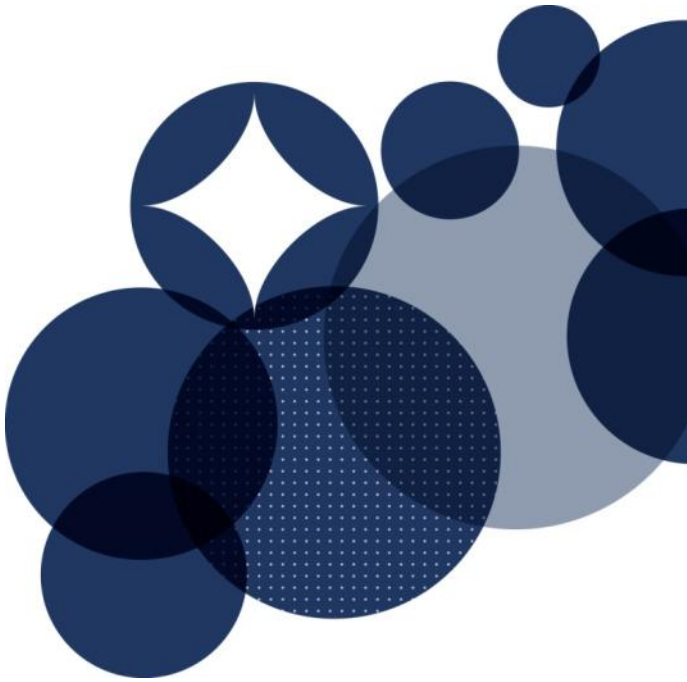

Green Star Design & As Built **Scoping Paper**

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Version Control

Version	Date	Description of changes
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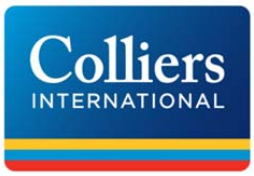
Thanks to our Green Star 2014 Thought Leaders



Contents

Introduction

Green Star - Design & As Built is a new generation Green Star rating tool that will assess the sustainability of building design and construction. It will be able to assess most building uses in Australia, with the exception of single-unit dwellings (BCA Classes 1a and 1b) and will cover single- and mixed-use buildings.

Green Star – Design & As Built is more than just an amalgamation of the existing rating tools for the design and construction of buildings. It aims to address new sustainability issues and reflect current industry best practice. It will be delivered via an online platform that will host all technical content and information and provide a streamlined submission process.

Green Star - Design & As Built will be designed to reduce the cost of certification while also encouraging innovation and world leadership in the delivery of sustainable outcomes for our built environment.

The development process for Green Star - Design & As Built is currently underway and a first draft of all credits will be released for public comment towards the end of April 2014. Once draft credits are released, stakeholders will be invited to provide feedback on all the technical details, documentation requirements, and the overall direction taken to achieving best practice sustainable outcomes. Stakeholders will also be invited to test the draft credits in their currently registered projects.

Green Star – Design & As Built will be launched online and available for project registration from October 2014.

This scoping paper sets out the objectives and scope of Green Star – Design & As Built. It does so in response to the feedback received in response to the consultation paper released in October 2013. It also highlights some major improvements that are planned for the new rating tool. Stakeholders are invited to provide comments on the items addressed in this paper.

Providing your feedback

As you read this scoping paper, you will be asked to provide feedback on a range of issues and topics. Feedback prompts are presented as follows (example only):

Do you have any comments on the proposed Credits and Criteria to be included in Green Star – Design & As Built?

Please provide your feedback by filling in the text box that is provided with each question. Some additional text boxes are provided where you can make general comments or suggestions about the issues covered in that section. Once you have finished providing feedback, please click the 'submit form' button found in Adobe Reader. This will send us an email with your comments. If you are unable to submit your feedback using Adobe Reader or have additional documents that you'd like to share with us, you can do so by emailing us at: designandasbuilt@gbca.org.au

Please provide your feedback by 31st July 2014

Objectives

The delivery of Green Star – Design & As Built is an important part of the Green Building Council of Australia's (GBCA) strategic plan and consistent with our goal to drive the Australian property industry towards:

- Sustainability by promoting sustainable building programs, technologies, design practices and operations
- Integration of green building initiatives into mainstream design, construction and operations of buildings

Provide a simpler, more user-friendly and cost effective user experience

The GBCA has received consistent feedback from project teams, building owners and developers that the cost of certifying projects using the current Green Star Design and As Built rating tool buildings is high and acts as a barrier to projects pursuing a Green Star rating. One of the primary objectives of Green Star – Design & As Built is to create a system that is easy to use and reduces the amount of documentation required to demonstrate compliance.

Redefine best practice in sustainable buildings

Over the past ten years, the GBCA has developed a range of sector-based Green Star rating tools in consultation with industry, to assess the sustainable design and construction of buildings. Tools developed more recently, such have Green Star - Public Building, have improved upon the older rating tools within the suite and it is recognised that these tools are now in need of an upgrade.

Industry practices have progressed and many sustainable building elements and approaches have become standard practice. Increased expectations of what quality buildings should deliver, increased legislative requirements and improved building standards have all contributed to the changing definitions of 'standard practice' and subsequent industry-wide improvements to the way buildings are designed and delivered.

In addition, the collective industry experience gained from the certification of over 600 Green Star projects has provided us with a wealth of information and alternative approaches to reducing environmental impacts, including the formal Green Star process of Credit Interpretation Requests (CIRs), Technical Clarifications (TCs) and through informal anecdotal feedback.

Increase influence across all building sectors and project sizes

To achieve the GBCA's objective of integrating green building initiatives into the mainstream design, construction and operations of buildings, there is a need to expand the types of buildings that typically register for Green Star certification. To have greater influence in the building and real estate industries, Green Star – Design &As Built will be applicable to a wider range of project types, sizes and budgets. With reduced documentation costs and new 'Deemed to Satisfy (DTS)' credit criteria, Green Star – Design & As Built will be more accessible for projects that previously lacked the expertise or budget to consider Green Star certification. This means that there will be more compliance options made available to project teams, while applying the same level of rigour to demonstrate varying levels of benchmark achievement.

Improved certification pathway - Design to As Built

The Green Star – Design & As Built consultation paper asked several questions regarding Green Star Certification pathway. The responses are summarised below.

> *Q: Green Star – Design ratings should continue to be awarded without a requirement for a subsequent As Built rating. The current time limit of two years on the validity of Green Star ratings is a sufficient measure to address the issue of lack of delivery.*

The majority of respondents disagreed with the statement that Design ratings should be awarded without a requirement for a subsequent As Built rating, as shown by the response rates below.

Yes - 26% No - 74%

Q: Green Star – Design ratings should be awarded only upon the condition of the future achievement of an As Built rating

A smaller majority of respondents agreed with the statement that a Design rating should be awarded on the condition of achieving an As Built rating in the future, as shown by the response rates below.

Yes - 68% No - 32%

Q: There should be no Green Star – Design rating. It should be replaced with a design stage pre-certification to assess whether the project is on course to achieve an As Built rating. This pre-certification should not allow project teams to market their project as Green Star – Design certified.

The responses for replacing the Design rating with a design stage pre-assessment were split, with no clear preference, as shown by the response rates below.

Yes - 48% No - 52%

Q: There should be no Green Star assessment at the design stage.

The majority of respondents disagreed with the statement that there should be no Green Star assessment at the design stage, as shown by the response rates below.

Yes - 7% No - 93%

As a result of these responses, changes are proposed to the current system where a project has a full assessment at tender stage for the Design certification and another full assessment after practical completion for the As Built certification. The diagram below details the design, construction, and occupation timeline of a typical construction building, and shows the two available options:

Option A - a modified version of the current dual rating certification process.

Option B - the combined rating pathway.

Figure 1: Certification Pathways - Design to As Built

A: Current Dual Rating Certification Pathway – Full Design Assessment and Full As Built assessment

Currently within the Green Star framework, two certifications are offered. A 'Design' rating, which is assesses the project using tender documentation and an 'As Built' rating, which assesses the project using 'As Built' documentation. The GBCA has recently introduced an expiry date for Design ratings, in that they must achieve an 'As Built' rating two years after practical completion or their Design rating will expire.

We have received industry feedback that mentions several issues with the current certification pathway:

- A Design rating does not guarantee that the sustainable attributes of the design will be realised in the final, constructed building
- Achieving two certifications is costly, both in Green Star assessment fees and in collating the documentation
- The design stage assessment is too late in the design process to be useful for many sustainable design initiatives, and in some procurement pathways tender documentation may be within the remit of the contractor rather than the client.

Based on the feedback, the model could be modified in minor ways. For example, documentation could be revised slightly to reduce the cost of collation. The GBCA could also stop promoting Design ratings to reduce the incentive of those who only undertake that rating and don't follow through with an As Built rating.

B: Combined Certification Pathway - Design Stage Pre-Assessment and As Built Certification

In this model, Green Star - Design & As Built is packaged as a single registration. When a building is registered for certification, it will be registering for a single certification which assesses the building using as built documentation, with an option for a Design Stage Pre-assessment.

The Design Stage Pre-assessment will be offered as an option available to projects when registering for a Green Star – As Built rating. The intention is that the GBCA will offer a Design Stage Pre-assessment at Development Application stage. This Pre-assessment will assess the building attributes for all Green Star – Design & As Built credits. However, the extent of the assessment will have a scope suited to the documentation available at this earlier design stage. It will comprise simplified checks with reduced

documentation and commitment agreements, detailing how credits will be achieved in the completed building and during operation. Assessing the project at an early stage has several benefits. It will focus the design team to consider sustainability early in the design process and will allow for earlier marketing of the project as a Green Star project. This responds to the industry need for assessment at the design stage in a project's development. Developers value having a marketable rating to sell property and secure tenants and design consultants have expressed a need for an interim check, to provide guidance as to whether a building is on track to reach the desired Green Star rating.

The Design Stage Pre-Assessment will provide project teams with full marketing rights. However, there will be some rules related to when a Design rating would expire, for example:

- The 'Design' rating will immediately expire if the applicant does not express interest in pursuing a rating within six months of practical completion

- The 'Design' rating will automatically expire if an 'As Built' rating is not achieved within two years.

Because of the proposed changes, the 'Design' rating will not be offered separately.

The GBCA's preferred approach for Green Star - Design & As Built is in alignment with Option B the 'combined rating delivery'.uilt. By offering a combined approach, and ensuring the certified rating reflects the finished building at practical completion, the following outcomes are assured:

- **Market transformation:** the rating will reflect the finish building. That is, the approach ensures follow-through occurs for the finished building.

- **Reduced cost for achieving a rating:** A Green Star – Design & As Built rating will be awarded at As Built stage, only one set of full documentation will be submitted for assessment reducing time taken to collate a submission and assessment fees.

- **Reduced processing times**: due to the suggested approach, a 'Design' rating can be achieved at an earlier stage and used to market to potential occupants and tenants. The time required to submit for an 'As Built' rating is also expected to halve.

The GBCA is seeking feedback on the proposed approach. In particular,

Do you support the proposed Green Star certification pathway?

Do you support the rules for the expiry of the Design rating (as per the current practice for Design ratings under the Green Star 'legacy rating tool')? If you not, what amendments do you recommend?

As the Design rating is now aiming for a transparent commitment to achieve an As Built Certification, should there be a mechanism for industry to track those that have not followed through to As Built certification? If so, what should that be?

Currently, the GBCA has not decided on a name or label for the review' undertaken at the design stage for the new Green Star – Design & As Built rating tool. Does the current name (Design rating) reflect the intent of the rated stage? Or, should another name for that rating be used? If so, what should that name be?

Online delivery

The Green Star - Design & As Built rating tool and submission process will be delivered entirely online. This means that there will be no traditional technical manual or scorecard, and that technical content and submission guidelines will be integrated within the rating tool. Green Star - Design & As Built will be created within a similar online system to the Green Star – Performance PILOT.

Green Star submissions for each credit will be entered using an online questionnaire, which will contain fields to upload drawings and other documents. The online system will also generate the scorecard of points achieved and allow project managers to assign tasks to team members for their completion.

Moving our rating tools to an online delivery system will allow for more frequent updates, improving the accuracy and integration of technical information. It is proposed that the new rating tool be updated at least once a year with minor amendments, with a two year review cycle for major amendments and updates.

Do you have any comments on the online delivery of Green Star – Design & As Built?

Proposed credits and criteria

As part of the development process for Green Star – Design & As Built, the content of all the categories has been reviewed by a working group of industry experts through a consultation process. For more details on the development process, please refer to the 'Updating benchmarks and technical content' section of this report.

Management Category

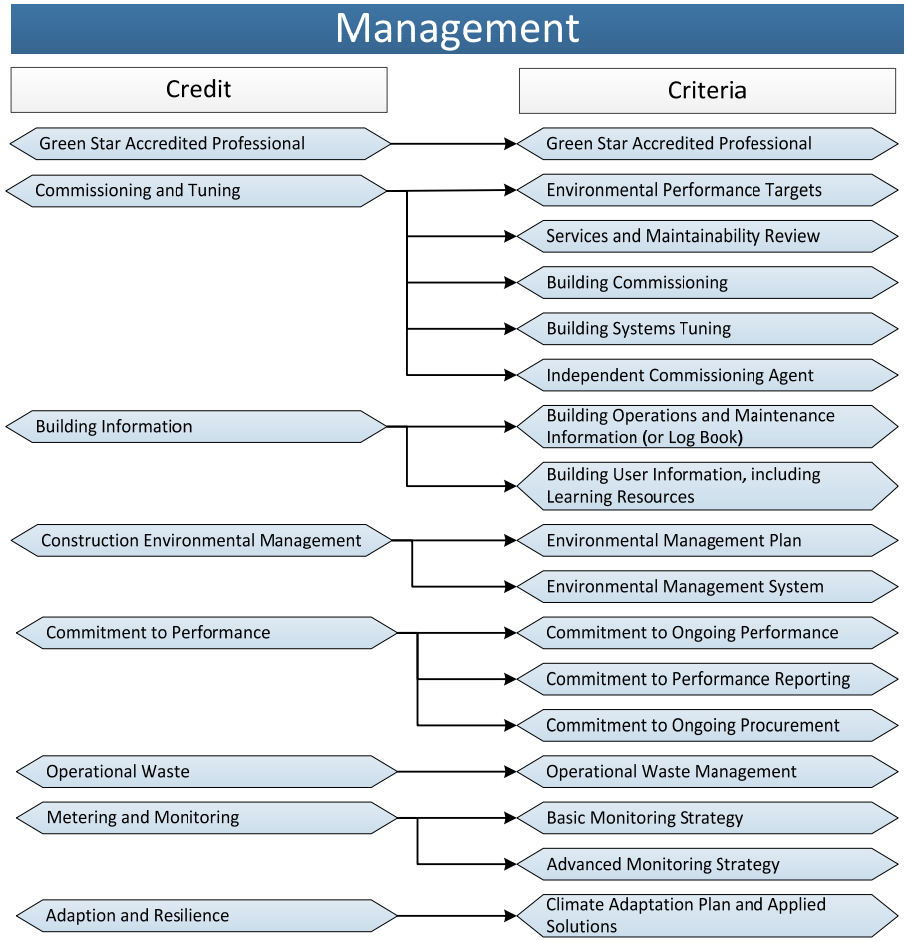


Figure 2: Summary of Proposed Management Category

The Green Star – Design & As Built 'Management' category encourages and rewards the adoption of features and attributes that enable and support good environmental management practices throughout all phases of a project's development and its ongoing operation.

Throughout the 'Management' category, Green Star – Design & As Built intends to improve projects' environmental performance by influencing areas where decision-making is critical. . The category promotes practices that ensure a building will be used to its maximum operational potential. It also rewards the implementation of processes and strategies that minimise negative environmental impacts during construction.

Indoor Environment Quality Category

The Green Star – Design & As Built 'Indoor Environment Quality' category aims to encourage and reward initiatives that enhance the comfort and wellbeing of building occupants. The credits within this category address issues including air quality, pollutants and occupant comfort.

Through the 'Indoor Environment Quality' category, Green Star – Design & As Built aims to achieve environmental performance improvements in a manner that also improves occupants' experience of the space. The 'Indoor Environment Quality' category recognises that buildings are designed for people and that improvements to sustainability should never be made at the expense of occupants' health and wellbeing. By rewarding both energy efficiency and indoor environment quality, the Green Star rating system promotes and rewards a holistic approach to sustainability that results in multiple benefits.

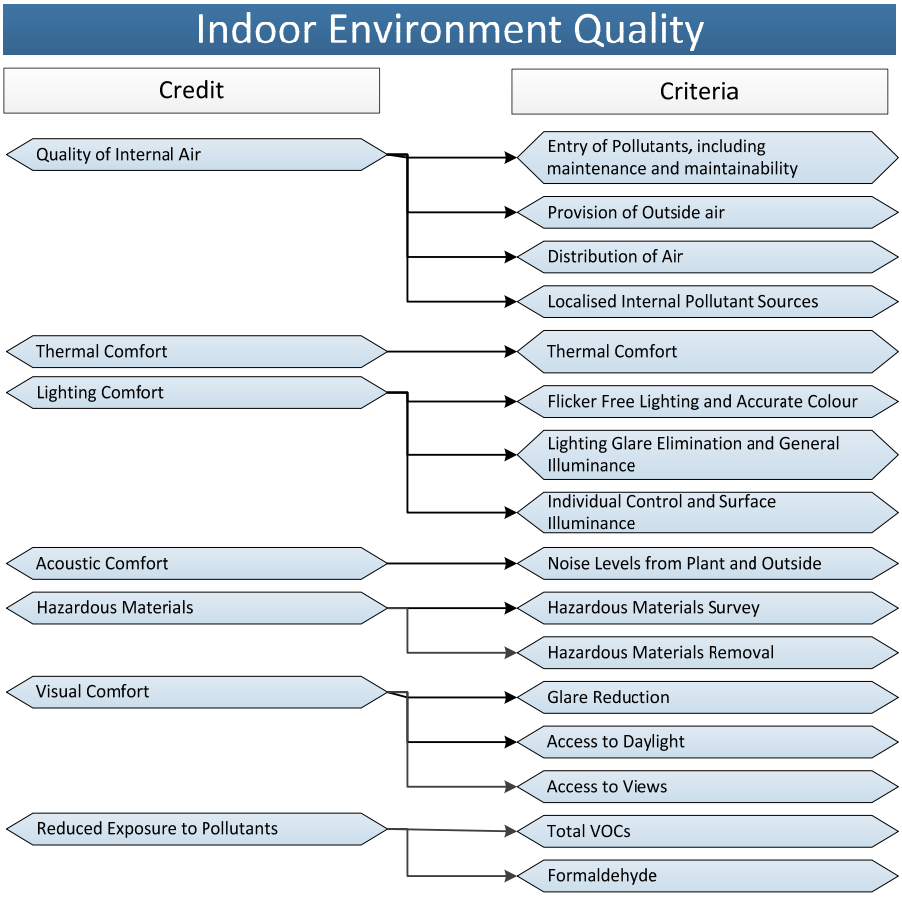


Figure 3: Summary of Proposed Indoor Environment Quality Category

Energy Category

The credits within the 'Energy' Category reward designs that reduce the overall operational energy consumption and the peak demand on energy supply. These reductions have an impact upon greenhouse gas emissions and energy production capacity as well as other emissions associated with energy generation.

Reductions in peak energy demand can be achieved through both active systems and passive design initiatives. Active systems include renewable energy and thermal storage systems, while passive design initiatives include the use of thermal mass and high performance building materials. Reductions in operational energy consumption may be achieved through maximising the efficiency of energy usage in buildings, and reductions in emissions may be achieved through generation of energy from low-emission sources.

Following stakeholder feedback, the 'Reduction in Greenhouse Gas Emissions' credit now contains three pathways for projects to demonstrate credit compliance. 'Deemed to Satisfy' criteria will be available for projects that cannot or do no wish to undertake energy modelling. In this compliance pathway, points will be awarded for efficient building fabric, glazing, lighting and HVAC systems. There will also be a criterion included for building sealing testing.

The comparison to an existing framework compliance pathway will allow projects that have completed a NABERS or NatHERS to use this rating towards demonstrating compliance with the 'Greenhouse Gas Emissions' credit.

The final compliance pathway requires projects to complete an energy model of the building and to demonstrate a reduction in greenhouse gas emissions when compared to a reference building. This pathway is an updated version of the 'Greenhouse Gas Emissions' credits in the most recent Green Star rating tools.

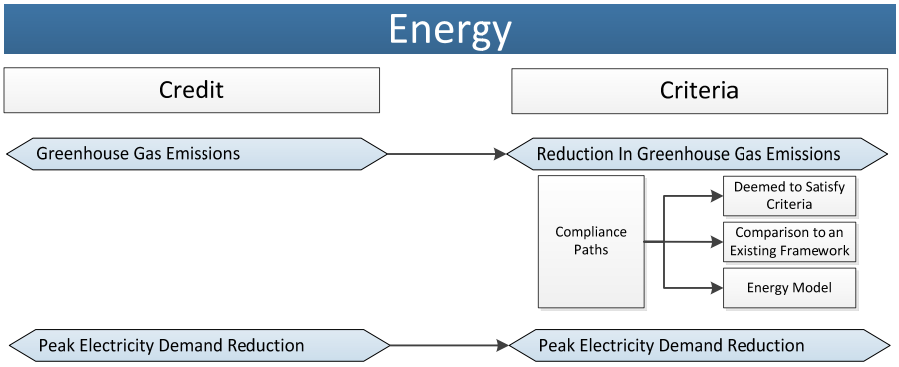


Figure 4: Summary of Proposed Energy Category

Transport Category

The credits within the 'Transport' category aim to reward initiatives that reduce the greenhouse gas emissions (GHG) associated with motor vehicle transport and encourage active modes of transport that increase occupants' health and wellbeing. Reducing the dependency on private car use is an important means of reducing overall GHG emissions. Global warming is directly affected by motor vehicle use in two major ways - the high amounts of energy required to build cars and supporting infrastructure and services and the direct emissions from their operation. Car exhaust fumes also contribute to asthma and other respiratory illnesses.

This category includes two compliance pathways. The prescriptive pathway contains credits based on previous Green Star credits, and rewards projects for reducing parking spaces, good access to public transport and providing end of trip facilities for cyclists and other active transport modes. The modelled performance pathway offers projects a more flexible way to demonstrate a reduction in GHG due to transport and an increase in use of active transport modes, resulting in improved occupant health. The GBCA has constructed a calculator that produces transport data based on a project's location. The project team can use this calculator to demonstrate a reduction in private vehicle use and an increase in occupants walking and cycling

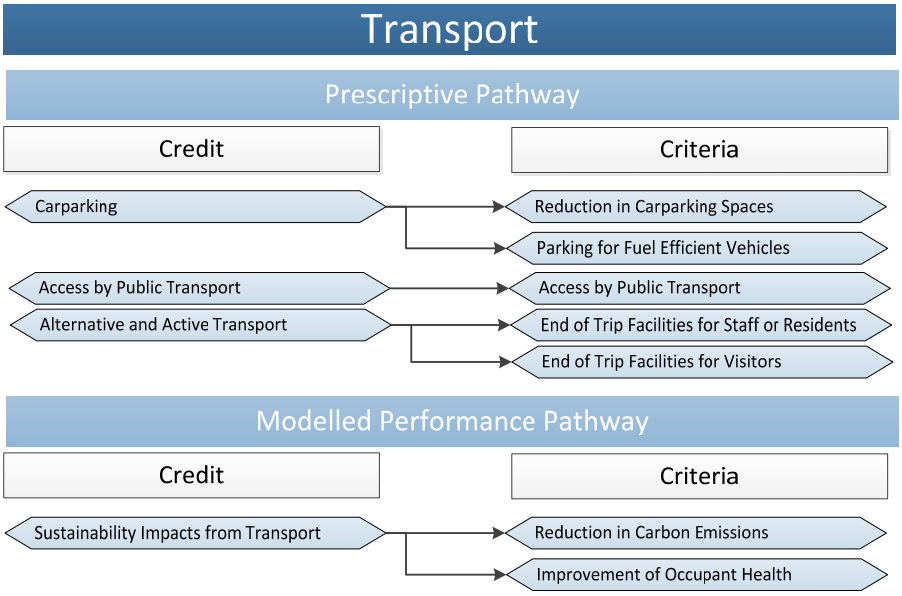


Figure 5: Summary of Proposed Transport Category

Water Category

The credits within the 'Water' category reward initiatives that reduce the consumption of potable water, through measures such as the incorporation of water efficient fixtures, water efficient building systems and waste water re-use. Demand for potable water can be reduced through the capture of rainwater or the recycling of grey-water and black-water. Such reductions will ease the pressure on water sources as well as contribute to more cost efficient operation of buildings.

Similar in approach to the updated 'Energy' category, there are two compliance pathways. The Deemed to Satisfy compliance pathway allows projects to demonstrate a reduction in potable water use by the specification of water saving fixtures and fittings, water tanks, irrigation systems and water-efficient HVAC systems. The water balance pathway is intended for larger or more complex projects that can demonstrate a reduction in potable water use with a water balance calculation.

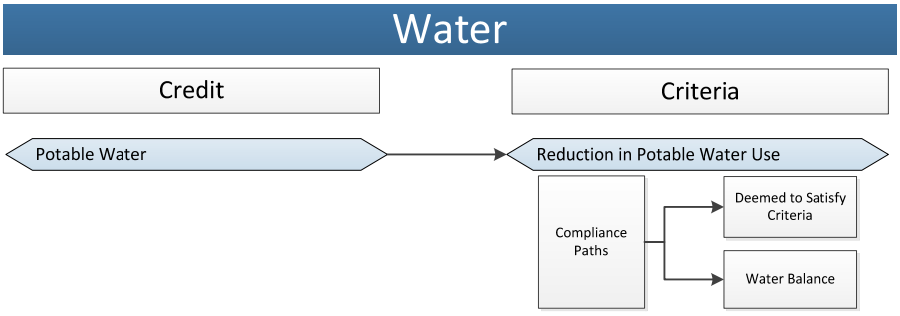


Figure 6: Summary of Proposed Water Category

Materials Category

Within the 'Materials' category of Green Star, the credits target the consumption of resources through selection of materials, reuse, efficient management practices, responsible sourcing of materials and an accountable supply chain. Building materials can have a serious impact on the environment. Energy is used to extract, produce and transport building materials, natural resources are consumed in the production process and the industrial processes used to create the materials cause pollution and waste (e.g. fly ash from cement production)

In the updated 'Materials' category, there are now a set of common credits and two compliance pathways to demonstrate a reduction in material use. The prescriptive pathway includes 'Steel' and 'Concrete' credits that contain prescriptive criteria to demonstrate a reduced use of these building materials. The 'Modelled Performance Pathway' includes a 'Life Cycle Material Impacts' credit, which allows projects to demonstrate a reduction in material impacts by comparing a life cycle assessment of the proposed building with a reference building.

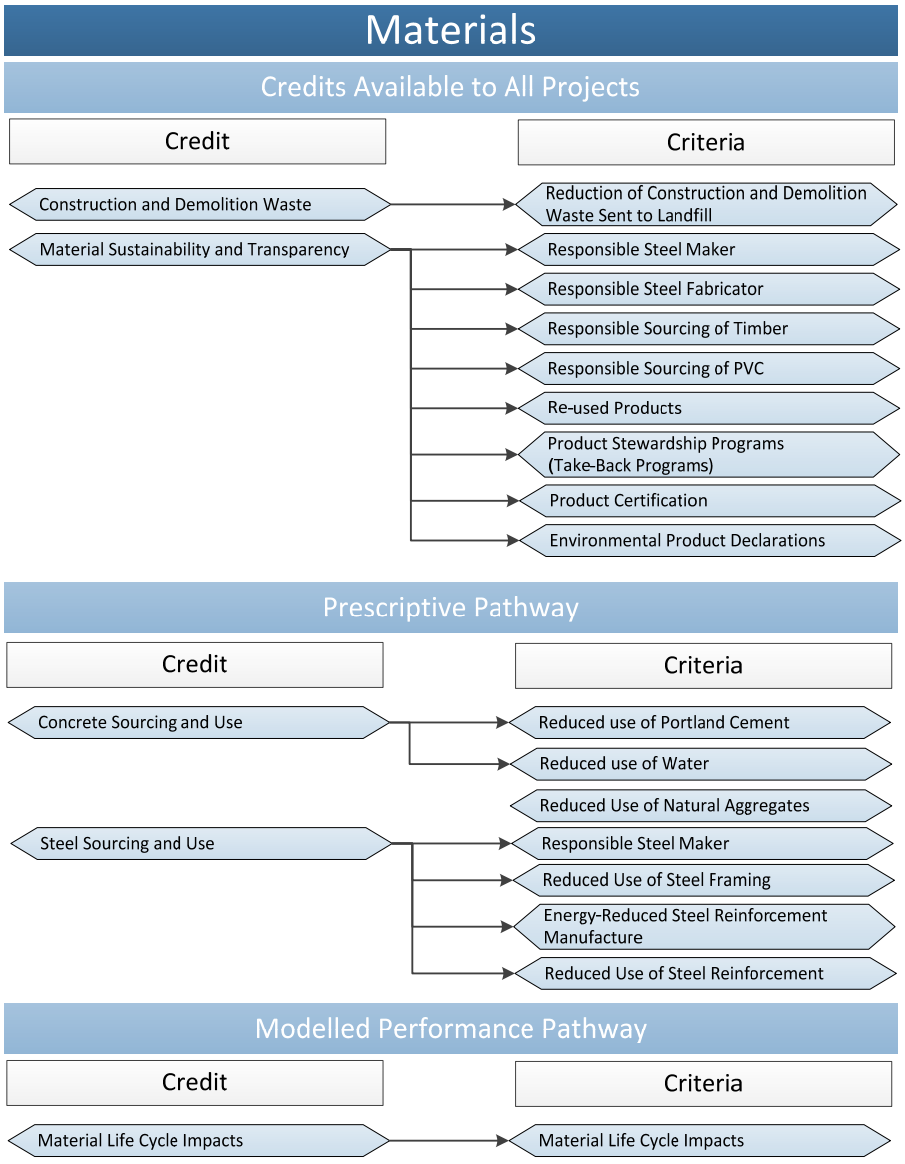


Figure 7: Summary of Proposed Materials Category

Land Use and Ecology Category

The credits in the 'Land Use and Ecology' category aim to reduce the environmental impacts of urban development and reward projects which both minimise harm and enhance the quality of local ecosystems.

An extensive review of this category has been undertaken for Green Star – Design & As Built. Benchmarks for the 'Sustainable Sites' and 'Change in Ecological Value' credits have been brought up to date and compliance criteria have been simplified.

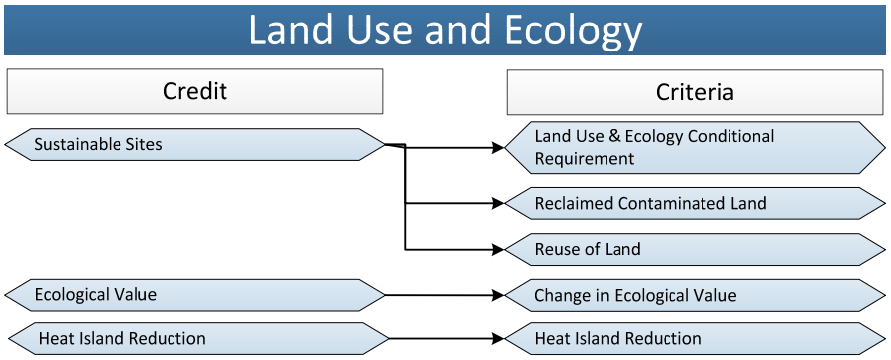


Figure 8: Summary of Proposed Land Use & Ecology Category

Emissions Category

The Green Star – Design & As Built 'Emissions' category aims to assess the environmental impacts of emissions generated by buildings. Negative impacts commonly associated with building emissions include refrigerant leaks, which add to the effects of global warming, disturbances to native animals and their migratory patterns as a result of light pollution and increasing the demands on the local stormwater system.

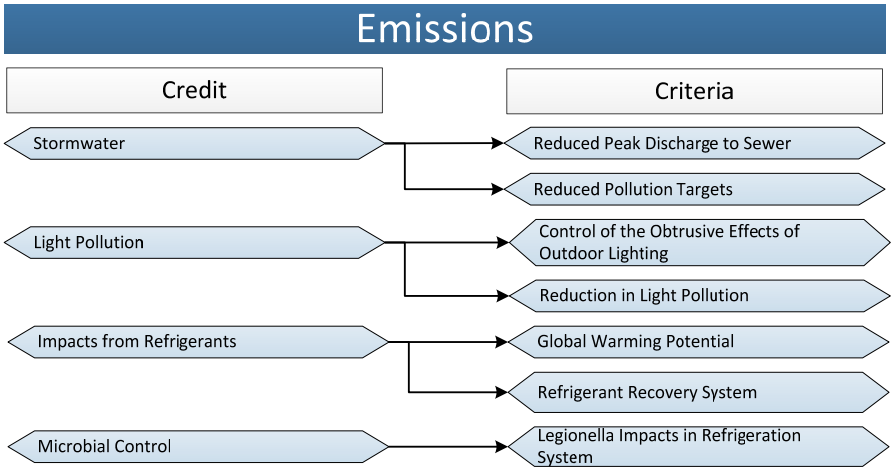


Figure 9: Summary of Proposed Emissions Category

Innovation

The 'Innovation' category is included within Green Star as a way of encouraging, recognising and rewarding the spread of innovative technologies, designs and processes for building applications that impact upon sustainability performance.

The 'Innovation' category also acknowledges efforts which demonstrate that sustainable development principles have been incorporated in broader circumstances, rather than solely for the building for which the Green Star criteria apply. This may include collaboration between developers and other parties and is recognised separately from outcomes rewarded in other categories.

Innovation Challenges will continue to be a part of Green Star and are intended to encourage and direct investment into solutions that address a wide range of social, economic and environmental issues. Innovation Challenges may address entirely new topics, such as contractor education, while others will identify areas for improvement over and above current Green Star benchmarks, such as improved acoustic privacy in open plan areas. Innovation Challenges are also a method for testing new or revised Green Star credits. The initiative provides an avenue for GBCA stakeholders to suggest new Innovation Challenges that can be taken up by industry.

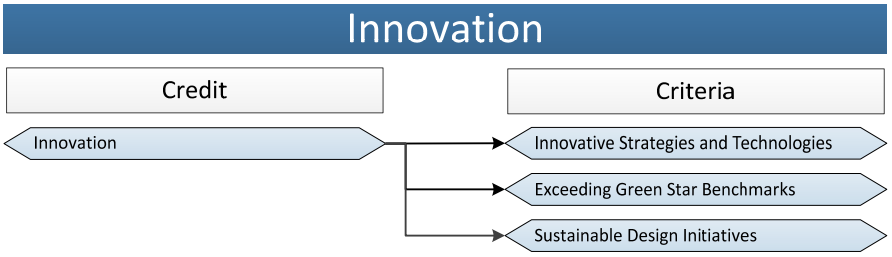


Figure 10: Summary of Proposed Innovation Category

Current Innovation Challenges that are available for projects to include as part of their submissions include:

- Financial Transparency
- Marketing Excellence
- Market Intelligence
- Design for Active Living
- Employment Creation
- Social Return on Investment
- Community Benefits
- Contractor Education
- Affordable Housing
- Culture, Heritage and Identify

Do you have any comments on the proposed Credits and Criteria to be included in Green Star – Design & As Built?

Project delivery scope

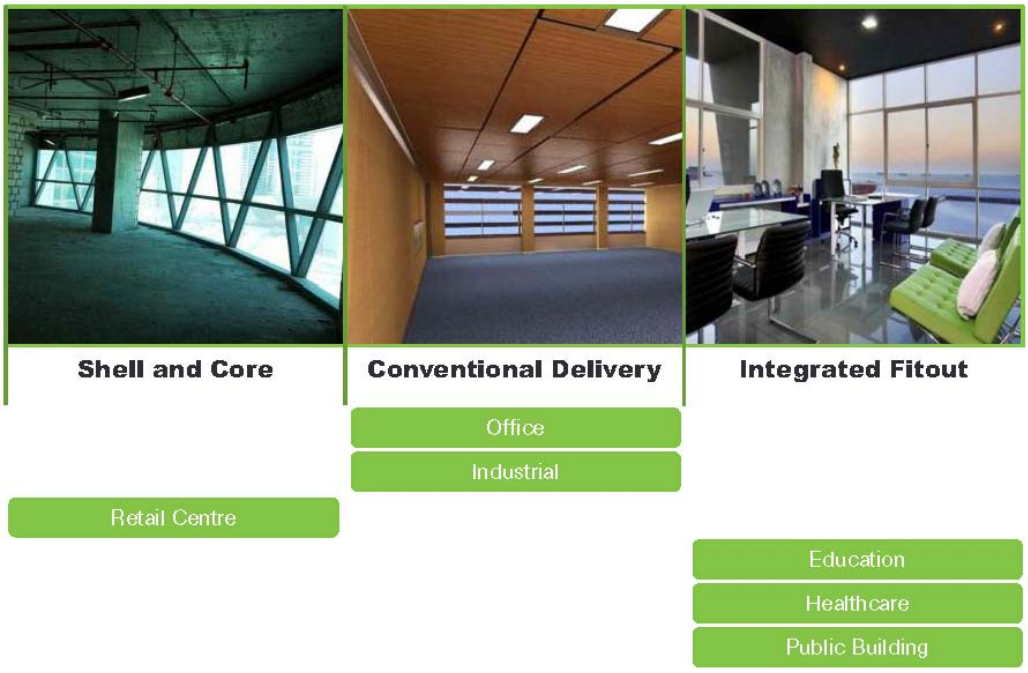


Figure 11: Typical Project Delivery Scopes

As Green Star - Design & As Built will rate all building types, different project delivery methods such as 'shell and core', 'integrated fitouts' and ‘conventional delivery’ needs to be considered. Definitions of these terms were proposed in the Design & As Built Consultation Paper and were supported by the majority of respondents.

- **Shell and Core**: Finishes and services are applied to common areas only. Tenant spaces are delivered with no ceilings, floor coverings, lighting systems and partition walls, and ducts from air supply and return risers finish within 1m of the face of the riser.

- **Conventional Delivery**: Finishes and services are applied to common areas. Occupied areas are delivered with ceilings, floor coverings, finishes and a standard design for supply and return ducts, with a lighting system installed on a grid. Typically in the case of commercial office buildings, the tenant comes in and adjusts the delivered services and finishes. This delivery method is common for commercial office buildings or spaces that will be tenanted.

- **Integrated Fitout**: Where the design and construction brief addresses, in addition to typical building elements, ceilings, floor coverings, lighting systems, mechanical, electrical and hydraulic services, partition walls, finishes, and fitout elements to all (or most) areas. In most cases, the design and construction involves significant coordination with the client or tenant. This is common for education, hospitality and healthcare facilities, but is also seen in premium grade commercial office buildings

Proposed Approach to Project Delivery Scope in Green Star - Design & As Built

There are several credit criteria that are affected when a building or parts of a building are delivered as an integrated fitout, conventional delivery or shell and core. These issues are commonly found in industrial and retail spaces and commercial office buildings. Credits that are affected include criteria for building attributes that may be specified by a tenant rather than the building owner.

The affected areas include:

- Lighting
- Indoor Air Quality
- Acoustics
- Exposure to VOCs in finishes and fitout items
- Material qualities of assemblies, flooring, furniture
- Appliance and equipment energy and water use

It is proposed that these credits may include an alternative approach, which would allow building developers to demonstrate compliance for conventional delivery or shell and core delivery with amended criteria. The alternative approach will include criteria for the items that are within their scope of works for these areas and a commitment to promoting sustainable fitout to the future tenants and occupants. Other options include having multiple compliance paths based on level of delivery, such as having furniture contribute to some credits in the 'Materials' category, if the furniture is present.

In a building that has a mixed delivery, for example an office building with some fully fitted out floors and some conventional delivery floors, the final point score will be an area weighted combination of the points achieved via the two approaches. We expect to be able to utilise the online submission system to provide a clear method for compliance for the two credit approaches and the areas that they area applied to.

Do you agree with the proposed method of accounting for differing project delivery scopes in Green Star – Design & As Built?

In your experience, which credits have proved most problematic when demonstrating credit compliance for a project with non-standard project delivery method?

Updating benchmarks and technical content

As part of the development process for Green Star – Design & As Built, every credit has been reviewed by a working group of industry experts through a consultation process. The GBCA selected members of the working group to represent a cross section of industry sectors (Figure 12) and states. Credits and their criteria have been reviewed for their applicability to all building types, whether the benchmarks represent best practice and how they can best encourage positive sustainable outcomes.

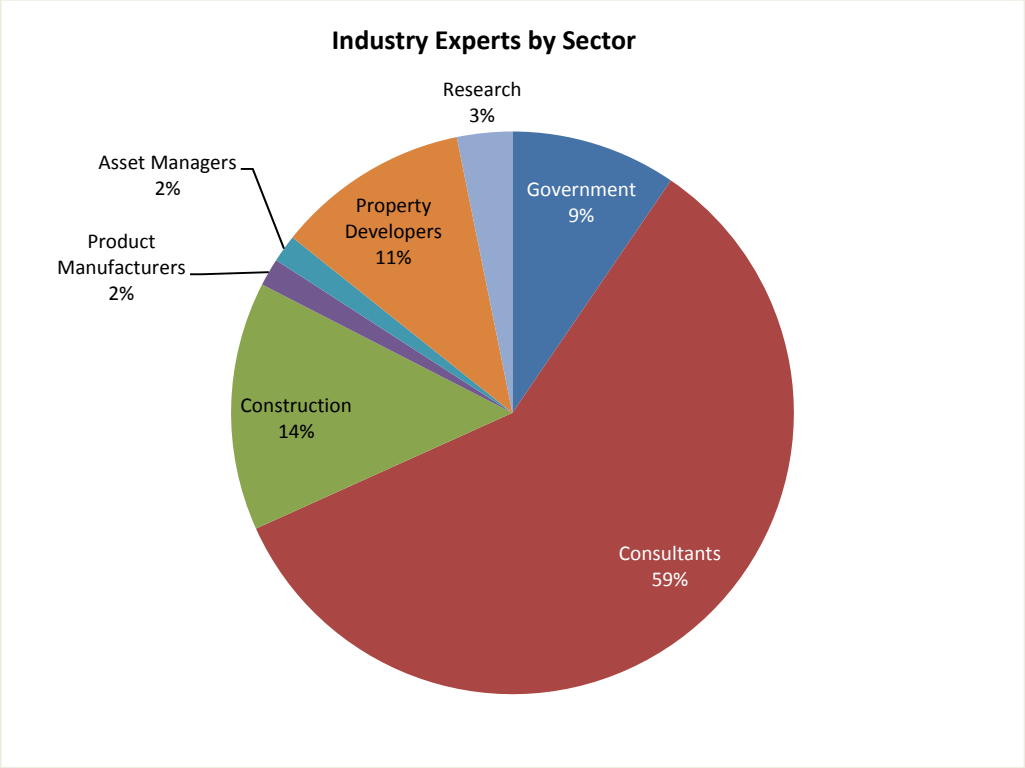


Figure 12 : Breakdown of Industry Expert Groups by Industry Sector

Four Green Star categories, 'Energy', 'Water', 'Transport' and 'Land Use & Ecology', have each been reviewed by an independent, technical consultancy to provide updates to technical standards and to ensure that the credits reflect industry best practice. The GBCA has also appointed engineering consultancies to review and develop several credits that have received the most industry feedback.. These credits are 'Greenhouse Gas Emissions', 'Peak Electricity Demand Reduction', 'Potable Water' and a number of credits relating to thermal comfort and air quality in the 'Indoor Environment Quality' category.

Part of the review process was to review the rating tool as a whole and identify credits that should be removed as their criteria have become business as usual, and emerging issues that should be rewarded in new credits. Table1 identifies some of these changes. For more information, please refer to the Credit Road Map in the Appendix. This diagram indicates how the Green Star legacy credits and criteria have been incorporated into the new Green Star – Design & As Built rating tool.

Another improvement that has been introduced into the rating tool is providing options for demonstrating compliance. As a result, most credits feature an outcomes-based, or model-based approach, and a deemed to satisfy (DTS) approach to demonstrating compliance. The outcomes-based approach will allow projects to demonstrate world-leading sustainability performance through holistic modelling solutions, such as building energy models or materials life cycle assessment, which have been created for the iterative design process. However, for projects that would not choose to undertake a holistic modelling path for a particular design issue deemed to satisfy credits and/or criteria are provided as an alternative method to demonstrate credit compliance.. In some credits and categories, the DTS approach will not be eligible for full points, as it may not demonstrate the benefits a modelled approach can provide.

For example, in the new 'Potable Water' credit, projects can choose whether to demonstrate compliance using a water balance model, or by specifying the performance of water saving fittings and fixtures, water tanks and irrigation systems.

New Credits	Credits Removed or changed to 'Minimum Requirements'
Material Life Cycle Impacts	High Frequency Ballast
Heat Island Effect Reduction	Mould Prevention
Sustainability Impacts from Transport	Small Occupied Spaces
Adaptation and Resilience	Design for Disassembly
Environmental Product Declarations	Insulation Ozone Depletion Potential
	Trade Waste Pollution

Table 1: Summary of New Credits and Credits Removed or Added as 'Minimum Requirements'

Revised weighting system

As part of the development project for Green Star – Design & As Built, the current Green Star weighting system has been reviewed.

Feedback we have received regarding the current system of category weighting factors includes:

- The current system of weighting can make it difficult to compare the impacts that one solution will have across multiple categories, making communication difficult between relevant parties and requiring prior knowledge of Green Star to interpret.
- The current weighting system varies across different building sectors, which does not allow for a clear comparison across different building types and makes the assessment of mixed-use buildings complex.
- The current weighting system is state based and also accounts for state based variations, such as greenhouse gas grid intensity, which is sometimes perceived as 'double counting'.

The current proposal is to simplify the weighting system where 1 point is equal to 1 point across all categories, removing any additional Category Weighting Factors. In other words, the total number of points available in a certain category will be representative of the relative importance of that sustainability impact out of the 100 points available in the rating tool. A similar approach has been taken in Green Star – Performance and Green Star – Communities rating tools. The issue of regional or climatic variations can then be resolved through variations within credits themselves.

Green Star – Office v3 Current Category Weighting Factors

	No Points	NSW%	ACT %	NT %	QLD %	SA %	TAS %	VIC %	WA %
Man	**12**	9	9	9	9	9	9	9	9
IEQ	**27**	20	20	20	20	20	20	20	2
Ene	**24**	25	25	25	25	25	25	25	25
Tra	**11**	8	8	8	8	8	8	8	8
Wat	**13**	12	12	10	14	15	10	15	14
Mat	**24**	14	14	14	14	14	14	14	14
Eco	**8**	6	6	8	4	4	8	4	5
Emi	**14**	6	6	6	6	5	6	5	5
Total	**132**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Table 2: Green Star -Office v3 Category Weighting Factors

Do you agree with the proposed simplification of the weighting system, so that 1 point is 1 point across all categories?

Integrate with Green Star – Communities, Green Star – Interiors and Green Star – Performance

The new Green Star - Design & As Built rating tool will integrate and align with the Green Star – Communities, Green Star – Interiors, and Green Star – Performance rating tools. Green Star - Design & As Built will:

- **Reward** buildings within Green Star – Communities rated sites where applicable.
- **Encourage** and improve the transition from an attributes-only sustainability assessment to one that also incorporates sustainable performance in operation, in alignment with Green Star – Performance.
- **Facilitate** the development of fitouts that comply with the requirements of Green Star – Interiors within the Green Star - Design & As Built certified projects.

Do you have any comments on how Green Star – Design & As Built should integrate with Green Star – Communities, Green Star – Interiors and Green Star – Performance?

Future Opportunities

Certification process review

The Green Star – Operations team is currently undertaking a review of the certification process. The proposals from this review are expected to be trialled towards the end of 2014. One of the objectives of the certification process review is a reduction in certification costs. This objective is aligned with the reduced documentation and online platform, which is a goal of Green Star – Design & As Built.

We do not expect that the proposals of the certification review project will affect the launch of Green Star – Design & As Built and the new certification processes will work in conjunction with the online delivery system.

Further Feedback and Information

Scoping document

Stakeholders are invited to submit comments on the scope of Green Star - Design & As Built as described in this paper. Comments should be submitted to designandasbuilt@gbca.org.au by **31 st July 2014**.

Credits issued for public consultation in April 2014

The Green Star Development Team will publish the draft credits on the GBCA website at the end of April 2014. They will be published as Pdf documents and stakeholders will be invited to submit comments. The deadline for comments will be July 2014

Any other comments?

Appendix

Appendix A: Updated Credit Road Map

The Green Star Roadmap

LEGEND

- a — Credit in Category
- a — Credit found in other category
- a — Proposed for deletion
- a — Proposed new credit or compliance pathway

Current Management	Future Management	Description of proposed credit
Man-1 Green Star Accredited Professional	Green Star Accredited Professional	Recognises the appointment and active involvement of a Green Star Accredited Professional (GSAP) in all stages of the project to ensure a successful submission.
Man-2 Commissioning Man-3 Building Tuning Man-4 Independent Commissioning Agent	Commissioning & Tuning	Recognises the high quality maintainability, commissioning, handover and tuning initiatives, including the development of future operational tuning plans
Man-5 Building User's Guide Man-10 Learning Resource	Building Information	Recognises the development and provision of relevant information to visitors, users and facilities managers to utilise the building to optimal performance
Man-6 Environmental Management System Man-12 Construction Indoor Air Quality Plan WMP	Construction Environmental Management	Recognises the processes to reduce energy, water, indoor air, and waste impacts during construction in line with established guidelines and standards.
Man-7 Waste Management	Construction and Demolition Waste	An element of this credit has been moved to the Materials category.
Man-13 Sustainable Procurement Guide Leasing & other commitments	Commitment to Performance	Recognises good practices that ensure buildings perform well during operation. This is done through good leasing practices, or development of operational guides.
Man-11 Maintainability		
Man-8 Waste and Recycling Management Plan Mat-1 Recycling Waste Storage	Operational Waste	Recognises the development of processes to minimise waste during building operations. This includes providing a space for waste collection and recycling.
Man-9 Building Management System Man-16 Metering	Metering and Monitoring	Successful projects provide systems and processes that facilitate future monitoring, operation and maintenance of energy and water consumption.
	Climate Adaptation and Resilience	Recognises building solutions that address the impact of extreme weather events, and develop processes in place to address them during operations.

The Green Star Roadmap

LEGEND

- a — Credit in Category
- a — Credit found in other category
- a — Proposed for deletion
- a — Proposed new credit or compliance pathway

Current

Indoor Environment Quality

- IEQ-21 Dwelling Ventilation
- IEQ-18 Outdoor Pollutant Source Control
- IEQ-1 Ventilation Rates
- IEQ-3 Indoor Pollutants Monitoring & Control
- IEQ-10 Mould Prevention
- IEQ-13 Air Supply Ductwork
- IEQ-17 Air Distribution System
- IEQ-2 Air Change Effectiveness
- IEQ-22 Natural Ventilation
- IEQ-16 Tenant Exhaust Riser
- IEQ-5 Thermal Comfort
- IEQ-15 Individual Thermal Comfort Control
- IEQ-13 Electric Lighting Levels
- IEQ-12 High Frequency Ballasts
- IEQ-7 Internal Noise Levels
- IEQ-6 Hazardous Materials
- IEQ-23 Small Occupied Spaces
- IEQ-4 Daylight
- IEQ-11 Daylight Glare Control
- IEQ-14 External Views
- IEQ-8 Volatile Organic Compounds
- IEQ-9 Formaldehyde Minimization
- Connection to nature (plants)
- IEQ-19 Places of Respite
- IEQ-19 Breakout Spaces
- IEQ-20 Private External Space
- Eco-5 Outdoor Communal Facilities

Future

Indoor Environment Quality

	Description of proposed credit
Quality of Internal Air	Recognises providing good amounts of fresh air, while providing good exhaust of pollutant sources. It also encourages best practice design of ventilation solutions.
Thermal Comfort	Recognises increased thermal comfort through systems that balance, and provide occupant controls, of temperature, ventilation and humidity within a space.
Lighting Comfort	Recognises lighting design that takes into account the impact of luminaire glare, and appropriate light levels at work surfaces and within the space as a whole.
Acoustic Comfort	Recognises reduced noise from the outside, reduced noise from sources inside the building, and the provision good acoustic privacy in all spaces.
Hazardous Materials	Recognises removing all indoor lead, asbestos, and PCBs from an existing building and dispose of them in accordance with best practice standards
Visual Comfort	Recognises providing most occupants with daylight and a connection to nature, while also minimising discomfort glare from the sun.
Reduced Exposure to Pollutants	Reduces the use of paints, adhesives, sealants, joinery, and flooring with low levels of VOCs. Also encourages reducing exposure from operational sources.
Quality of Amenities	Encourages spaces that are conducive to social interaction, well designed, comfortable, and encourage a level of active movement.

The Green Star Roadmap

LEGEND

- a — Credit in Category
- a — Credit found in other category
- a — Proposed for deletion
- a — Proposed new credit or compliance pathway

Current

Energy

- Ene-3 Peak Electricity Demand Reduction
- Ene-Con Conditional Requirement
- Ene-1 Greenhouse Gas Emissions
- Ene-11 Energy Efficient Appliances
- Ene-7 Unoccupied Areas
- Ene-4 Lighting Zoning
- Ene-5 Lighting Power Density
- Ene-6 Car Park Ventilation
- Ene-8 Stairs
- Ene-9 Efficient External Lighting
- Ene-10 Shared Energy Systems

Future

Energy

- Peak Electricity Demand Reduction
- Greenhouse Gas Emissions
- Compliance Paths
  - DTS
  - Comparison with existing frameworks
  - Comparison to a variable performance

Description of proposed credit

Recognises building designs that reduce their peak load.

Recognises a holistic, modelled, approach at reducing the building's operational greenhouse gas emissions through maximising energy efficiency practices, while encouraging the use of on-site and off-site renewable energy.

Projects will be able to demonstrate compliance in 3 ways, using deemed to satisfy criteria to be awarded a limited number of points, by achieving a score in an existing framework (NABERS and NatHERS. To be awarded the maximum number of points, projects must demonstrate a reducing in GHG emissions as compared to a reference building using an energy model.

The Green Star Roadmap

LEGEND

- a — Credit in Category
- a — Credit found in other category
- a — Proposed for deletion
- a — Proposed new credit or compliance pathway

Current

Transport

- Tra-1 Provision of Car Parking
- Tra-2 Fuel-Efficient Transport
- Tra-4 Commuting Mass-Transport
- Tra-5 Trip Reduction Mixed-Use
- Tra-3 Cyclist Facilities
- Tra-6 Transport Design and Planning

Future

Transport

Prescriptive Path

- Car Parking
- Commuting Mass-Transport
- Walkable Neighbourhoods
- Alternative Transport

Performance Path

- Impacts from Transport

Description of proposed credit

Where a holistic, modelled, approach is not relevant, a partial number of points will be made available through a prescriptive path. This path will reward specific solutions such as reduced car parking use, commuting mass transport, the walkability of the neighbourhood, and providing alternatives such as cycling, virtual conferencing facilities, electric vehicles, etc.

Recognises a holistic, modelled, approach at reducing the building's transport greenhouse gas emissions through an assessment of all available transport impacts, and through the use of transport minimisation strategies.

The Green Star Roadmap

LEGEND

- a — Credit in Category
- a — Credit found in other category
- a — Proposed for deletion
- a — Proposed new credit or compliance pathway

Current

Water

- Wat-1 Occupant Amenity Water
- Wat-3 Landscape Irrigation
- Wat-4 Heat Rejection Water
- Wat-6 Potable Water Use in Equipment
- Wat-7 Water Efficient Appliances
- Wat-8 Swimming Pool/Spa Water Efficiency
- Other water sources
- Wat-5 Fire System Water Consumption

Future

Water

- Potable Water

Compliance Path

- Deemed to Satisfy
- Water Balance Calculation

Description of proposed credit

Recognises a holistic, modelled, approach at reducing the building's operational potable water use through an assessment of all available potable water uses, and through the use of water collection and reuse strategies.

Where a holistic, modelled, approach is not relevant, a partial number of points will be made available through a deemed to satisfy path. This path will reward specific solutions such as efficient amenities, low water use from heat rejection systems, low water landscaping design, and water reuse systems.

The Green Star Roadmap

LEGEND

- a — Credit in Category
- a — Credit found in other category
- a — Proposed for deletion
- a — Proposed new credit or compliance pathway

Current

Materials

- Mat-3 Recycled Content & Re-used Products & Materials
- Mat-4 Concrete
- Mat-5 Steel
- Mat-6 PVC
- Mat-7 Timber
- Mat-8 Design for Disassembly
- Mat-9 Dematerialization
- Mat-1 Recycling Waste Storage
- Mat-2 Building Re-use
- Man-7 Waste Management
- Mat-10 Shell and Core or Integrated Fitout
- Mat-11 Flooring
- Mat-12 Joinery
- Mat-14 Ceilings, Walls & Partitions
- Mat-14 Internal Walls
- Mat-13 Loose Furniture
- Mat-15 Universal Design

Future

Materials

Performance Path

- Materials Life Cycle Impacts
- Responsible Sourcing and Supply Chain

Prescriptive Path

- Concrete
- Steel
- PVC
- Timber

- Operational Waste
- Construction and Demolition Waste
- Flooring
- Assemblies
- Furniture

Description of proposed credit

Recognises a holistic, modelled, approach at reducing the building's material lifecycle impacts use through an assessment of all available structural materials, and showing an improvement over key environmental impact categories.

Recognises projects that specify materials that have been responsibly sourced and manufactured.

Where a holistic, modelled, approach is not relevant, a partial number of points will be made available through a prescriptive path. This path will reward specific solutions such as low impact concrete and steel, chain of custody certified materials (PVC and timber) or materials with environmental product declarations, and dematerialisation strategies.

This credit has been moved to the Management category, as it deals more with a process, rather than a specific material impact.

Recognises minimise construction and demolition waste through initiatives including the refurbishment of buildings, and reduction of overall waste going to landfill.

Recognises selection of fitout elements that are reused, have an eco-label, or that have a reduced impact in the built environment.

The Green Star Roadmap

LEGEND

- a — Credit in Category
- a — Credit found in other category
- a — Proposed for deletion
- a — Proposed new credit or compliance pathway

Current

Land Use and Ecology

- Eco- Conditional Requirement
- Eco-2 Reuse of Land
- Eco-3 Reclaimed Contaminated Land
- Eco-4 Change of Ecological Value
- Eco-1 Topsoil
- Eco-5 Outdoor Communal Facilities

Future

Land Use and Ecology	Description of proposed credit
Site Selection	Recognises the selection of land that is not greenfield, while actively promoting the use of land that is of lower ecological value (such as contaminated, or reused).
Land Ecology	Recognises solutions that enhance the ecology of the site, and enhances the biodiversity of the area. Urban Agriculture
Quality of Amenities	This credit has been moved to the Indoor Environment Quality category.
Heat Island Reduction	Recognises solutions that reduce the impacts from heat island effect

The Green Star Roadmap

LEGEND

- a — Credit in Category
- a — Credit found in other category
- a — Proposed for deletion
- a — Proposed new credit or compliance pathway

Current Emissions	Future Emissions	Description of proposed credit
Emi-2 Refrigerant GWP	Impacts from Refrigerants	Recognises reduction of impacts from ozone layer degradation, global warming, and health impacts to people arising from bacteria such as Legionella.
Emi-3 Refrigerant Leaks		
Emi-1 Refrigerant ODP		
Emi-8 Legionella	Microbial Control	Recognises reduction health impacts to people arising from bacteria such as Legionella.
Emi-4 Insulant ODP		
Emi-5 Watercourse Pollution	Stormwater	Recognises reduction of pollutants and flows from stormwater.
Emi-6 Discharge to Sewer		
Emi-7 Light Pollution	Light Pollution	Recognises reduction from Glow, glare and light flicker through the elimination of all indirect light to the night sky.
Emi-9 Trade Waste Pollution		
Emi-10 Noise Pollution		

The Green Star Roadmap

LEGEND

- a — Credit in Category
- a — Credit found in other category
- a — Proposed for deletion
- a — Issue not found in Green Star

Current	Future	Description of proposed credit
Innovation	**Innovation**	
Inn-1 Innovation Strategies and Technologies	Innovation	Recognises solutions that enhance the sustainability credentials beyond the requirements in the rating tool. The new innovation category will be modelled after the newly released credits, and include the opportunity to address a number of innovation challenges as well.
Inn-2 Exceeding Green Star Benchmarks		
Inn-3 Environmental Design Initiatives		
Innovation Challenges	**Innovation Challenges**	
Environmental Product Declarations	Manufacturer and supplier responsibility	It is expected this challenge will graduate to the Materials category
Material Lifecycle Impacts	Materials Life Cycle Impacts	It is expected this challenge will graduate to the Materials category
Adaptation and Resilience	Adaptation and Resilience	It is expected this challenge will graduate to the Land Use and Ecology category
Construction and Demolition Waste	Construction and Demolition Waste	It is expected this challenge will graduate to the Materials category
Financial Transparency	Financial Transparency	For more information see: http://www.gbca.org.au/green-star/innovation/
Marketing Excellence	Marketing Excellence	For more information see: http://www.gbca.org.au/green-star/innovation/
Market Intelligence	Market Intelligence	For more information see: http://www.gbca.org.au/green-star/innovation/
Design for Active Living	Quality of Amenities	It is expected this challenge will graduate to the Indoor Environment Quality category
Employment creation	Employment creation	For more information see: http://www.gbca.org.au/green-star/innovation/
Social Return on Investment	Social Return on Investment	For more information see: http://www.gbca.org.au/green-star/innovation/
Community Benefits	Community Benefits	For more information see: http://www.gbca.org.au/green-star/innovation/
Contractor Education	Contractor Education	For more information see: http://www.gbca.org.au/green-star/innovation/
Affordable Housing	Affordable Housing	For more information see: http://www.gbca.org.au/green-star/innovation/
Culture, Heritage and Identity	Culture, Heritage and Identity	For more information see: http://www.gbca.org.au/green-star/innovation/
Integration to the Urban Fabric	Integration to the Urban Fabric	This issue has been highlighted as potential Innovation Challenge
Inclusive Design	Inclusive Design	This issue has been highlighted as potential Innovation Challenge
Effective Space Use	Effective Space Use	This issue has been highlighted as potential Innovation Challenge