Tech Hub, Haymarket – BREEAM New Construction 2018 Office Pre-Assessment

This report is intended as a summary of the BREEAM pre-assessment review for the following project:

Project Name	Haymarket - Tech Hub
BREEAM Version	BREEAM 2018 NC - Office
Assessment Stage	Pre-Assessment Stage
Lead Assessor	Lucy Rees
Target Rating	Excellent (70%*)

Please note that this is an uncontrolled copy and is for information only and a more detailed, formal pre-assessment report may be issued by your appointed assessor. If you have any queries on the content of this report or the award of any of the credits, please contact your licensed assessor as noted above.

* Hurley Palmer Flatt recommend a 5% buffer is included in the target score for any desired rating to mitigate against the unforeseen loss of targeted credits over the course of certification. Therefore, for Excellent, the recommended target is 75%.

1st July 2019

1.0 Summary

The BREEAM pre-assessment for Tech Hub, Haymarket, demonstrates that a score of 70.25% is achievable, equating to a BREEAM rating of 'Excellent' (minimum of 70% required). The pre-assessment outlined below highlights credits which have been agreed as targets by the Client and Design Team. Based on this pre-assessment, Hurley Palmer Flatt recommend that the following is conditioned: "A BREEAM 'Final' (as-built) 'Excellent' Certificate for the development is submitted to the council within 6 months of occupation". We recommend a 6-month period is allowed for post construction for the BREEAM certificate to be provided to the council, as BREEAM evidence submission requires evidence of elements which can only be provided post completions (e.g. commissioning records). In addition, the BRE Quality Assurance lead time for reviewing and providing a certificate is 3-6 months.

2.0 Minimum Standards

Performance against the minimum standards (required for the specified target rating) under each scenario is summarised below:

Issue	BREEAM Excellent Target
Man 03 - Responsible construction practices	Yes
Man 04 - Commissioning and handover	Yes
Man 04 - Commissioning and handover	Yes
Man 05 - Aftercare	Yes
Ene 01 - Reduction of energy use and carbon emissions	Yes
Ene 02 - Energy monitoring	Yes
Wat 01 - Water consumption	Yes
Wat 02 - Water monitoring	Yes
Mat 03 - Responsible sourcing of construction products	Yes
Wst 01 - Construction waste management	Yes
Wst 03 - Operational waste	Yes

If the required minimum standards are not met, then the target rating will not be achieved regardless of overall score

3.0 - Credits and Comments Table

Credit		Available	Target	Comments	Responsible Party
Management					
Man 01	Project brief and design	4	2	**Targeted, 1 credit** – Prior to completion of RIBA Stage 2, it must be demonstrated that all project delivery stakeholders have met to identify and define roles, responsibilities and contributions across every key phase of project delivery considering: a. End user requirements b. Aims of the design and design strategy c. Particular installation and construction requirements or limitations d. Occupiers' budget and technical expertise in maintaining any proposed systems e. Maintainability and adaptability of the proposals f. Operational energy (see Assessment scope) g. Requirements for the production of project and end user documentation h. Requirements for commissioning, training and aftercare support. It must be demonstrated that the above outcomes influence the following: a. Initial Project Brief b. Project Execution Plan (see Definitions) c. Communication Strategy (see Definitions) d. Concept Design. **Targeted, 1 credit** – Prior to completion of RIBA Stage 2, the design team demonstrate they have consulted all interested parties on matters covering the minimum BREEAM consultation content as set out in the BREEAM NC 2018 manual. It must be demonstrated that this influences the Project Brief and Concept Design. Prior to the completion of RIBA Stage 4, it must be demonstrated that all interested parties have been given consultation feedback.	Project Manager (with Design Team input)
Man 02	Life cycle cost and service planning	4	4	**Targeted, 2 credits** - An outline, entire asset Life Cycle Cost plan in compliance with BREEAM methodology is undertaken at RIBA Stage 2 together with any design options appraisals in line with PD 156865: 2008. The plan must provide an indication of future replacement costs over a 60-year period, including service life, maintenance and operation cost estimates. Demonstrate, using appropriate examples provided by the design team, how the elemental LCC plan has been used to influence building and systems design and specification to minimise life cycle costs and maximise critical value. HPF have provided full requirements to Validus for review **Targeted, 1 credit** - A component level LCC options appraisal is undertaken during RIBA Stage 4 in line with PD 156865: 2008. The component level LCC includes (where present): a. Envelope, e.g. cladding, windows, or roofing b. Services, e.g. heat source cooling source, or controls c. Finishes, e.g. walls, floors or ceilings d. External spaces, e.g. alternative hard landscaping, boundary protection. HPF have provided full requirements to Validus and TPB for review. **Targeted, 1 credit** - Report the capital cost for the building in pounds per square metre of gross internal floor area (£k/m²)	Cost Consultant
Man 03	Responsible construction practices	6	6 (+1)	**Targeted (all scenarios), pre-requisite -** All timber and timber-based products used during the construction process of the project are 'legally harvested and traded timber' **Targeted (all scenarios), 1 credit –** All parties who manage the construction site operate under a third party EMA e.g. ISO 14001	Contractor (Developer commitment)

				Targeted, 1 credit – The client and the contractor formally agree performance targets. A certified BREEAM Accredited Professional is appointed for the construction stage by either the Contractor or Client **Targete, 2 credits+1 exemplary –** The contractor must achieve all of the BREEAM 'responsible construction management' items as listed in the NC 2018 manual **Targeted, 1 credit -** Set targets, monitor and record and report the site energy consumption in kWh (and where relevant, litres of fuel used) as a result of the use of construction plant, equipment (mobile and fixed) and site accommodation. Set targets, monitor and record and report the site total net water consumption (m^3), i.e. consumption minus any recycled water use from the construction process **Targeted, 1 credit** - Set targets, monitor, record and report transportation movements and impacts resulting from delivery of the majority of construction materials to site and construction waste from site. Report separately for materials and waste, the total transport-related carbon dioxide emissions ($kgCO_2eq$), plus total distance travelled (km)	
Man 04	Commissioning and handover	4	4	**Targeted, prerequisite, 1 credit** - Prior to handover, develop two building user guides and two training schedules for the following users: a. A non-technical user guide for distribution to the building occupiers b. A technical user guide for the premises facilities managers **Targeted, 1 credit -** Prepare a schedule of commissioning and testing that identifies a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and for testing and inspecting building fabric. The schedule identifies the appropriate standards for all commissioning activities to be conducted and where a BMS is specified, this is commissioned in line with BREEAM methodology. Appoint an appropriate project team member to monitor and programme pre-commissioning, commissioning and testing. Where necessary include re-commissioning activities. The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and the main programme of works. Allow the required time to complete all commissioning and testing activities prior to handover. **Targeted, 1 credit -** During the design stage, a Specialist Commissioning Manager is appointed with responsibility for: a. Undertaking design reviews and giving advice on suitability for ease of commissioning b. Providing commissioning management input to construction programming and during installation stages c. Management of commissioning, performance testing and handover or post-handover stages. **Targeted, 1 credit -** Complete post-construction testing and inspection including continuity of insulation, avoidance of thermal bridging and air leakage paths (this is through air tightness testing and a thermographic survey. Rectify any defects identified prior to building handover and close out.	Contractor (Developer commitment)
Man 05	Aftercare	3	3	**Targeted, 1 credit** - Provide aftercare support to the building occupiers. This includes as a minimum: a. A meeting between the aftercare support team or individual and the building occupier or management team (prior to initial occupation) to: i. Introduce the aftercare support available, including the building user guide and training schedule and their content. ii. Present key information on the building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible. b. On-site facilities management training including: iii. A walkabout of the building AND iv. Introduction to the building systems, controls and how to operate them in accordance with the design intent and operational demands c. Provide initial aftercare support for at least the first month of occupation	Developer Specialist Consultant

				d. Provide longer term aftercare support for occupiers for at least the first 12 months from occupation. Establish operational infrastructure and resources to collect and monitor energy and water consumption for a minimum of 12 months. **Targeted, 1 credit** – Specialist Commissioning Manager to do the following over a minimum 12-month period, once the building becomes occupied: a. Identify changes made by the owner or operator that might have caused impaired or improved performance b. Test all building services under full load conditions c. Where applicable, carry out testing during periods of extreme occupancy d. Interview building occupants to identify problems or concerns regarding the effectiveness of the systems e. Produce monthly reports comparing sub-metered energy performance to the predicted one f. Identify inefficiencies and areas in need of improvement g. Re-commission systems and incorporate any revisions in operating procedures into the O&M manuals **Targeted, 1 credit** – an independent party carries out a post occupancy evaluation exercise one year after the building is occupied covering: a. A review of the design intent and construction process b. Feedback from a wide range of building users including facilities management on the design and environmental conditions covering: i. Internal environmental conditions (light, noise, temperature, air quality) ii. Control, operation and maintenance iii. Facilities and amenities iv. Access and layout v. Energy and water consumption vi. Other relevant issues	
Management Totals: (+exemplary)		**21 (+1)**	**19 (+1)**		
Management score totals:		**11**	**10.952**		
Health & Wellbeing					
Hea 01	Visual comfort	5	2	**Targeted, 1 credit –** Internal and external lighting to be designed in accordance with BREEAM standards **Targeted, 1 credit** – 95% of areas within the distances from an external wall below must have the corresponding window area with an 'adequate view' out i.e. of landscape or buildings (not the sky) Maximum depth of room (distance from window wall) / Minimum area of window in the wall (as seen from inside - %) < 8m: 20 8-11m: 25 11-14m: 30 >14m: 35	MEP Architect
Hea 02	Indoor air quality	4	3	**Targeted, prerequisite –** a BREEAM compliant Indoor Qir Quality Plan is produced covering: a. Removal of contaminant sources b. Dilution and control of contaminant sources c. Procedures for pre-occupancy flush out d. Third party testing and analysis e. Maintaining good indoor air quality in-use. **Targeted, 2 credits –** all relevant products meet BREEAM requirements for emissions limits (VOC, carcinogens, formaldehyde) **Targeted, 1 credit -** The formaldehyde concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 100µg/m³ averaged over 30 minutes. The total volatile organic compound is measured and does not exceed 500µg/m³over 8 hours. Where levels are found to exceed these limits,	Developer & Contractor Air Quality Specialist Architect

				measures must be undertaken in accordance with the IAQ plan, to reduce the TVOC and formaldehyde levels to within the limits.	
Hea 04	Thermal comfort	3	3	**Targeted, 3 credits -** Thermal modelling has been carried out using software in accordance with CIBSE AM11 under a current and future climate scenario to confirm summer and winter operative temperature are in accordance with CIBSE Guide A Environmental Design, during RIBA Stage 3. Demonstrate that thermal modelling analysis has informed the temperature control strategy for the building.	Energy Modeller
Hea 05	Acoustic performance	3	3	**Targeted, 3 credits -** The building meets the appropriate acoustic performance standards and testing as defined by BREEAM 2018 in relation to: a. Sound insulation b. Indoor ambient noise level c. Room acoustics Pre-completion acoustic testing to confirm compliance will also be required.	Acoustic Consultant
Hea 06	Security	1	1	**Targeted, 1 credit -** A Suitably Qualified Security Specialist conducts a Security Needs Assessment during or prior to RIBA 2. The SNA must cover: 1. A visual audit of the site and surroundings, identifying environmental cues and features pertinent to the security of the proposed development. 2. Formal consultation with relevant stakeholders, including the local ALO, CPDA and CTSA to obtain a summary of crime and disorder issues in the immediate vicinity of the proposed development 3. Identify risks specific to the proposed, likely or potential use of the buildings 4. Identify risks specific to the proposed, likely or potential users of the buildings 5. Identify detrimental effects the development may have on existing community The SQSS develops security controls and recommendations for incorporation into the proposals. All recommendations must be implemented into the design.	Specialist Security Consultant
Hea 07	Safe and healthy surroundings	1	0	Not targeted	
	Health & Wellbeing Totals: (+exemplary)	**17 (+4)**	**12**		
	Health & Wellbeing score totals:	**14**	**9.882**		
Energy					
Ene 01	Reduction of energy use and carbon emissions	13	8	**Targeted, 4 credits** – Calculate an Energy Performance Ratio and compare to BREEAM benchmark. It is assumed at this stage that the minimum 4 credits will be achieved for BREEAM Excellent. **Targeted, 4 credits** - Involve the design team in an energy design workshop focusing on operational energy performance at RIBA 2. Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures. Carry out a risk assessment to highlight significant design, technical, and process risks that should be monitored and managed throughout construction and commissioning.	Energy Modeller
Ene 02	Energy monitoring	2	2	**Targeted, 1 credit -** Energy metering systems ensure 90% of estimated annual energy consumption of each fuel is assigned to the end-use categories with an appropriate energy monitoring and management system. Building users can identify energy consuming uses through labelling or data output **Targeted, 1 credit -** Monitor a significant majority of the energy supply with an accessible energy monitoring and management system for: a. tenanted areas or b. relevant function areas or departments in single occupancy buildings	MEP

Ene 03	External Lighting	1	1	**Targeted, 1 credit -** External light fittings within the construction zone must have an average initial luminous efficacy of at least 70 luminaire lumens per circuit Watt and be fitted with automatic control to prevent operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	MEP
Ene 04	Low carbon design	3	2	**Targeted, 1 credit –** (prerequisite: Hea 04 thermal comfort must be achieved) passive design measures to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption are identified during RIBA Stage 2 and the reduced total energy demand and carbon dioxide (CO_2-eq) emissions resulting is calculated. **Targeted, 1 credit -** An energy specialist completes a feasibility study by the end of RIBA Stage 2 to establish the most appropriate recognised low and zero carbon (LZC) energy sources. Specify LZC technologies in line with the feasibility study recommendations and quantify the reduced regulated carbon dioxide emissions resulting.	Energy Modeller
Ene 06	Energy efficient transportation systems	3	3	**Targeted, 1 credit –** Analyse the transportation demand and usage patterns for the building to determine the optimum number and size of lifts, escalators or moving walks. Calculate the energy consumption in accordance with BS EN ISO 25745 Part 2 or Part 3 for one of the following: i. At least 2 options for each transportation type ii. At least 2 options considering different system arrangements & controls Consider the use of regenerative drives, where they are found to save energy. Specify the transportation system with the lowest energy consumption **Targeted, 2 credits -** Specify the following three energy efficient features for each lift: 1. A standby condition for off-peak periods 2. The lift car lighting and display lighting has an average luminous efficacy of >70 luminaire lumens per circuit Watt 3. Use of a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor Specify regenerative drives where their use is demonstrated to save energy	Lift Engineer
	Energy Totals: (+exemplary)	**22 (+5)**	**16**		
	Energy score totals:	**16**	**11.636**		
Transport					
Tra 01	Transport assessment and travel plan	2	2	**Targeted, 1 credit –** A site specific transport assessment is produced during RIBA Stage 2 covering: • Travel patterns and attitudes of existing building or site users towards cycling, walking and public transport, to identify relevant constraints and opportunities • Predicted travel patterns and transport impact of future building or site users • Current local environment for pedestrians and cyclists, accounting for any age-related requirements of occupants and visitors • Reporting of the number and type of existing accessible amenities within 500m of site • Disabled access accounting for varying levels and types of disability, including visual impairment • Calculation of the existing public transport Accessibility Index • Current facilities for cyclists Following a transport assessment, develop a site-specific travel plan that provides a long term management strategy which encourages more sustainable travel. The travel plan includes measures to increase or improve more sustainable modes of transport and movement of people and goods during the building's operation. If the occupier is known, involve them in the development of the travel plan. Demonstrate that the travel plan will be implemented and supported by the building's management in operation.	Transport Consultant

Tra 02	Sustainable transport measures	10	4	**Targeted, 4 credits** – based on a review of current site accessibility (PTAL rating) and local amenities etc it is believed that 4 credits may be achievable. In addition, compliant cycling racks (1 per 10 building users) and facilities (1 shower per 10 cycle racks, 1 locker per 1 cycle rack) must be provided, in addition to providing a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure.	Architect Transport Consultant
	Transport Totals: (+exemplary)	**12**	**6**		
	Transport score totals:	**10**	**5**		
Water					
Wat 01	Water consumption	5	3	**Targeted, 3 credits –** specify low flow sanitary ware to ensure a 40% improvement over the BREEAM baseline building for water consumption	Architect
Wat 02	Water monitoring	1	1	**Targeted, 1 credit** - Specify a water meter on the mains water supply to each building. For water-consuming plant or building areas consuming 10% or more of the building's total water demand, fit easily accessible sub-meters	MEP
Wat 03	Water leak detection	2	2	**Targeted, 1 credit** - Install a leak detection system capable of detecting a major water leak on the utilities water supply within the buildings. The leak detection system must be: a. A permanent automated water leak detection system that alerts building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks b. Activated when the flow of water passing through the water meter or data logger is at a flow rate above a pre-set maximum for a pre-set period of time. c. Able to identify different flow and therefore leakage rates d. Programmable to suit the owner's or occupier's water consumption criteria e. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers **Targeted, 1 credit** - Install flow control devices that regulate the water supply to each WC or sanitary facility	MEP
Wat 04	Water efficient equipment	1	1	**Targeted, 1 credit -** Identify systems or processes to reduce the water demand from unregulated sources. For example, if irrigation to planting is to be provided it must incorporate soil moisture sensors and be zoned for variable watering. Or, all planting should rely solely on rainwater at all times of year.	Landscape Architect
	Water Totals: (+exemplary)	**9 (+1)**	**7**		
	Water score totals:	**7**	**5.444**		
Materials					
Mat 01	Environmental impacts from construction products - Building life cycle assessment (LCA)	7	1	**Targeted, 1 credit –** Life Cycle Assessment modelling is undertaken during RIBA Stage 4 to compare the Superstructure materials to the BREEAM benchmark and undertake an options appraisal to explore options for reduction of embodied carbon.	Specialist Consultant
Mat 02	Mat 02 Environmental impacts from construction products - EPDs	1	1	**Targeted, 1 credit –** materials with Environmental Product Declarations are required to be specified. Sufficient number of EPDs required to achieve '20 EPD points' in line with BREEAM Mat 02 methodology. HPF have issued full BREEAM methodology to Validus and TPB for review.	Architect

Mat 03	Responsible sourcing of construction products	4	2	**Targeted, prerequisite -** All timber and timber-based products used on the project are legally harvested and traded timber as per the UK Government's Timber Procurement Policy **Targeted, 1 credit** - A sustainable procurement plan must be used by the design team to guide specification towards sustainable construction products. It must: a. Be in place by RIBA Stage 2. b. Include sustainability aims, objectives and strategic targets to guide procurement c. Include a requirement for assessing the potential to procure construction products locally d. Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan. If the plan is applied to several sites or adopted at an organisational level it must also: e. Identify the risks and opportunities of procurement against a broad range of social, environmental and economic issues following BS ISO 20400:2017 **Targete, 1 credit –** wherever feasible, materials specified should be from manufacturers holding responsible sourcing certification e.g. ISO 14001, BES 6001, FSC/PEFC, CARES, Ecoreinforcement etc	Developer Architect and Contractor
Mat 05	Designing for durability and resilience	1	1	**Targeted, 1 credit -** Protection measures are incorporated into the building's design to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. Key exposed building elements have been designed and specified to limit long and short-term degradation due to environmental factors through The element or product achieving an appropriate quality or durability standard or design guide in line with BREEAM methodology. Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design. Design the roof and façade to prevent water damage, ingress and detrimental ponding. HPF have issued full BREEAM methodology to Validus and TPB for review.	Architect
Mat 06	Material efficiency	1	1	**Targeted, 1 credit –** From RIBA Stage 1 onwards, set targets and report on opportunities and methods to optimise the use of materials. Must be undertaken at each of the following stages: RIBA Stage 1, 2, 3, 4, 5. Develop and record the implementation of material efficiency across RIBA Stages 3, 4, 5. Report targets and material efficiencies achieved. HPF have issued full BREEAM methodology to Validus and TPB for review.	Design Team collaboration Or Specialist Consultant
	Materials Totals: (+exemplary)	**14 (+4)**	**6**		
	Materials score totals:	**15**	**6.429**		
Waste					
Wst 01	Construction waste management	5	4	**Targeted, 1 credit –** a pre-demolition audit must: • Be carried out at RIBA Stage 2 prior to strip-out or demolition works • Guide design, consider materials for reuse and set targets for waste management • Engage all contractors in maximising high-grade reuse and recycling • Be referenced in the resource management plan (RMP) • Compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets **Targeted, 2 credits –** Prepare a compliant Resource Management Plan (RMP) covering: a. Non-hazardous waste materials, including demolition and excavation waste b. Accurate data records on waste arisings and waste management routes. Non-hazardous waste materials related to construction must not exceed 7.5 m3 or 6.5 tonnes per 100m2 GIFA. **Targeted, 1 credit –** Sort waste materials into separate key waste groups and ensure that the following is diverted from landfill: • At least 70% (by volume) or 80% (by tonnage) of non-demolition waste • At least 80% (by volume) or 90% (by tonnage) of demolition waste	Contractor (Developer Commitment)

Wst 02	Use of recycled and sustainably sourced aggregates	1	0	Not Targeted	
Wst 03	Operational waste	1	1	**Targeted, 1 credit -** Provide a dedicated space for the segregation and storage of operational recyclable The space must be: • Clearly labelled landfill vs. recycling (different waste streams) • Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors • Of a capacity appropriate to the building type, size, number of units and predicted volumes of waste that will arise from daily or weekly operational activities and occupancy rates. Where a consistent and large amount of operational waste is generated, provide: • Static waste compactors or balers • Vessels for composting suitable organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection and delivery to an alternative composting facility • A water outlet provided adjacent to or within the facility for cleaning and hygiene purposes where organic waste is to be stored or composted on site	Architect
Wst 04	Speculative finishes (Offices only)	1	1	**Targeted, 1 credit -** Either: 1. For tenanted areas, where the future occupant is not known and carpets or other floor or ceiling finishes are installed, these must be limited to a show area only Or 2. Only install floor and ceiling finishes selected by the known occupant of a development. Alternatively, where only ceiling finishes and no carpets are installed, the building owner confirms that the first tenants will not be permitted to make substantial alterations to the ceiling finishes (through least agreement)	Architect Developer
Wst 05	Adaptation to climate change	1	1	**Targeted, 1 credit –** Conduct a climate change adaptation strategy appraisal using a systematic risk assessment to identify the impact of expected extreme weather conditions from climate change on the building over its life cycle. The assessment covers the installation of building services and renewable systems, as well as structural and fabric resilience aspects and includes: • Hazard identification • Hazard assessment • Risk estimation • Risk evaluation • Risk management Develop recommendations or solutions based on the climate change adaptation strategy appraisal, by the end of RIBA Stage 2, which aim to mitigate the identified impact. Provide an update during RIBA Stage 4 demonstrating how the recommendations proposed have been implemented where practical and cost effective. Omissions must be justified in writing. HPF have issued full BREEAM methodology to Validus and TPB for review.	Design Team collaboration Or Specialist Consultant
Wst 06	Design for disassembly and adaptability	2	2	**Targeted, 1 credit –** Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios in line with the BREEAM methodology by the end of RIBA Stage 2. Develop recommendations or solutions (based on the study, during RIBA Stage 2, that aim to enable and facilitate disassembly and functional adaptation. HPF have issued full BREEAM methodology to Validus and TPB for review. **Targeted, 1 credit –** Provide an update, during RIBA Stage 4, on: how the recommendations or solutions have been implemented where practical and cost effective. Omissions have been justified in writing to the assessor. Changes to the recommendations and solutions during RIBA Stage 4 must be reported and a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to	Design Team collaboration Or Specialist Consultant

				prospective tenants must be produced. HPF have issued full BREEAM methodology to Validus and TPB for review.	
	Waste Totals: (+exemplary)	**11 (+3)**	**9**		
	Waste score totals:	**6**	**4.909**		
Land Use & Ecology					
LE 01	Site selection	2	0	Not Targeted	
LE 02	Identifying and understanding the risks and opportunities for the site	2	2	**Targeted, 2 credits -** Suitably Qualified Ecologist (SQE) is appointed at a project stage that ensures early involvement in site configuration and, where necessary, can influence strategic planning decisions. The SQE undertakes survey and evaluation in line with the BREEAM methodology to determine the value of the current site and any risk to it, plus opportunities available for enhancement. During RIBA Stage 2, the project team liaise and collaborate with representative stakeholders to identify the optimal ecological outcome for the site.	Ecologist Design Team input required
LE 03	Managing negative impacts on ecology	3	3	*LE02 must first be achieved* **Targeted, 1 credit -** Roles and responsibilities for managing negative impacts on the ecology are clearly defined and allocated to support successful delivery of project outcomes at an early enough stage to influence the Concept Design. The potential impact of site preparation and construction works on ecology are identified at an early project stage to optimise benefits and outputs. The project team, liaising and collaborating with representative stakeholders and, taking into consideration data collated and shared, have proposed solutions and selected measures to be implemented during site preparation and construction works. **Targeted, 2 credits-** The SQE identifies how negative impacts from site preparation and construction works have been managed and at least no loss of ecological value occurs.	Ecologist Design Team input required
LE 04	Enhancement of Ecological value	4	3	*LE03 must first be achieved* **Targeted, prerequisite -** The client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site. **Targeted, 1 credit -** The SQE guides the project team in liaising and collaborating with representative stakeholders and taking into consideration data collated and shared, they have implemented solutions and measures in a way that enhances ecological value in the following order: • On site, and where this is not feasible, • Off site within the zone of influence Data collated are provided to the local environmental records centres by the SQE. **Targeted, 1 credit –** The SQE calculates the change in ecological value post-development in line with the BREEAM methodology and confirms that there is at least no net loss of ecological value **Not Targeted, 1 credit –** would require net gain of ecological value (105-109% improvement)	Contractor (Developer commitment) Ecologist Design Team input required
LE 05	Long term management and maintenance	2	2	*LE04 must first be achieved* **Targeted, prerequisite -** The client or contractor has confirmed that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site **Targeted, 1 credit -** The project team liaise and collaborate with representative stakeholders taking into consideration data collated and shared, on solutions and measures implemented to: • Monitor and review the effectiveness with which plans for LE 03 & LE 04 are implemented • Develop and review management and maintenance solutions, actions or measures considering the following: • Monitoring and reporting of the ecological outcomes for site implemented at the design and construction stage	Contractor (Developer commitment) Ecologist Design Team input required

				• Monitoring and reporting of outcomes and successes from the project • Arrangements for the ongoing management of landscape and habitat connected to the project (on and, where relevant, off site) • Maintaining the ecological value of the site and its relationship or connection to its zone of influence • Maintaining the site in line with the any sustainability linked activities • Remedial or other management actions are carried out which relate to those identified in LE 02, LE 03 and LE 04 • As part of the tenant or building owner information supplied, include a section on Ecology and Biodiversity **Targeted, 1 credit –** a SQE develops a landscape and ecology management plan in accordance with BS 42020:2013 covering the first 5 years after project completion.	
	Land Use & Ecology Totals: (+exemplary)	**13 (+2)**	**10**		
	Land Use & Ecology score totals:	**13**	**10**		
Pollution					
Pol 01	Impact of refrigerants	3	2	**Targeted, prerequisite** - All systems with electric compressors comply with the requirements of BS EN 378:2016 (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice. **Targeted, 1 credit -** Systems using refrigerants have a DELC of ≤1000kgCO_2-eq/kW cooling and heating capacity. **Targeted, 1 credit -** All systems are hermetically sealed or only use environmentally benign refrigerants OR where the systems are not hermetically sealed, they have either: • A permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks or • An inbuilt automated diagnostic procedure for detecting leakage is enabled In the event of a leak, the system must be capable of automatically responding and managing the remaining refrigerant charge to limit loss of refrigerant	MEP
Pol 02	Local air quality	2	1	**Targeted, 1 credit -** Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set in the BREEAM 2018 manual for 1 credit at minimum.	MEP
Pol 03	Flood and surface water management	5	4	**Targeted, prerequisite -** An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria. **Targeted, 2 credits -** site-specific flood risk assessment (FRA) confirms the development is in a flood zone that is defined as having a low annual probability of flooding. The FRA takes all current and future sources of flooding into consideration **Targeted, 1 credit -** Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site. Drainage measures are specified so that the peak rate of run-off from the site to the shows a 30% improvement for the developed site compared with the pre-developed site. This should comply at the 1-year and 100-year return period events. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems are in place. Calculations include an allowance for climate change. **Targeted, 1 credit -** Surface water run-off design solutions must be bespoke. Flooding of property will not occur in the event of local drainage system failure (extreme rainfall or a lack of maintenance). Drainage measures are specified so that the post-development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development. This must be for the 100-year 6-hour event, including an allowance for climate change.	Specialist Consultant

Pol 04	Reduction of night time light pollution	1	1	**Targeted, 1 credit -** The external lighting strategy has been designed in compliance with Table 2 of the Institution of Lighting Professionals Guidance notes for the reduction of obtrusive light, 2011. All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes. Illuminated advertisements are designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements.	MEP
Pol 05	Reduction of noise pollution	1	1	**Targeted, 1 credit -** Noise impact assessment compliant with BS 4142:2014 is commissioned. Noise levels must be measured or determined for: • Existing background noise levels: i. At the nearest or most exposed noise-sensitive development to the proposed assessed site ii. Including existing plant on a building, where the assessed development is an extension to the building • Noise rating level from the assessed building. The noise impact assessment must be carried out by a suitably qualified acoustic consultant. The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise sensitive development must be at least 5dB lower than the background noise throughout the day and night. If not, measures must be installed to attenuate the noise at its source.	Acoustic Consultant
Pollution Totals: (+exemplary)		**12**	**9**		
Pollution score totals:		**8**	**6**		
Innovation					
AI	Approved Innovation	1	0		
Innovation Totals: (+exemplary)		**1**	**0**		
Innovation score totals:		**1**	**0**		
OVERALL SCORE TOTALS:		**101**	**70.25%**		