

RAIA ENVIRONMENT POLICY

The Royal Australian Institute of Architects

VISION

In 1993, The Royal Australian Institute of Architects adopted the International Union of Architects 'Declaration of Interdependence for a Sustainable Future'. In doing so, the RAIA recognises that:

- *A sustainable society restores, preserves, and enhances nature and culture for the benefit of all life, present and future; a diverse and healthy environment is intrinsically valuable and essential to a healthy society; today's society is seriously degrading the environment and is not sustainable.*
- *We are ecologically interdependent with the whole natural environment; we are socially, culturally, and economically interdependent with all of humanity; sustainability, in the context of this interdependence, requires partnership, equity, and balance among all parties.*
- *Buildings and the built environment play a major role in the human impact on the natural environment and on the quality of life; sustainable design integrates consideration of resource and energy efficiency, healthy buildings and materials, ecologically and socially sensitive land-use, and an aesthetic sensitivity that inspires, affirms and ennobles; sustainable design can significantly reduce adverse human impacts on the natural environment while simultaneously improving quality of life and economic well being.¹*

The RAIA affirms the responsibility of the architectural profession, as a key player in the construction industry, to embrace an integrated approach to ecological, social and economic sustainability. This should be done through individual practice and by bringing to bear our collective expertise and influence in the community. In order to achieve this, the RAIA and its members should abide by the following principles:

PRINCIPLES

1. Commit

Place sustainability at the *core* of our practices and professional responsibilities.

2. Develop

Research and develop policies, regulations, practices, products, curricula, services, standards, contracts and other mechanisms that will facilitate the implementation of sustainability.

3. Educate

Educate ourselves, our fellow professionals, the building industry, clients, building users, students, government, manufacturers and the general public about the critical importance and substantial opportunities of sustainability.

4. Formalise

Encourage policies, regulations and practices in government and the private sector of the construction industry to ensure sustainability becomes, and remains, normal practice.

5. Implement

Implement, and continually improve, subject to our professional responsibilities to our clients, sustainability in the resourcing, construction, use and reuse of buildings and the built environment.

The Strategic Objectives set out in the following Appendix are a guide for the RAIA and its members to give effect to this

¹ 'Declaration of Interdependence for a Sustainable Future', UIA/AIA World Congress of Architecture, Chicago, 18 - 21 June 1993

RAIA ENVIRONMENT POLICY – APPENDIX

Strategic objectives

1. Commit

Objectives	Examples
The RAIA will:	
1.1 place sustainability at the core of the Institute's objectives, not as a peripheral activity;	<i>1.1.1 Ensure the programs, activities and administration of the Institute enables it to implement sustainable goals.</i>
1.2 promote a shift in values throughout the profession towards ecological sustainability; and	<i>1.2.1 Raise and maintain the profile of sustainability in all aspects of Institute business.</i>
1.3 become known as the industry leader in the philosophy and practical application of sustainability in the built environment.	<i>1.3.1 Seek and where appropriate act upon the advice of national and state environment committees.</i>
Members should:	
1.4 work towards placing sustainability at the core of their practice structure.	<i>1.4.1 Actively encourage clients to include sustainability as an integral principle in the briefing, design and commissioning of projects.</i> <i>1.4.2 Maintain commitment to the delivery of sustainable outcomes throughout the life of projects.</i>

2. Develop

Objectives	Examples
The RAIA will:	
2.1 continually develop and improve its own practises, procedures, professional development curricula and services relating to sustainable design; and	<i>2.1.1 Integrate, where possible, a sustainability component in all professional development programmes.</i> <i>2.1.2 Continually contribute to the improvement of the BDP Environment Design Guide to make information on sustainable design more accessible and useful.</i>
2.2 continually research, support and make available external products, curricula, services and standards that will enable its members to implement sustainable practises.	<i>2.2.1 Support the development and enhancement of sustainable content of specifications, product selection aids and manufacturers' data.</i>
Members should:	
2.3 promote sustainability through appropriate built environment solutions; and	<i>2.3.1 Test and evaluate sustainable principles, through innovative design, to the extent supported by clients.</i>
2.4 continually develop and improve their own sustainable practises and procedures.	<i>2.4.1 Undertake ongoing research into sustainable practises and processes.</i> <i>2.4.2 Continually update product library and project specifications to reflect the latest technical information and examples of sustainability in the built environment.</i>

3. Educate

Objectives	Examples
<p>The RAIA will:</p> <ul style="list-style-type: none"> 3.1 encourage architectural education institutions to incorporate all aspects of sustainable design throughout their course content; and 3.2 encourage the education of its members, students, the general public, governments at all levels and, where possible, the building industry, about the critical importance and substantial opportunities of sustainable design. 	<ul style="list-style-type: none"> 3.1.1 Promote comprehensive integration of sustainable design into the syllabus of all architecture schools. 3.1.2 Promote lectures at architecture schools by experts in sustainability in the building industry. 3.2.1 Lobby for sustainability to become a formal part of every school and university syllabus. 3.2.2 Promote sustainability through the BEE Program. 3.2.3 Provide a professional development programme on sustainability to members. 3.2.4 Advocate the role of architects in contributing to a sustainable society, and promoting and marketing architects' skills and expertise in sustainable design. 3.2.5 Encourage the introduction of environmentally acceptable products, processes and systems.
<p>Members should:</p> <ul style="list-style-type: none"> 3.3 promote to their clients the critical importance and substantial opportunities of sustainable design; and 3.4 provide opportunity to educate their staff and maintain a level of skill which enables informed decision making on sustainability. 	<ul style="list-style-type: none"> 3.3.1 Discuss sustainable opportunities with clients, at briefing and at relevant stages during a project. 3.4.1 Seek a variety of environmental literature for ongoing education, which might include the BDP Environment Design Guide. 3.4.2 Encourage staff to attend Professional Development courses and seminars on sustainability.

4. Formalise

Objectives	Examples
<p>The RAIA will:</p> <ul style="list-style-type: none"> 4.1 establish policies and procedures for its members to encourage sustainable design to become normal practise; 4.2 attempt to influence government regulations and practises to ensure that they are appropriate for sustainability and they do not stifle 'good design'; 4.3 recognise that special temporary measures may be required to integrate sustainability into normal practise; and 4.4 highlight issues and lobby government at all levels to improve incentives, policies and regulations to ensure that sustainable design becomes normal practise. 	<ul style="list-style-type: none"> 4.1.1 Periodically review and update this Policy and supporting documents. 4.1.2 Base all award categories on a minimum agreed set of sustainability criteria. 4.2.1 Ensure early participation in development of regulatory measures, particularly through the Australian Building Codes Board. 4.3.1 Maintain ESD and Energy awards as separate categories until sustainable criteria become a prerequisite of all awards. 4.4.1 Support implementation of improved energy rating schemes which allow for all building types and conditions. 4.4.2 Support the development of a national environmental performance system which will rate multiple sustainability criteria. 4.4.3 Lobby for government support and incentives for sustainable industry based projects and products.
<p>Members should:</p> <ul style="list-style-type: none"> 4.5 formalise practises within their own organisations to ensure that sustainable design becomes normal practise; and 4.6 assist in the formulation and development of future outcomes and visions for the RAIA. 	<ul style="list-style-type: none"> 4.5.1 Implement sustainability check-lists. 4.5.2 Continually review sustainability of projects. 4.6.1 Actively participate in RAIA and other forums on sustainability, such as community consultation, education processes and ideas competitions.

5. Implement

Objectives	Examples
The RAIA will:	
5.1 progressively bring its own existing and future elements of the built environment up to sustainable design standards - in their design, production, use and eventual reuse.	<i>5.1.1 Aim, through changes to office procedures, to become a model sustainable organisation. 5.1.2 Encourage members to do likewise.</i>
Members should:	
5.2 give holistic consideration to the range of environmental effects which may arise from the planning, construction and use of buildings and their infrastructures;	<i>5.2.1 In implementing sustainable design practises, consider a combination of effects on:</i> <ul style="list-style-type: none"><li data-bbox="890 557 1394 610"><i>• bio-diversity – protect and restore ecological diversity, health and functionality</i><li data-bbox="890 610 1394 714"><i>• resources (including materials, energy, water, amenity and waste) – optimise their use, especially non-renewable resources</i><li data-bbox="890 714 1394 768"><i>• pollution – minimise pollution of soil, air and water</i><li data-bbox="890 768 1394 819"><i>• quality of life – improve the health, safety and comfort of building users.</i>
5.3 attempt to consider the effects, from local to global, on ecosystems over the entire product life cycle – from short to long term; and	<i>5.3.1 In selecting and specifying construction materials consider all aspects from extraction, processing and transport through to possible fire, demolition and disposal or reuse.</i>
5.4 aspire to bring all projects up to sustainable design standards - in design, production, use and eventual reuse.	<i>5.4.1 For a summary of this core aspect of the policy, refer to the associated document – ‘Sustainable Design Strategies’, located in the BDP Environment Design Guide.</i>

RAIA ENVIRONMENT POLICY – SUPPLEMENTARY DOCUMENT

SUSTAINABLE DESIGN STRATEGIES FOR ARCHITECTS

This Note is a back-up document to the RAIA Environment Policy. It is also intended for use as a checklist and prompter of ESD issues that should be considered during the creation and use of buildings.

INTRODUCTION

The RAIA Environment Policy states an objective to implement sustainable design practices. In order for architects to meet the objectives they should consider the four following inter-related tenets of environmental sustainability at all stages of a building's life:

- bio-diversity – protect and restore ecological diversity, health and functionality
- resources – optimise their use, especially non-renewable resources
- pollution – minimise pollution of soil, air and water
- quality of life – improve the health, safety and comfort of building users.

To assist in making appropriate sustainable design decisions, the following specific design strategies and actions are recommended. They do not form a comprehensive list, merely a prompt for the most commonly encountered issues. They do not all offer solutions, sometimes just raising issues to be considered. Any recommendations are contingent upon current knowledge and technology and are therefore subject to change over time. The architect must, as always, ensure that professional advice offered is based on all relevant and available information (refer to the other Environmental Design Guide [EDG] notes for detailed information).

In the context of these strategies, 'sustainability' always refers to 'environmental sustainability'; and ESD means 'Ecologically Sustainable Development'.

1. Pre-design

If possible, influence site selection and briefing for the project.

Design strategies	Actions/examples	EDG references
1.1 Brief client on potential of ESD opportunities.	<i>1.1.1 Ensure client is appraised of all ESD opportunities, and the broader benefits of taking such actions.</i> <i>1.1.2 Actively participate in client briefing to ensure space and services in buildings will efficiently provided for the foreseen end use.</i>	GEN 2, GEN 6, GEN 13, GEN 18-19 DES 1, DES 5, DES 34
1.2 Evaluate appropriateness of building project and site.	<i>1.2.1 Use instruments such as Environmental Impact Statements.</i> <i>1.2.2 Check availability of public transport.</i> <i>1.2.3 Negotiate with local government authorities to improve sustainable opportunities and outcomes.</i> <i>1.2.4 Evaluate 'no-build' or 'non-structural' options, or re-use of existing facilities.</i> <i>1.2.5 Consider the nature of subdivisions, which can greatly effect sustainable design options for individual sites or buildings.</i>	GEN 16, DES 18 DES 16 GEN 17, GEN 36 DES 11, DES 26, DES 31, DES 38, DES 39, PRO 9 DES 8, DES 9
1.3 Adopt an inter-disciplinary integrated approach to design.	<i>1.3.1 Ensure selection of consultants with sustainable design credentials.</i> <i>1.3.2 Encourage a suitable fee structure.</i>	DES 1, DES 36 GEN 38

2. Siting and planning issues

Develop an understanding of the opportunities and constraints of the site and utilise this knowledge to appropriately plan at the macro level.

Design strategies	Actions/examples	EDG references
2.1 Evaluate site and local ecosystems to ensure they are maintained and enhanced.	2.1.1 <i>Preserve vegetation and topsoil as much as possible</i> 2.1.2 <i>Rehabilitate and restore habitat corridors.</i> 2.1.3 <i>Minimise construction practices which encourage erosion.</i>	GEN 32, GEN 37 GEN 39, DES 18, DES 40 DES 18, DES 26, DES 29
2.2 Maximise re-cycling of existing building stock.	2.2.1 <i>Evaluate opportunities to adapt and/or utilise existing buildings, facilities, infrastructure, etc.</i>	DES 11, DES 31, DES 38, DES 39
2.3 Appropriately site with regard to microclimate.	2.3.1 <i>Position buildings on site to allow for optimum passive design opportunities - consider prevailing winds, solar access, water supply, etc.</i>	GEN 12, DES 3
2.4 Appropriately site and design with regard to effects on natural and built surroundings.	2.4.1 <i>Consider effects on adjacent natural features such as bushland and watercourses.</i> 2.4.2 <i>Maintain or provide solar access to adjacent sites.</i> 2.4.3 <i>Maintain and protect lifestyle and amenities of neighbours.</i> 2.4.4 <i>Avoid visual and noise pollution for neighbours.</i>	DES 8, DES 9, DES 41 GEN8 GEN 24
2.5 Facilitate pedestrian and non-motorised forms of transport.	2.5.1 <i>Consider proximity to public transport and people as part of site selection.</i> 2.5.2 <i>Design in pathways and cycle-ways.</i> 2.5.3 <i>Ensure secure storage facilities for transport other than cars.</i> 2.5.4 <i>Provide shower and change facilities.</i> 2.5.5 <i>Design to allow for future changes to cars fuelling – e.g. electric re-charging.</i>	GEN 17, DES 16 GEN 17
2.6 Recognise, respond and design to support the local social context.	2.6.1 <i>Provide or utilise local community and business facilities which minimise the need to use motorised transport.</i>	GEN 17

3. Concept design

Employ well considered knowledge about environmentally responsive design to appropriately plan and design at the micro level.

Design strategies	Actions/examples	EDG references
3.1 Design to maximise building and siting orientation opportunities.	3.1.1 Consider appropriate building orientation with regard to micro-climate. 3.1.2 Consider appropriate orientation for different zones of the building. 3.1.3 Consider appropriate orientation for external areas.	GEN 12, DES 32
3.2 Design for appropriate solar access through all seasons and for specific climate and location; maximise passive solar design strategies.	3.2.1 Consider how the form of the building will effect the solar access for internal and external areas. 3.2.2 Design to maximise sun penetration and minimise sun shading in winter (except in tropical climates). 3.2.3 Design to minimise sun penetration and maximise sun shading in summer. 3.2.4 Design to allow for flexibility during intermediate seasons and unseasonal weather.	DES 2 GEN 8, GEN 12 DES 6
3.3 Determine appropriate building form to maximise natural lighting and ventilation for specific climate and location.	3.3.1 Consider window sizes, spacing, details such as light shelves and devices such as atria and courtyards to optimise natural lighting. 3.3.2 Consider building depth and location, operation of openings in external walls to optimise natural ventilation. 3.3.3 Consider building form and amount of external wall area to optimise thermal performance of the building envelope.	DES 6, DES 20, PRO 3, PRO 19 TEC 2 TEC 10
3.4 Consider integrated sustainable systems at concept stage rather than during detailed design.	3.4.1 Design for integrated energy, water and waste systems.	GEN 29, GEN 30, DES 4, DES 14, DES 36
3.5 Ensure building design supports and encourages ecologically sustainable lifestyles.	3.5.1 Connect users to external environment in a meaningful and educative manner. 3.5.2 Ensure building systems are easy to understand and operate. 3.5.3 Design for ease of recycling of all wastes by users during occupation.	GEN 12, GEN 23, DES 19

4. Resources – Material selection

Consider all issues regarding the life cycle of materials in order to ensure most appropriate and least damaging selection and design.

Design strategies	Actions/examples	EDG references
4.1 Select ‘renewable’ resources in preference to finite resources.	4.1.1 Protect old growth forests - avoid specifying old growth timbers; check timber sources. 4.1.2 Support agro-forestry timber forestry and milling techniques.	PRO 10, PRO 11, PRO 15, PRO 21
4.2 Minimise the use of new materials in buildings and construction processes.	4.2.1 Consider adaptive re-use of existing buildings. 4.2.2 Design for minimal material use through reduction in overall size of building and interior installations. 4.2.3 Design for minimal waste through modularisation and appropriate sizing for specific materials. 4.2.4 Use recycled and recyclable building elements and materials where possible.	DES 38, DES 39 TEC 1 GEN 29, PRO 22 DES 31, PRO 9
4.3 Design for appropriate levels of durability and re-configurability.	4.3.1 Use the concept of ‘loose fit’ to ensure adaptability of buildings over time. 4.3.2 Recommend the use of materials and equipment with the potential for longer lives and the capacity of reuse or changed use. 4.3.3 Specify appropriate levels of quality and finish to avoid future replacement. 4.3.5 Design for component update, particularly in areas of rapidly developing technologies and changing environmental standards. 4.3.6 Design for integrated physical solutions rather than chemical pest control.	DES 31 PRO 16 DES 31 PRO 23
4.4 Select materials with appropriate properties for the application.	4.4.1 Consider thermal mass to moderate temperature variations. 4.4.2 Appropriate levels of insulation – more insulation for extreme climates. 4.4.3 Consider durability.	DES 4 PRO 7, PRO 8 PRO 16
4.5 Evaluate and select materials and products with lower embodied energy.	4.5.1 Use life-cycle analysis techniques to evaluate embodied energy. 4.5.2 Consider selection of materials with regard to proximity of site.	GEN 22, DES 35 PRO 1, PRO 2
4.6 Select materials and products with low toxicity and off-gassing; consider pollution caused during extraction of raw materials, production, transport, installation, in-situ and removal.	4.6.1 Consider impact of selection of following: <ul style="list-style-type: none">• paints• varnishes, polishes etc• glues, adhesives• upholstery and treatments• particle and other board products• carpets, underlays• PVC products. 4.6.2 Consider material characteristics: <ul style="list-style-type: none">• low absorption• discouragement of micro-organisms• ease of cleaning with benign processes and materials.	GEN 15, PRO 4, PRO 5, PRO 6, PRO 13, PRO 14, PRO 20
4.7 Design for minimal energy use during construction.	4.7.1 Consider impact of different building technologies on machinery requirements during construction. 4.7.2 Consider how size and weight of material components will impact on machinery requirements during construction.	PRO 1, PRO 2

5. Resources – energy

Ensure the detail design, selection of appliances and energy sources results in a reduction in the building's operational energy impact across all seasons.

Design strategies	Actions/examples	EDG references
5.1 Encourage reduction of power consumption through design.	<ul style="list-style-type: none"> 5.1.1 <i>Passive solar design.</i> 5.1.2 <i>Improve thermal performance of buildings.</i> 5.1.3 <i>Design for efficient building use.</i> 5.1.4 <i>Re-evaluate accepted comfort standards.</i> 5.1.5 <i>Provide natural clothes drying facilities.</i> 	<ul style="list-style-type: none"> See Section 3 See Section 4 DES 2, DES 17, DES 21, DES 22, DES 23 See Section 8, GEN 15, DES 12, GEN 20
5.2 Select energy efficient appliances and operating systems.	<ul style="list-style-type: none"> 5.2.1 <i>Select high efficiency lights and sensor systems for operation.</i> 5.2.2 <i>Select high efficiency equipment – especially for heating and cooling – throughout.</i> 5.2.3 <i>Zone equipment systems for appropriate settings and more responsive occupation usage.</i> 5.2.4 <i>Employ smart building management systems to minimise energy requirements.</i> 	<ul style="list-style-type: none"> GEN 14 DES 7, DES 37, TEC 3 DES 36
5.3 Encourage use of alternative and low impact power sources.	<ul style="list-style-type: none"> 5.3.1 <i>Encourage inclusion of appropriate renewable energy forms:</i> <ul style="list-style-type: none"> • <i>active solar design – solar panels, hot water systems</i> • <i>geothermal</i> • <i>wind power</i> • <i>co-generation</i> • <i>mini hydro.</i> 5.3.2 <i>Encourage use of gas in preference to electricity.</i> 	<ul style="list-style-type: none"> DES 10, DES 28, TEC 4, TEC 5, TEC 6, TEC 7, TEC 8

6. Resources – Water and others

Understand and acknowledge the opportunities to sustainably harvest, use, re-use or recycle on-site resources during the life of the building.

Design strategies	Actions/examples	EDG references
6.1 Practise on site water conservation.	<ul style="list-style-type: none"> 6.1.1 <i>Collect and use rainwater.</i> 6.1.2 <i>Use water cycle management techniques.</i> 6.1.3 <i>Use grey water reticulation systems.</i> 6.1.4 <i>Utilise water efficient technologies, e.g. composting toilets.</i> 6.1.5 <i>Use water efficient appliances.</i> 6.1.6 <i>Avoid specifying water-hungry construction techniques.</i> 	<ul style="list-style-type: none"> DES 13, DES 14 DES 19, DES 24, DES 27
6.2 Design landscape to minimise water requirements.	<ul style="list-style-type: none"> 6.2.1 <i>Select plants appropriate to climate.</i> 6.2.2 <i>Incorporate landscaping features such as swales and dams to reduce additional water input required.</i> 	<ul style="list-style-type: none"> GEN 9, DES 40 DES 13, DES 14, DES 19
6.3 Practise land and soil conservation.	<ul style="list-style-type: none"> 6.3.1 <i>Recommend building on and rehabilitating already disturbed and degraded land.</i> 	<ul style="list-style-type: none"> GEN 32
6.4 Design to facilitate recycling of waste.	<ul style="list-style-type: none"> 6.4.1 <i>Design for easy access to recycling facilities and separation of materials on site.</i> 6.4.2 <i>Allow adequate storage space for recycling materials on site.</i> 6.4.3 <i>Where appropriate design for on site recycling of organic waste.</i> 	

7. Construction management

Ensure that the ESD initiatives included in the design process are actually implemented during the construction stage, and that the Contractor undertakes best work place practices.

Design strategies	Actions/examples	EDG references
7.1 Ensure all ESD requirements are clearly set out in specification and contract documents.	7.1.1 Use a 'green' specification. 7.1.2 Refer to appropriate standards and procedures.	PRO 17, PRO 18 DES 26, DES 29
7.2 Restrict tenders to include contractors with appropriate ESD credentials.	7.2.1 Check contractors' position and track record prior to inclusion on tender list.	
7.3 Specify for on site environmental control.	7.3.1 Ensure storm water run-off controls are put in place. 7.3.2 Stage work and employ appropriate site management techniques to preserve top soil, flora and fauna. 7.3.3 Require all contractors and subcontractors to engage in non-polluting construction techniques.	DES 18, DES 29 DES 26 DES 30
7.4 Specify for on site waste minimisation.	7.4.1 Require all demolition material to be recycled. 7.4.2 Ensure contractors and sub-contractors sort on-site waste for recycling. 7.4.3 Give preference to suppliers who take back and recycle off-cuts and wastes.	DES 30

8. Building operation and management

Ensure that the ESD initiatives of the design and construction stages are properly understood and utilised by the users of the building over its lifetime.

Design strategies	Actions/examples	EDG references
8.1 Incorporate delivery of Building Operations Manual as part of standard service.	8.1.1 Directly report to building users on best way to manage building. 8.1.2 Manual to include easily understood diagrams and words demonstrating how the passive design aspects of the building and equipment work. 8.1.3 Ensure that Manual is included as part of the settlement documents if the building is sold.	
8.2 Ensure building performance is able to be easily monitored and managed.	8.2.1 Separately meter various aspects of building systems to ensure performance of each can be understood.	DES 36
8.3 Work with client to formulate suitable maintenance strategy.	8.3.1 Set up regular maintenance schedules to ensure all materials and equipment properly cared for. 8.3.2 Work with client to employ appropriate cleaning methods for carpets, fabrics, timber, etc. 8.3.3 Determine ongoing pest management system.	PRO 23