

Mr Ben Ponton
Director-General
Environment, Planning and Sustainable Development Directorate
GPO Box 158
CANBERRA ACT 2601

31 May 2018,

Dear Mr Ponton,

RE: GBCA SUBMISSION – DEMONSTRATION HOUSING EXPRESSION OF INTEREST

The Green Building Council of Australia (GBCA) appreciates the opportunity to engage with the ACT Government on how best to deliver housing demonstration projects which reflect best practice environmental performance and support the transition towards a sustainable Canberra.

As Australia's authority on the sustainable built environment, the GBCA takes an active interest in initiatives to promote the liveability, productivity and long-term sustainability of our cities and communities. We believe there is an immense opportunity through the Housing Choices review and the demonstration projects to establish industry's ability to deliver more diverse and affordable housing that meets the needs of a changing population. In ensuring that these projects are designed and constructed to the highest level of sustainable performance, we also believe that it can contribute to the ACT Government's nation-leading target to achieve zero net greenhouse gas emissions by 2045.

Australia's property industry has the expertise, knowledge and skills to deliver best practice sustainable buildings, in many cases on a cost-neutral basis. Demonstration housing projects are an opportunity for governments to collaborate with industry and translate the principles of good design into practice. They also encourage social sustainability and if constructed correctly, can positively address growth and demographic change whilst showcasing the best of Australian innovation. The Expression of Interest (EOI) document outlines seven best practice environmental performance principles referenced in the Legislative Assembly Resolution. Our submission responds to each of these seven principles to illustrate how the GBCA's Green Star rating tool can be used to achieve these outcomes, and by providing a framework for implementation, allow the ACT Government's objectives to be delivered and benchmarked.

The GBCA is increasingly working collaboratively across government and industry to explore new models for residential certification that are tailored to the unique circumstances of individual jurisdictions. As governments look to the residential sector to drive energy efficiency and support ambitious emissions reduction targets, we are keen to explore opportunities to help certify innovative

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models and outcomes. We would be pleased to take forward the issues raised in this submission in a broader discussion that leverages our existing work in development across the states and territories.

The GBCA looks forward to this continued dialogue as you progress this consultation in the weeks ahead. If you require further information about this submission, or take forward this invitation, please contact Sandra Qian, Senior Advisor- Policy and Government Relations at sandra.qian@gbca.org.au.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'J. Cartledge', written in a cursive style.

Jonathan Cartledge
Head of Public Affairs



Established in 2002, the GBCA is Australia's leading authority on sustainable buildings and communities. We are an industry association committed to developing a sustainable property industry in Australia. Our vision is to create healthy, resilient and positive places for people and the natural environment.

To achieve this, we;

- Rate the sustainability of buildings and communities through Australia's only national, voluntary, holistic rating system – Green Star;
- Educate industry and government practitioners and decision makers and promote green building programs, technologies, design practices and operations; and,
- Advocate for the sustainable transformation of the built environment.

The GBCA represents more than 650 individual companies with a collective annual turnover of more than \$40 billion. Our membership reflects the diversity of Australian business, with over 500 small to medium enterprises through to 75 companies with annual turnover of more than \$100 million and 24 companies now listed in the ASX 200, with a combined market capitalisation of more than \$620 billion. Members include major developers, professional services firms, government departments and local councils, banks, superannuation funds, product manufacturers and suppliers.



Launched by the GBCA in 2003, as Australia's only national, voluntary and holistic rating system for sustainable buildings and communities, Green Star is an internationally recognised built environment rating system. The Green Star rating system has been developed by Australian industry and locally adapted to suit the Australian market. From individual buildings to neighbourhoods, precincts and entire communities, Green Star is transforming the way our built environment is designed, constructed and operated.

There are four Green Star rating tools available:

- Green Star – Design & As Built
- Green Star – Interiors
- Green Star – Performance
- Green Star – Communities

The rating tools cover a broad range of sustainable topics and provide an overall rating, with 4-star meaning 'best practice', 5-star meaning 'Australian excellence' and 6-star meaning 'international excellence'. Green Star has been applied to almost every type of building and a wide range of

communities from business precincts to communities designed to become home to over 50,000 people.

Green Star certification is a formal process during which a building, fitout, or precinct is awarded a rating by an independent, third party assessment panel of sustainable development experts through a documentation-based assessment. A Green Star certified rating provides independent verification that a building or community project is sustainable.

There are over 1722 Green Star-rated projects across Australia:

- 37% of Australia's CBD office space is Green Star certified
- 6% of the workforce head to a green office each day
- 42,000 people live in Green Star-rated apartments
- 425,000 people are moving into Green Star communities
- 1.3 million people visit a Green Star-rated shopping centre each day

Green Star certified buildings, on average: produce 62% fewer greenhouse gas emissions and use 66% less electricity than the average building; 51% less potable water than minimum industry requirements; and recycle 96% of their construction and demolition waste.

How Green Star supports the design brief for Demonstration Housing by delivering:

Excellence in Design Quality:

According to the EOI project objectives, Demonstration Housing Projects should be of architectural quality and fit sensitively into the Canberran streetscape, well known for its gardens and suburban feel. The Green Star rating tools enable the delivery of this outcome as they set a benchmark for best practice design and ensure the accountability and transparency of projects through extensive external assessment and audit. Green Star – Design & As Built assesses the sustainability outcomes from the design and construction of new buildings or major refurbishments, across nine holistic impact categories:

- **Management:** Aims to encourage and reward the adoption of practices and processes that support best practice sustainable outcomes through the different phases of a project's design, construction and ongoing operation.
- **Indoor environment quality (IEQ):** Aims to encourage and reward initiatives that enhance the comfort and well-being of occupants. The credits within this category address issues such as air quality, thermal comfort and acoustic comfort.
- **Energy:** Aims to reward projects that are designed and constructed to reduce overall greenhouse emissions from operations by addressing energy demand reduction, use efficiency and generation from alternative sources.
- **Transport:** Aims to reward projects that facilitate a reduction on the dependency of private car use as an important means of reducing overall greenhouse gas emissions, as well as to encourage the provision of alternative forms of transportation.

- **Water:** Aims to encourage and reward initiatives that reduce the consumption of potable water through measures such as the incorporation of water efficient fixtures and building systems and water re-use.
- **Materials:** Aims to address the consumption of resources for the project, by encouraging the selection of low-impact materials.
- **Land use and ecology:** Aims to reduce the negative impacts on sites' ecological value as a result of urban development and reward projects that minimise harm and enhance the quality of local ecology.
- **Emissions:** Aims to assess the environmental impacts of 'point source' pollution generated by projects and reduce their effects on the atmosphere, watercourse and native animals.
- **Innovation:** Aims to recognise the implementation of innovative practices, processes and strategies that promote sustainability in the built environment.

The rating tool provides a platform to assess the direction of a project by framing a path for implementation. Each of the impact categories are further broken down into 30 Credits which has the potential to improve a project's sustainability performance and defines a clear outcome that the project must meet. To reach a 6 Star Green Star rating, Demonstration Housing Projects would need to reach a minimum of 75 out of 100 points. The rating is easily communicated and describes to industry the sustainability attributes in terms that are widely understood and accepted.

By adopting and mandating the principles of Green Star in Demonstration Housing, policy makers can ensure their vision is met with good governance, transparency and accountability. The rating is easily communicated and describes to industry the sustainability attributes in terms that are widely understood and accepted.

We are proposing that the ACT Government reference Green Star Design & As Built certification as a pathway for industry to achieve best practice design. This would ensure that the deliverables of the chosen developer, architect or project team meet the targets for housing affordability, environmental outcomes, community health, social values and economic prosperity highlighted in the Housing Choices discussion paper.

Carbon Neutral Buildings:

According to the EOI project objectives, Demonstration Housing should deliver carbon neutral buildings. The GBCA is proud to have collaborated with the Australian Government Department of Environment and Energy and NABERS to develop the Australian Government's National Carbon Offset Standard for Buildings. Our rating tool, [Green Star- Performance V1.2](#) is one of two ways that buildings can certify that they are achieving carbon neutrality under this standard. Buildings will be assessed after one year across nine impact categories, to analyse the operational performance of design features and provide assurance that the brief has been met. An integral part of ensuring carbon neutral buildings is having robust systems in place that can measure, reduce, offset, report and audit a project from end to end. A benchmark such as Green Star- Performance will be fundamental in achieving the ACT Governments climate strategy towards net zero emissions and provides a direct and measurable pathway towards carbon neutral homes.

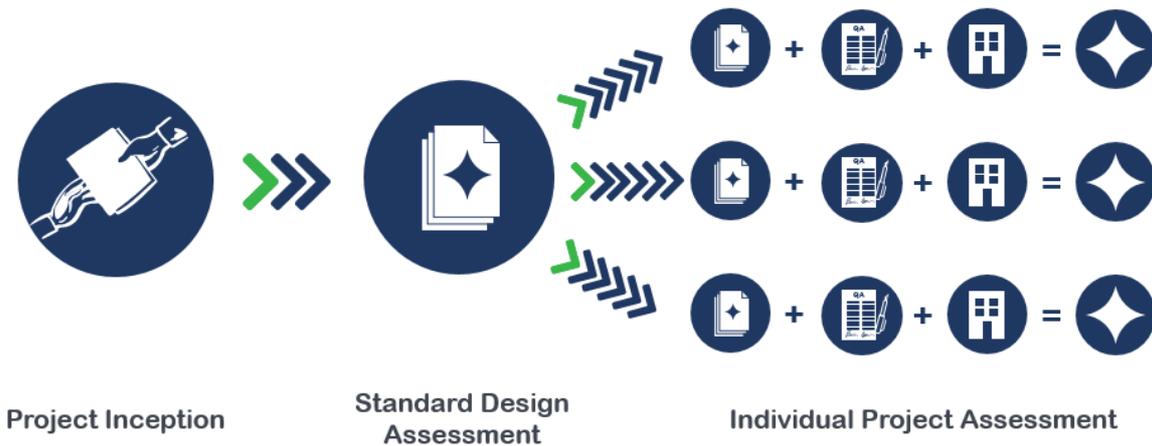
In April 2018, the GBCA released the Executive Summary for [A Carbon Positive Roadmap for Buildings](#), proposing a pathway for industry and government to demonstrate global leadership in the delivery of buildings to eventually be free of carbon emissions. As outlined in the Roadmap, in the next release of Green Star and subsequent tool revisions, the GBCA is proposing to introduce requirements for the commitment to, and achievement of emission free buildings. These requirements will include high levels of energy efficiency, use of 100 per cent renewable energy from both on-site and off-site sources; and the avoidance of all fossil fuels. This vision requires policy leadership, and government support in achieving this goal will ensure competitiveness and attractiveness for investment and future proof against escalating energy and water prices.

Medium Density Infill:

Canberra is renowned as a master planned, garden city however the EOI document outlines it has a 'missing middle', i.e. medium density housing. One of the project objectives is to increase housing stock and diversity of household structures whilst working within the confines of limited land supply. Accommodating for an aging population is also integral. With Canberra's predicted growth and demographic change, smart growth is essential to combat urban sprawl and cater to the diverse needs of its residents. Medium density infill, referring to multi-unit housing such as townhouses, duplexes and multiplexes is needed in abundance however to achieve this without compromising environmental standards, requires robust design and mechanisms for accountability. The [Volume Certification](#) approach to Green Star enables a group of projects that share similar features to be certified in bulk and some of the benefits of standardisation include:

- Lower submission costs per project;
- Lower registration fees per project;
- Reduced documentation;
- Reduced turnaround time for each submission;
- Achieve formal certification earlier;
- Ability to achieve an individual project certification for a specific site earlier in the project lifecycle;
- Increased technical support and free technical queries throughout the Standard Credit Assessment stage;
- Increased certainty that common design, processes and materials comply with best practice benchmarks;
- Increased marketing opportunities and ability to demonstrate corporate leadership in sustainability.

Green Star- Design & As Built provides a platform to inform and benchmark best practice design and Volume Certification ensures streamlined certification and the delivery of homes that meet environmental goals and affordability constraints.



(Green Star Volume Certification Process Guide, 2015)

Innovative Planning and Engagement Approaches:

Community engagement is essential for the success of a project, as highlighted in the EOI policy objectives, and our rating tools are developed with the consumer in mind. The GBCA encourage project proponents to utilise best practice engagement principles throughout their design process and Design & As Built uses innovation points to incentivise the uptake of community benefiting initiatives such as social return on investment or social enterprise for affordable housing.

Creating a plan that satisfies every member of society is virtually impossible however by incorporating good design that eases economic burden and creates a healthier, built and natural environment, government can ensure they are meeting the needs of their citizens. We see value in the Collaboration Hub and agree that public consultation should be meaningful, effective, transparent and ongoing. Following the results of this consultation period, the GBCA requests the opportunity to offer our industry expertise on how to manifest such visions and ensure deliverables meet Australian best practice standards.

Innovative Housing Products and Typologies:

The EOI document raises the opportunity to propose innovative typologies and present housing that is not currently available in the ACT housing market. Suggestions include infill compact housing, co-housing, small houses, mixed tenure and long term rental. Within the innovation challenges of Green Star- Design & As Built, projects can be awarded additional points for designs that address [Affordable Housing](#) or are [Social Enterprise for Social Housing](#). This is implemented with the aim of increasing the availability of affordable, sustainable housing and increasing living affordability. [Ginninderry](#) highlights a project where Canberra and the ACT government has already adopted a master planned approach to housing development. It is designed to push boundaries, boost the adoption of renewables and increase access to active and public transport. Achieving a 6 Star Green Star-

Communities rating, Ginninderry will deliver 11,500 new homes and accommodate up to 30,000 residents by 2050. Some of the environmental features it has include best practice Water Sensitive Urban Design and it has mandated the use of solar panels on every household. Green Star – Communities is a powerful lever to deliver more sustainable precincts that facilitate innovative housing models. Ginninderry has purposefully sought to address the 'missing middle' with their ['Flexi-Living Series'](#). As neither apartments nor suburban houses, they utilise the space of a compact block; building to the boundary whilst selling as a single title. Specifically targeting first home buyers who earn a combined gross salary less than \$120,000, they offer a range of 1, 2 and 3 bedroom homes that can be bought off the plan. Just one example of a way to deliver compact, more sustainable housing that is part of a highly sustainable community.

In South Australia the [Bowden](#) Green Star-Community has seen the development of the Prince's Terrace. The Prince's Terrace Adelaide features eight three bedroom townhouses and four coach mews units – a reflection of the area's architectural legacy. A former industrial site, Bowden is undergoing a radical transformation that is redefining sustainable living in South Australia.

The development has gained national recognition for Renewal SA's bold action to mandate all new buildings within the community to achieve a minimum 5 Star Green Star rating. Renewal SA has also achieved a 6 Star Green Star – Communities rating for the entire precinct. The Prince's Terrace Adelaide project has been designed to be extremely climate responsive and ensure comfort for residents.

Starting with sustainable design basics, each dwelling has been orientated to maximise natural daylight and to passively heat and cool throughout the year. Shading devices and balconies have also been optimised to allow the sun in the winter and block it in the summer. All dwellings have also been designed to promote natural cross ventilation for cooling in the summer as well as ensuring healthy air flow.

The building fabric is insulated to ensure comfortable internal temperatures as well as efficiency of air conditioning systems. Double glazed windows are also specified throughout for energy efficiency and acoustic comfort. The project uses low energy heating and cooling systems, like ceiling fans in summer and fire places in winter. While the need for air conditioning has been reduced, highly-efficient zoned systems can be switched on during peak Adelaide temperatures.

Each dwelling will have a photovoltaic array installed on the roof, helping to reduce energy use during the day.

The result? A building that uses 50 per cent less energy and produces fewer greenhouse gas emissions than a standard Australian residential dwelling.

Options for Public and Affordable Housing:

We agree with the EOI Document that Demonstration Housing should help address the issue of housing affordability. Green Star- Design & As Built certified projects have been found to lower operating costs, deliver a higher return on investment and offer reduced liability and risk. Each of these factors presents major benefit to both developer and clientele, where cost is a driving factor for the construction and upkeep of public and affordable housing.

The [Lilyfield Housing Development](#) achieved a Five Star Green Star- Multi Unit Residential PILOT rating in 2009 for its social housing scheme in Sydney, Australia. This represents 'Australian Excellence' in environmentally sustainable design and highlights how the Green Star rating tools can inform highly functional, best practice design at a realistic and affordable price. This development housed 88 units in total, varying between one and three bedrooms and this model of energy and water efficient social housing could be directly applied to the Demonstration Housing project.

The [Hopkins Affordable Housing Project](#) in Tasmania achieved a 5 Star Green Star- Multi Unit Residential design rating in 2011 and highlights how public housing can cater for a diverse range of tenants whilst delivering environmental and community-minded outcomes. This tool has since been consolidated and absorbed into Design & As Built. By delivering energy efficient housing, it has reduced the financial strain on its residents through minimising energy bills. Equally, by constructing the units with dual aspect and a shared, central courtyard, it maximises indoor air quality, natural light and sense of community. By redefining the amenities associated with social housing, Hopkins Street further delivered to its residents with a children's playground, worm farms, bicycle storage and community gardens, earning it Innovation points for market transformation in sustainable development.

Close Partnership with Industry Bodies:

The EOI document encourages proponents to work collaboratively with industry so to expand the knowledge and experience in areas such as environmental performance, innovative design, delivery or tenure and affordability. The GBCA is an industry body that works collaboratively with project teams seeking to achieve high standards of environmental and social design and it is the tenure of our organisation and robustness of our rating tools that provides knowledge, accountability and experience in delivering best practice construction. Mandating the use of Green Star rating tools would ensure that the Demonstration Housing Projects delivered will excel in environmental performance, innovative design and affordability.

As mentioned, the GBCA is increasingly working collaboratively across government and industry to explore new models for residential certification that are tailored to the unique circumstances of individual jurisdictions. As governments look to the residential sector to drive energy efficiency and support ambitious emissions reduction targets, we are keen to explore opportunities to help certify innovative models and outcomes. We would be pleased to take forward the issues raised in this submission in a broader discussion that leverages our existing work in development across the states and territories through a range of innovative pilot projects that are helping realise the potential to transform homes across Australia.