

Building
a sustainable
future



Election 2016 Platform

A five-point plan for buildings,
communities and cities

Contents

Introduction	2
The growth of green – key statistics	4
Buildings: Move towards net zero	5
Case study: Global Change Institute, Brisbane	6
Case study: Barangaroo South, Sydney	7
Buildings: Raise minimum standards	8
Case study: Sydney Opera House	9
Buildings: Harness the potential of mid-tier buildings	10
Case study: StarTrack House, Sydney	11
Communities: Accelerate the advancement of a precinct utilities marketplace	12
Case study: Central Park, Sydney	13
Case study: Alkimos Beach, Western Australia	14
Cities: Catalyse a sustainable cities movement	15
Case study: Bowden Village and Tonsley, Adelaide	16



Introduction

When Australia signed the Paris Agreement in April, we committed to move towards a 'net zero' carbon economy by 2050.

Our commitment sent a signal to the global marketplace: we are taking steps to invest in a low-carbon future.

Now the hard work begins.

One of our greatest opportunities to reduce emissions is standing right in front of us in our bricks and mortar. Our buildings currently generate a massive 23 per cent of our nation's carbon emissions.

At the same time, our built environment is growing at an exponential rate. Four out of every five Australians live in our cities and we need to build the infrastructure for an extra million Australians every four years.

This challenge puts our buildings, communities and cities at the frontline of a host of issues from climate change and congestion, to housing affordability and attracting human capital in the global war for talent.

For the last decade, the Australian property and construction industry has been committed to reducing emissions, delivering cost savings, boosting health and productivity, and creating places that are good for the environment and people too.

The evidence of this evolution is there for all to see. More than 1,060 Green Star projects equate to 14 million square metres of Green Star certified space. That's more than twice the size of the Melbourne CBD.

But we need to move faster if we are to halt climate change. And we need to move faster if we are to ensure the liveability, productivity and long-term sustainability of our cities.

Our election platform outlines a clear five-point plan for our buildings, cities and communities.

We need supportive policies and programs to help the industry move towards net zero. We need a commitment from government to raise national minimum standards for buildings, to work with us to harness the potential of mid-tier buildings and to remove barriers to energy market reform. And we need the government to demonstrate leadership as we catalyse a sustainable cities movement.

We'll be working hard over this long election campaign to seek commitment from all political parties. Together, we can build a better, more sustainable future for all Australians.



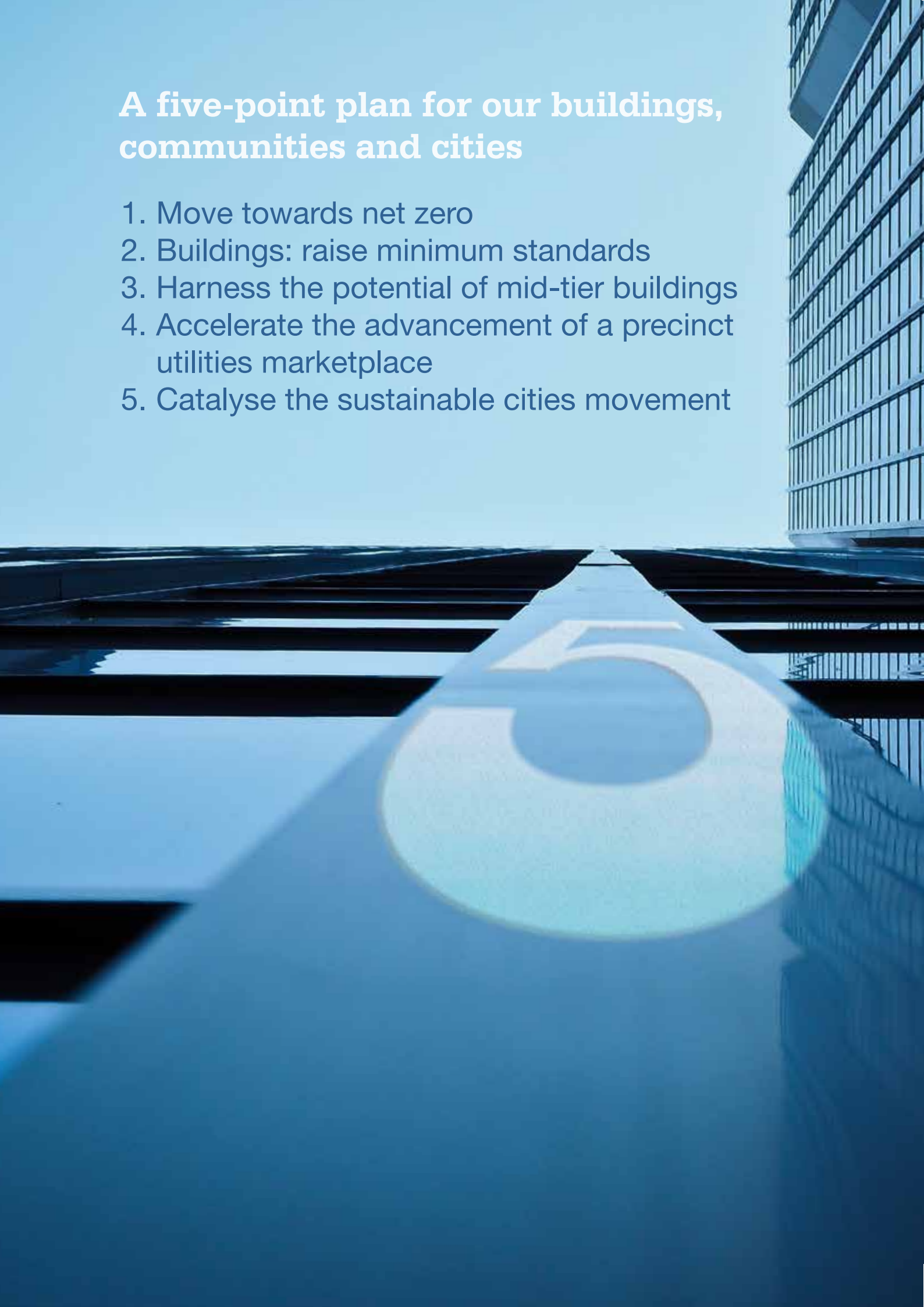
Romilly Madew

Chief Executive Officer

Green Building Council of Australia

A five-point plan for our buildings, communities and cities

1. Move towards net zero
2. Buildings: raise minimum standards
3. Harness the potential of mid-tier buildings
4. Accelerate the advancement of a precinct utilities marketplace
5. Catalyse the sustainable cities movement



The growth of green



* *The Value of Green Star: A decade of environmental benefits* (2013), analysed the data from 428 Green Star-certified projects occupying 5.7 million sqm across Australia and compared it to the 'average' Australian building and minimum practice benchmarks.



Buildings

Move towards net zero

No.1 Central Park, 5 Star Green Star – Multi-Unit Residential Design v1

Australia's commitment to the Paris Climate Change Agreement demands a transition to net zero emissions by 2050. In the short term, this means upgrading national emissions targets every five years.

The built environment presents the greatest opportunity to reduce emissions, at the least cost. Even without any new technology breakthroughs, ClimateWorks Australia modelling shows that energy efficiency measures and fuel switching can reduce projected 2050 emissions from buildings by more than half.

What is the GBCA doing?

The GBCA is working with the NSW Office of Environment and Heritage (responsible for delivering the NABERS rating system) to develop a net zero buildings certification label. This will be launched later in 2016.

We are also working together with the Australian Government's National Carbon Offset Standards team to develop a carbon neutral certification standard for precincts.

We have collaborated with the Australian Sustainability Built Environment Council (ASBEC) on the development of the Low Carbon, High Performance report, which provides a roadmap to drive the transition to a zero carbon building sector and improve the living and working environment of all Australians.

What can the Australian Government do?

Commit to achieving net zero emissions buildings by implementing the following:

1. A national plan with supporting policy frameworks, governance arrangements, clear targets and ministerial responsibilities.
2. Mandatory minimum standards for buildings, equipment and appliances with the long-term goal of net zero emissions.
3. Targeted incentives and programs to motivate and support higher performance, including incentives and the use of government market power.
4. Energy market reforms to ensure that the energy market supports roll-out of cost-effective energy efficiency and distributed energy improvements.
5. A range of supporting data, information, training and education measures to enable informed consumer choice, innovation, commercialisation and deployment of new technologies and business models.



Net zero in action

Global Change Institute, Brisbane

Designed as a 'living laboratory', the Global Change Institute at the University of Queensland is one of Australia's first net zero energy and carbon buildings.

A working test case for a range of sustainability innovations, the building has a 6 Star Green Star rating.

Naturally ventilated 88 per cent of the year, the building also captures and stores its own power through one of the largest solar arrays in Queensland.

The Institute meets its own power needs every day in all seasons, exports power to the grid four days a week, and is the perfect workplace for a team exploring the impacts of climate change, population growth and technological innovation.



Building a net zero city

Barangaroo South, Sydney

Barangaroo South. 6 Star Green Star – Communities v0.2

When one in 20 CBD workers will travel to Barangaroo South on Sydney Harbour each day, addressing sustainability is a once-in-a-lifetime opportunity.

Sydney's largest urban renewal project since the 2000 Olympics, Barangaroo South will eventually be home to around 1,500 residents, and will house 23,000 office workers and 80 new retail outlets. More than half the precinct will be open public space for everyone to enjoy.

The precinct recently achieved a 6 Star Green Star – Communities rating, and aims to be Australia's first large-scale carbon neutral community. Lendlease is also targeting a 20 per cent reduction in embodied carbon emissions and zero net waste to landfill by 2020. An onsite blackwater treatment plant can supply one million litres of recycled water daily to the precinct and surrounding suburbs.

Lendlease developed a Climate Change Adaptation and Community Resilience framework which maps the climate change effects likely to impact the \$1.2b precinct, and has adapted the design of Barangaroo South to mitigate impacts such as extreme weather events and sea level rises.

Lendlease's Managing Director Steve McCann says resilient urban communities are one of the most sustainable responses a society can make to economic growth.

"As the world's population urbanises, there is a greater emphasis placed on the role of the built environment, including place, sustainability and community outcomes. People want to live and work in cities that are liveable, connected, accessible and beautiful."



Buildings

Raise minimum standards

The National Construction Code (NCC) sets minimum standards for energy performance in buildings, and can be an essential tool to influence emissions reduction. The last increase to energy performance requirements in the Code was made in 2010, and the gap between minimum standards and best practice continues to widen while code compliance is also a widespread issue.

The National Energy Efficient Building Project (NEEBP) aims to support consumers, government and industry to achieve better energy efficiency in new buildings, renovations and additions by encouraging improved compliance with the NCC.

What is the GBCA doing?

The GBCA is working with ASBEC on the Building Energy Performance Standards project, which is pursuing an upgrade of minimum standards at the scheduled 2019 Code update. The project is also mapping out a trajectory for future upgrades for both commercial and residential buildings to ensure Australia meets its net zero target by 2050.

The Value of Green Star research showed that, compared to the 'average' Australian buildings, Green Star-certified buildings produce 62 per cent fewer greenhouse gas emissions than business-as-usual buildings. If this was possible in 2013, we know a net zero NCC is possible within years, not decades, and this is what the GBCA will advocate.

What can the Australian Government do?

Commit to a bold and clear trajectory towards net zero buildings, supported by funding for the Building Energy Performance Standards project and adoption of the report's recommendations through the Building Ministers' Forum and Australian Buildings Code Board.

Support the NEEBP, currently being led by the South Australian Government on behalf of all state and territory governments, and adopt the proposed strategies for change, including: communicating the case for increased energy efficiency requirements; upskilling industry to deliver better outcomes and removing the opportunity to 'cut corners'; and raising awareness and empowering the community to understand what they have a right to expect in terms of energy efficiency outcomes in the buildings they are buying or occupying.



Good bones for green Sydney Opera House

Sydney Opera House. 4 Star Green Star – Performance PILOT

When designing the Sydney Opera House more than 40 years ago, Jørn Utzon was inspired by nature and integrated many features now recognised as pioneering sustainable design.

An innovative seawater cooling system still powers the main heating and air-conditioning, while an early interpretation of the ‘chilled ceiling’ design remains in the Drama Theatre today to help control the venue’s air temperature.

This technology has provided a great foundation for the sustainability improvements that have followed, including a two-year program of lighting upgrades in the Concert Hall which slashed energy consumption by 75 per cent, and saves around \$70,000 per year in electricity costs.

The GBCA’s Chief Executive Officer, Romilly Madew, says that the Opera House’s certification sends a signal to the market that older buildings can go green. “The general consensus has been that it’s ‘too hard’ to improve the sustainability of older buildings. The Sydney Opera House has laid down the gauntlet for the property industry with a pragmatic, practical approach which shows even the most iconic, historic and challenging buildings can be high-performing, energy efficient and sustainable. If you can green the Opera House, you can green anything.”



Buildings

Harness the potential of mid-tier buildings

While commercial and residential buildings are responsible for 23 per cent of Australia's total greenhouse gas emissions, we know the potential for emissions reduction at low cost is significant.

The market leaders have already demonstrated that step change is possible. New Green Star-rated office buildings emit less than half as much greenhouse gases as the average 10-year-old building. However, mid-tier commercial office buildings – those classed as B-Grade or below – are lagging behind. The 80,000 mid-tier commercial office buildings across Australia, equalling approximately 54 million sqm of space, must be addressed if we are to make significant reductions to the built environment's carbon footprint. Sectors such as retail, health, industrial and residential buildings also have a long way to go, but commitments to improve performance and deliver more sustainable buildings of these types is gaining momentum.

What is the GBCA doing?

The GBCA encourages industry to upgrade and improve the operational performance of all types of buildings through Green Star rating tools, particularly Green Star – Performance. We will build the capacity of building owners and service providers so that they understand and can take advantage of the benefits of using rating tools such as Green Star – Performance.

We support government and industry to implement actions from the Mid-tier Commercial Office Building Pathway (a project led by the GBCA in 2015 and funded by the Australian Department of Industry, Innovation and Science). These include: demonstrating the business case and benefits of upgrades to existing buildings through case studies, data and resources; supporting the delivery of projects such as the Building Retrofit Toolkit; building the capacity of owners and service providers and offering opportunities for professional development.

We will also lead and facilitate the establishment of sectoral leadership groups in retail, health, industrial and multi-unit and volume residential sectors.

What can the Australian Government do?

Accelerate improvements to mid-tier buildings and harness their potential through:

1. Supporting further research to better understand the number, location, size and performance of mid-tier buildings.
2. Developing the Building Retrofit Toolkit, which aims to bring together existing resources and tools and create new ones based on confirmed gaps and needs, together with an informed communications plan for building owners and their trusted advisers and service providers.
3. Expanding initiatives such as the Commercial Building Disclosure program to apply to smaller buildings and other building types.
4. Promoting innovative financing mechanisms and incentives to encourage building upgrades and retrofits.

Retrofitting for resilience

StarTrack House, Sydney



StarTrack House. 5 Star Green Star rated in Office Design v3, Office As Built v3 and Office Interiors v1.1

Australia Post's retrofit of StarTrack House delivered a 'trifecta' of Green Star ratings for design, construction and interiors and a string of awards and accolades.

Energy modelling identified an opportunity to boost the building's NABERS Energy rating from 2.5 Stars to 5 Stars through a range of measures, including an overhaul of electrical, mechanical, hydraulic and fire systems, as well as upgrades to glazing, the façade, lobby, interior fitouts and landscaping.

The installation of 1,048 solar panels on the roof – one of the largest commercial arrays at the time – produces 371.5 MWh of electricity each year.

This is enough to reduce the base building's electrical load by 25 per cent at peak times. Australia Post is now saving \$340,000 in energy costs each year, and has reduced carbon emissions by around 318 tonnes a year – the equivalent emissions generated by around 100 average Australian homes for a year.

Communities

Accelerate the advancement of a precinct utilities marketplace



For Australia to meet its emissions reduction targets, we must drive innovation at the precinct scale. However, to do so, we must overcome a number of barriers, including the inability to gain easy connection to the electricity networks, issues with planning permission and red tape, and difficulty in on-selling electricity due to a complex licensing framework. Additionally, no framework or platform currently exists for sharing and replicating innovation and success.

What is the GBCA doing?

The GBCA will play a national leadership role in advancing the dialogue, innovation and delivery of precinct-scale infrastructure in the areas of energy, water and waste. We will convene an industry-based national roundtable for precinct-wide infrastructure including key partners (across various industry sectors, government and industry associations) to co-create a roadmap that enables the Australian energy market to be free of regulatory barriers for precinct-scale solutions. This will be released in 2017.

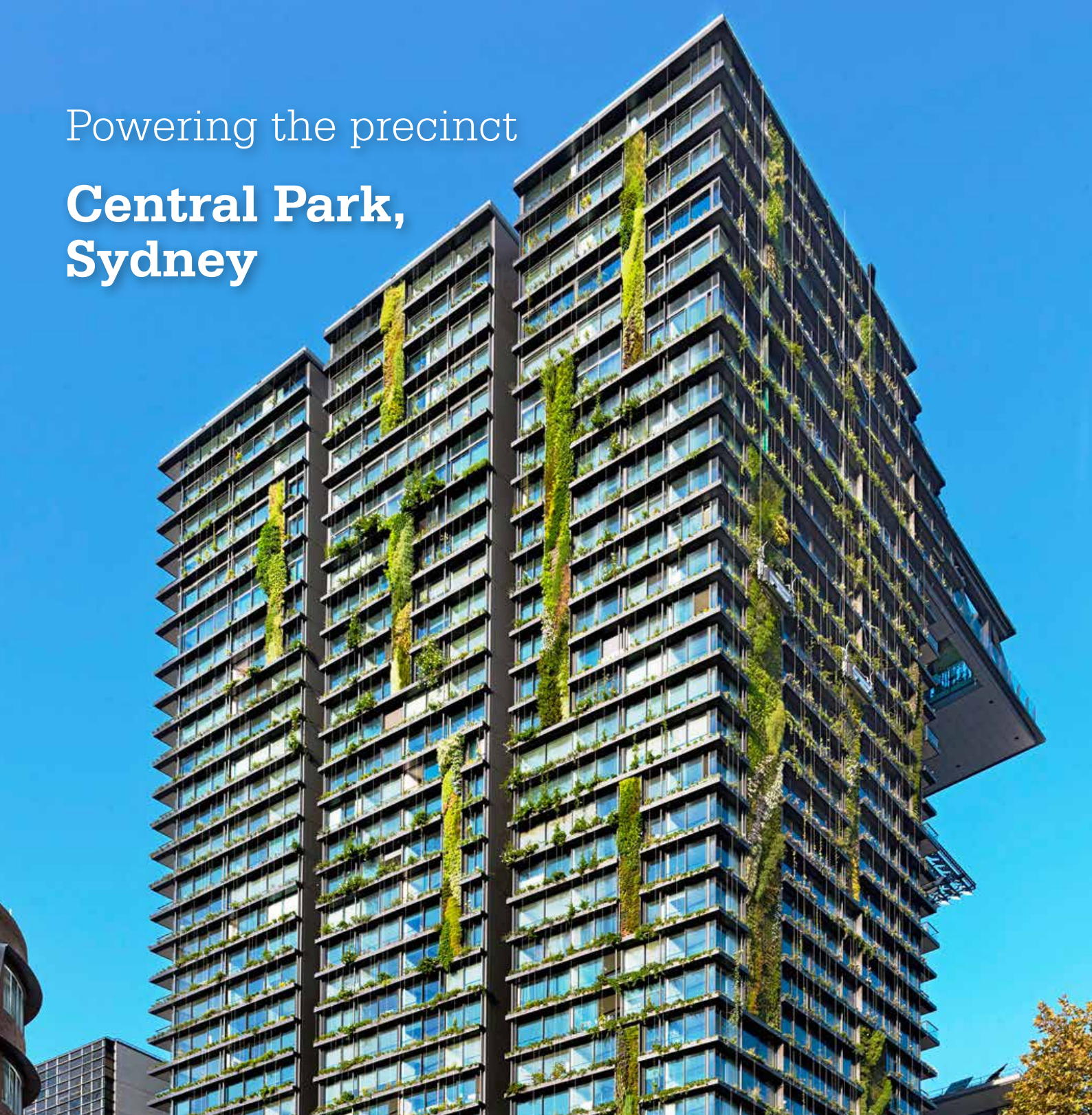
What can the Australian Government do?

Work with the GBCA, industry, government and regulators towards the regulatory barrier-free utilities markets that Australia needs to achieve net zero emissions by 2050. Commit to energy market reform through measures such as:

1. Establishing an independent authority to investigate and recommend solutions to address energy market barriers.
2. Introducing electricity tariff structures that provide an incentive for distributed energy and energy efficiency.
3. Establishing a mechanism for distributed generators to receive a fair value of distributed energy exported to the grid.

Powering the precinct

Central Park, Sydney



No. 1 Central Park. 5 Star Green Star – Multi-Unit Residential Design v1

The Central Park development in Sydney's inner west is set to become one of Australia's largest developments powered by its own tri-generation energy plant, as well as hosting one of the biggest Membrane Bioreactor recycled water facilities in the world.

This facility is realising the benefits of a precinct-scale approach to utilities, with more than 5,000 residents halving their usage of drinking water, while also saving money and valuable resources.

Central Park will also have its own low-carbon natural gas power plant to provide heating and cooling for the community. This system has the potential to reduce greenhouse gas emissions by up to 190,000 tonnes over the 25 years.

While the opportunities to reduce resource use within the precinct are significant, efforts to export energy offsite to other buildings in the area to gain further efficiencies have been blocked by regulatory restrictions.



Battery-powered potential

Alkimos Beach, Perth

Alkimos Beach. 6 Star Green Star – Communities v0.0

Lendlease, West Australia's LandCorp and energy provider Synergy are pioneering a major community-level battery storage program that could change the way that residential communities source energy.

The pilot project at Alkimos Beach in north Perth, the first 6 Star Green Star – Communities project in the country, will include 1.1MWh of lithium ion battery storage that will service more than 100 homes with rooftop solar panels. In addition to reducing peak demand locally, the trial is providing valuable insight into how renewable generation and energy storage can be integrated with traditional network infrastructure.

Households participating in the trial are not the only ones to benefit from energy initiatives at Alkimos Beach. Solar panels and gas-boosted solar hot water systems are mandatory for all homes, while the capital cost to residents of energy-efficient appliances is offset by a range of financial incentive packages of up to \$6,000. Together, these initiatives are expected to reduce home energy bills by up to 50 per cent.



Cities

Catalyse a sustainable cities movement

We are living in the century of the city – and this demands fresh thinking, smart policy and committed political leaders. With our four largest cities expected to double in size over the next 15 years, cities are at the frontline of a host of issues from climate change and congestion, to housing affordability and attracting human capital in the global war for talent.

Significant opportunities exist to facilitate education, training and knowledge sharing among governments, industry and the community, to promote resilience in community and city-building, encourage uptake of smart technology, innovation and precinct energy, water and waste solutions, and to tackle the sustainable design and construction of homes on a large scale.

What is the GBCA doing?

The GBCA is setting the standard for precinct and community-scale development – the building blocks of a sustainable city. With more than 50 projects around Australia using the Green Star – Communities rating tool, we are at the cusp of an emerging opportunity to transform how we build cities. These projects range from small, inner-city infills to large greenfield developments that will one day be home to 50,000 people. These projects are looking at large-scale solutions that are not only environmentally sustainable, but also address economic and social sustainability.

The GBCA is committed to catalysing a movement to create better places and spaces for people. Green Star rating tools encourage green infrastructure to enhance biodiversity, reduce the heat island effect and create healthier cities. The GBCA is part of the Living Cities Alliance focused on driving positive outcomes for green infrastructure and is also a member of ASBEC's Cities Task Group taking an industry-wide approach to cities policy development.

We will release a framework document that sets out our vision for liveable cities.

The GBCA will play a national leadership role to advance the dialogue, innovation and delivery of liveable cities and precinct-scale infrastructure in the areas of energy, water and waste. We will do this by convening an industry-based national roundtable.

What can the Australian Government do?

Commit to enabling local and state governments to meet best practice benchmarks for economic, social and environmental sustainability for community-scale developments that are scalable and replicable by establishing a National Sustainable Communities Fund. The Fund will work to build partnerships between the GBCA, its members, and all tiers of government to deliver best practice sustainable city building practices by integrating the Green Star – Communities rating system into planning, design and delivery processes, allowing them to apply for funding to achieve Green Star – Communities certification for up to 30 key national urban development projects per year for three years.

Commit to referencing benchmarks within Green Star – Communities as part of the Australian Infrastructure Plan's recommendations around for our major cities to deliver higher quality, high density development that supports affordable housing, greater community cohesion and strong connectivity to infrastructure and public amenities. Using these benchmarks in new initiatives such as City Deals to strengthen policy coordination and alignment is also encouraged.

The Clean Energy Finance Corporation is already using Green Star as a benchmark in financing models for energy efficient social housing and this could be replicated and scaled up for the design and construction of large-scale sustainable residential developments within Green Star – Communities projects and beyond.





Places for People

Bowden Village and Tonsley, Adelaide

Renewal SA is a leading exemplar of how governments can create communities that protect the natural environment, are built for resilience and have people at their heart.

A Green Star – Communities rating provides positive independent verification that project teams have considered how the developments will support healthy and active living, social cohesion and affordable housing, how they will create employment opportunities and how the community will be a great place to live and work.

Tonsley was Australia's first mixed-use urban development project to be awarded a 6 Star Green Star – Communities rating. The South Australian Government set a clear brief while developing the master plan for the former manufacturing park. Tonsley was to become a sustainable centre for innovation and productivity, draw workers from around Adelaide, incorporate residential development for key workers, drive high-value industries and contribute to the state's economic success.

Bowden, situated on the western edge of the Adelaide City Parklands, is redefining sustainable living in South Australia. Every building delivered on the 16.3 hectare site must achieve a 5 Star Green Star rating or higher, in addition to Renewal SA's commitment to achieve a Green Star – Communities rating for the whole development. Inspiring excellence in sustainability gives Bowden residents the confidence that their homes are future-proofed, while also reducing utility bills and enjoying a healthier place to live.

Sydney

Level 15,
179 Elizabeth St
Sydney NSW 2000
T 02 8239 6200
F 02 8252 8223

Postal Address

PO Box Q78
QVB NSW 1230

www.gbca.org.au



green building council australia

