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BREEAM NEW CONSTRUCTION 2014
PRE-ASSESSMENT

BREEAM®

Job no. 33

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ISSUE SHEET

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EXECUTIVE SUMMARY

This Pre-Assessment has been commissioned from Isambard Environmental by Mr Terry Homes on behalf of Greatplanet Limited, the owners and developers of the site to support a planning application for the redevelopment of the site to include a mix of residential and non-residential uses. It is anticipated that the non-residential element will comprise A1 non-food retail space.

For all planning applications involving non-residential development the London Borough of Richmond upon Thames requires a BREEAM assessment to achieve an 'Excellent' rating.

For retail development the New Construction 2014 assessment methodology is the most appropriate BREEAM scheme. The proposal includes two independent units (124m^2 and 105m^2 GIA, respectively) and these have been assessed as a 'shell and core' where the building envelope has been constructed and core building services, provided.

Based on the proposed specification an 'Excellent' rating of 77.16% is achieved, where 70% is required as a minimum. There is therefore a reasonable degree of comfort in case credits cannot be achieved when the building is formally assessed.

The project team must be aware that all information must be documented in either specification or drawing format for the targeted credits to be awarded at the Design and Post Construction Stage Assessments. Credits cannot be awarded where evidence is incomplete.

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1.0 INTRODUCTON

This Pre-Assessment has been commissioned from Isambard Environmental by Mr Terry Homes on behalf of Greatplanet Limited, the owners and developers of the site to support a planning application for the redevelopment of the site to include a mix of residential and non-residential uses.

For all planning applications involving non-residential development the London Borough of Richmond upon Thames (LBRuT) requires a BREEAM New Construction Pre-Assessment 2014 to be completed showing how the development achieves an 'Excellent' rating.

1.1 SITE CONTEXT

1.1.1 Site Location

The application site is located at 63-71 High Street, Hampton Hill, Hampton, TW12 1NH. It is rectangular in shape, measuring c. 70m by 40m and covers an area of approximately 2,800m^2. It is bounded by the High Street to the east, retail with residential over to the north on the High Street frontage and a new development of residential houses to the rear, to the west is the St Clare Business Park, accessed of Holly Road and to the south a fairly modern terrace built as offices, now largely converted for residential use.

1.1.2 Proposed Development

A planning application is to be submitted for the redevelopment of the site to include demolition of the existing buildings, excavation of basement areas underlying the majority of the site and the erection of 6 townhouses, 35 apartments and two retail units of 124m^2 and 105m^2 GIA.

The two retail units are being built on a speculative, shell and core basis, with the tenants fitting them out.

2.0 METHODOLOGY

A New Construction 2014 Pre-Assessment has been completed following a review of the information prepared by the Design Team, namely the detailed drawings prepared for planning. The specification is yet to be finalised and therefore the statements made in the pre-assessment are based on professional experience in order to establish the basis for the development to achieve an anticipated rating.

The assessment has been made for the 'shell and core' option which is where the developer's scope of works covers new build works to the fabric, sub and superstructure of the building only, including: external walls, windows, external doors, roof, core internal walls and structural floors; and hard and soft landscaping areas (where present and within the scope of the works) and core buildings services. Core building services relates to the installation of central or communal transportation services, water systems, fit-out of common areas, central mechanical and electrical systems including HVAC but without local fitting of systems within tenant areas (BRE, 2016, 391).

3.0 BREEAM NEW CONSTRUCTION 2014

The Building Research Establishment's Environmental Assessment Method (BREEAM) is a sustainability rating scheme which helps clients measure and reduce the environmental impacts of their buildings. The BRE operate a number of schemes, each designed to assess the environmental performance of different types of buildings at various stages in the life cycle.

The New Construction 2014 (NC 2014) scheme assesses new build, domestic and non-domestic buildings. It encourages developers to go beyond the minimum requirements of the Building Regulations. Environmental performance is quantified by a number of individual measures and associated criteria stretching across a range of environmental issues: Management; Health and Wellbeing; Energy; Transport; Water; Materials; Waste; Land use and Ecology; Pollution; and Innovation.

BREEAM NC 2014 can be applied to both complex and less complex buildings as well as fully fitted (all buildings which are not classed as 'simple' buildings), shell only and shell and core building projects.

A Simple Building is where the building services are predominantly of limited capacity and local in their delivery, largely independent of other systems in the building fabric and avoid complex control systems. Buildings which do not fall under this definition will require a full BREEAM NC 2014 assessment (BRE, 2016, 395).

A shell only building is one where the developer's scope of works covers new build works to the fabric, sub and superstructure of the building only, including: external walls, windows, external doors, roof, core internal walls and structural floors; and hard and soft landscaping areas (where present and within the scope of the works)(BRE, 2016, 391).

A shell and core building covers the shell option as described above plus core buildings services. Core building services relates to the installation of central or communal transportation services, water systems, fit-out of common areas, central mechanical and electrical systems including HVAC but without local fitting of systems within tenant areas (BRE, 2016, 391).

A shell only or shell and core building cannot be assed as a simple building because at these early stages in the lifecycle of the building it is not possible to determine whether a building will be 'simple' (BRE, 2016, 392).

3.1 Scoring System

Within each category credits are available which reflect the options open to the design team. They are awarded where evidence has been provided to confirm that the specific requirements and performance standards have been met. The innovation credits are awarded for exemplary performance in the first nine categories which goes beyond the requirement of the credit criteria. A score for each category is then calculated based on the percentage of credits awarded within that category (table 1). An environmental weighting is applied depending on the completeness of the assessed building (fully fitted, shell only or shell and core) to each category score to reflect the relative environmental importance of the category. These 'weighted' scores are then combined to give an overall single percentage score. The BREEAM rating awarded is based on the percentage scores as illustrated in table 1.

Categories of environmental impact	Total credits in each category for retail use	Section weighting (% points contribution)
		Shell and core
Category 1: Management	18	11%
Category 2: Health & Wellbeing	13	10.5%
Category 3: Energy	21	15%
Category 4: Transport	9	10%
Category 5: Water	9	7.5%
Category 6: Materials	13	14.5%
Category 7: Waste	8	9.5%
Category 8: Land Use & Ecology	10	11%
Category 9: Pollution	13	11%
Total	**114**	**100%**
Category 10: Innovation	10	10%

Table 1. Total credits available, category weighting factors and points.

Credits are awarded based on environmental performance of the development which, overall, is expressed as a single BREEAM NC 2014 rating (BRE, 2016, 22). This rating provides an indication of the sustainability of the development based on a sliding scale from unclassified (which represents less than 30% of the available credits being achieved) to outstanding (which represents more than 85% of the available credits being achieved)(table 2).

BREEAM NC 2014 rating	Total percentage score
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30
Unclassified	< 30

Table 2. BREEAM rating benchmarks.

3.2 Minimum Standards

The BREEAM NC 2014 methodology contains minimum standards for certain issues within the management; energy; water, materials; waste; and land use and ecology categories which must be met to achieve the relevant BREEAM NC 2014 rating. The minimum standards are summarised in table 3.

BREEAM issue	**Minimum standards by rating level**				
	Pass	**Good**	**Very Good**	**Excellent**	**Outstanding**
Man 03: Responsible construction practices	None	None	None	1 credit Considerate construction	2 credits Considerate construction
Man 04: Commissioning and handover	None	None	None	Criterion 10 Building User Guide	Criterion 10 Building User Guide
Man 05: Aftercare	None	None	None	1 credit Seasonal commissioning	1 credit Seasonal commissioning
Ene 05: Reduction of energy use & carbon emissions	None	None	None	5 credits	8 credits
Ene 02: Energy monitoring	None	None	1 credit First sub-metering credit	1 credit First sub-metering credit	1 credit First sub-metering credit
Wat 01: Water consumption	None	1 credit	1 credit	1 credit	2 credits
Wat 02: Water monitoring	None	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Mat 03: Responsible sourcing of materials	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Wst 01: Construction waste management	None	None	None	None	1 credit
Wst 03: Operational waste	None	None	None	1 credit	1 credit
LE 03: Minimising impact on existing site ecology	None	None	1 credit	1 credit	1 credit

Table 3. Minimum BREEAM standards by rating level.

The minimum standards are only applicable for a fully fitted building. For shell only and shell and core assessments the minimum standards for certain issues are not applicable such as Wat 01 *Water Consumption* because sanitary appliances will be part of the final fit-out carried out by the tenant.

3.3 Routes to Certification

There are two routes in obtaining a BREEAM NC 2014 rating: completing both Design and Post Construction Stage Assessments; or by only completing a Post Construction Stage Assessment.

A Design Stage (DS) Assessment provides a rating of the new building's performance as specified and is normally carried out before the start of work. It is carried out during the design process using the specification and other evidence to document measures to be

implemented in the refurbishment. Upon completion of the DS Assessment an interim rating and certificate is issued before the start of work (BRE, 2016, 19).

A Post Construction Stage (PCS) Assessment can either be completed by reviewing the DS Assessment or by undertaking a PCS assessment where a DS Assessment has not been previously completed. Where the latter is the case the assessment will be based on actual 'as-built' information. In either case, upon completion of the PCS Assessment a final rating and certificate will be issued after the new build has been completed (figure 1)(BRE, 2016, 19).

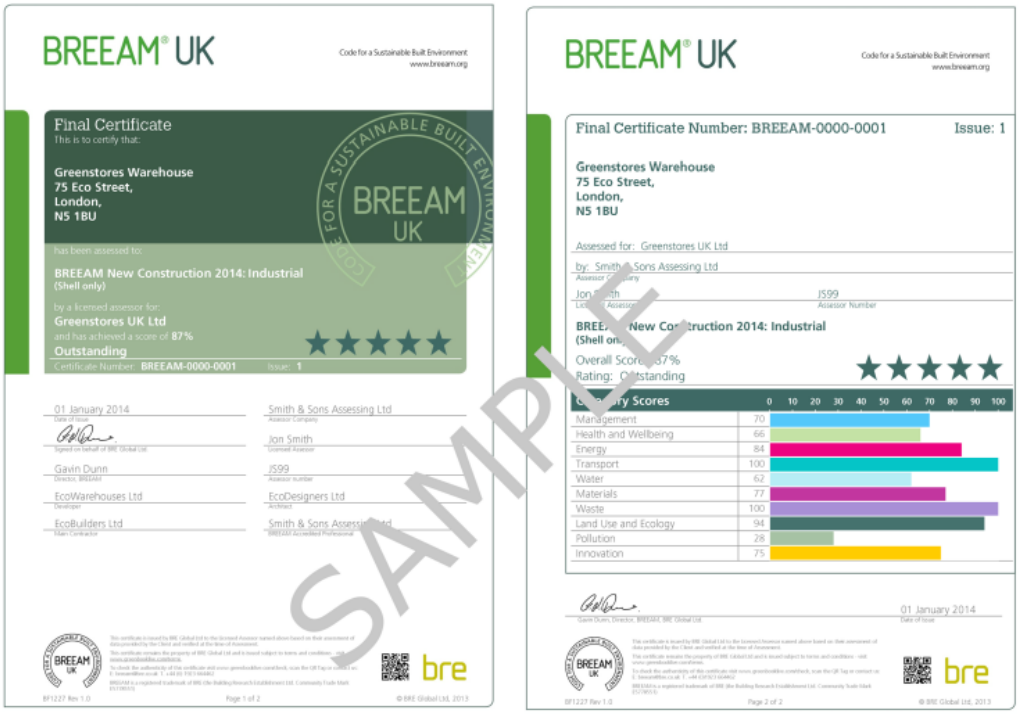

Figure 1. Example of Post Construction Stage Final Certificate.

In NC 2014 to be able to achieve a final certificate a building must be fully fitted with all services installed and operational in order to be able to complete a PCS. Speculative buildings (shell only and shell and core) by their nature are not fully fitted out and can therefore be assessed and the DS and issued with an interim certificate. In order for a speculative building to be issued with a final certificate it can be assessed by the Refurbishment and Fit-out 2014 scheme once it has been fully fitted out (BRE, 2016, 392-393).

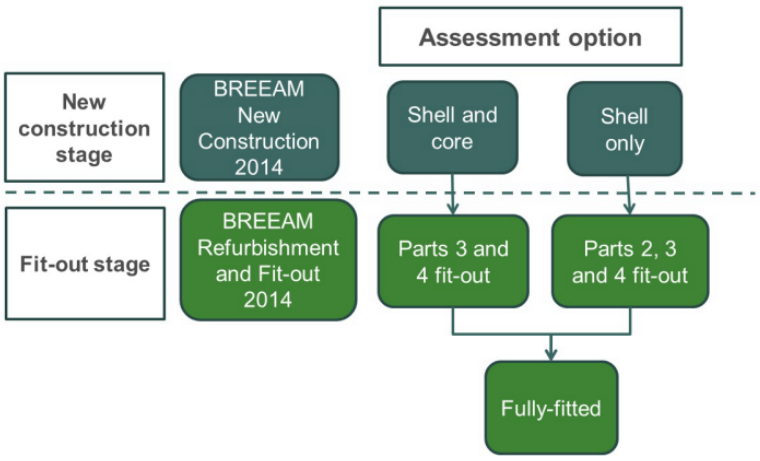

Figure 2. New Construction 2014 and Refurbishment and Fit-out 2014 schemes and the assessment options

4.0 RESULTS OF THE PRE-ASSESSMENT

A summary of the results of the Pre-Assessment are shown in table 4 and figure 3 with the full results being included at Appendix A

Based on the available information from the Design Team and a number of assumptions using professional experience the following ratings have been achieved for the development:

BREEAM NC 2014 category	**Credits available**	**Credits achieved**	**% of credits achieved**	**Section weighting (shell and core)**	**Category score**
Management	18	14	77.78	11%	8.56
Health and Wellbeing	12	7	58.33	10.5%	6.13
Energy	18	9	50.00	15%	7.50
Transport	9	3	33.33	10%	3.33
Water	9	4	44.44	7.5%	3.33
Materials	13	13	100.00	14.5%	14.50
Waste	8	8	100.00	9.5%	9.50
Land Use & Ecology	10	10	100.00	11%	11.00
Pollution	13	11	84.62	11%	9.31
Innovation	10	4	40.00	10%	4.00
Total	120	83	69.17	-	77.16
Final BREEAM score			**77.16%**		
BREEAM NC 2014 Rating			**EXCELLENT**		

Table 4. Summary of results achieved for the Pre-Assessment.

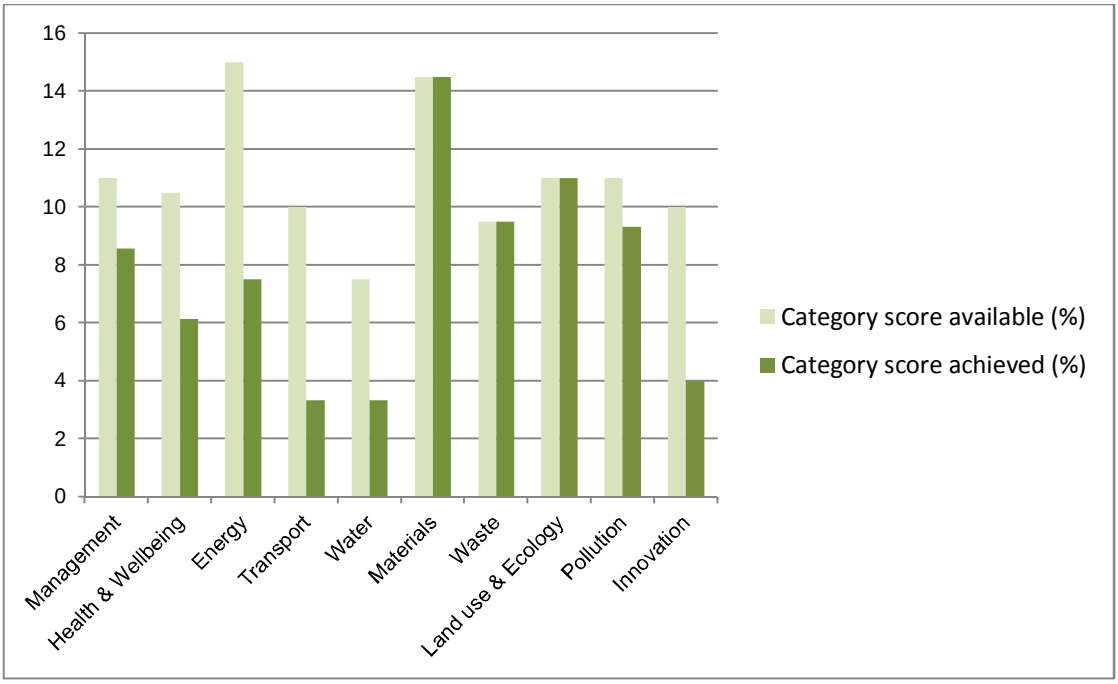

Figure 3. Summary of results achieved for the Pre-Assessment.

The retail element of the development achieves 77.16% which is an 'Excellent' rating.

Where applicable for a shell and core assessment the mandatory and minimum standards have been achieved.

5.0 CONCLUSION

This Pre-Assessment has been commissioned from Isambard Environmental by Mr Terry Homes on behalf of Greatplanet Limited, the owners and developers of the site to support a planning application for the redevelopment of the site to include a mix of residential and non-residential uses. It is anticipated that the non-residential element will comprise of retail space.

For all planning applications involving non-residential development the London Borough of Richmond upon Thames requires a BREEAM assessment to achieve an 'Excellent' rating.

For retail development the New Construction 2014 assessment methodology is the most appropriate BREEAM scheme. They have been assessed as a 'shell and core' where the building envelope has been constructed and core building services, provided.

Based on the proposed specification an 'Excellent' rating of 77.16% is achieved, where 70% is required as a minimum. There is therefore a reasonable degree of comfort in case credits cannot be achieved when the building is formally assessed.

The project team must be aware that all information must be documented in either specification or drawing format for the targeted credits to be awarded at the Design and Post Construction Stage Assessments. Credits cannot be awarded where evidence is incomplete.

6.0 REFERENCES

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APPENDIX A – STRATEGY TO MEET BREEAM NC 2014 'EXCELLENT' RATING

BREEAM ISSUE	Criteria	Available credits	Targeted credits	Comments/assumptions
MANAGEMENT				
Man 01 Project brief and design	Stakeholder Consultation (Project Delivery)	1	1	The client, design team and contractor will be involved in contributing to the decision making process for the project. Roles and responsibilities will be set for all phases of the development.
	Stakeholder Consultation (Third Party)	1	1	Relevant third party stakeholders have been and will continue to be consulted where appropriate and their comments will be inputted into the final design.
	Sustainability Champion (design)	1	1	A Sustainability Champion has been appointed at the earliest stage to advise and monitor the progress of the development against specific performance targets.
	Sustainability Champion (Monitoring Progress)	1	1	A Sustainability Champion will be appointed to monitor the progress of the development throughout the design process and will formally report to the client and design team.
Man 02 Life cycle and service life planning	Elemental Life Cycle Cost	2	0	To achieve the credits an outline, entire asset life cycle cost (LCC) will need to be carried out by RIBA Stage 2 – Concept Design which will need to provide an indication of future replacement costs as required by the client and will include service life, maintenance and operation cost estimates. Relevant examples will be used to demonstrate how the LCC has been used to influence the building and systems design/specification. This credit has not been targeted.
	Component Level Life Cycle Cost	1	0	To achieve the credit a component LCC will need to be developed by the end of RIBA Stage 4 – Technical Design and need to include the following components: envelope; services; finishes; external spaces. Relevant examples will be used to demonstrate how the LCC has been used to influence the building and systems design/specification. This credit has not been targeted.
	Capital Cost Reporting	1	0	To achieve the credit the capital cost for the building (£k/m^2) will be reported via the BREEAM Assessment and Reporting tool, Assessment Issue Scoring tab, Management section. This credit has not been targeted.

Man 03 Responsible construction practices	Environmental management	1	1	All timber and timber based products used on the project will be legally harvested and traded timber. The principal contractor will operate an environmental management system covering their main operations which will be third party certified to ISO 14001/EMAS and be compliant with BS 8555:2003 reaching stage 4 of the implementation stage. Best practice for pollution prevention policies will be implemented on-site.
	Sustainability Champion	1	1	A Sustainability Champion will be appointed at the earliest stage to advise and monitor the progress of the development throughout the NC 2014 Assessment process from initial design to handover.
	Considerate construction	2	2	The principal contractor will register with the Considerate Constructors' Scheme and demonstrate that they will significantly go beyond best practice achieving a minimum of 35 points overall and 7 in each category.
	Monitoring of construction site impacts	2	2	A responsible person will be assigned to monitor energy and water consumption and the transportation of construction materials and waste on-site.
Man 04 Commissioning and handover	Commissioning and testing schedule and responsibilities	1	1	A suitably qualified person will be appointed to prepare a suitable commissioning and testing schedule and monitor the works in accordance with current Building Regulations, BSRIA and CIBSE guidelines.
	Commissioning building services	1	1	A suitably qualified person will be appointed to commission the works in accordance with current Building Regulations, BSRIA and CIBSE regulations.
	Testing and inspecting building fabric	1	1	A suitably qualified person will be appointed to carry out testing on the integrity of the building fabric with regard to continuity of insulation. Avoidance of thermal bridging and air leakage paths for simple building services.
	Handover	1	1	It is mandatory that a Building User Guide is produced prior to handover for the building occupiers and premises managers.
	Management total credits	**18**	**14**	
	Management score totals %	**11.00**	**8.56**	

BREEAM ISSUE	Criteria	Available credits	Targeted credits	Comments/assumptions
HEALTH AND WELLBEING				
Hea 01 Visual comfort	Glare control	1	0	The potential for disabling glare has been designed out of the retail units and the adopted strategy will avoid increasing light energy consumption. This credit has not been targeted.
	Daylighting	2	2	The retail units will have high levels of daylighting which will meet the following criteria: • Sales area: 35% of the floor area will achieve a point daylight factor of 2% or greater and a minimum 200 lux point daylight illuminances for 2,650 hrs/yr or more; and • Other occupied areas: 80% of the floor area will achieve an average daylight factor of 2% or greater; an average daylight illuminance of at least 200 lux for 2,650 hrs/yr or more; and a minimum daylight illuminance at the worst lit point of at least 60 lux for 2,650 hrs/yr or more.
	View out	1	1	95% of the floor area in each of the units will be within 7m of a wall which has a window. The window will comprise of greater than 20% of the wall area.
	Internal and external lighting	1	1	All external lighting located within the construction zone will be designed to provide illuminance levels which enable users to perform outdoor visual tasks efficiently and accurately especially during the night.
Hea 02 Indoor air quality	Ventilation	1	0	The building has been designed to minimise the concentration and recirculation of pollutants in the building by providing fresh air via openable windows which are a minimum of 10m from any sources of external pollution. This credit has not ben targeted.
	Adaptability – potential for natural ventilation	1	0	The building ventilation has been designed to be flexible and adaptable to potential building occupant needs and climatic scenarios and is capable of providing at least 2 levels of user-control on the supply of fresh air to the occupied space.
Hea 04 Thermal comfort	Thermal modelling	1	0	To achieve the credit thermal modelling in accordance with CIBSE AM11 Building Energy and Environmental Modelling will be required. This credit has not been targeted.
	Adaptability for a projected scenario climate change	1	0	To achieve the credit thermal modelling in accordance with CIBSE AM11 Building Energy and Environmental Modelling will be required. This credit has not been targeted.

Hea 05 Acoustic performance	Sound insulation and internal indoor ambient noise levels	1	1	A suitably qualified acoustician will be appointed to ensure that internal indoor ambient noise levels will comply with the design ranges given in BS8233:2014.
Hea 06 Safety and security	Safe access	1	1	To ensure safe access to the development dedicated cycle paths, footpaths and pedestrian crossings will be incorporated within the site boundary and those will be adequately illuminated according to BS 5489-1:2013. Delivery areas will not be directly accessible from general parking areas.
	Security of site and building	1	1	A suitably qualified security specialist will be consulted early in the design stage and their recommendations regarding the security of the site and the building will be incorporated.
	Health and Wellbeing total credits	**12**	**7**	
	Health and Wellbeing scores totals %	**10.50**	**6.13**	

BREEAM ISSUE	**Criteria**	**Available credits**	**Targeted credits**	**Comments/assumptions**
ENERGY				
Ene 01 Reduction of energy use and carbon emissions	Energy performance	12	5	Until the advice of a SAP assessor has been taken it is anticipated that the Energy Performance Ratio for New Constructions (EPR_{NC}) will be 0.26 as required for an 'Excellent' rating. This will be achieved by using high levels of insulation and reducing cold bridging and keeping heat lost to a minimum.
Ene 02 Energy monitoring	Sub-metering of major energy consuming systems	1	1	It is a mandatory requirement that the building has an energy metering system which enables at least 90% of the estimated annual energy consumption of each fuel assigned to the various end-use categories of energy consuming systems to be recorded. An energy monitoring and management system or a separate accessible energy sub-meter with pulsed or other open protocol communication outputs will be specified.
	Sub-metering of high energy load and tenancy areas	1	1	An accessible energy monitoring and management system or a separate accessible energy sub-meter with pulsed or other open protocol communication outputs will be specified which covers a significant majority of the energy supply to tenanted areas, or in the case of single occupancy buildings, relevant function areas or departments within the building.
Ene 03 External lighting	External lighting	1	1	The non- residential element of the building has been designed to operate without the need for external lighting therefore the credit can be awarded by default.

Ene 04 Low carbon design	Passive design analysis	1	0	Credit not targeted because thermal modelling has not been carried out to demonstrate that the building can deliver appropriate levels of thermal comfort in occupied spaces.
	Free cooling	1	0	Credit not targeted because thermal modelling has not been carried out to demonstrate that the building can deliver appropriate levels of thermal comfort in occupied spaces.
	Low and zero carbon feasibility study	1	1	A feasibility study has been carried out by SVM Consulting Engineers which has recommended that low and zero carbon technologies are not appropriate for the retail units.
	Energy total credits	**18**	**9**	
	Energy scores totals %	**15.00**	**7.50**	

BREEAM ISSUE	**Criteria**	**Available credits**	**Targeted credits**	**Comments/assumptions**
TRANSPORT				
Tra 01 Public transport accessibility	Accessibility Index	5	1	The development achieves an Accessibility Index of 2.
Tra 02 Proximity to amenities	Proximity to amenities	1	1	The development is within 500m of a supermarket, cash point, recreational space and a post office.
Tra 03 Cyclist facilities	Cycle storage	1	0	To achieve the credit a minimum of 10 cycle storage spaces are required.
	Cycle facilities	1	0	To achieve the credit 2 of the following are required to be provided: showers, changing facilities; lockers; and drying spaces.
Tra 05 Travel plan	Travel plan	1	1	A Transport Statement has been prepared by Royal Haskoning which covers: existing travel patterns and options for cyclists and pedestrians; the potential travel patterns of future building occupants; the current local environment for walkers and cyclists; disabled access; public transport links serving the site; and current facilities for cyclists. A draft Travel Plan has also been prepared which includes a package of measures encouraging the use of sustainable modes of transport and movement of people and goods during the building's operation and use.
	Transport total credits	**9**	**3**	
	Transport scores totals %	**10.00**	**3.33**	

BREEAM ISSUE	Criteria	Available credits	Targeted credits	Comments/assumptions
WATER				
Wat 01 Water consumption	Water consumption	5	1	It is a mandatory requirement for an 'Excellent' rating that potable water consumption is reduced by 12.5% against the notional baseline standard and to achieve 1 credit. Any sanitary ware specified by the developer will reduce potable water use by 12.5% against the notional baseline performance.
Wat 02 Water monitoring	Water monitoring	1	1	To achieve the mandatory criterion a pulsed meter will be fitted to the mains water supply.
Wat 03 Water leak detection	Leak detection system	1	1	A leak detection system capable of detecting a major water leak on the mains water supply will be installed.
	Flow control devices	1	0	To achieve the credit a flow control device which regulates the supply of water to each WC area/facility according to demand will need to be specified.
Wat 04 Water efficient equipment	Water efficient equipment	1	1	All sources of unregulated water use have been identified and these will be reduced by the use of good practice design and specification.
	Water total credits	**9**	**4**	
	Water scores totals %	**7.50**	**3.33**	

BREEAM ISSUE	Criteria	Available credits	Targeted credits	Comments/assumptions
MATERIAS				
Mat 01 Life cycle impacts	Life cycle impacts	5	5	A commitment has been made by the client that any new materials will have a low environmental impact over their life-cycle. This will be achieved by specifying new materials which have a high Green Guide rating in the following elements: external walls; windows; roof; upper floor slab; and floor finishes and coverings.
Mat 02 Hard landscaping and boundary protection	Hard landscaping and boundary protection	1	1	A minimum of 80% of all external hard landscaping and 80% of all boundary protection (by area) in the construction zone will achieve a Green Guide rating of A of A+.

Mat 03 Responsible sourcing of materials	Responsible sourcing of materials	4	4	All timber and timber based products used on the project will be legally harvested and traded timber. The principal contractor will have a sustainable procurement plan which will detail how materials are sourced. All applicable materials will be responsibly sourced in line with the criteria for the exemplary credit to be awarded which requires a minimum of 70% of the available RSM points to be achieved. The applicable materials are: timber and timber based products; concrete/cementitious products (plaster, mortar, screed etc.); metal; stone or aggregate; clay-based products (pavers, blocks, bricks, roof tiles etc.); gypsum; glass; plastic, polymer, resin, paint, chemicals and bituminous products; animal fibre or skin and cellulose fibre; and any other materials.
Mat 04 Insulation	Embodied impact	1	1	Insulation will be specified to meet the insulation index required through high Green Guide ratings and thermal performance.
Mat 05 Designing for durability and resilience	Protecting vulnerable parts of the building from damage Protecting exposed parts of the building from material degradation	1	1	The design will incorporate suitable durability and protection measures or design features/solutions to prevent damage to the vulnerable parts of the building.
Mat 06 Material efficiency	Material efficiency	1	1	Opportunities have been identified by the design/construction team, and appropriate measures investigated and implemented, to optimise the use of materials in building design, procurement, construction, maintenance and end of life. These are to be carried out at each of the following RIBA stages: preparation and brief; concept design; developed design; technical design; and construction.
	Materials total credits	**13**	**13**	
	Materials scores totals %	**14.50**	**14.50**	

BREEAM ISSUE	Criteria	Available credits	Targeted credits	Comments/assumptions
WASTE				
Wst 01 Construction waste management	Construction resource efficiency	3	3	A Resource Management Plan (RMP) covering non-hazardous waste will be prepared and relate to on-site construction and dedicated off-site manufacture or fabrication (including demolition and excavation waste) generated by the building's design and construction. It will require that a maximum of 3.2 tonnes per m^2 of gross internal floor area will be generated. A pre-demolition audit covering the existing buildings will be prepared which will identify the main materials and which of these can be refurbished and recycled.
	Diversion of resources from landfill	1	1	It is intended that all waste streams will be identified in the RMP and to divert a minimum of 80% by tonnage of non-hazardous waste from landfill.
Wst 02 Recycled aggregates	Recycled aggregates	1	1	High grade recycled aggregates will comprise a minimum of 25% of the total high grade aggregates (by weight or volume). To contribute to the total amount the percentage of high grade aggregates will meet the following minimum levels by weight of volume: • structural frame – 15%; • bitumen or hydraulically bound base, binder and surface courses for paved areas and roads – 30%; • building foundations – 20%; • concrete road surfaces – 15% • pipe bedding – 100%; and • granular fill and capping – 100%.
Wst 03 Operational waste	Operational waste	1	1	To meet the minimum criterion there will be a dedicated space to cater for the segregation and storage of operational recyclable waste volumes generated by the building, its future occupants and activities..
Was 05 Adaptation to climate change	Structural and fabric resilience	1	1	A climate change adaption strategy appraisal for structural and fabric resilience by the end of RIBA Stage 2 – Concept Design will be completed, covering: hazard identification; hazard assessment; risk estimation; risk evaluation; and risk management.

Wst 06 Functional adaptability	Functional adaptability	1	1	A building specific adaptation strategy study has been undertaken by RIBA Stage 2 – Concept Design which includes recommendations for measures to be incorporated to facilitate future adaptation. Functional adaption measures have been adopted by RIBA Stage 4 – Technical Design in accordance with the functional adaption strategy recommendations where practical and cost effective.
	Waste total credits	**8**	**8**	
	Waste scores totals %	**9.50**	**9.50**	

BREEAM ISSUE	**Criteria**	**Available credits**	**Targeted credits**	**Comments/assumptions**
LAND USE AND ECOLOGY				
Le 01 Site selection	Previously occupied land	1	1	A contaminated land survey prepared by HBPW LLP has confirmed that at least 75% of the footprint of the proposed development is on previously developed land.
	Contaminated land	1	1	A remediation strategy will be put in place in accordance with the recommendations contained within the contaminated land survey.
Le 02 Ecological value of site and protection of ecological features	Ecological value of site	1	1	An ecological survey prepared by Arbtech Consulting Limited has confirmed that both the development site and the assessment zone (the site boundary plus a 3m wide strip bordering the boundary) is of low ecological value.
	Protection of ecological features	1	1	The ecological report contains advice on the protection of ecological features.
Le 03 Minimising impact on site ecology	Change in ecological value	2	2	It is proposed that there will be extensive planting to increase the ecological diversity of the site as shown on the soft landscaping plan prepared by Bradley-Hole Schoenaich Landscape Architects. This has been prepared having regard to the recommendations of the ecologist. There will therefore be an increase in the ecological value of the site.
Le 04 Enhancing site ecology	Ecologist's report and recommendations	1	1	An ecologist has been appointed by the end of RIBA Stage 1 Preparation and Brief and their report prepared by RIBA Sage 2 – Concept Design.
	Increase in ecological value	1	1	The Landscape Architect has specifically incorporated a range of planting which will increase the ecological value of the site following completion of the development.

Le 05 Long term impact on biodiversity	Long term impact on biodiversity	2	2	An ecologist has confirmed that all relevant UK and EU legislation relating to the protection and enhancement of ecology have been complied with. A landscape and habitat management plan will be prepared which will cover the first 5 years following project completion.
	Land Use and Ecology total credits	**10**	**10**	
	Land Use and Ecology scores totals %	**11.00**	**11.00**	

BREEAM ISSUE	**Criteria**	**Available credits**	**Targeted credits**	**Comments/assumptions**
POLLUTION				
Pol 01 Impacts of refrigerants	Impacts of refrigerants	3	3	Credits awarded by default because no refrigerants are being specified.
Pol 02 NOx emissions	NOx emissions	3	1	Any specified plant to meet the building's delivered heating and hot water demand will emit 100mg/kWh or less under normal operating conditions.
Pol 03 Surface water run-off	Low flood risk	2	2	The FRA prepared by RAB Consultants Ltd confirms that the site is in an area of low flood risk.
	Surface water run-off	2	2	A suitably qualified person has designed a proposed drainage strategy which ensures that the peak rate of run-off post development is no greater than it was before development by using appropriate SUDS techniques; that there is a maintenance agreement for the ownership, long-term operation and maintenance of any specified SUDS techniques; that an allowance has been made for climate change; and that risks of local flooding have been identified and mitigation measures put in place.
	Minimising water course pollution	1	1	The suitably confirmed person has confirmed that there will be no discharge from the developed site for rainfall up to 5mm.
Pol 04 Reduction of night time light pollution	Reduction of night time light pollution	1	1	There is no external lighting associated with the non-residential element of the development and therefore the credit can be awarded by default.
Pol 05 Reduction of noise pollution	Reduction of noise pollution	1	1	A desk-top review indicates that the building has noise-sensitive areas within an 800m radius of the site. An acoustician will be appointed to conduct an acoustic test in accordance with BS 7445 and any recommendations which they make will be carried out.
	Pollution total credits	**13**	**11**	
	Pollution scores totals %	**11.50**	**9.31**	

BREEAM ISSUE	Criteria	Available credits	Targeted credits	Comments/assumptions
INNOVATION				
Man 03 Responsible construction practices	Considerate construction	1	1	The principal contractor will register with the Considerate Constructors' Scheme and demonstrate that they will significantly go beyond best practice achieving a minimum of 35 points overall and 7 in each category.
Hea 01 Visual comfort	Daylighting	1	1	The retail units will have high levels of daylighting which will achieve the exemplary credit. The following criteria will be met: • Sales area: 50% of the floor area will achieve a point daylight factor of 2% or greater and a minimum 300 lux point daylight illuminances for 2,000 hrs/yr or more; and • Other occupied areas: 80% of the floor area will achieve an average daylight factor of 3% or greater; an average daylight illuminance of at least 300 lux for 2,650 hrs/yr or more; and a minimum daylight illuminance at the worst lit point of at least 90 lux for 2,650 hrs/yr or more.
Ene 01 Reduction of energy use and carbon emissions	Reduction of energy use and carbon emissions	5	0	These credits have not been targeted.
Wat 01 Water consumption	Water consumption	1	0	This credit has not been targeted.
Mat 01 Life cycle impacts	Life cycle impacts	3	0	These credits have not been targeted.
Mat 03 Responsible sourcing of materials	Responsible sourcing of materials	1	0	This credit has not been targeted.
Wst 01 Construction site waste management	Construction resource efficiency	1	1	A Resource Management Plan (RMP) covering non-hazardous waste will be prepared and relate to on-site construction and dedicated off-site manufacture or fabrication (including demolition and excavation waste) generated by the building's design and construction. It will require that a maximum of 1.9 tonnes per m^2 of gross internal floor area will be generated.
	Diversion of resources from landfill	1	1	It is intended that all waste streams will be identified in the RMP and to divert a minimum of 95% by tonnage of non-hazardous waste from landfill.

Wst 02 Recycled aggregates	Recycled aggregates	1	0	High grade recycled aggregates will comprise a minimum of 35% of the total high grade aggregates (by weight or volume). To contribute to the total amount the percentage of high grade aggregates will meet the following minimum levels by weight of volume: • structural frame – 30%; • bitumen or hydraulically bound base, binder and surface courses for paved areas and roads – 75%; • building foundations – 35%; • concrete road surfaces – 45% • pipe bedding – 100%; and • granular fill and capping – 100%. This credit has not been targeted.
Wst 05 Adaption to climate change	Responding to climate change	1	0	This credit can be achieved where there is a holistic approach to the design and construction of the current building's life cycle to mitigate against the impacts of climate change. This credit has not been targeted.
	Innovation total credits	**16**	**4**	
	Innovation scores totals %	**10.00***	**4.00**	

* A maximum of 10 innovation credits are allowed out of the 16.

	TOTAL CREDITS	**120**	**83**
	TOTAL SCORES TOTALS %	**100**	**77.16**