

INNOVATION RECORD

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The NZGBC has established this Innovation Record to share initiatives that have successfully achieved Green Star Innovation points. The record lists exemplar submissions and is a resource for all members of the industry to use. Projects that have strived to lead, exceed and go beyond Green Star in order to achieve innovation points are recognised below. Note that this is not an exhaustive list for awarded innovations. Similar innovations have been grouped and summarised. Any claim to current Innovation Challenges is excluded.

Sharing Initiatives in this record enables the industry to learn from and be inspired by the precedents set by others and potentially adopt or improve these technologies and strategies in their future projects, thereby expanding the sustainable outcomes of the initiative.

Project names have been omitted however if you would like to see your project's name next to the innovation point achieved please contact the NZGBC Tech Team.

Innovations that have been awarded to previous projects may not be awarded for a future project. Each innovation will be assessed on a case-by-case basis with consideration of timeliness, impacts and its specific circumstance.

Tool	Credit	Summary
Offv1	INN-01	Active Facades - Active and passive solar shading with a ventilated double façade for enhanced views and natural ventilation.
Edu09	INN-01	Phase change Materials - Use of phase change plasterboard in the ceiling and floorspace allowed the entire chilled panel cooling system to be omitted.
Edu09	INN-01	Low energy building design and technology - Mixed-mode ventilation in combination with underfloor plenum technology
Edu09	INN-01	The first use of a Monodraught system within New Zealand and demonstration of significant environmental benefit to the project and the wider NZ property industry.
Offv1	INN-01	Tri Generation System - A combined heat and power system coupled with an absorption chiller plant to meet the building's cooling load. The key components of the tri-gen plant are as follows: <ul style="list-style-type: none">• Biogas powered engine producing electricity on a continuous basis during occupied hours to supply the building's base electricity requirements.• Engine cooling and exhaust heat recovery system producing hot water for heating the building and the absorption chiller.• Absorption chiller to provide cooling to the building.

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Edu09	INN-01	Reduced environmental impact by utilising waste animal bedding material by cleanly burning it on site as a heating fuel in the new woodchip boiler.
Int09	INN-01	<p>The painting contractor for the project's fit-out used an on-site paint wash system for the cleaning of brushes and rollers, and the disposal of waste paint from the site. This system is an innovative, water-based treatment system that turns paint wash-out into clean water and inert solid waste, allowing for easier and safer disposal.</p> <p>Hot water Reclamation: In this case the project has been able, through the integrated fit-out, to alter the base building design and include a feature not originally offered by the landlord in order to reduce their energy consumption.</p> <p>All of the project's showers within the cyclist facilities on have wastewater heat recovery units fitted to the drains at the floor below. Recovered heat is used to pre-heat the hot water supply to the tenancy thereby saving energy.</p>
Offv1	INN-01	Development and publishing of embodied energy research and application on this project to understand construction impacts in NZ.
Int09	INN-01	Project researched and implemented a PC Management Software which turns all PCs off at night when not in use to save energy and reduce the environmental impact of the building. The energy savings quantified through use of this technology were significant.
Edu09	INN-01	Reduction in development contributions achieved through providing Green Star calculations to demonstrate reduced impact of building.
Edu09	INN-01	Use of earthbank construction technology.
Off09	INN-01	Seismic Strengthening Strategy. The innovative in-situ testing technique is a first to be used on a large scale Heritage Building in New Zealand and enabled the project to save material resources.
Ind09	INN-01	The project committed to carbon footprinting via an independent carbon and sustainability benchmarking programme to further reduce environmental impact from all operations. The marketing material for both the building and carbon footprinting process will be produced and made available on their website for public and industry to view and learn from.
Off09	INN-01	The Photo Catalyst product, the first technology incorporated in a New Zealand project, allows the façade panels to have active self-cleaning properties resulting in reduced maintenance costs. The innovation was awarded based on the quantity and scale of the product used in the project.
Edu09	INN-02	<p>Exceeding Benchmarks for MAN B and MAN C.</p> <p>MAN-B Learning Resources and MAN-C Learning Resources Incorporated into the Curriculum Credits.</p> <p>The project has demonstrated that initiatives rewarded within eight separate credits are being used as learning resources within the new building.</p> <p>The project has also demonstrated that three out of these eight initiatives, will be incorporated into the curriculum.</p>

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Offv1	INN-02	Exceeding Benchmarks for TRA-1, TRA-2 and TRA-3: TRA-1 - Reduced parking to 74% less than minimum requirement TRA-2 Small Parking Spaces: Small Car Parking Provided - exceeded Green Star by 20% TRA-3 Cyclist Facilities: Exceeded Green Star benchmarks for bicycle parks, showers and lockers.
Int09	INN-02	Exceeding benchmark (Waste management) MAT-10 – The project recovered concrete from the site and re-used on-site by crushing, stockpiling and use as backfill.
Offv1	INN-02	200% improvement on NZBC requirements. Next incremental benchmark met.
Int09	INN-02	Exceeding Benchmarks for IEQ C - Significantly exceeding benchmarks for internal plants.
Int09	INN-03	The project installed a Green Roof to provide landscaping/amenity space for tenants and habitat for birds and insect as well as increase CO2 absorption and reduce rainwater run-off.
Offv1	INN-03	100% Natural Ventilation System via twin façade – passive ventilation by creating a stable thermal condition within its cavity controlled via vents that are closed for warming the air and closed for cooling and creating air movement. Controlled by Building Management System and the building occupants
Offv1	INN-03	Demonstration of environmental benefit for top-down construction demonstrated through an embodied energy calculation that was developed by project team.
Off09	INN-03	Reduced energy use resulting from the emphasis on the use of stairs rather than lifts as part of the design.
Edu09	INN-03	Strategy of taking into account the lifecycle, operation and maintenance of the building as part of an integrated design process.
Int09	INN-03	The fit out includes a variety of learning resources, in compliance with the MAN-B Learning Resources credit in the Education Tool. These learning resources provide significant environmental benefit by enhancing the knowledge of all staff and visitors using Explanation cards highlighting the materials used, an energy monitor indicating the energy used in reception and office tours offered every month where the features of the fit out and how the rating was achieved are explained.
Edu09	INN-03	Commitment to using ceiling tiles that will be re-furbished and re-installed when needed resulting in reduction of resource depletion and material sent to landfill
Off09	INN-03	Presence detectors controlling the HVAC system to reduce energy use.
Int09	INN-03	Providing electric vehicle carparks, their charging points, two electric staff cars and electric bike charging facilitates encourages the use of more sustainable transport. The proposal encourages the spread of an emerging technology, provides a strong environmental message to the community and the environmental benefits are well documented.
Int09	INN-03	Implementing an Integrated Whole Building Design Process enables the project to proceed from 'no sustainability agenda' to a 'full sustainability agenda' that locked in lower life cycle costs and impacts from project outset through to completion.
EduV3	INN-03	Carbon dioxide monitoring in a naturally ventilated building aids users in the appropriate use of window, keeping CO2 levels low to benefit to occupant health and comfort.

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OffV3	INN-03	Having central featured staircase oriented towards the main entrance, runs through to all office levels, and is treated as a prominent feature that building occupants must walk past this staircase to get to the lifts, will promote a form of exercise and therefore creating a healthier routine, as well as reducing the energy consumption from the lifts.
Int09	INN-02	Achieving 95-100% diversion of waste from landfill exceeds the top benchmark of 70% set by the Credit. This would further facilitate reuse and recycle of materials.
CUSTOM	INN-03	Display of Performance graphics (Energy, Water and transport), certification and sustainability practises to the public and stakeholders during operational phase can motivate organisations towards continuous improvement.
Int09	INN-01	ICA credit is currently available only for base build tools. Introducing ICA in interior tools can benefit interior project particularly large fitout projects undertaking service modifications.
Int09	INN-03	Developing a communication strategy to publish and share information with the wider public sector about greenstar tools which can help mitigate risk of negative publicity surrounding the cost in implementing greenstar tools.
CUSTOM	INN-01	The project is the first of its kind to receive Green Star certification as the first Green Star church in NZ and Australasia
OffV3	INN-03	Understanding and recognising the environmental impact of the company. Green Bonds were created in response to the need to consider the impact on the natural environment, and to assist in 'greening' the company.
IndV3	INN-01	Starting from the planning process, water sensitive design has been at the forefront of stormwater design, shaping the solution to enhance the quantity, quality, amenity and ecological functioning of the development
INTv3	INN-02	Exceeding MAT-4 Ultra Low VOC by using paints with a maximum TVOC content of 5g/l for over 50% of the total paint used
DAB	29.1	The building comprises an accessible roof void for services reticulation and the installation of plant equipment which allows all regular maintenance access to be out of the staff and building occupant spaces. This allows the building to operate smoothly without disruption from services and maintenance staff.
DAB	29.3	100% of mattresses procured were low VOC