green building council australia

Building a sustainable future

Department of Environment, Land, Water & Planning
GPO Box 2392
MELBOURNE VIC 3001

Submitted via email to: planmelbourne@delwp.vic.gov.au

21 December 2015

Dear Sir / Madam,

RE: PLAN MELBOURNE REFRESH DISCUSSION PAPER

Thank you for the opportunity to provide comment on the *Plan Melbourne (Plan)* refresh discussion paper. The Green Building Council Australia (GBCA) commends the Victorian Government on the *Plan* which presents options for ensuring the original plan for the City's growth and development is still on the correct path, providing future citizens an even better quality of life, a higher standard of living and access to greater opportunities.

The GBCA supports initiatives that aim to improve energy efficiency and decrease greenhouse gas emissions associated with the built environment. A reduction in energy use can readily be achieved through the design and construction or refurbishment of a building. This submission focuses on key point 6 and 7 in the *Plan – A More Resilient and Environmentally Sustainable Melbourne* and *New Planning Tools* respectively - and how the Green Star rating tools can assist the *Plan* achieving its desired outcomes for the people of Melbourne.

About the GBCA

As you may be aware, GBCA is the nation's authority on sustainable buildings, communities and cities. Our mission is to accelerate the transformation of Australia's built environment into one that is healthy, liveable, productive, resilient and sustainable. We work together with industry and government to encourage policies and programs that support our mission. We educate thousands of people each year on how to design and deliver sustainable outcomes for our buildings, communities and cities. We operate Australia's only national voluntary and holistic rating system for sustainable buildings and communities – Green Star.

The GBCA is a founding member of the World Green Building Council (WorldGBC) and there are now over 100 Green Building Councils across the globe. The GBCA has over 630 member organisations including 13 Victorian local governments and nine state departments and agencies. The GBCA has now certified more than 1000 Green Star projects, which equates to more than 14 million square meters of building and precinct space. Of these 1000 projects, more than 8.1 million square meters is office space – the equivalent to all existing premium A Grade office space in the Sydney, Melbourne, Canberra, Brisbane, Perth and Adelaide CBDs combined. Victoria continues to show great leadership with 293 Green Star-certified projects, including 62 projects in 2015.

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The Green Star rating system

The Green Star rating system is designed to take an holistic approach within each class and building sector, addressing nine categories in total; Management, Indoor Environment Quality (IEQ), Energy, Water, Materials, Land Use and Ecology, Emissions, Transport and Innovation and defining 'best practice' in each.

Government has a responsibility to provide visionary leadership, in particular by setting contemporary benchmarks and rigorous standards. Third party certification, such as that offered by Green Star, ensures that government departments and agencies can meet community expectations and demonstrate long-term fiscal responsibility and accountability for the buildings and precincts they own, occupy and develop. The GBCA encourages the Victorian Government to continue to work with the GBCA and to achieve Green Star certification for all suitable projects.

Green Star – Design & As Built

Green Star – Design & As Built has been developed to rate the design and construction of any building, including offices, public buildings, retail centres, aquatic centres and multi unit residential buildings. Green Star – Design & As Built certification identifies projects that have demonstrated the achievement of a set of industry-agreed best practice sustainability benchmarks.

The Green Star – Design & As Built 'Energy' category aims to reward projects that are designed and constructed to reduce their overall operational energy consumption below that of a comparable building standard-practice building. Such reductions are directly related to reduced greenhouse gas emissions, lower overall energy demand as well a reduction in operating costs for building owners and occupants. Through the 'Energy' category, Green Star – Design & As Built aims to facilitate reductions in greenhouse gas emissions by facilitating efficient energy usage and encouraging the utilisation of energy generated by low-emission sources.

The Regional Rail Link Authority has recently achieved 4 Star Green Star certification for the new Wyndham Vale and Tarneit Stations, as well as Green Star certification for upgrades to Footscray, West Footscray and Sunshine railway stations. I have attached a case study of these projects for further information.

Green Star – Interiors

Green Star – Interiors is a rating tool developed to rate the design and construction of any building fitout works. Green Star – Interiors aims to assist clients and project teams to achieve and rate their sustainability goals for their project, encourage a new approach to designing and constructing fitouts by rewarding sustainability best practice and excellence, and provide consistent and clear advice in an easy to use manner.

The Green Star – Interiors 'Energy' category aims to reward projects that are designed and constructed to reduce their overall operational energy consumption below that of a comparable standard-practice fitout. Such reductions are directly related to reduced greenhouse gas emissions, lower overall energy demand as well as reductions in operating costs for fitout owners and occupants. Through the 'Energy' category, Green Star – Interiors aims to facilitate reduction in greenhouse gas emissions by facilitating efficient energy usage and encouraging the utilisation of energy generated by low-emission sources.

Green Star – Performance

Green Star – Performance assesses the operational performance of existing buildings across the nine Green Star impact categories. Green Star – Performance enables building owners and managers to identify pathways to improve the environmental and financial sustainability of their assets over time.

The Green Star – Performance 'Energy' category aims to reward building owners implementing strategies and taking actions to measure and reduce a buildings operational energy use, below that of a comparable standard-practice building. Such reductions are directly related to reduced greenhouse gas emissions, lower overall energy demand as well as reductions in operating costs for building owners and occupants.

It is worth noting that for eligible buildings, NABERS Energy ratings are used to satisfy performance data requirements within the Green Star – Performance Energy category. Where buildings are not able to obtain NABERS Energy ratings, Green Star – Performance sets out a number of alternative pathways for project teams to provide energy performance data.

The NAB office at Docklands was the first project to achieve a Green Star – Performance rating and achieved 4 Star Green Star certification. I have attached a case study of this project for further information.

Green Star – Communities

Green Star – Communities evaluates the sustainability attributes of the planning, design, and construction of large scale development projects, at a precinct, neighbourhood, and/or community scale. At the time of its development, VicUrban (now Places Victoria) was a key supporter and sponsor of the Green Star – Communities rating tool, along with all other government land organisations – as well as sponsors from local government, the Australian Government and industry. Green Star – Communities assists governments, development project teams, contractors and other interested parties aiming to deliver large scale sustainable developments around Australia to:

- Provide diverse, affordable, inclusive, well connected and healthy places to live work and play
- Protect, maintain and restore the natural environment by reducing the ecological footprint of developments
- Receive recognition for demonstrated leadership and commitment to sustainability
- Achieve real value for money through demonstrated whole-of-life cost savings
- Encourage opportunities for business diversity, efficiency, innovation and economic development.

There are seven Green Star – Communities certified across Australia, with the first in Victoria being *Aurora* by Lendlease, which achieved a 6 Star Green Star – Communities certification. I have attached a media release on this project for further information. City of Melbourne has recently registered the Queen Victoria Markets Precinct Renewal for a Green Star – Communities rating and is also targeting a 6 Star Green Star outcome. Below is an overview of the Green Star – Communities categories.

Governance

The purpose of the Governance category is to encourage and recognise developers and development that demonstrate leadership within the sector, by the establishment and maintenance of strong governance practices. The category promotes engagement, transparency, and community and industry capacity building. It also seeks to ensure that community developments are resilient to a changing climate.

Liveability

The Liveability category encourages and recognises developments that deliver safe, accessible and culturally rich communities. The category encourages the development of healthy and active lifestyles, and rewards communities that have a high level of amenity, activity, and inclusiveness.

Economic Prosperity
Economic Prosperity category aims to encourage and recognise developments that promote prosperity and productivity. The category encourages affordable living and housing, investment in education and skills development, and the facilitation of community capacity building. The Economic Prosperity category also promotes greater productivity via emerging opportunities in the digital economy.

Environment
The Environmental category aims to reduce the impact of urban development on sensitive ecosystems. It encourages resource management and efficiency by promoting infrastructure, transport, and buildings, with reduced ecological footprints. The Environment category seeks to reduce the impacts of developments on land, water, and the atmosphere.

Innovation
The Innovation category is included within Green Star – Communities as a way of encouraging, recognising, and rewarding the spread of innovative practices, processes and strategies that promote sustainable communities and cities.

Emissions in the built environment
Plan Melbourne identifies the development of a tangible work program aimed at improving energy affordability, creating jobs and delivering a sustainable economy in Victoria. The *Plan* also includes a number of strategic environment principles including optimising water and energy efficiency and minimising waste. The GBCA believes that the Green Star rating tools can support this and several of the other strategic environment principles and identified outcomes within the *Plan*, and looks forward to the opportunity to work with all relevant stakeholders.

In 2013, the GBCA conducted analysis of data from Green Star-certified buildings in order to quantify the overall impact of the rating system on greenhouse gas emissions, operational energy usage, operational water consumption and construction and demolition waste. The study compared data from 428 Green Star-certified projects with buildings that just meet average or minimum practice standards. Please find enclosed for further information a copy of the *Value of Green Star: A Decade of Environmental Benefits, Research Key Findings (2013) report.* Key findings of the report include:

- On average, Green Star-certified buildings produce 62 per cent fewer greenhouse gas emissions than average Australian buildings
- On average, Green Star-certified buildings use 66 per cent less electricity than average Australian buildings
- On average, Green Star-certified buildings use 51 per cent less potable water than if they had been built to minimum industry requirements

The higher the Green Star-certified rating of a building the greater the environmental savings across all key areas – greenhouse gas emissions, energy use, water consumption and construction and demolition waste.

In early 2015, the Australian Government Department of Industry and Science and the GBCA brought together around 50 industry and government stakeholders, for a workshop to discuss how industry and all levels of government can work together towards improving energy efficiency and productivity in the mid-tier commercial office buildings sector. A pathway document and report which provides an overview of the current situation in this sector and the opportunities for actions and improvements was released in November. It is intended the report and pathway document will be used by industry and government to guide and inform the development of future policies and programs, including the National Energy Productivity Plan. The GBCA looks forward to continuing to work with the Victorian Government to improve the mid-tier commercial office buildings sector in Melbourne.

The inaugural Building Day held at COP 21 in Paris in December 2015 recognised the role buildings play in helping nations and cities meet their ambitious targets. The COP21 agreement ushers in renewed commitment to a low carbon pathway and it is critical that the role of buildings in achieving deep emissions cuts is recognised. Buildings present some of the cheapest and fastest opportunities to reduce our emissions and we can do all this with proven and readily-available technologies. In 2016 the GBCA will introduce a new label to recognise buildings that achieve 'net zero' impact in energy, carbon and water. This label will also recognise buildings that go beyond net zero to make positive contributions to the environment, such as generating more renewable energy than is consumed. The GBCA has already commenced discussions with local governments on this new initiative and would like to discuss further with the Victorian Government in 2016.

I encourage the Victorian Government to look upon the GBCA as the primary sustainable building and communities resource and would welcome the opportunity to discuss this submission further. Please do not hesitate to contact me for further information, or to arrange a meeting.

Yours sincerely,

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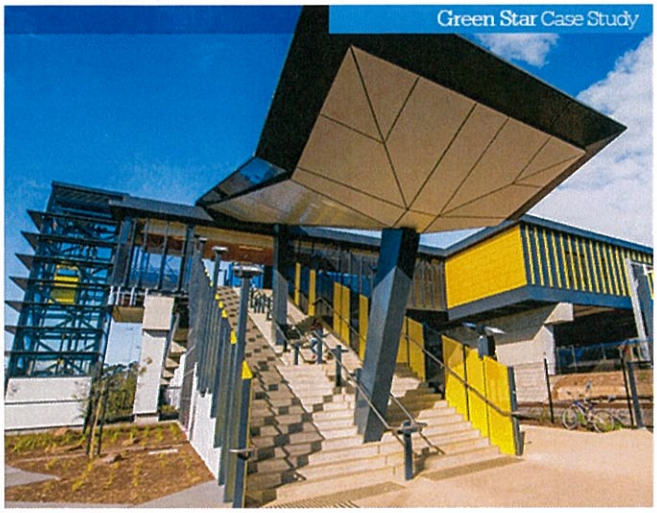
Regional Rail Link

Green Star / Green Star Projects / Green Building Case Studies MON 23 MAR 2015



> "The Regional Rail Link project highlights that sustainability can be successfully embedded in large scale infrastructure projects from inception through to delivery"

- Allen Garner, CEO, Regional Rail Link Authority

About the project

With no environmental rating tool available to help guide the delivery of sustainable train stations, the Regional Rail Link Authority in Victoria committed to working with the Green Building Council of Australia (GBCA) to set the sustainability benchmarks.

The upgrades to Footscray, West Footscray and Sunshine railway stations and the new railway stations in Wyndham Vale and Tarneit have all received 4 Star Green Star – Custom Design certification from the GBCA – making them the first Green Star-rated railway stations in Australia.

By gaining Green Star ratings for all five stations, the people of Victoria can be confident that these public assets are sustainable places for decades to come – financially, socially and environmentally.

> "These stations are an example of what is possible in sustainable transport design"

- Allen Garner, CEO, Regional Rail Link Authority

Energy- and water-efficient

Extensive natural light reduces the train stations' reliance on electric lighting, while more than 100 solar panels help to provide power and heat water in each station.

Lighting improves safety - so providing energy-efficient LEDs in car parks, forecourts, uncovered patron areas, and many internal areas, means more lighting can be installed for the same cost. Sensors automatically switch off or reduce the use of lighting and air-conditioning systems when they are not required.

Each train station uses energy and water meters to monitor consumption. A rainwater harvesting system collects rainwater run-off from the roof which is used to flush station

toilets and wash platforms, and water-efficient taps, urinals and toilets further reduce the reliance on potable water, while . Low water-use and native plant species have been planted in the garden beds around the station.

The results are impressive. For example, West Footscray railway station produces 40% less greenhouse gas emissions than a standard station design, uses 60% less water and, in the middle of summer, its maximum electrical demand is 30% lower.

> "These stations are representative of the huge environmental benefits of the Regional Rail Link project, which will save 14,000 tonnes of greenhouse gas emissions each year."

- Allen Garner, CEO, Regional Rail Link Authority

Comfortable for the community

At the forefront of sustainable design – from the materials used in their construction to energy- and water-efficient features – the train stations are also good for people. The designs consider lighting and thermal comfort, use materials that are low in harmful volatile organic compounds (VOCs), and feature air conditioning and ventilation systems that reduce the entry of outdoor pollutants into indoor areas. The result? Those waiting to catch trains or working in the stations are in a more comfortable environment – one with fewer pollutants, better ventilation and more comfortable conditions

> "Sustainability is integrated into every aspect of the stations' design, from the materials used in their construction, energy- and water-efficient features, and the layout of the precinct as a whole."

- Allen Garner, CEO, Regional Rail Link Authority

Safe and walkable neighbourhoods

The train stations promote healthy and active living. Employment, community facilities and residences are within a short walking distance of each station, and cyclist facilities and walking routes also prioritise physical activity.

The stations also achieved two Green Star points under the 'Safe Places' credit. The project team undertook a crime risk assessment, selected shrubs and trees that minimise sight impediments and chose perforated aluminium screens for balustrades and on bridges to increase visibility for pedestrians. The risk assessment also advised alignment and widening of ramps and thoroughfares to minimise pinch points.

> "Not only are these stations environmentally sustainable, they are also safe, accessible and user-friendly."

- Allen Garner, CEO, Regional Rail Link Authority

Project Team

Footscray, West Footscray and Sunshine Stations:

- Architect: Hassell Studios
- Building Services and Structural/Civil Engineer: SKM
- Building Services and Structural/Civil Engineer & ESD Consultant: SKM
- Main Contractor: TBBJV - Thiess Balfour Beatty JV
- Quantity Surveyor: TBBJV

Wyndham Vale and Tarneit Stations:

- Architect: DesignInc Ltd
- Building Services and Structural/Civil Engineer: Aurecon Australasia Pty Ltd
- Building Services and Structural/Civil Engineer & ESD Consultant: Hyder Consulting Pty Ltd
- Main Contractor: Baulderstone and Leighton Building & Construction Quantity Surveyor: Baulderstone

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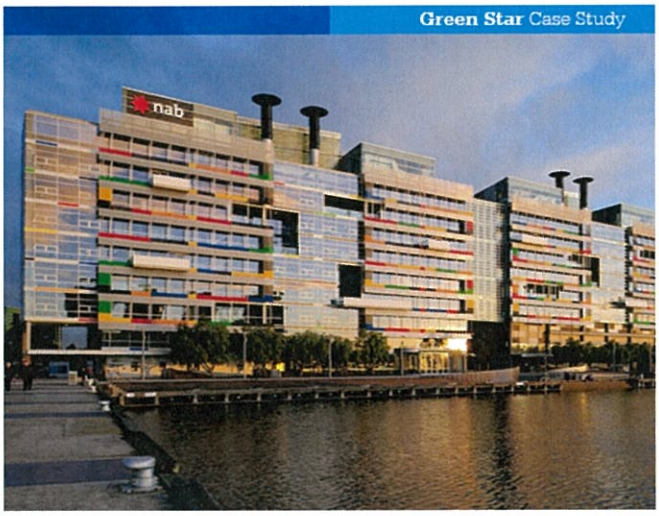
NAB 800-808 Bourke Street Docklands

Green Star / Green Star Projects / Green Building Case Studies TUE 16 JUN 2015



> **This Green Star – Performance rating demonstrates what can be achieved when two organisations which recognise the value of sustainability come together to find smarter ways of doing things.**

- Nicola Murphy, Head of Environmental Sustainability, NAB

Collaboration was the cornerstone of The GPT Group and National Australia Bank's commitment to achieve Australia's first Green Star – Performance rating. Working in partnership, the building owner and tenant now have independent, third-party proof that **800-808 Bourke Street** in Melbourne is efficient, productive and sustainable.

Partnership plus

Achieving the first Green Star – Performance rating was the result of exceptional collaboration between a building owner and a tenant.

In 2012, NAB renewed its lease for 800-808 Bourke Street until 2027. The new lease agreement includes a number of best practice lease clauses that have been effective in improving performance throughout the building.

One requirement of the new lease was to establish a Building Environmental Management Plan and Committee. This Committee included members from NAB and the GPT management teams and was instrumental in the building achieving the following lease requirements:

- A Base Building NABERS Energy rating of 5 Stars, which was achieved two years ahead of the target date (December 2015).
- An improved Base Building NABERS Water rating from 2.5 to 3 Stars, achieved in first year of the new lease.

Through the new lease, GPT and NAB also collaborated on what is believed to be the largest LED retrofit in an Australian commercial office tenancy. A massive 3,896 lights were replaced, resulting in an energy saving of 62% when compared to the original lights. The new LED lights are also predicted to have a lifetime of around five times longer than the original lights, thereby further reducing waste and maintenance costs.

Positive proof of performance

Designed just before Green Star was launched, with construction completed when the rating system was in its infancy, 800-808 Bourke Street was unable to achieve a Green Star rating for design or construction.

A 4 Star Green Star – Performance rating provides The GPT Group with independent verification that the building 'stacks up' against newer offices built to Green Star benchmarks. A Green Star – Performance rating will ensure 800-808 Bourke Street holds its value in a highly competitive commercial office market.

GPT's Head of Asset Management, Matthew Faddy said: "We are pleased to now have a sustainability measurement in the market for the performance of our assets. Not only does it allow us to benchmark our assets with those of our peers but it also assists us to drive consistent sustainable outcomes across the business."

Nicola Murphy, NAB's Head of Environmental Sustainability, says: "NAB has transformed our commercial portfolio over recent years through a commitment to seeking to achieve Green Star certification across all major refurbishments and new builds, and the implementation of activity-based environments. Given the building was designed before the Green Star design rating tools were developed, we're thrilled to have the opportunity to partner with GPT to assess the operational performance of the building through the Green Star – Performance Pilot."

Impressive energy efficiency

800-808 Bourke Street was designed with green principles in mind. The building, with its brightly patterned exterior and extensive atria is flooded with natural light and has high indoor air quality.

Achieving the full 25 Green Star points for greenhouse gas emissions means 800-808 Bourke Street is a carbon neutral building in operation. This was realised through a combination of tenancy and base building energy efficiency initiatives, with NAB offsetting remaining emissions with the Australian Government's National Carbon Offset Standard.

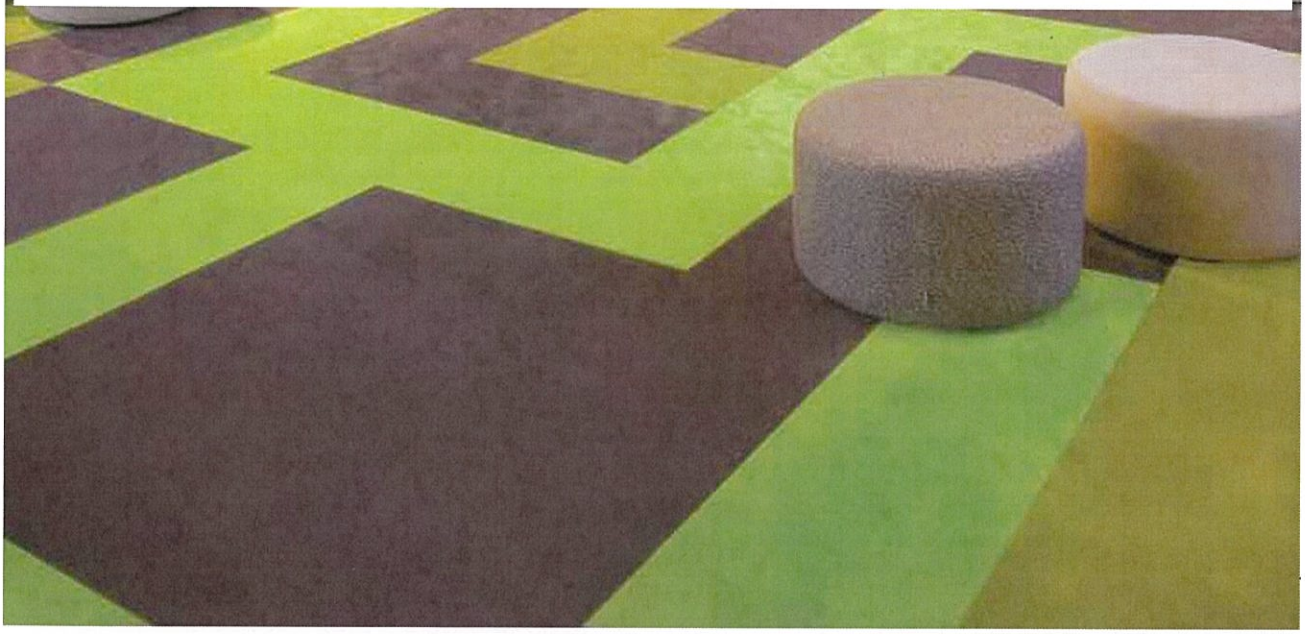
In partnership with NAB, The GPT Group has embarked on a building efficiency program that has resulted in a 29% reduction in energy consumption since 2012.

Tenant engagement and commitment was essential to achieve this spectacular outcome, with five Green Star points in the Energy category awarded for NAB's commitment to a NABERS Energy rating. NAB achieved a tenancy NABERS Energy rating of 5.5 Stars in March 2015.

The project team

Building Owner: The GPT Group

Tenant: National Australia Bank



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Leading the way with Australia's most sustainable communities

News / GBCA media releases THU 19 NOV 2015

Lendlease's Aurora community in Melbourne's north has been awarded a 6 Green Star – Communities rating by the Green Building Council of Australia (GBCA), making it the first 6 Green Star project of its kind in Victoria.

The announcement comes just eight months after Lendlease's Alkimos Beach project in Western Australia was awarded the same 6 Star Green Star rating, making it the first in Australia at the time.

Lendlease is set to apply its 50-years of master-planning experience to the 316ha expansion of open spaces and new homes at Aurora in Melbourne. On completion, it will be home to 10,000 residents and 3,100 new dwellings.

Managing Director of Lendlease's Communities business, Matthew Mears, said that the Aurora project was assessed against a holistic set of distinct social, environmental and economic benchmarks including governance, design, liveability, economic prosperity, environment and innovation.

"We acknowledge the previous work done by Places Victoria and are committed to demonstrating new benchmarks in social, economic and environmental outcomes in master-planned communities.

"Lendlease's vision of creating the best places is underpinned by a commitment to, and strong track record in delivering cohesive, socially connected, environmentally sustainable and innovative communities.

"Aurora by Lendlease will allow us to continue to deliver outstanding sustainability and innovation for residents, in a landscape that draws inspiration from the surrounding natural environment," said Mr Mears.

GBCA's Chief Executive Officer, Romilly Madew said: "Lendlease understands that building a sustainable community must go beyond physical environments.

"It means creating employment opportunities and economic prosperity, supporting diverse, affordable and liveable places that enhance people's wellbeing, and fostering the community's connections with nature and culture.

"In achieving a 6 Star Green Star – Communities rating, which represents world leadership in sustainable precincts, Lendlease and the future residents of Aurora have positive proof that their community will be a place that delivers outstanding environmental, social and economic outcomes today, tomorrow and well into the future."

Green Star is an internationally-recognised rating system that delivers independent verification of sustainable outcomes throughout the life cycle of projects.

Green Star – Communities is a rating tool that evaluates the sustainability attributes of the planning, design, and construction of large scale development projects, at a precinct, neighbourhood, or community scale. The Green Star – Communities rating tool is designed to assist governments, development project teams and contractors in their aim to deliver large scale sustainable developments around Australia.

Contact:
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The Value of Green Star:

A Decade of Environmental Benefits
Research Key Findings

May 2013

greenstar Developed by the Green Building Council of Australia

Executive Summary

Since the launch of the Green Star rating system in 2003, hundreds of buildings around the country have been independently certified for their sustainable design and construction using Green Star rating tools.

While much evidence of the positive effect of Green Star at the individual building level has been collected over the past ten years, until now, no comprehensive quantitative research has ever been conducted into the overall impact of Green Star on Australia's built environment.

In late 2012, the Green Building Council of Australia (GBCA) conducted a study of data from Green Star-certified buildings in order to quantify the overall impact of the rating system on greenhouse gas emissions, operational energy usage, operational water consumption and construction and demolition waste.

The study compared data from 428 certified project submissions with standard or minimum practice benchmarks. The methodology and findings have been peer-reviewed for accuracy by independent consulting firm Net Balance.

A summary of the key findings of the study are provided overleaf. The research is ongoing, with aggregated results to be published annually.

For more information on research methodology and to download the full Green Star: A Decade of Environmental Benefits research report, please visit: www.gbca.org.au and go to the Resources section.

Brookfield Place - 5 Star Green Star - Office Design v2

Key Findings

- On average, Green Star-certified buildings produce **62% fewer greenhouse gas emissions** than average Australian buildings.
- On average, Green Star-certified buildings produce **45% fewer greenhouse gas emissions** than if they had been built to meet minimum industry requirements.
- On average, Green Star-certified buildings use **66% less electricity** than average Australian buildings.
- On average, Green Star-certified buildings use **50% less electricity** than if they had been built to meet minimum industry requirements.
- On average, Green Star-certified buildings use **51% less potable water** than if they had been built to meet minimum industry requirements.
- The cumulative savings in greenhouse gas emissions from Green Star-certified buildings equates to **172,000 cars removed from our roads**, when compared to average Australian buildings – that is 625,000 tonnes CO_2 per annum.
- Green Star-certified buildings save enough potable water to fill **1,320 Olympic swimming pools every year** – that is, over 3,300,000 kL per annum.
- On average, Green Star As Built-certified buildings **recycled 96% of their construction and demolition waste.**
- Since Green Star's introduction to the market in 2003, more than **5.5 million square metres of building area have been Green Star-certified.**
- Green Star-certified buildings **save the equivalent of 76,000 average households' electricity use annually.**
- **37,600 truckloads of construction and demolition waste has been diverted from landfill** due to good waste management practices when constructing Green Star-certified buildings.
- **The higher the Green Star-certified rating of a building (4, 5 or 6 star) the greater the environmental savings** across all key areas – greenhouse gas emissions, energy use, water consumption, and construction and demolition waste.