



Summary

Urgent action is needed as we face the challenges presented by climate change. The commercial and residential building sectors offer significant potential for achieving deep cuts in greenhouse gas emissions by 2050. This potential can be realised by reducing energy demand and increasing the energy efficiency of buildings.

Policy frameworks must be established to achieve greater energy and resource efficiency in the building sector and to facilitate innovation in building design and procurement. Incentives to encourage the alteration, retrofitting and rebuilding of our current building stock to achieve more sustainable outcomes are needed now.

The architectural profession, as a key player in the development of the built environment must continue to show leadership. The Australian Institute of Architects (the Institute) advocates a range of actions for government, its members, the design and construction industry and the broader community that it believes will drive the necessary changes.

Background

We are facing the two greatest environmental challenges of our time: climate change and an environmentally degraded planet that is increasingly unable to support the growing demand for resources. The profession's contribution to the urgent evolution and application of new ideas to create a built environment that has a positive impact on environmental systems must continue.

The building sector is a key part of the climate change problem with 23 percent of Australia's total greenhouse gas (GHG) emissions accounted for by the residential and commercial building sectors. At the same time, this sector, more than any other, offers significant potential for minimising the economic impact of broad based GHG emissions cuts.

Energy demand in the building sector can be halved by 2030 and cut



by over 70 percent by 2050, delivering extra savings of 30-35 percent over the whole building sector. Adopting building sector energy efficiency could increase Australia's GDP by as much as \$38 billion by 2050.

Action to change the way we approach the design and management of the built environment is required now. As a global community we need to:

- Understand the impact of our actions to date;
- Continually improve the efficiency of buildings through design and use; and
- Innovate in our design and building procurement processes to move progressively toward a built environment that positively contributes to natural systems.

The Institute recognises the importance of voluntary rating systems such as the Green Building Council of Australia's Green Star rating tool for achieving improvements and innovations in the built environment. We believe that the adoption of a range of measures, including voluntary schemes, tax and financial incentives, increased minimum standards and the setting of meaningful targets is necessary.



What Governments need to do

There is an urgent need for broad and effective policy frameworks to ensure ongoing action on building efficiency. Governments must work with industry and community to re-structure the approach to the development and management of built infrastructure so that it becomes environmentally and socially beneficial. The Institute calls on government to immediately adopt or expand the following policy initiatives. These have been assessed as having the most potential to achieve greater energy efficiency in the commercial and residential building sectors. While several initiatives do or may overlap, provided they are implemented with checks and balances against 'double dipping', a multi-faceted approach has the potential to be relevant to different energy users:

Climate Change and the Built Environment

- Work with the international community to set meaningful carbon reduction targets that allow developing countries to improve their standard of living.
- Support economy-wide carbon reduction targets with a comprehensive range of emissions reduction strategies.
- Establish an economy-wide national emissions trading framework which includes the built environment, to rapidly reverse the rise in energy consumption.
- To overcome the disincentive of time lag between investment and slow payback through energy cost savings, facilitate private sector energy efficiency incentives by a system of 'White Certificates' generated by energy savings arising from energy retailer subsidy of energy efficiency investments in buildings, appliances or fittings which, in the hands of energy retailers/producers, then become tradeable offsets against limitations on energy production. The Victorian Energy Efficiency Target Act 2007 (Vic) which commences in 2009 is an example of such a scheme.
- Where energy limits are not applicable, similarly encourage subsidy of energy efficiency improvements by allowing an energy retailer to structure pricing to recoup its subsidy by retaining resulting savings until 'break even' point.
- For both new and retrofitted buildings, reduce energy use for heating and cooling by higher thermal performance standards



required by the Building Code of Australia (BCA) for the design and materials of buildings.

- Reform the basis of rates, charges and levies imposed on building owners to encourage retrofitting and investment in energy efficient buildings. This should apply to both homes and commercial properties.
- Expand the range of government-funded financial assistance for investment in energy efficiency improvements (such as installation of solar hot water and power generation through to insulation or energy efficient lighting) by households or small businesses.
- By 2012, establish a regulatory and incentive process that will lead to zero net carbon emissions from all new buildings by 2020.
- Mandate compulsory reporting of energy and water consumption/performance when non-residential buildings are offered for rent, lease or sale, and on a regular basis.
- Encourage an economy wide application of renewable energy, through strategies such as increasing the price of energy from non-renewable resources to reflect its true costs, and, initiating a legislative process to protect solar access rights and to expand renewable energy rebates.
- For appliances, increase minimum performance standards for energy efficiency coupled with mandatory compliance and a consistent rating system.

Using global resources

- Commit to nation wide targets for water efficiency, and build water security by providing policy support and incentives for water harvesting and re-use.
- Commit to nation wide targets for reducing waste.
- Commit to nation wide targets for improving indoor air quality in buildings.
- Support research on the impacts of existing buildings and by 2012, set robust and comprehensive targets for altering or retrofitting existing building stock to reduce resource consumption levels.
- Provide tax incentives for existing buildings in the form of accelerated depreciation for alteration and retrofitting to meet specified environmental standards.



- Financially support in conjunction with industry, the development of a life cycle based materials database that identifies environmental impacts of materials, construction methods and technology.
- Establish an independent body of industry and government to develop a cohesive national research program on sustainable buildings, systems and materials.
- Establish sustainability performance indicators that can value Australia's natural resources in the context of the construction industry.

Creating sustainable communities

- Support and facilitate the containment of the sprawl of Australian cities to facilitate sustainable and appropriate use of land resources
- Support and facilitate strategies to consolidate existing urban settlements.
- Establish an intergovernmental national action plan for Australia to retrofit its urban settlements.



What Institute members need to do

Architects can, and must, play a fundamental role in achieving a sustainable future. The Institute encourages the architectural profession to take immediate action. In doing so, Institute members should take the following action:

Climate Change and the Built Environment

- Create design solutions that aim for best practice in progressively reducing greenhouse gas emissions from the built environment.
- Commit to work toward placing sustainability at the core of their practice structure.
- Work toward reducing the carbon footprint of their practices.

Using global resources

- Continually develop and improve practices and procedures that give holistic consideration to global environmental impacts of design decisions.
- Create design solutions that minimise the use of water and maximise the potential for water recycling and re-use.
- Minimise the environmental impact of materials use by considering issues such as embodied energy, biodiversity, human health toxicity and the end of life fate of the material.

Creating sustainable communities

- Promote the importance and substantial opportunities of sustainable design to clients and colleagues.
- Continually innovate in our practices and procedures to move progressively toward a built environment that positively contributes to natural systems.



Institute Initiatives and Activities

The Institute acknowledges the international body of scientific evidence linking climate change to human activities, especially those related to the built environment and the importance of providing leadership in sustainability to the architectural profession and other industry stakeholders. The Institute has a number of initiatives which demonstrate this: an Environment Policy that contains objectives and strategies for delivering sustainable projects; production of the Environment Design Guide for and as part of the Built Environment Design Professions (BEDP), and being a founding member of the Australian Sustainable Built Environment Council (ASBEC)

The Institute is also committed to:

Climate Change and the Built Environment

- Working with government, members and industry to facilitate well informed design and procurement of the built environment to reduce the impact on climate change.
- Reducing the carbon footprint of its operations.

Using global resources

- Introducing operational efficiencies in upgrades of its own building stock to achieve measurable environmental improvements, specifically looking at energy and water use.

Creating sustainable communities

- Working with government to develop policies to initiate change to the built environment so that it moves towards zero environmental impact, and progressively makes a positive contribution to resource production and natural systems.



What the Design and Construction Industry needs to do

As an active member of the design and construction industry the Institute believes we should work to constantly realign construction of the built environment with sustainable best practice. The Institute supports the construction industry in its initiatives to:

Climate Change and the Built Environment

- Reduce energy consumption in the construction, alteration, operation and maintenance of the built environment

Using global resources

- Develop and choose materials, techniques and practices that have an increasingly diminishing environmental footprint.
- Increase awareness within the construction industry and beyond of the potential for adaptation and re-use of materials and buildings as a sustainable practice.
- Modify design and construction techniques in order to facilitate adaptation and re-use of materials and buildings in the future.

Creating sustainable communities

- Create communities that provide equitable opportunities for increased efficiencies in patterns of living.



What All Members of the Community Can Do

Climate Change and the Built Environment

- Choose 'green' power (renewable energy sources).
- Reduce energy use generally by using and maintaining buildings, systems and appliances responsibly.

Using global resources

- Choose alternative water supply and re-use options.
- Reduce, reuse, recycle generally and specifically with buildings and building systems and products.
- Purchase/lease buildings that are built for the local environmental conditions and have a small environmental footprint.
- Adapt and re-use materials and buildings as a sustainable practice.

Creating sustainable communities

- Engage in initiatives to develop and choose alternative housing models that can offer a high quality of life without the need for the resource intensive detached suburban housing model.
- Develop living environments which focus on local conditions and produce locally based solutions.
- Encourage and support government and other initiatives to contain the sprawl of urban areas and to plan for and implement sustainable and best use of land and water resources.



Further Information and Links

Institute policies

<http://www.architecture.com.au/policy/pages/sustainability>

Environment Design Guide

<http://www.environmentdesignguide.net.au/>

Built Environment Design Professions

<http://www.bedp.asn.au/>

Australian Sustainable Built Environment Council

<http://www.asbec.asn.au>

Green Building Council of Australia

<http://www.gbca.org.au/>

The Institute Sustainable Cities Submission

http://dev.architecture.com.au/i-cms_file?page=4105/RAIASubmission_SustCities_Dec2003.pdf

<http://www.greenhouse.gov.au/yourhome/>

<http://www.yourdevelopment.org/>

<http://www.yourbuilding.org>

If you have any questions or feedback regarding this policy, please email [here](#)