

Summary of Homestar Innovations Reviewed

21 July 2021

This table includes innovation applications that have been approved for your reference. Please note, innovation submissions will be reviewed by the NZGBC regardless of whether the innovation targeted has been approved in the past. Some innovation points are approved or declined under a specific circumstance and the comments and required documentation may not be applied to other projects. Please submit for innovation points prior to project submission.

Number	Innovation Name	Points	Description	Comments	Design Rating Submission Requirements	Built Rating Submission Requirements
1	Electric car charging point	1	Provision of a pre-wired charging point in the garage	Approval is dependent on providing sufficient evidence as to why it's different from a regular power supply. Juice Point (or similar) complies.	Drawings / specification showing power point	Photo showing power point
2	Integrated roof PV tiles	1	Roof tiles with integrated PV generation. These replace the need for traditional roof tiles and have an amorphous silicon topping.	Integrated roof tiles are not deemed to be widely transferrable at this point because of cost, however they are an innovative solution for New Zealand.	Drawings / specification showing inclusion in the project	Photo showing PVs integrated into the roof
3	Information Sharing	1	Sharing of design and build information	To qualify, the information must be presented in an easily transferable manner, such as a user-friendly website/blog with a good level of detail on how aspects of the design can be repeated. In one case, the house in question is going to be used an open home on weekends, for a period of 2 years.	Design & Details on website, blog etc.	
4	Exterior Wall Framing	1	Double framing system allowing for extra insulation, reducing thermal bridging and providing a clear space for services	This is an innovative design solution. While thermal properties of building elements are already accounted for in EHC-6, the material savings and conduit improvements of this design are useful and worthy of promoting for other projects.	Drawings / specification showing inclusion in the project	Photo showing system during the build process
5	Real-time Performance Monitoring	1	Real-time monitoring of key home metrics (solar, water use, energy use etc.)	Monitoring of energy use and performance metrics alone provides limited transferable information. However this innovation will be approved if data (at least 12 months' worth) is accompanied with analysis and useful interpretation.	Drawings / specification showing inclusion in the project	Report describing the energy monitoring system, analysis of at least 12 months of data and interpretation with respect to improving/maintaining performance levels in homes

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8	Onsite greywater reuse system	1	Installing an engineered system to handle greywater re-use onsite	Greywater reuse onsite is addressed in WAT-3, suggesting that this is not an innovation. However the local authority (Auckland Council) made the credit effectively unobtainable in this case, and a point was awarded in recognition of the research and advoc	Drawings / specification showing inclusion in the project	Photo showing system during the build process
10	Trombe wall	1	A trombe wall is a specifically designed, heavy mass situated and coloured in order to absorb energy from the sun during the day and release this energy during the night.	Size and orientation needs to be adequate. This should be backed up with appropriate calculations or modelling.	Drawings / Specification showing inclusion in the project	Photo showing system during the build process
13	Hot water drain heat exchangers	1	Heat exchangers installed in shower drains to use waste water to pre-heat cold water	Applicant did a lot of research. This is a smart, very low maintenance and proven technology; research has shown that very appropriate for hostels etc.	Drawings / Specification showing inclusion in the project	Photo showing system during the build process
15	Carpet tiles in a residential setting	1	Using replaceable carpet tiles or segments instead of large, carpet rolls, allowing for the replacement of smaller sections of carpet.	The applicant did a lot of research into the energy consumption of carpet production. While carpet tiles are now common practise in commercial settings, this is innovative for a residential setting.	Drawings / Specification showing inclusion in the project	Photo showing the carpet tiles in the dwelling
16	Timber Framing Junction	1	A new approach to the way that timber framing junctions are constructed. The use of Gib Ezybrace reduces the amount of timber framing required and allows increased thermal performance by allowing the installation of insulation at junctions.	This approach has been deemed to a) save timber resources and therefore save money, b) allow insulation to more areas and less thermal bridging (although the exact building performance increase may only be minor), c) saves time and has other practical ben	Drawings / Specification showing inclusion in the project	Photo showing system during the build process
17	Peak energy demand reduction	1 or 2	Sungenie Solar system that includes 10kwh battery array to enable dwelling to come off the main electricity grid during peak demand hours in the morning and evening.	It was determined that a 50% peak energy demand reduction should be awarded 1 point and that a 100% demand reduction should be awarded 2 innovation points. The original project demonstrated a 50% peak energy demand reduction.	Drawings / Specification showing inclusion in the project and calculations showing % of peak demand designed to be offset.	Photo showing system in place and screen shots of monitoring system showing offset of demand.

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19	Integrated natural systems – stormwater and ecological management	1	Provided report to demonstrate that stormwater treatment devices will be implemented to remove 80% of suspended solids or more of runoff from impermeable surfaces to minimize the impact of ingress of existing ground water.	Although stormwater is addressed in STE-1, the aim of this credit is reducing the stormwater runoff from buildings and hard surfaces. There is no facility in this credit to recognise large multi-unit projects that are not retaining and infiltrating stormw	Specifications of stormwater treatment devices, design details about stormwater treatment devices, documents that demonstrate no retention is required on site or project is contaminated.	As is for Design Rating
20	Avoiding O-zone depletion	0.5	All refrigerants and blown insulants will have zero ozone depleting potential and refrigerant leak detection systems are installed to reduce the potential effects of refrigerant leaks and their associated greenhouse gas effects.	Avoiding O-Zone depletion is recognized in the Green Star tool and awarded 1 point. Considering the weighting factor in Green Star tool, 0.5 point is awarded here.	Design specification which claims that zero ozone depleting potential refrigerants and blown insulants will be used for project. Design drawings include refrigerant leak detection systems.	Specification / factsheet of refrigerants and blown insulants, specification / factsheet of refrigerant leak detection systems.
21	Avoiding light pollution	0.5	All building and street lighting on project site has been designed to mitigate night sky effects.	Avoiding light pollution is recognized in the Green Star tool and awarded 1 point. Considering the weighting factor in Green Star tool, 0.5 point is awarded here.	Reports by lighting engineer describing that how external lighting has been designed to mitigate night sky effect. Drawings detailing that external lighting design as supporting documents for avoiding light pollution.	As is for Design Rating

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23	Pedestrians and cyclists first – shared streets	1	All the streets and laneways are designed as low speed (30 km/hr) “shared streets” with the purpose of reclaiming them from the dominance of the private motor vehicle.	Low speed limitation of “shared streets” could be a good incentive for people to choose alternative modes of transportation, such as: walking and cycling on site.	Report describes the transport network design which demonstrates the incentive of walking and cycling.	Photos show the speed limit signs of the streets on site.
24	Travel Management Association	1	An independent organisation has been established to deliver sustainable travel ideas for project by working with businesses, residents and landowners.	For large scale development, an independent organisation that focuses on promoting and developing sustainable transport and travel initiatives is a good practice.	Documents describe the organisation such as vision, objectives, etc. Documents demonstrate the organisation is under operation.	As is for Design Rating
25	Adaptation and Resilience	1	Project-specific “Climate Changes Adaption Strategies and Plans” have been provided.	Adaptation and Resilience is a recognised Innovation Challenge and awarded 1 point. See Summary of Innovation Challenges.	A comprehensive project-specific climate adaptation plan which includes solutions that are mentioned in the adaptation plan, and that address the risk-assessment component, should also be included into the building design and construction.	As is for Design Rating

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40	Car Sharing	2	100% of occupants have access to a hybrid or plug in electric car for shared use through a dedicated car share program	Not currently covered in Homestar and the allowances in Green Star does not apply due to differences in function and user behaviour. Widely cited international research suggests 13 is a suitable estimate for the number of private cars removed from the ro	Project to calculate the number of cars required based on one car per 13 households, unless published peer reviewed research specific to the city/district that the property is located in suggests a higher number of private vehicles are taken off roads by	As is for Design Rating
41	Future Proofing	1	Future proofing development with provision for installing EV chargers and PV	Project must demonstrate a cost benefit analysis and other evidence where applicable to show that future proofing addresses the primary barrier to uptake of EV and PV, AND there is sufficient interest to achieve a significant sustainability benefit	Details of future proofing works including diagrams drawings of structural supports and correctly sized cabling (rewiring), As well as cost benefit analysis and/ or research identifying key barriers and interest for uptake	As is for Design Rating
42	Green Wall	1	110m2 of external Green Wall supports increased bio diversity via high density planting of native plants and food for birds and bees	Project must demonstrate benefits of the green wall which may include increased plant density, bio diversity, native planting and birdlife. The size should be at least 100m2 for points to be awarded.	Provide a drawing and/ or specification for the green wall (by supplier) that clearly identify targeted sustainability benefits	Photo of the planted green wall

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43	Sustainability Benefits of Pre-fabrication	1	project recognised for prefabrication on site with processes that allow waste to be designed out, minimised and recycled more effectively than when built on site	Projects targeting this innovation must demonstrate how benefits of pre-fabrication are achieved in at least one of the following: minimising / designing out waste, improving building affordability and efficiency, improving build quality, improved moisture control and thermal performance. Contact NZGBC about other sustainability benefits the project achieves through pre-fabrication.	Report outlining specific measurable benefits that points are claiming showing that these either exceed existing Homestar benchmarks not covered in the tool.	As is for Design Rating
44	Reclaimed Contaminated Land	1	The project is recognised for decontamination and safe encapsulation of contaminants on site during construction on contaminated land as per Green Star ECO-3	To claim this innovation, project must be on land that is classified as contaminated. The project must show that adequate steps have been taken as per Green Star ECO-3 prior to the proposed construction to; (1) decontaminate (including removal, in situ or ex situ remediation) (2) safely encapsulate contaminants on the site (3) mobilise or contain contamination within the site.	Provide compliance documentation as per ECO-3: Site assessment report or contamination report, and signed statement from an environmental specialist that the site has been correctly and appropriately remediated	As is for Design Rating
45	Community Benefits			Community Benefits is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
46	Contractor Education			Contractor Education is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
47	Earthquake Resilience			Earthquake Resilience is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
48	Energy Efficient Appliances			Energy Efficient Appliances is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
49	Financial Transparency			Financial Transparency is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
50	Heritage Protection			Heritage Protection is a recognised Innovation Challenge. See Summary of Innovation Challenges.		

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51	Intergrating Healthy Environments			Intergrating Healthy Environments is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
52	Local Procurement			Local Procurement is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
53	Marketing Excellence			Marketing Excellence is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
54	Material Life Cycle Impacts			Material Life Cycle Impacts is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
55	Occupant Engagement			Occupant Engagement is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
56	Social and Affordable Housing			Social and Affordable Housing is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
57	Te Aranga Design			Te Aranga Design is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
58	Total Value Analysis			Total Value Analysis is a recognised Innovation Challenge. See Summary of Innovation Challenges.		
59	Water Efficient Appliances			Water Efficient Appliances is a recognised Innovation Challenge. See Summary of Innovation Challenges.		

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62	Natural Flow System	1	Instead of a traditional septic tank, the homeowners have elected to use a Natural Flow wastewater treatment system that manages this wastewater on site through a gravity-fed, natural filtration system. This system eliminates the need for pumping out and treatment in an off-site facility, as would typically be required when installing a septic tank, and furthermore eliminates many of the risks associated with a traditional septic retention system.	The request for 1 innovation point for the provision of a Natural Flow system to manage grey and blackwater on site is AWARDED. It is recognised that a system that manages grey water and black water onsite using natural mechanisms and with minimal external power go above and beyond the current Homestar framework, while also having a significant environmental benefit.	Please evidence in the form of drawings and/ or specifications to confirm 1 innovation point.	Please provide evidence that this system was installed at the built rating submission to confirm 1 innovation point.
64	E-bike Provided to Owner	0.5	Each owner will be provided an e-bike upon purchase of the dwelling to encourage owners to use the local cycleways and to avoid driving where possible.	This innovation is awarded as this makes using an e-bike an easy and accessible mode of transport for the new owners, which will reduce car usership. People tend to make choices about their main mode of transport within weeks of moving into a new home and providing e-bikes will increase the chance of the new owners making a sustainable transport choice.	Please provide evidence that these e-bikes will be provided to the owners e.g. Purchase invoice, photo of bikes, inclusion in purchase agreement, confirmation email etc.	As for design rating
66	Deconstruction and Resuse	1	Project exceeds the existing benchmarks for WST-1 by deconstructing the original dwelling onsite and achieving 89.5% diversion rate from landfill for the deconstruction through re-use in the new building and recycling.		SWMP to include the deconstruction phase.	A report detailing waste generated and diversion rates for the deconstruction.

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68	Car Park Minimisation	2	The project demonstrates a reduction in car parking available to residents to encourage more sustainable forms of transport.	<p>1 point may be awarded where the project has demonstrated a 30% reduction in carparking from that typically provided in new developments (the benchmark).</p> <p>2 points may be awarded where the project has demonstrated a 50% reduction in carparking from that typically provided in new developments (the benchmark).</p> <p>Benchmark: The benchmark for new homes is 1 car parking space for every 2 bedrooms provided across the project. The target number of car parking spaces should be calculated by dividing the number of bedrooms in the development by 2, subtracting the appropriate reduction (30% / 50%) and then rounding down to the nearest whole number.</p> <p>These innovation points will only be awarded to projects that achieve 2 points for proximity to key amenities, and 1 point for proximity to public transport services under STE-3 Neighbourhood amenities, and 2 points for STE-4 Cycling.</p>	Reports that include a comparison between the total numbers of car parking spaces provided by the project against the benchmark of 1 carpark for every 2 dwellings. Drawings demonstrate the number of car parking spaces associated.	As for design rating
69	Permanent Ladder Bracket	0.5	<p>The provision of Accumulation of debris can quickly lead to a compromised and overflowing gutter (which can overflow back towards the building when the external edge of the gutter being higher than the internal edge).</p> <p>The provision of permanent roof ladder brackets in the residential setting allows for easy, safe gutter clearing, and helps prevent the accumulation of debris causing water to overflow into the building.</p>	While these are common in commercial buildings, permanent ladder brackets or other fixings for maintenance personnel safety are not common in standalone or terrace dwellings. Having these in place may potentially encourage gutters to be cleaned more often, leading to better stormwater flows and reduced likelihood of flooding/overflows that may cause moisture ingress into the dwelling structure.	Provide a plan which indicates the location(s) of ladder brackets, to confirm that at least 80% of the guttering can be safely accessed with the use of installed brackets (and any sections not accessible must not block the flow path from accessible sections and downpipes).	Provide photos of the ladder brackets installed, along with the plan.

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71	Continuous Improvements Tracking	1	Developer tracks key metrics over multiple developments and analyses to continually identify and implement efficiencies across their builds.	Such a process has the potential to reduce waste in cost, time and material across projects, thus positively impacting housing affordability, embodied carbon associated with the project and construction waste.	provide an email/letter from the main contractor/developer outlining: 1. what efficiency improvements identified through this tracking process are implemented in this project. 2. how environmental benefits of improvements can be quantified for informing initiatives on future projects.	Same as for design