monitor integration of sustainability through design, implementation and performance of the building, share learnings and knowledge with team and users.



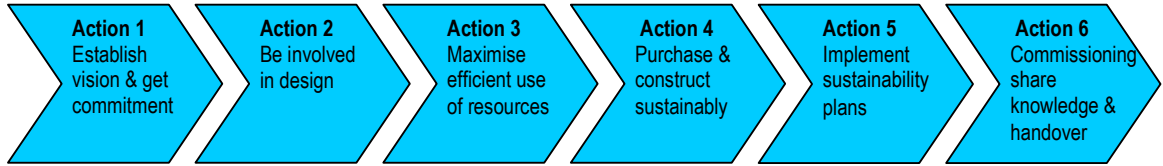
Actions for Engineers: Commit to integrating sustainability features into design, collaborating to find solutions for best fit features, engage with industry bodies for innovative solutions, exceed mandatory regulations, encourage consideration of the long term impacts of concepts, seek sustainable materials, work together to understand risks and whole of life impacts, seek to minimize impacts/footprint. Share knowledge with team and facilities managers.



Designing

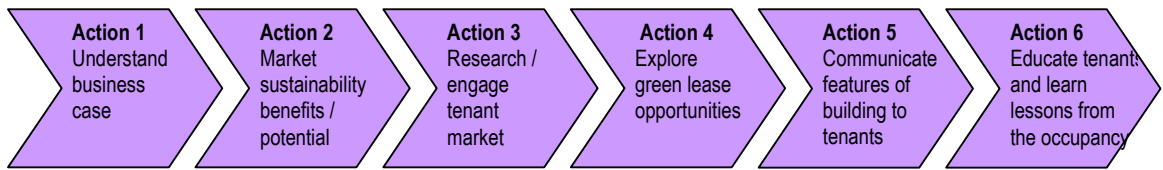
Making

Actions for Builders: Engage your construction team, understand and commit to sustainability objectives of the project. Maximise resource use throughout the supply chain and engage with suppliers, sub-contractors to seek more sustainable solutions. Engage/ consult with consent authorities early and be involved in design to provide expertise on construction.



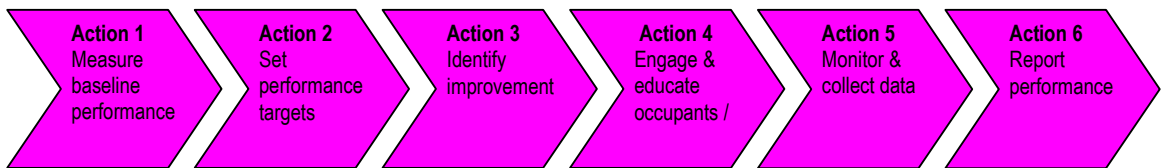
Selling

Actions for Real Estate Agents: Understand and commit to the sustainability features of the building, understand the business case and target market. Market sustainability features, benefits and opportunities. Explore green lease opportunities/agreements with tenants to encourage sustainable fit outs. Communicate any special sustainability features to users/ owners. Connect tenants to facilities managers, encourage education, monitoring and communication of learnings during occupancy.

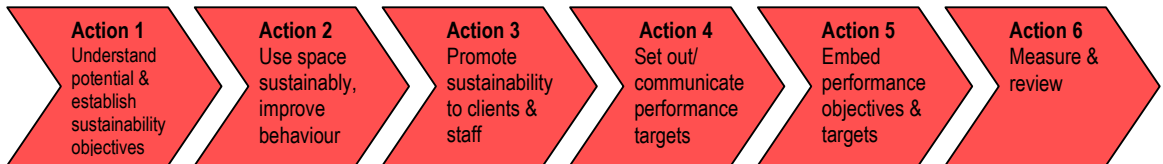


Using

Actions for Facilities Managers: Get informed/gain skills for sustainability. Measure baseline performance of building, set targets for performance and identify possible areas for improvement. Engage with occupants to encourage use of building to best potential. Engage with maintenance professionals to arrange contracts for best maintenance of building features, consider disposal/reuse options of products as tenants churn. Monitor and collect data, report performance to tenants and owners, educate for improvement.



Actions for Occupiers: Understand how to use your building to its best potential, ask questions about the sustainability benefits. Commit to sustainability objectives of the tenancy. Allocate responsibility for monitoring, performance improvement, staff engagement and communication with facilities management. Measure, review and improve your use of the building.



Actions for Building Roadmap Players developed by Danielle Domone and Irmine van der Geest (TEC) and is adapted from: Six steps to sustainable commercial buildings, Your Building, August 28, 2007 <http://www.yourbuilding.org/display/yb/Six+steps+to+sustainable+commercial+buildings>



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www.thehub.ethics.org.au

