

SUMMARY OF INNOVATIONS REVIEWED

November 2016

Note: The following table includes innovation applications that are approved or declined. For approved innovation points, a brief review comments and Documentations required are listed below; for declined innovation points, project can also use review comments as a reference. Some innovation points are approved / declined under a specific circumstance and the comments / required documentation may not be applied to other projects. For all innovation point applications, a project by project based reviewed is required.

Name	Points Awarded	Detail	Status	Comments	No of Uses	Documentation Required
Electric car charging point	1	Provision of a pre-wired charging point in the garage	Approved	Approval is dependent on providing sufficient evidence as to why it's different from a regular power supply. Juice Point (or similar) complies.	5	<i>Design Rating:</i> Drawings / specification showing power point <i>Built Rating:</i> Photo showing power point
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.	Approved	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.	1	<i>Design Rating:</i> Drawings / specification showing inclusion in the project <i>Built Rating:</i> Photo showing PVs integrated into the roof
Information sharing	1	Sharing of design and build information	Approved	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.	4	<i>Design & Built Rating:</i> Details on website, blog etc.

Exterior wall framing	1	Double framing system allowing for extra insulation, reducing thermal bridging and providing a clear space for services	Approved	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.	2	<i>Design Rating:</i> Drawings / specification showing inclusion in the project <i>Built Rating:</i> Photo showing system during the build process
Real-time performance monitoring	0	Real-time monitoring of key home metrics (solar, water use, energy use etc.)	Declined	Monitoring of energy use and performance metrics alone provides limited transferable information. This innovation is likely to be approved if data (ideally at least 12 months' worth) is accompanied with analysis and useful interpretation. Update: Analysis has now been completed for this project. Innovation credit application could be re-submitted.		<i>Design Rating:</i> Drawings / specification showing inclusion in the project <i>Built Rating:</i> Photo showing system during the build process
Open source design	0	Providing plans and specifications for amendment and re-use by others. This goes beyond just sharing knowledge and learning. It includes access to design details.	Declined	In the case submitted, it was deemed that this was too close to 'Sharing of design and build information'. Points could be awarded for open-source design if detailed drawings and specifications were included and made freely available.		
Avoiding PVC in materials and products	0	Avoiding PVC in materials and products	Declined	There was no consensus from the Technical Development Group on whether avoiding all PVC is a good overall strategy when all aspects of life cycle analysis are considered. Excluding all PVC is not likely to be widely transferrable and may exclude cost effective envelope options such as uPVC window frames.		
Onsite greywater reuse system	1	Installing an engineered system to handle greywater re-use onsite	Approved	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 advocacy undertaken by the applicant in order for them to install a viable solution.	1	<i>Design Rating:</i> Drawings / specification showing inclusion in the project <i>Built Rating:</i> Photo showing system during the build process
Passivhaus certification	1	House achieves Passivhaus certification	Approved	Obtaining Passivhaus Certification is a significant achievement and will result in	1	<i>Design Rating:</i> PassiveHaus Design Tick letter or certificate

				exemplar thermal performance and energy efficiency. To qualify for innovation, a house must have formal certification. Being designed to the standard, or equivalent, without certification, does not qualify.		<i>Built Rating:</i> PassiveHaus Built as Designed Tick letter or certificate
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.	Approved	Size and orientation needs to be adequate. This should be backed up with appropriate calculations or modelling.	1	<i>Design Rating:</i> Drawings / Specification showing inclusion in the project <i>Built Rating:</i> Photo showing system during the build process
Very low flow shower head	0	Monster brand shower head, claiming to have a flow rate of 3.8 L/min.	Declined	Model is not found on the WELS database.		
Excellent ventilation & moisture control		First submission to include fully enclosed showers. Project also included automatic range hood switches and programmed controllers for Velux roof windows	Approved	As well as being the first submission that can claim the fully enclosed shower point, the applicant has gone to great lengths to minimise moisture at source.	1	<i>No longer available for use. Deemed to be included in EHC-7</i>
Hot water drain heat exchangers	1	Heat exchangers installed in shower drains to use waste water to pre-heat cold water	Approved	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.	1	<i>Design Rating:</i> Drawings / Specification showing inclusion in the project <i>Built Rating:</i> Photo showing system during the build process
Cycle parks	1 or 1.5	Provision of a sufficient number of safe, secure bike parks to encourage the use of cycling.	Approved	Applicant needed to demonstrate that parks are adequately secure and under cover, thereby providing a very user-friendly option. Sufficient storage facilities for bicycles for 1 point: no less than the expected occupancy (no. of bedrooms +1) for standalone and terraced dwellings; no less than 1 per dwelling for apartments. For apartments, additional 0.5 points awarded where number of facilities exceed 125% of the number of apartments	3	<i>Design Rating:</i> Drawings / Specification showing inclusion in the project <i>Built Rating:</i> Photos showing the bike parks

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.	Approved	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.	1	<i>Design Rating:</i> Drawings / Specification showing inclusion in the project <i>Built Rating:</i> Photo showing the carpet tiles in the dwelling
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.	Approved	This approach has been deemed to: - save timber resources and therefore save money - allow insulation to more areas and less thermal bridging (although the exact building performance increase may only be minor) - saves time and has other practical benefits	2	<i>Design Rating:</i> Drawings / Specification showing inclusion in the project <i>Built Rating:</i> Photo showing system during the build process
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.	Approved	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.	2	<i>Design Rating:</i> Drawings / Specification showing inclusion in the project and calculations showing % of peak demand designed to be offset. <i>Built Rating:</i> Photo showing system in place and screen shots of monitoring system showing offset of demand.
Reclaimed contaminated land	1	Provide report to demonstrate that project site has been awarded points under Green Star ECO-3 for reclaimed contaminated land, which is not currently covered by Homestar.	Approved	The reclaimed contaminated land has been conditionally awarded one innovation point under INN (Option 2): not recognised under the existing Homestar benchmarks, and provides a significant environmental benefit. Project teams must provide confirmation that adequate steps have been taken prior to construction to decontaminate or encapsulate contaminants.	2	<i>Design Rating:</i> Contract documentation demonstrating what decontamination/encapsulation will be taking place on site. <i>Built Rating:</i> The project team must provide documentation demonstrating that the site has been decontaminated.
Integrated natural systems – stormwater and ecological	1	Provided report to demonstrate that stormwater treatment devices will be implemented to remove	Approved	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	1	<i>Design Rating / Built Rating:</i> Specifications of stormwater treatment devices, design details about stormwater treatment devices, documents that demonstrate no

management		80% of suspended solids or more of runoff from impermeable surfaces to minimize the impact of ingress of existing ground water.		not retaining and infiltrating stormwater on site, but are instead leaving the quantity of the stormwater unchanged but are treating it before it leaves the site to remove suspended solids. There is no retention requirement on project site due to contaminated land, and stormwater treatment devices will be implemented to remove 80% of suspended solids or more to minimize the impact of ingress of existing water.		<i>retention is required on site or project is contaminated.</i>
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.	Approved	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.	3	<i>Design Rating: 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. Built Rating: Specification / factsheet of refrigerants and blown insulants, specification / factsheet of refrigerant leak detection systems.</i>
Avoiding light pollution	0.5	All building and street lighting on project site has been designed to mitigate night sky effects.	Approved	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.	1	<i>Design Rating / Built Rating: 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.</i>
Car park minimisation	1	Project has a reduction on the maximum allowable parking capacity.	Approved	Car park minimisation is recognized in the Green Star tool. And the established benchmarks are 1 point for a 25% reduction of the maximum allowable parking and 2 points for a 50% reduction of the maximum allowable parking.	1	<i>Design Rating / Built Rating: Reports that include a comparison between the total numbers of car parking spaces provided by the project against the total number of car parking spaces permitted in the local regulations. Drawings demonstrate the number of car parking spaces associated with the project.</i>

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.	Approved	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.	3	<i>Design Rating: Report describes the transport network design which demonstrates the incentive of walking and cycling. Built Rating: Photos show the speed limit signs of the streets on site.</i>
Travel management association	1	An independent organisation has been established to deliver sustainable travel ideas for project by working with businesses, residents and landowners.	Approved	For large scale development, an independent organisation that focuses on promoting and developing sustainable transport and travel initiatives is a good practice.	1	<i>Design Rating / Built Rating: Documents describe the organisation such as vision, objectives, etc. Documents demonstrate the organisation is under operation.</i>
Resilient design	1	Project-specific “Climate Changes Adaption Strategies and Plans” have been provided.	Approved	Resilient design is recognized in the Green Star tool – Adaptation & Resilience Innovation Challenge and awarded 1 point.	1	<i>Design Rating / Built Rating: 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.</i>
Diversity, intensity and urban design	0	Residential development density has been considered for this project.	Declined	The intensity, diversity and urban design items are already considered in the Density Factor which is incorporated into Homestar v3.		
Design guidelines, reference design and sustainability standards	0	Documents are issued to prospective developers as briefing and reference / control documents.	Declined	Items in these guidelines are already covered in Homestar v3 credits.		

Passive design master plan	0	Passive design analysis has been conducted at project design stage, such as natural ventilation, etc.	Declined	Most items that are addressed in the passive master planning (i.e. good passive thermal performance, access to natural daylight, cross ventilation) are already covered in Homestar v3 credits.
Provision of open/green space	0	Provide open space is considered as a key principle for project development.	Declined	Already covered under Homestar v3 STE-5 credit.
Health and active by design	0	Design principles have been adopted to support and promote healthy and active living ways.	Declined	Already covered under Homestar v3 STE-4/5 credits.
Urban ecology	0	Different sustainable design concepts in regard to landscapes, habitats are incorporated with project development.	Declined	This concept is too wide range for the aim of Homestar innovation point that rewards for design feature, technology or strategy. And certain items are already covered in Homestar v3 STE-1/2.
Green/living roofs and balconies	0	Green roofs / green canopies are proposed to this project.	Declined	Items are already covered in Hoemstar v3 STE-1/2/3 credits.
Community gardens	0	Planters of vegetables, fruits, herbs and flowers are incorporated in this project.	Declined	Items are already covered in Homestar v3 STE-3 credit.
Waterfront pumping station and interceptor	0	A new storage and pump station and a central interceptor pipe will be built so that will significant mitigate of existing overflows.	Declined	This design appears to be a more standard infrastructure and no additional environmental benefits are demonstrated.

Reduce greenhouse gas emission and avoiding use of fossil fuels	0	Claim that design strategies which will avoid fossil fuel usage are incorporated for project design.	Declined	Reduce greenhouse gas emission is used as the benchmark for many Homestar credits (EHC-1, EHC-2, EHC-5). Therefore the generic application of “reduce greenhouse gas emission” cannot be awarded innovation point. However this does not preclude the future awarding of innovation to a targeted reduction in greenhouse gas emission by a design strategy which is not currently addressed by Homestar.	
Car sharing	0	Two shared car parking spaces are provided for apartment owners who do not own or have a parked private vehicle.	Declined	Two share car parking spaces are not sufficient in regard to the total dwellings of project; however this does not preclude the future awarding of innovation with a more appropriate percentage of shared car parking spaces.	
Public transport supportive	0	Integrated transport plans have been developed in line with sustainable principles for this project.	Declined	Items are already covered in Homestar v3 STE-4 credit.	
Development of a complete community	0	A community infrastructure plan/activation strategy has been prepared for project to improve amenities connectivity.	Declined	Items are already covered in Homestar v3 STE-4 credit.	
Smart precinct	0	A whole sustainable design strategy is incorporated into project site development with the consideration from energy, transport, water, etc.	Declined	Most items are already covered in current Homestar v3 credits.	
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	Approved	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 roads by each shared car.	1 <i>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</i>

					<i>by each shared car</i>	
Future Proofing	0.5	Future proofing development with provision for installing EV chargers and PV – the project is providing cabling sized to meet additional expected future capacity requirements and structural details sized to support future PV installations	Approved	The project demonstrated through a cost benefit analysis that the future proofing works sufficiently offsets the capital cost of a PV and EV charger installation, which is the primary barrier for uptake of EV and PV. The project also showed there is sufficient interest in the potential homeowners to adopt EV and PV when the cost barrier is reduced /eliminated. 0.5 points awarded as a currently installed PV system achieves minimum of 0.8 points	1	<i>Design and Built Ratings: Drawings of futureproofing works including structural supports and cabling (prewiring) showing they are sized appropriately to meet future installation requirements. Cost benefit analysis or other evidence to show that future proofing works address the main barrier to uptake and sufficient interest exists to achieve significant future sustainability benefit when this barrier is removed</i>
Green Wall	1	110m ² of external Green Wall supports increased bio diversity via high density planting of native plants and food for birds and bees	Approved	The project must demonstrate that the wall is large enough to achieve a significant sustainability benefit in terms of increased native planning, bio diversity, increased planting density and / or improved birdlife. Each instance of a green wall is to be assessed case by case and awarded points	1	<i>Design Rating: provide specification of wall outlining size, types of plants and expected sustainability benefits Built Rating: Photos of Wall</i>
Thermally Treated Timber Framing	1	The project used thermally preserved Abodo NZ origin timber cladding in place of chemically treated or imported wood typically used for this purpose	Approved	Chemically treated timber typically used in construction presents an environmental hazard at the end of its life and there are avoidable carbon emissions associated with shipping Cedar from North America. Thermally treated NZ origin timber thus have a significant sustainability benefit	1	<i>Design and Built Rating: provide product specification to show that product is thermally treated, NZ origin and does not present an end-of life environmental hazard to the same degree as chemically treated timber</i>