

The Green Infrastructure Policy presents GRA's agenda on the future of our cities. It is a long term, national framework to guide policy development and public and private investment in cities through articulating a set of goals and principles.

The Goals of the Green Infrastructure Policy are:

Productivity: To harness the productivity of Australia's built form professionals and trades, through information sharing, education and stakeholder support for sustainable design and best practice

Sustainability: To advance the sustainability of Australia's natural and built environment.

Liveability: To enhance the liveability of our cities by promoting sustainable urban design, reducing carbon emissions, improving air quality, incorporating green infrastructure, embracing decentralised urban water management and increasing biophilia.

These goals will be achieved through delivering on the following objectives:

The Objectives of the Green Infrastructure Policy are:

A: PRODUCTIVITY Objectives:

1. Improve building energy efficiency with zero to low emissions technology
2. Integrate land use and green infrastructure
3. Improve the efficiency and sustainability of urban infrastructure
4. Include decentralised stormwater management
5. Provide new skill training for new green technology

B: SUSTAINABILITY Objectives:

4. Protect and sustain our natural and built environments
5. Reduce greenhouse gas emissions and improve air quality
6. Manage our urban development sustainably
7. Increase resilience to climate change
8. Improve the quality and management of urban water
9. Adopt the principles for Water Sensitive Urban Design into planning codes and practice

C: LIVEABILITY Objectives:

8. Improve the health and wellbeing of urban populations
9. Support affordable sustainable living choices
10. Improve biophilia and awareness raising about new green technology
11. Support green infrastructure inclusion for low income and indigenous housing

D: GOOD GOVERNANCE Objectives:

12. Improve the planning and management of our cities
13. Review and align planning policies and codes with new green technology
14. Evaluate the benefits of green infrastructure and collect data
15. Engage community groups with similar goals, principles and objectives

The Principles of the Green Infrastructure Policy are:

Efficiency . Value for money. Innovation. Adaptability. Resilience. Equity. Affordability.
Integration. Engagement.

Objectives

PRODUCTIVITY

1. Improve labour and capital productivity by:

- Aligning workforce availability and capacity to meet labour force demand
- Supporting education, research and innovation

2. Integrate land use and infrastructure by:

- Integrating planning of land use, social and economic infrastructure
- Investing in urban passenger transport
- Protecting corridors, sites and buffers

3. Improve the efficiency of urban infrastructure by:

- Maximising returns on new and existing infrastructure
- Taking into account operational and maintenance costs of infrastructure and assets
- Connecting private investment capital to infrastructure and assets of high public benefit
- Utilising smart infrastructure
- Enhancing connectivity through the National Broadband Network

SUSTAINABILITY

4. Protect and sustain our natural and built environments by:

- Protecting and enhancing natural ecosystems
- Supporting sustainable development and refurbishment of our built environment

5. Reduce greenhouse gas emissions and improve air quality by:

- Supporting and promoting vegetated systems investing in low emissions technologies
- Putting a price on carbon
- Sustainable urban planning and regulatory reform

6. Manage our resources sustainably by:

- Reducing resource consumption and waste
- Improving water, energy and food security

7. Increase resilience to climate change, emergency events and natural hazards by:

- Climate change science and research
- Mitigation and adaptation

LIVEABILITY

8. Facilitate the supply of appropriate mixed income housing by:

- Encouraging a range of housing types to suit diverse household needs across metropolitan areas and regional cities
- Supporting the development of aged persons accommodation, including medium and high care

9. Support affordable living choices by:

- Locating housing close to facilities and services, including jobs and public transport, in more compact mixed use development
- Supporting new outer metropolitan housing with access to facilities, services and diverse education and employment opportunities

10. Improve accessibility and reduce dependence on private vehicles by:

- Improving transport options
- Reducing travel demand by co-location of jobs, people and facilities

11. Support community wellbeing by:

- Providing access to social and economic opportunity
- Improving the quality of the public domain
- Improving public health outcomes
- Redressing spatially concentrated disadvantage
- Enhancing access to cultural, sporting and recreational activity

GOVERNANCE

12. Improve the planning and management of our cities by:

- Facilitating a whole-of-governments approach
- Integrating planning systems, infrastructure delivery and management
- Encouraging best practice governance and applying the principle of subsidiarity

13. Streamline administrative processes by:

- Improving the effectiveness and efficiency of approval processes for development
- Encouraging participation and engagement with stakeholders

14. Evaluate progress by:

- Research, analysis and reporting

WSUD

Under natural conditions, water operates in a cycle of precipitation, infiltration, surface runoff, and evaporation. However, in urban areas, this cycle is disturbed and cannot run its course. Urban water is polluted, cannot infiltrate the ground due to paved surfaces and is rapidly collected and discharged to the public draining systems leaving no time for evaporation (see fig. 1, left and middle). Finally, this negatively impacts groundwater recharge, water supplies, the qualitative and quantitative state of receiving rivers, and urban climate. All the problems listed make clear that there is a need for more effective solutions in managing urban water. Decentralised stormwater management can be one solution

With our major cities being where 80% of Australians live and where 75% of our economic activity occurs, it's important that we find ways to live, move about and conduct our business that are as ecologically sustainable as possible.

Green Living Infrastructure to help filter water

Sustainable development refers to 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (Brundtland, 1987).

Recent trends in population growth and urban development are intensifying the challenges facing our communities and the pressures on our built and natural environments.

Our natural environment provides many benefits and services which are unable to be replicated or that would be very costly to produce ourselves. As our cities grow, we must keep these benefits in mind and ensure that we do not impose unnecessary costs on future generations.

Similarly, the design and construction of the urban form, whether it is a transit-oriented development, water sensitive urban design project or suburban block development, has long term consequences for the sustainability and resilience of our cities.

The construction and operation of buildings account for almost half of the world's greenhouse gas emissions. It is estimated that investing in a more energy efficient building sector has the potential to reduce the sector's greenhouse gas emissions by between 30–35 per cent by 2030.

One of the key challenges for decision-makers is to conserve and to protect our natural assets while facilitating human habitation.

Although the impact of most human activity is unintentional, human habitation can threaten the ecosystems and environments that are essential to our way of life.

In cities, natural areas and places of open space also provide for recreation and relaxation, visual amenity and urban liveability, and thereby also contribute to physical and mental health.

The high intensity nature of our cities provides opportunities to exploit economies of scale in reducing our impact on the environment.

How cities are planned, their density and spread, and the buildings and infrastructure within them, provide an enormous opportunity to reduce greenhouse gas emissions.

Along with opportunities for improvement in specific sectors such as waste, water and energy.

Cities can significantly influence sustainability outcomes.

1. Reduce greenhouse gas emissions and improve air quality by:

Emissions and air pollution are accelerating and changing our Earth's natural systems, affecting our health and standard of living. The scale of our cities provides opportunities for significant reductions in greenhouse gas emissions. There is also scope to reduce ambient levels of air pollutants in urban areas by focusing on the major sources of these pollutants including motor vehicles, the burning of carbon-based fuels and use of materials such as plastics and paints.

2. Supporting sustainable development and refurbishment of our built environment;

Our built environment is a large source of energy and water consumption and waste production.

Throughout the design, construction, operation and demolition of our built environment, consideration needs to be given to its long-term sustainability in economic, environmental and social terms.

3. Protecting and enhancing natural ecosystems Australia's natural environment is both fragile and unique.

Native ecosystems are at risk of being displaced or degraded by expanding urban areas. This will have negative implications for clean air and water, biodiversity and amenity.

To ensure our cities take full advantage of the services that our natural environment provides, and do not impose unnecessary costs to future generations, we must protect and enhance natural ecosystems, waterways and biodiversity.

This can be done by avoiding and mitigating the impacts on critical environments and by incorporating quality green space, microclimate and water sensitive design into urban systems.

4. Protect and sustain our natural and built environments by:

Cities and their populations have a detrimental impact on natural ecosystems— both within metropolitan boundaries and across the broader region.

The challenge is finding the balance between the natural and built environments. As the natural environment already exists, the onus is upon urban development policy makers to provide directives, methods and incentives which will protect and sustain both environments. Green Infrastructure is one directive toward this outcome.