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Sustainability Statement

52-55 Friar Street & 12 Greyfriars Road
Reading

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1.0 EXECUTIVE SUMMARY

This Sustainability Statement has been developed to detail the sustainable design features for the proposed mixed-use redevelopment of the site at 52-55 Friar St & 12 Greyfriars Road, located in Reading. This statement relates to the final proposals, and is issued as part of the Full Planning Application for the development.

The design for the Proposed Development has been designed with sustainable design principles at its core. An integrated and holistic approach to design has been adopted and this document contextualises the process by which sustainability has been addressed as part of the project.

The Sustainability Strategy aims to:

- Match or exceed today's requirements
- Anticipate tomorrow's needs
- Adapt and remain relevant into the future

In supporting this strategy a number of national, regional and local policies have been used to inform design decisions.

This document identifies how the Proposed Development will meet the objectives of Reading's Core Strategy and the Sustainable Design and Construction Supplementary Planning Document.

2.0 INTRODUCTION

This document has been produced to address how the sustainability vision will be met in terms of demolition, construction and long-term management and operation of the site at 52-55 Friar St & 12 Greyfriars Road. It is structured following the objectives of Reading's Planning Policy.

The proposal is to be submitted to Reading Borough Council as part of a full planning application.

The design for the scheme has been developed with sustainable design principles at its core. An integrated and holistic approach to design has been adopted and this document contextualises the process by which sustainability has been addressed as part of the project.

The Sustainability Statement aims to demonstrate how the Proposed Development:

- Matches or exceeds today's requirements
- Anticipate tomorrow's needs
- Adapt and remain relevant into the future

2.1 Site and Proposed Development

The existing site is 0.26 hectare in area and three storeys in height, and comprises the existing Sainsbury's supermarket fronting onto Friar Street, hardstanding, and a service area accessed from Greyfriars Road.

The proposals comprise redevelopment of the site to provide up to 137 residential dwellings and over 600sqm ground floor retail, leisure and/or office uses.

3.0 **APPROACH**

This document shall follow the principles set out in Reading Borough Council's Sustainable Design and Construction SPD Appendix A5. This covers,

- Energy and CO₂ emissions
- Water
- Materials
- Surface Water Run-off
- Waste
- Pollution
- Health and Wellbeing
- Management
- Ecology

This aligns with the environmental categories within Code for Sustainable Homes and BREEAM assessments for residential and commercial developments respectively.

4.0 POLICY BACKGROUND

This section outlines the policies which have been used to inform design decisions for the Proposed Development.

- The UK Government Sustainable Development Strategy
- National Planning Policy Framework (NPPF)
- Deregulation Bill
- Reading Borough's Local Development Framework Core Strategy
- Reading Borough's Revised Sustainable Design and Construction Supplementary Planning Document

4.1 Government Policy

UK Government Strategy for Sustainable Development

In 1999, the UK Government published its initial strategy for sustainable development, 'A Better Quality of Life: A Strategy for Sustainable Development in the UK.' This has four main objectives:

- Social progress which recognises the needs of everyone;
- Effective protection of the environment;
- Prudent use of natural resources; and
- Maintenance of high and stable levels of economic growth and employment.

The Sustainable Development Task Force reviewed this Strategy and a revised UK Government Sustainable Development Strategy "Securing the Future" was put into place on 7 March 2005.

A range of environmental and planning legislation and fiscal instruments for specific issues supports the UK Government Sustainable Development Strategy. For example, the Climate Change Levy, the Landfill Tax and the Environmental Protection Act. The UK Government's Sustainable Development Strategy is disseminated throughout its own estates through a variety of strategies.

This is also being delivered at a local level through Local Authorities' Unitary Development Plans and Local Development Plans.

Deregulation Act 2015

The Deregulation Act, which received Royal Assent on 26 March 2015, contains a number of changes that have a direct impact on planning policies and housing standards enforceable by local authorities. The requirement of new developments to achieve a minimum rating under the Code for Sustainable Homes was included in the Deregulation Act, and as such is not a requirement for planning approval within any local authority across England.

National Planning Policy Framework (March 2012)

The National Planning Policy Framework sets out the Government's planning policies on the delivery of sustainable development through the planning system. It replaces the following documents: *Planning Policy Statement 1: Delivering Sustainable Development* (January 2005), *Planning Policy Statement 9: Biodiversity and Geological Conservation* (August 2005), *Planning Policy Guidance 13: Transport* (January 2011), *Planning Policy Statement 22: Renewable Energy* (August 2004), *Planning Policy Statement 23: Planning and Pollution Control* (November 2004), *Planning Policy Guidance 24: Planning and Noise* (October 1994), *Planning Policy Statement 25: Development and Flood Risk* (March 2010).

4.2

Local Authority Planning Guidance Documents

Reading Borough's Local Development Framework Core Strategy (with Alteration Adopted 27th January 2015)

The most relevant sustainability policies covered within this Sustainability Statement include the below policies. For information on additional policies refer to the full planning application submitted as part of this application.

CS1: Sustainable Construction and Design

Proposals for new development, including the construction of new buildings and the redevelopment and refurbishment of existing building stock, will be acceptable where the design of buildings and site layouts use energy, water, minerals, materials and other natural resources appropriately, efficiently and with care and take account of the effects of climate change.

- All new housing is required to meet the most up to date Eco-Homes 'Very Good' as a minimum standard, and all new commercial developments are required to meet the most up to date BREEAM 'Very Good' as a minimum standard;
- On larger developments of more than 10 dwellings or 1,000 m² of floor space, ensure that 50% of the provision meets the most up to date Eco-Homes and BREEAM 'Excellent' standards;
- All new developments maximise the use of energy efficiency and energy conservation measures in their design, layout and orientation to reduce overall energy demand;
- All developments of more than 10 dwellings or 1000 m² floor space incorporate on-site generation of energy from renewable sources and energy efficient design measures (including the use of CHP where appropriate) to off-set at least 20% of predicted carbon dioxide emissions from the estimated energy usage of the completed and occupied development;
- All developments reduce mains water use and demonstrate that water conservation measures are incorporated so that predicted per capita consumption does not exceed the appropriate levels set out in the Code for Sustainable Homes or BREEAM Standards; and
- Developments incorporate sustainable urban drainage facilities and techniques as part of the layout of a development as appropriate and as advised by the Environment Agency, including minimising the size of impermeable areas so that peak run-off and annual water run-off is reduced where possible and in any case is no greater than the original conditions of the site. Particular care will be needed in areas of flood risk where different solutions may be required.

Other policies within the Core Strategy which relate to sustainability include:

- CS2 – Waste Minimisation
- CS7 – Design and the Public Realm
- CS8 – Waterspaces
- CS23 – Sustainable Travel and Travel Plans
- CS24 – Car/ Cycle Parking
- CS34 – Pollution and Water Resources
- CS35 – Flooding
- CS36 – Biodiversity and Geology
- CS38 – Trees, Hedges and Woodlands

Reading Borough's Revised Sustainable Design and Construction Supplementary Planning Document (adopted July 2011)

This document sets out the specific areas a development should address as part of best practice sustainable development and is aligned with Code for Sustainable Homes and BREEAM. This document forms the basis of the sustainability appraisal of the scheme.

The Sustainable Design and Construction SPD clarifies that the targets for reduction of a development's CO₂ emissions as set out in the adopted Core strategy CS1 are no longer relevant:

"Recent changes to the Building Regulations mean that the requirement in policy CS1 to 'off-set at least 20% of predicted carbon dioxide emissions has now been superseded for both residential and non-residential developments. All other parts of policy CS1 are still relevant. For this reason, the requirement to off-set at least 20% of predicted carbon dioxide emissions from the estimated energy usage of the completed and occupied development in adopted policy CS1 is not mentioned further in this SPD."

4.3 Site Wide Energy Strategy

Policy CS1 required 50% of units within a development to achieve Code Level 4. Whilst a formal Code for Sustainable Homes certificate is not being targeted (see section 4.4) the requirements for energy reduction will be met, which is the Level 4 target for CO₂ reduction of 19% over Part L1A 2013. Under Reading policy this is to be achieved by 50% of the units within the development. On an aggregate calculation the residential emissions reductions target for all residential units is 9.5%.

The energy strategy determined that the development will achieve a CO₂ emissions saving of 38.5 tCO₂ site-wide, with the residential spaces achieving a 26.7% reduction. This is above the minimum requirement under Reading's planning policy of 50% of the units achieving a 19% reduction in CO₂ emissions (9.5% aggregate reduction across all residential units).

Refer to the energy strategy for details on the carbon emissions reductions achieved through the energy hierarchy.

4.4 Residential Sustainability Assessment (Code for sustainable Homes)

As discussed previously within this report the Deregulation Act 2015 means local authorities can no longer require new development to achieve a minim rating under the Code for Sustainable Homes. Consequently Code for Sustainable Homes certification is not being sought for the proposed development. However, the principles of Code for Sustainable home are included within the design as detailed in 5.1 of this report.

4.5 BREEAM

A BREEAM pre-assessment has been undertaken for the commercial units within the development. The pre-assessment shows a score of 61.3% is achievable, which is above the minimum score of 55% for a Very Good score.

5.0 SUSTAINABLE DESIGN AND CONSTRUCTION CHECKLIST

This section formally outlines how the development would meet the objectives of Reading Borough's Supplementary Planning Document for Sustainable Design and Construction.

5.1 Code for Sustainable Homes Checklist (Table A5.1)

Energy / CO ₂	Development Response
Aim: To conserve energy, in particular carbon dioxide emissions and maximise the use of energy efficiency techniques. 1. How has the development been designed to optimise the use of the energy from the sun and limit heat losses?	The fabric performance of the residential units will result in high levels of energy efficiency throughout specification of U-values, air tightness and services strategy. Low U-values will be targeted as part of the Energy Hierarchy's first step, "Be Lean", and for Part L compliance (Fabric Energy Efficiency).
2. How has the development been designed to optimise natural daylighting, energy efficient lighting, external lighting and natural ventilation?	GVA have undertaken an internal daylight study of the residential units. The report determined that the majority of units complied with the BRE guidance for natural daylight levels, with only a small number of worst case units achieving an average daylight factor below the standard. Refer to the Daylight report submitted as part of this planning application for full details of the analysis and results.
3. How will the design of the building make efficient use of energy? (e.g. use of thermally massive materials, levels of insulation, energy efficient white goods and use of green/ brown roofs etc).	Insulation values of the external elements will meet or exceed upon Part L notional values. Where possible, energy efficient white goods will be provided by the developer, or included as part of the choices offered to the end occupier. There are a number of biodiverse roofs across the development, as well as the central courtyard. These green roofs provide additional thermal mass to the residential units below, while also reducing the development's stormwater run-off rates and heat island effect.
4. Has local energy generation from renewables been considered as part of the scheme?	A renewable energy feasibility study has been undertaken for the development. The proposed development has been designed in accordance with the energy hierarchy where energy efficiency is prioritised over the use of renewables. Through 'lean' design measures the proposed development achieves 5.5% reduction in CO₂ over Part L 2013. The renewable energy feasibility study confirms that VRF (heat pump) is suitable for the commercial units within the development and is predicted to achieve a 0.33% reduction in site-wide CO₂ emissions, however no renewable energy technologies were deemed appropriate for the residential units. Refer to the Energy Strategy that has been submitted as part of this full planning application for further details.
5. How have cycle storage facilities been considered?	Cycle storage facilities for the residential units have been designed in line with Reading Borough's requirements (CS24), and have been developed by the travel consultant (Vectos) and the architect (LDA). A total of 133 spaces have been provided for the residents, with spaces for Blocks A & B in a combined store, and Block C's bike store separate to this.

Water	Development Response
Aim: To improve efficiency in the use of water, conserve water resources and minimise vulnerability to flooding. 6. How will the development incorporate the use of water saving devices to achieve a maximum consumption of 105 litres per person per day?	Sanitary ware will be specified in line with the Advanced fittings standard in the Building Regulations Approved Document Part G. The Code for sustainable Homes water consumption calculator will be used to assess the proposed sanitary ware to ensure the 100 litres/person/day will be achieved. Below is a possible complaint sanitary ware specification. Showers – 8 L/m Bath - 180 L (to overflow) WC - 4.5 L (effective flush volume) Wash hand basin – 4.5 L/m Kitchen tap – 6 L/m Washing machine 6.5 L/kg dry load Dishwasher – 1.25 per service
7. How will the development incorporate recycling rainwater and reduce the use of potable water?	No water recycling system (grey or rainwater) are proposed. All internal water use reductions will be achieved through specification of fittings.
8. Has the collection, treatment and re-use of grey water been considered? If so, how will these facilities be incorporated within the development?	No water recycling system (grey or rainwater) are proposed. All internal water use reductions will be achieved through specification of fittings.

Materials	Development Response
Aim: To retain local character and promote the use of materials with a low environmental impact. 9. How will the selected materials help retain local character, ensure long life and ensure a low environmental impact?	The material and colour palate has been selected to ensure the proposed development is in keeping with its surrounding and enhances the local sense of place. All materials will be specified to have high environmental accreditation (Green Guide, Environmental Declarations etc.). Life Cycle Assessment may also inform the selection of materials to ensure the life cycle impacts of the building materials are minimised.

Surface Water Run Off	Development Response
Aim: To reduce flooding, pollution and other environmental damage. 10. How has the development considered flooding and pollution?	A Flood Risk Assessment (FRA) has been produced by the structural engineer, TWS and has been submitted as part of the planning application. The FRA deemed that the site is at low risk of flooding from all sources. Potential surcharging from the existing sewer system will be dealt with by non-return valves fitted to drainage pipework at the junction with the main system, if required.
11. Has the design considered the use of sustainable drainage systems (SUDS) and how will they be incorporated within the development?	A Drainage & SUDS report has been produced by the structural engineer, TWS and has been submitted as part of the planning application. Suitable SUDS techniques have been assessed and are currently proposed to manage the run-off rates on site, green roofs are proposed at various levels on the 3No. blocks. A rainwater attenuation tank is also proposed, which will provide initial storage during storm events, thus reducing peak flows to the mains sewer. The foul water rates will increase from the site due to the development. If the current network does not have the additional capacity for the increase, necessary upgrade works will be undertaken.

Waste	Development Response
Aim: To minimise the production of waste and maximise re-use and recycling. 12. How will the development minimise waste sent to landfill?	The contractor will develop a site-wide Resource Management Plan (RMP), with the aim of reducing the amount of waste generated during demolition and construction activities. As part of the plan a pre-demolition audit will be undertaken of the existing structure to identify opportunities of material re-use, and where re-use is not suitable the audit will increase the volume of waste diverted from landfill.
13. How will the development make the maximum use of construction and demolition waste?	See above.
14. How will the development make maximum use of re-used and recycled materials?	See above.
15. How will provision be made for the storage and recycling of waste for all users of the site?	Adequate waste storage will be provided in the individual residential units, allowing for the frequency of collection. Communal waste stores will be sized in accordance with BS5906, with the provision for co-mingled dry recyclable waste and general waste streams to improve the recycling rates achieved across the development.

Pollution	Development Response
Aim: To minimise damage to the environment through air, ground/surface water, land, noise or light pollution. 16. What measures have been incorporated to ensure that noise and light pollution will be minimised throughout the development?	A background noise level survey will be undertaken to determine the existing background noise levels, which will inform the plant selection process, and if appropriate any noise attenuation measures, to ensure noise emissions from the proposed development do not negatively impact the surrounding area. Indoor luminaires in communal areas (corridors, stairwells) will be controlled with passive infrared sensors (PIRs) to ensure light pollution is minimised. External luminaires will be designed in line with ILP Guidance notes for the reduction of obtrusive light, and will be controlled via a photocell and time clock to ensure they are switched off during daylight hours.
17. What measures have been incorporated to reduce nitrogen oxide emissions and reduce the global warming potential of insulants?	The central heating plant (CHP & boilers) will be specified to be low NO_x. CHP is inherently low NO_x due to the grid-supplied electricity the system replaces, which has a high NO_x emission factor. Insulants installed on the building services and façade will strive to be low Global Warming Potential (GWP) and Ozone Depletion Potential (ODP).
18. What measures have been incorporated to reduce the release of pollution into the atmosphere?	The building services strategy does not contain any refrigerants, as comfort cooling / air-conditioning has not been proposed for the residential units, space heating will be provided via a wet system, produced by the CHP-led heating plant and distributed by a LTHW network to individual Heat Interface Units (HIUs).

Health and Wellbeing	Development Response
Aim: To improve the quality of life in homes through good daylighting, improved sound insulation, provision of outdoor space with good accessibility. 19. How has the development been designed to maximise natural lighting, reduce the likelihood of noise complaints, incorporate private outdoor space and ensure the layout of the development can be easily adapted to meet the needs of future occupants?	The layout of the residential floorplates and elevations have been maximised where possible to achieve high natural daylighting levels through the internal daylight analysis being undertaken by GVA. The separating building elements between adjacent residential units will be designed to achieve greater levels of sound insulation required under Building Regulations. Private space has been included for the majority of units through balconies or terraces. The central courtyard is also for the private use of residents of the development.

Management	Development Response
Aim: To manage the site in an environmentally and socially considerate manner. 20. What measures have been taken to ensure the construction of the site is managed in an environmentally and socially considerate manner, mitigating environmental impacts?	The contractor will register the entire project against the Considerate Constructors Scheme (CCS) and will be required to target high scores in all categories throughout all site activities. The contractor will also be required to implement best practices with regard to dust and groundwater pollution prevention.
21. How has the development been designed to ensure people feel safe and secure?	The project team has consulted with an Architectural Liaison Officer (ALO), who has reviewed the proposed design and provided a number of recommendations that will increase the security of the site. The recommendations include secure access to each residential block and a camera-integrated entrance system.

Ecology	Development Response
Aim: To retain, protect and enhance wildlife habitats and natural features. 22. How have the wildlife habitats and natural features on and adjacent to the site been considered and how will they be retained, protected and enhanced?	Seasons Ecology undertook a Phase 1 Habitat Survey to identify whether there were any habitats present on the site which were of ecological value and/or required protection during the proposed site works. The study determined that the site is of low (negligible) value, and there are no features requiring protection present on the site. The Phase 1 Habitat Survey has been submitted as part of the planning application. The proposal includes the provision of habitats that would promote biodiversity, including green roofs.

5.2 BREEAM Checklist (Table A5.2)

Management	Development Response
Aim: To recognise and encourage environmentally and socially considerate development. 1. Will guidance for the non-technical building user be provided so they can understand and operate the building efficiently and understand how the design reduces the overall environmental impact of the building and raise environmental awareness?	A Building User Guide (BUG) will be produced and handed over to the incoming tenant of each commercial unit. Information on the operation of the building will be limited as the scope for the commercial units is Shell only.
2. What consideration has been given to resource use, energy consumption and pollution in terms of the construction site impacts?	The contractor will register the entire project against the Considerate Constructors Scheme (CCS) and will be required to target high scores in all categories throughout all site activities. The contractor will also be required to implement best practices with regard to dust and groundwater pollution prevention.
3. Will site investigation and appropriate remedial action be undertaken?	A ground contamination review was undertaken by the structural engineer, TWS and has been submitted as part of the planning application. This review determined that the site is not contaminated. The existing site is fully comprised of hardstanding.
4. Will the community and stakeholders be involved in the design process encouraging flexibly designed buildings which cater for shared use with the local community?	The project delivery and third party stakeholders will be consulted with throughout the design period. This consultation process will inform the project of what the design is expected to deliver. 3rd party consultees will include neighbours, representative facilities management teams and the local planning authority, to provide input in to the development design.
5. How has the building been designed to reduce the opportunity for and the fear of crime?	The project team has consulted with an Architectural Liaison Officer (ALO), who has reviewed the proposed design and provided a number of recommendations that will increase the security of the site. The recommendations include secure access to each residential block and a camera-integrated entrance system.
6. What consideration has been given to the maintenance of the building?	Maintenance procedures for the communal and commercial areas will be developed and agreed during detailed design. The management of the development will include maintenance of all plant equipment, green roofs and planting, and communal storage areas (bicycle storage, waste storage etc.). The management of the commercial units will be the responsibility of each respective tenant. The design will include durable features such as wall and corner protection, hard wearing floor system in areas of high pedestrian traffic etc.

Health and Wellbeing	Development Response
Aim: To ensure a good quality amenity level is afforded to occupants of buildings. 7. How has the development been designed to ensure users have sufficient daylight, an external view, adequate and appropriate lighting, ventilation, air quality and drinking water?	The layouts of the retail units are constrained based on their respective footprints. The depths of each unit will not result in high daylight factors across the entire floorplate. However it is envisaged that the back-of-house areas will be located in the areas furthest away from perimeter glazing. As the scope for the retail units is Shell only the provision of lighting has not been included. However additional plant space for tenant services has been included.

Energy	Development Response
Aim: To conserve energy and maximise the use of energy efficiency techniques. 8. How has the building been designed to minimise CO₂ emissions associated with their operational energy consumption?	The fabric performance of the retail units will be limited due to the Shell only scope. However the Energy Strategy being submitted as part of this planning application details the fabric's U-values required to meet the relevant CO₂ emissions and energy efficiency targets. As the BREEAM target for the retail units is Very Good (< 1,000m²) there is no minimum standard for energy efficiency/CO₂ emissions for this rating level.
9. How has the development been designed to optimise the use of the energy from the sun, natural daylighting and controlled natural ventilation?	The layouts of the retail units are constrained based on their respective footprints. The depths of each unit will not result in high daylight factors across the entire floorplate. However it is envisaged that the back-of-house areas will be located in the areas furthest away from perimeter glazing. The g-values of the glazing to the retail units will ensure Criterion 3 of Part L of the Building Regulations (limiting the effects of heat gains in summer). As the retail units are both single aspect it will not be possible to provide natural ventilation. Tenant plant space will be provided as part of the Shell to accommodate future ventilation equipment.
10. How will the design of the building make efficient use of energy? (e.g. use of thermally massive materials, levels of insulation and use of green / brown roofs etc).	As the retail units are being developed to a Shell, there is limited scope to provide an energy efficient façade as insulation will be installed during the tenant fit-out of the spaces. The shell has been designed to exceed building regulation U-values and the tenant as part of the fit-out will have the opportunity to improve the performance with insulation.
11. Have renewable energy sources or decentralised energy been considered for this development and if so, how would they be incorporated within the development?	As there will be no provision of mechanical systems provided as part of the Shell, no renewable energy sources have been included within the proposals for the retail units. However space provision has been included to allow the tenant to install their own VRF system.

Transport	Development Response
Aim: To reduce the need to travel through appropriately located development. 12. How has the design and layout incorporated measures to reduce the need to travel, especially by car, and promote alternative and sustainable modes of transport such as walking, cycling and the use of public transport?	A Transport Assessment has been undertaken for the proposed development by Vectos. This has informed the design features in relation to transport related to the development (number of car parking & bicycle storage spaces, drop-off locations etc.). The commercial units have been provided 12 & 10 cycle spaces respectively. The development is also in close proximity to a number of public transport nodes, including Reading Railway Station. Refer to the Transport Assessment that has been submitted as part of this full application for further details.
13. How have public transport networks been considered in terms of the location of the development and proximity to local amenities?	See above.
14. How have deliveries and the manoeuvring of delivery vehicles been considered?	See above.

Water	Development Response
Aim: To improve efficiency in the use of water, conserve water resources and minimise vulnerability to flooding. 15. How will the development incorporate the use of water saving devices to achieve a maximum consumption of 5.5 cubic metres per year per person for office developments? (Or the most appropriate benchmark for other types of development).	Sanitary ware is not being specified for the retail units as the scope is Shell only.
16. Will the development and access to and from it such as roads and paths be located away from areas of potential flooding?	No water recycling system (grey or rainwater) are proposed for the commercial units.
17. How will the development incorporate harvesting and re-use of rainwater?	No water recycling system (grey or rainwater) are proposed for the commercial units.

Materials	Development Response
Aim: To retain local character and promote the use of materials with a low environmental impact. 18. How will the selected materials help retain local character, ensure long life and ensure a low environmental impact?	Materials will be selected to ensure the surrounding views are not negatively impacted. All materials will be specified to have high environmental accreditation (Green Guide, Environmental Declarations etc.) where specified as part of the proposed works. Life Cycle Assessment may also inform the selection of materials to ensure the life cycle impacts of the building materials are minimised.
19. What consideration has been given to reusing materials in-situ, responsibly sourcing materials and re-using existing structures?	The contractor is to undertake a pre-demolition audit prior to the start of site activity to inform the design team whether there are any existing materials that can be reused within the proposed design. Where the reuse of materials is not deemed suitable (materials have reached their end of life, damaged materials beyond repair etc.) the pre-demolition audit will inform the contractor on how to maximise the diversion rates achieved on site.

Waste	Development Response
Aim: To minimise the production of waste and maximise re-use and recycling. 20. Has an audit of the materials present on the site been conducted with an assessment of the extent to which materials could be re-used?	The contractor will develop and site-wide Resource Management Plan (RMP), with the aim of reducing the amount of waste generated during demolition and construction activities. As part of the plan a pre-demolition audit will be undertaken of the existing structure to identify opportunities of material re-use, and where re-use is not suitable the audit will increase the volume of waste diverted from landfill.
21. How will the development make the maximum use of construction, demolition waste and recycled materials?	See above.
22. How will provision be made for the storage and recycling of waste for all users of the site?	Adequate waste storage will be provided in the individual retail units, allowing for the frequency of collection. They will be sized to allow for on-site segregation of recyclable and general waste streams to improve the recycling rates achieved across the development.

Ecology	Development Response
Aim: To retain, protect and enhance wildlife habitats and natural features. 23. How have the wildlife habitats and natural features on and adjacent to the site been considered and how will they be retained, protected and enhanced?	Seasons Ecology undertook a Phase 1 Habitat Survey to identify whether there were any habitats present on the site which were of ecological value and/or required protection during the proposed site works. The study determined that the site is of low (negligible) value, and there are no features requiring protection present on the site. The proposal includes the provision of habitats that would promote biodiversity, including green roofs.
24. What consideration has been given to not using previously undeveloped land?	As the site consists of 100% previously developed land the current proposals does not development of undeveloped land.
25. What consideration has been given to the removal of contamination from the land?	A ground contamination review was undertaken by the structural engineer, TWS. This review determined that there were no major contaminative sites present on or around the area. The existing site is fully comprised of hardstanding.

Pollution	Development Response
Aim: To minimise damage to the environment through air, ground/surface water, land, noise or light pollution. 26. What measures have been incorporated to ensure that noise and light pollution plus pollution transported through surface water runoff will be minimised throughout the development?	A background noise level survey will be undertaken to determine the existing background noise levels, which will inform the plant selection process, and if appropriate any noise attenuation measures, to ensure noise emissions from the proposed development do not negatively impact the surrounding area.
27. What measures have been incorporated to ensure that light pollution will be minimised throughout the development?	External luminaires will be designed in line with ILP Guidance notes for the reduction of obtrusive light, and will be controlled via a photocell and time clock to ensure they are switched off during daylight hours.
28. What consideration has been given to reducing refrigerants and minimising nitrogen oxide emissions?	Within the current Shell only scope no refrigerants are proposed for either the residential or retail areas. It is envisaged that the incoming tenants for the retail units will install their own refrigerant-containing plant equipment.
29. How has the development been sited to minimise the impact of flooding.	A Flood Risk Assessment (FRA) has been produced by the structural engineer, TWS. The FRA deemed that the site is at low risk of flooding from all sources. Potential surcharging from the existing sewer system will be dealt with by non-return valves fitted to drainage pipework at the junction with the main system, if required.
30. How has the design considered the use of sustainable drainage systems (SUDS) and how will they be incorporated within the development?	A Drainage & SUDS report has been produced by the structural engineer, TWS. Suitable SUDS techniques have been assessed and are currently proposed to manage the run-off rates on site, Green roofs are proposed at various levels on the 3No. residential blocks. A rainwater attenuation tank is also proposed, which will provide initial storage during storm events, thus reducing peak flows to the mains sewer. The foul water rates will increase from the site due to the development. If the current network does not have the additional capacity for the increase, necessary upgrade works will be undertaken.

6.0 CONCLUSION

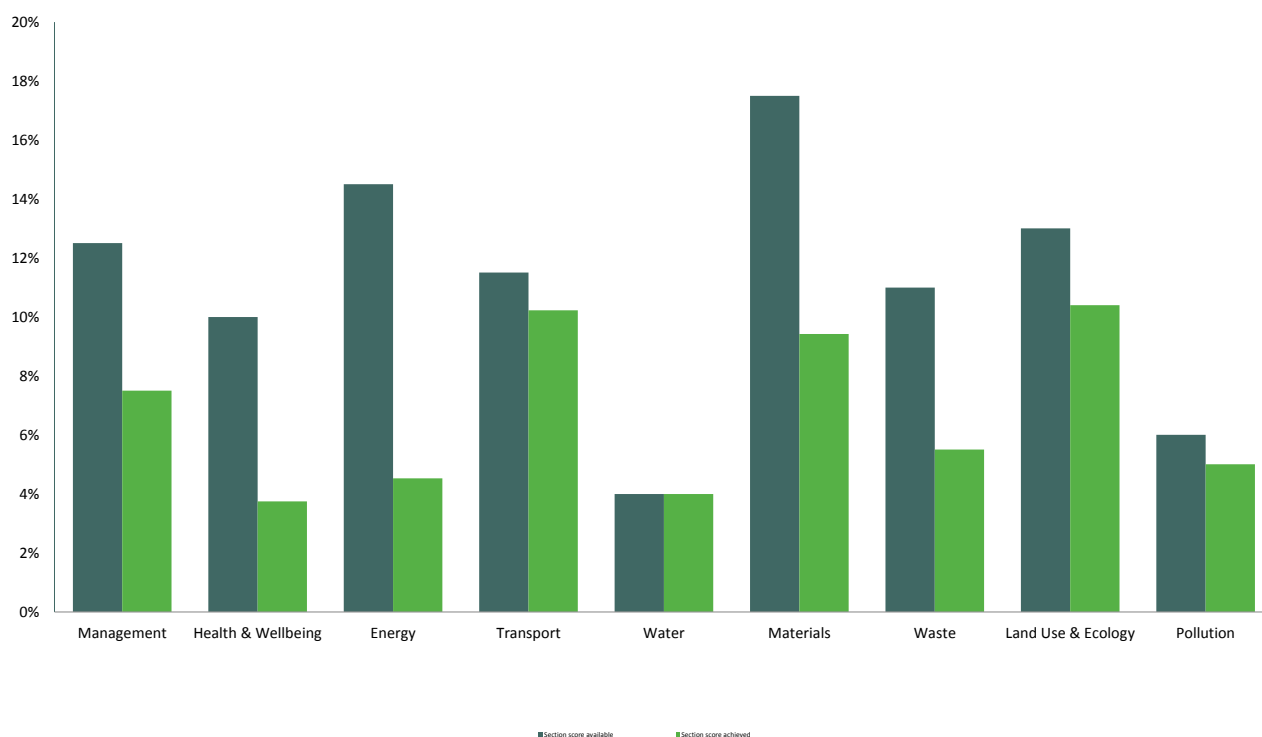
The design of the Proposed Development addresses all relevant policy requirements within Reading Borough Council's planning policies. Where feasible, best practice measures have been implemented within the proposal.

APPENDIX A
BREEAM PRE-ASSESSMENT

Overall Building Performance

Building name	A1 Retail
Indicative BREEAM rating	Very Good
Indicative Total Score	61.3%
Min. standards level achieved	Very Good level

Building Performance by Environment Section



Environmental Section	No. credits available	Indicative no. credits Achieved	% credits achieved	Section Weighting	Indicative Section Score
Management	15	9	60.00%	12.50%	7.50%
Health & Wellbeing	8	3	37.50%	10.00%	3.75%
Energy	16	5	31.25%	14.50%	4.53%
Transport	9	8	88.89%	11.50%	10.22%
Water	3	3	100.00%	4.00%	4.00%
Materials	13	7	53.85%	17.50%	9.42%
Waste	8	4	50.00%	11.00%	5.50%
Land Use & Ecology	10	8	80.00%	13.00%	10.40%
Pollution	6	5	83.33%	6.00%	5.00%
Innovation	10	1	10.00%	N/A	1

Man 03 Responsible construction practices

No. of BREEAM credits available	6	Available contribution to overall score	5.00%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Is all site timber used in the project 'legally harvested and traded timber'?	Yes		
Will/does the principal contractor operate a compliant Environmental Management System?	Yes	1	1
Will a construction stage sustainability champion be assigned?	No	1	0
Will a considerate construction scheme be used by the principal contractor? (One credit where 'compliance' has been achieved. Two credits where 'compliance' is significantly exceeded.)	2	2	2
Will construction site impacts be metered/monitored?	Yes		
Will site utility consumption be metered/monitored?	Yes	1	1
Will transport of construction materials and waste be metered/monitored?	Yes	1	1
Will exemplary level criteria be met?	Yes	1	1

Key Performance Indicators: Construction site energy use		
Energy consumption (total) - site processes		Information not available at design stage
Energy consumption (intensity) - site processes		Information not available at design stage
Distance (total) - materials transport to site		Information not available at design stage
Distance (total) - waste transport from site		Information not available at design stage
Energy consumption (total) - materials transport to site		Information not available at design stage
Energy consumption (total) - waste transport from site		Information not available at design stage
Energy consumption (intensity) - materials transport to site		Information not available at design stage
Energy consumption (intensity) - waste transport from site		Information not available at design stage

Key Performance Indicators: Construction site greenhouse gas emissions		
Process greenhouse gas emissions (total) - site processes		Information not available at design stage
Greenhouse gas emissions (intensity) - site processes		Information not available at design stage
Greenhouse gas emissions (total) - materials transport to site		Information not available at design stage
Greenhouse gas emissions (total) - waste transport from site		Information not available at design stage
Greenhouse gas emissions (intensity) - materials transport to site		Information not available at design stage
Greenhouse gas emissions (intensity) - waste transport from site		Information not available at design stage

Key Performance Indicators: Construction site use of freshwater resources		
Use of freshwater resource (total) - site processes		Information not available at design stage
Use of freshwater resource (intensity) - site processes		Information not available at design stage

Total BREEAM credits achieved	5
Total contribution to overall building score	4.17%
Total BREEAM innovation credits achieved	1
Minimum standard(s) level	Outstanding level

Comments/notes:

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BREEAM UK New Construction 2014 Pre-Assessment Estimator: Assessment Issue Scoring

Building name	A1 Retail
Building score (%)	61.30%
Building rating	Very Good
Minimum standards level achieved	Very Good level

MANAGEMENT

Man 01 Project brief and design

No. of BREEAM credits available	4	Available contribution to overall score	3.33%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will stakeholder consultation (project delivery) take place?	Yes	1	1
Will stakeholder consultation (third party) take place?	Yes	1	1
Will a sustainability champion (design) be assigned?	No	1	0
Will a sustainability champion (monitoring progress) be assigned?	No	1	0

Total BREEAM credits achieved	2
Total contribution to overall building score	1.67%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Man 02 Life cycle cost and service life planning

No. of BREEAM credits available	4	Available contribution to overall score	3.33%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

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Assessment Criteria	Compliant?	Credits available	Credits achieved
Will an elemental life cycle cost (LCC) analyses be carried out?	No	2	0
Will a component level LCC plan be developed?	No	1	0
Will the predicted capital cost be reported?	Yes	1	1
Expected capital cost of the project (if available)	£100	£/m²	

Total BREEAM credits achieved	1
Total contribution to overall building score	0.83%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

HEALTH & WELLBEING

Hea 01 Visual Comfort			
No. of BREEAM credits available	4	Available contribution to overall score	5.00%
No. of BREEAM innovation credits available	1	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will the design provide adequate glare control for building users?	0	2	0
How many credits will be targeted for the daylighting criteria?	No	1	0
Will the design provide adequate view out for building users?			
Will internal/external lighting levels, zoning and controls be specified in accordance with the relevant CIBSE Guides/British Standards?	Yes	1	1
Will exemplary level criteria be met?	No	1	0
Total BREEAM credits achieved	1		
Total contribution to overall building score	1.25%		
Total BREEAM innovation credits achieved	0		
Minimum standard(s) level	N/A		

Comments/notes:

Hea 02 Indoor Air Quality			
No. of BREEAM credits available	1	Available contribution to overall score	1.25%
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will an air quality plan be produced and building designed to minimise air pollution?			
Will building be designed to minimise the concentration and recirculation of pollutants in the building?			

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Will the relevant products be specified to meet the VOC testing and emission levels required?			
Will formaldehyde and total VOC levels be measured post construction?			
Will the building be designed to, or have the potential to provide, natural ventilation?	No	1	0
Will exemplary level VOCs (products) criteria be met?			

Key Performance Indicators: Indoor air quality		
Concentration levels of formaldehyde		Information not available at design stage
Total volatile organic compound (TVOC) concentration		Information not available at design stage
Total BREEAM credits achieved	0	
Total contribution to overall building score	0.00%	
Total BREEAM innovation credits achieved	0	
Minimum standard(s) level	N/A	

Comments/notes:

Man 04 Commissioning and handover

No. of BREEAM credits available	1	Available contribution to overall score	0.83%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will commissioning schedule and responsibilities be developed & accounted for?			
Will a commissioning manager be appointed?			
Will the building fabric be commissioned?	Yes	1	1
Will a building user guide be developed prior to handover?			
Will a training schedule be prepared for building occupiers/managers?			
Total BREEAM credits achieved	1		
Total contribution to overall building score	0.83%		
Total BREEAM innovation credits achieved	N/A		
Minimum standard(s) level	N/A		

Comments/notes:

Man 05 Aftercare		Assessment issue not applicable	
No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will aftercare support be provided to building occupiers?			
Will seasonal commissioning occur over 12months once substantially occupied?			
Will a post occupancy evaluation be carried out 1 year after occupation?			
Will exemplary level criteria be met?			
Total BREEAM credits achieved	N/A		
Total contribution to overall building score	N/A		

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Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Hea 05 Acoustic Performance

No. of BREEAM credits available	1	Available contribution to overall score	1.25%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Credits	Credits available	Credits achieved
Will the building meet the appropriate acoustic performance standards and testing requirements for: a. Sound insulation b. Indoor ambient noise level c. Reverberation times?	0	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Hea 06 Safety and Security

No. of BREEAM credits available	2	Available contribution to overall score	2.50%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Where external site areas are present, will safe access be designed for pedestrians and cyclists?	Yes	1	1
Will a suitably qualified security consultant be appointed and security considerations accounted for?	Yes	1	1

Total BREEAM credits achieved	2
Total contribution to overall building score	2.50%
Total BREEAM innovation credits achieved	N/A

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Minimum standard(s) level	N/A
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Comments/notes:

Hea 03 Safe containment in laboratories

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will an objective risk assessment of proposed laboratory facilities' design be completed?			
Will the manufacture & installation of fume cupboards and containment devices meet best practice standards?			
Will containment level 2 & 3 labs meet best practice safety & performance criteria?			

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Hea 04 Thermal comfort

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will thermal modelling of the design be carried out?			

Key Performance Indicators: Thermal comfort

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Predicted Mean Vote (PMV)	
Predicted Percentage Dissatisfied (PPD)	

Total BREEAM credits achieved	0
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 02 Energy monitoring

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment criteria	Compliant?	Credits available	Credits achieved
Will a BMS or sub-meters be specified to monitor energy use from major building services systems?			
Will a BMS or sub-meters be specified to monitor energy use by tenant/building function areas?			

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 03 External lighting

No. of BREEAM credits available	1	Available contribution to overall score	0.91%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment criteria	Compliant?	Credits available	Credits achieved
Will external light fittings and controls be specified in accordance with the BREEAM criteria?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.91%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

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ENERGY

Ene 01 Reduction of energy use and carbon emissions

No. of BREEAM credits available	12	Available contribution to overall score	10.88%
No. of BREEAM innovation credits available	5	Minimum standards applicable	Yes

How do you wish to assess the number of BREEAM credits achieved for this issue?	Define a target number of BREEAM credits achieved
Select the target number of BREEAM credits for the Ene01 issue:	4

Ene 01 Calculator			
Country of the UK where the building is located		Confirm building regulation and version to be used:	

New Construction (shell only)	
Building floor area	m2
Notional building heating and cooling energy demand	MJ/m2yr
Actual building heating and cooling energy demand	MJ/m2yr
Notional building primary energy consumption	
Actual building primary energy consumption	
Target emission rate (TER)	
Building emission rate (BER)	
Building emission rate improvement over TER	
Heating & cooling demand energy performance ratio (EPR _{h,c})	
Primary consumption energy performance ratio (EPR _{pc})	
CO ₂ Energy performance ratio (EPR _{co2})	
Overall building energy performance ratio (EPR _{o2})	

Where specified, please confirm the energy production from onsite or near site energy generation technologies	
Equivalent % of the building's 'regulated' energy consumption generated by carbon neutral sources and used to meet energy demand from 'unregulated' building systems or processes?	
Is the building designed to be 'carbon negative'?	
If the building is defined as 'carbon negative' what is the total (modelled) renewable/carbon neutral energy generated and exported?	

Total BREEAM credits achieved	4
Total contribution to overall building score	3.63%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Very Good level

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Comments/notes:

Ene 06 Energy efficient transportation systems				Assessment issue not applicable			
No. of BREEAM credits available		N/A		Available contribution to overall score		N/A	
No. of BREEAM innovation credits available		N/A		Minimum standards applicable		N/A	
Assessment criteria				Compliant?	Credits available	Credits achieved	
Will a transportation system analysis be carried out to determine and specify the optimum number, size and type of lifts that is most energy efficient?							
Will the relevant energy-efficient features criteria be met?							
Total BREEAM credits achieved		N/A					
Total contribution to overall building score		N/A					
Total BREEAM innovation credits achieved		N/A					
Minimum standard(s) level		N/A					

Comments/notes:

Ene 07 Energy efficient laboratory systems				Assessment issue not applicable			
No. of BREEAM credits available		N/A		Available contribution to overall score		N/A	
No. of BREEAM innovation credits available		N/A		Minimum standards applicable		N/A	
Assessment criteria				Compliant?	Credits available	Credits achieved	
Pre-requisite: Criterion 1 of Hea 03 - risk assessment of laboratory facilities							
Have the occupants' laboratory requirements & performance criteria been confirmed during the preparation of the initial project brief to minimise energy demand?							
Best Practice Energy Practices in Laboratories (table 27)							
Will the laboratory meet criteria item b) Fan power?							
Will the laboratory criteria item c) Fume cupboard volume flow rates?							
Will the lab meet item d) Grouping / isolation of high filtration/ventilation activities?							
Will the laboratory meet criteria item e) Energy recovery - heat?							
Will the laboratory meet criteria item f) Energy recovery - cooling?							

Will the laboratory meet criteria item g) Grouping of cooling loads?		
Will the laboratory meet criteria item h) Free cooling?		
Will the laboratory meet criteria item i) Load responsiveness?		
Will the laboratory meet criteria item j) Cleanrooms?		
Will the laboratory meet criteria item k) Diversity?		
Will the laboratory meet criteria item l) Room air-change rates?		
Total BREEAM credits achieved		N/A
Total contribution to overall building score		N/A
Total BREEAM innovation credits achieved		N/A
Minimum standard(s) level		N/A

Comments/notes:

Ene 04 Low carbon design				
No. of BREEAM credits available		3	Available contribution to overall score	2.72%
No. of BREEAM innovation credits available		0	Minimum standards applicable	No
Assessment criteria		Compliant?	Credits available	Credits achieved
Will passive design measures be used in line with an analysis be carried out during concept design stage (RIBA stage 2 or equivalent)?		No	1	0
Will free cooling measures be implemented in the whole building in line with the passive design analysis?		No	1	0
Will a LZC technology be specified in line with a feasibility study carried out by the completion of the Concept Design stage (RIBA Stage 2 or equivalent)?		No	1	0

KPI - Low and/or zero carbon energy generation	
Total on-site and/or near-site LZC energy generation	INA kWh/yr
Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 05 Energy efficient cold storage				Assessment issue not applicable			
No. of BREEAM credits available		N/A		Available contribution to overall score		N/A	
No. of BREEAM innovation credits available		N/A		Minimum standards applicable		N/A	

Assessment criteria				Compliant?	Credits available	Credits achieved	
Will the refrigeration system be designed, installed & commissioned in accordance with BREEAM criteria?							
Will the refrigeration system demonstrate a saving in indirect greenhouse gas emissions?							

Will the refrigeration system be designed, installed & commissioned in accordance with BREEAM criteria?		
Will the refrigeration system demonstrate a saving in indirect greenhouse gas emissions?		
Total BREEAM credits achieved		N/A
Total contribution to overall building score		N/A
Total BREEAM innovation credits achieved		N/A
Minimum standard(s) level		N/A

Comments/notes:

TRANSPORT

Tra 01 Public Transport Accessibility

No. of BREEAM credits available	5	Available contribution to overall score	6.39%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra01 issue assessment)	Retail
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Assessment Criteria	Compliant	Credits available	Credits achieved
Indicative public transport accessibility index (AI): Will the building have a dedicated bus service?	20.00	5	5 N/A

AI	Indicative Accessibility Index for pre-assessment
0	Poor or no public transport provision
1	A single BREEAM compliant public transport node available
2	Some BREEAM compliant public transport nodes/services available
4	A selection of BREEAM compliant public transport nodes/services available
8	Good provision of public transport i.e. small urban centre / suburban area
10	Very Good provision of public transport i.e. small/medium urban centre
12	Excellent provision of public transport, i.e. medium urban centre
18	Excellent provision of public transport, i.e. large urban/metropolitan centre

Total BREEAM credits achieved	5
Total contribution to overall building score	6.39%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Tra 02 Proximity to Amenities

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No. of BREEAM credits available	1	Available contribution to overall score	1.28%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will the building be in close proximity of and accessible to applicable amenities?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.28%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 08 Energy efficient equipment

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment criteria

Which of the following will be present and likely to be a/the major contributor to 'unregulated' energy use?	Present	Major impact
Ref A Small power and plug in equipment?		
Ref B Swimming pool?		
Ref C Communal laundry?		
Ref D Data centre?		
Ref E IT-intensive operation areas?		
Ref F Residential areas?		
Ref G Healthcare?		
Ref H Kitchen and catering facilities?		

Will the significant majority contributor(s) to 'unregulated' energy use above meet the BREEAM criteria?	Compliant	Credits available	Credits achieved

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 09 Drying space

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

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Assessment criteria	Compliant?	Credits available	Credits achieved
Will internal/external drying space and fixings be provided?			

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Tra 05 Travel Plan			
No. of BREEAM credits available	1	Available contribution to overall score	1.28%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria		Compliant?	Credits available	Credits achieved
Will a transport plan based on site specific travel survey/assessment be developed?		Yes	1	1
Total BREEAM credits achieved			1	
Total contribution to overall building score			1.28%	
Total BREEAM innovation credits achieved			N/A	
Minimum standard(s) level			N/A	

Comments/notes:

WATER

Wat 01 Water Consumption Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A
How do you wish to assess the BREEAM credits to be achieved for this issue?			

Please select the calculation procedure used

Standard approach data	
Water Consumption from building micro-components	
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Water demand met via greywater/rainwater sources	
Total net water consumption	
Improvement on baseline performance	

Key Performance Indicator - use of freshwater resource	
Total net Water Consumption	
Default building occupancy	

Alternative approach data	
Overall microcomponent performance level achieved	

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Tra 03 Cyclist facilities			
No. of BREEAM credits available	2	Available contribution to overall score	2.56%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra03 issue assessment)	Retail – Individual retail unit
How many compliant cycle storage spaces will be provided?	10
What cyclist facilities will be provided?	No compliant facilities

Assessment Criteria		Compliant?	Credits available	Credits achieved
Cycle storage spaces Cyclist facilities	Yes		2	1
	No			
Total BREEAM credits achieved	1			
Total contribution to overall building score	1.28%			
Total BREEAM innovation credits achieved	N/A			
Minimum standard(s) level	N/A			

Comments/notes:

Small retail requires a minimum of 10No cycle spaces

Tra 04 Maximum Car Parking Capacity Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Building type category (for purpose of Tra04 issue)	
Building's indicative Accessibility Index (sourced from issue Tra01)	

Assessment Criteria		Compliant?	Credits available	Credits achieved
Will BREEAM's maximum parking capacity criteria for the building type/Accessibility Index be met?				

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Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Wat 04 Water Efficient Equipment

No. of BREEAM credits available	1	Available contribution to overall score	1.33%
No. of BREEAM innovation credits available	No	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Has a meaningful reduction in unregulated water demand been achieved?		1	1
Total BREEAM credits achieved		1	
Total contribution to overall building score		1.33%	
Total BREEAM innovation credits achieved		N/A	
Minimum standard(s) level		N/A	

Comments/notes:

MATERIALS

Mat 01 Life Cycle Impacts

No. of BREEAM credits available	5	Available contribution to overall score	6.73%
No. of BREEAM innovation credits available	3	Minimum standards applicable	No

How do you wish to assess the number of BREEAM credits to be achieved for this issue? Define the number of Mat 01 credits achieved

Assessment Criteria	Compliant?	Credits available	Credits achieved
Predicted total Mat01 credits achieved		3	
Green Guide exemplary level compliant?	No		
Has IMPACT compliant software been used?	No		

Key Performance Indicator - embodied green house gas emissions by element	Total area of element m ²	Total impact kgCO ₂ eq.	Area of element impact data relevant to m ²
External walls			

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Windows			
Roof			
Upper floor construction			
Internal wall			
Floor finishes/coverings			

Key Performance Indicator - embodied green house gas emissions for building (assessed elements only)		
Total embodied green house gas emissions for building (by assessed elements)	Missing data	kgCO ₂ eq.
Proportion of applicable building elements that data reported covers		kgCO ₂ eq./m ²

Total BREEAM credits achieved	3
Total contribution to overall building score	4.04%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Wat 02 Water Monitoring

No. of BREEAM credits available	1	Available contribution to overall score	1.33%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will there be a water meter on the mains water supply to the building(s)?	Yes	1	1
Will metering/monitoring equipment be specified on the water supply to any relevant plant/building areas?			
Will all specified water meters have a pulsed output?	Yes		
If the site/building has an existing BMS connection, will all pulsed meters be connected to the BMS?	N/A		

Total BREEAM credits achieved	1
Total contribution to overall building score	1.33%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Wat 03 Water Leak Detection and Prevention

No. of BREEAM credits available	1	Available contribution to overall score	1.33%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a mains water leak detection system be installed on the building's mains water supply?	Yes	1	1
Will flow control devices be installed in each sanitary area/facility?			

Total BREEAM credits achieved	1
Total contribution to overall building score	1.33%
Total BREEAM innovation credits achieved	N/A

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Minimum standard(s) level	N/A
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Comments/notes:

Mat 04 Insulation			
No. of BREEAM credits available	1	Available contribution to overall score	1.35%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria		Compliant?	Credits available	Credits achieved	Note: An insulation index of 2.50 or less is required for a Green Guide A rating.
What is the building's targeted insulating index?		2.50	1	1	
Total BREEAM credits achieved			1		
Total contribution to overall building score			1.35%		
Total BREEAM innovation credits achieved			N/A		
Minimum standard(s) level			N/A		

Comments/notes:

Mat 05 Designing for durability and resilience			
No. of BREEAM credits available	1	Available contribution to overall score	1.35%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment Criteria		Compliant?	Credits available	Credits achieved
Will suitable durability/protection measures be specified and installed to vulnerable areas of the building?	Yes	Yes	1	1
	Yes	Yes	1	1
Total BREEAM credits achieved			1	
Total contribution to overall building score			1.35%	
Total BREEAM innovation credits achieved			N/A	
Minimum standard(s) level			N/A	

Comments/notes:

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Mat 06 Material efficiency			
No. of BREEAM credits available	1	Available contribution to overall score	1.35%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria		Compliant?	Credits available	Credits achieved
Will material efficiency measures be identified & implemented during all RIBA stages?		No	1	0
Total BREEAM credits achieved			0	
Total contribution to overall building score			0.00%	
Total BREEAM innovation credits achieved			N/A	
Minimum standard(s) level			N/A	

Comments/notes:

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Mat 02 Hard Landscaping and Boundary Protection			
No. of BREEAM credits available	1	Available contribution to overall score	1.35%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria		Compliant?	Credits available	Credits achieved
Will ≥80% of all external hard landscaping and boundary protection achieve a Green Guide A or A+ rating?		No	1	0
Total BREEAM credits achieved			0	
Total contribution to overall building score			0.00%	
Total BREEAM innovation credits achieved			N/A	
Minimum standard(s) level			N/A	

Comments/notes:

Mat 03 Responsible Sourcing			
No. of BREEAM credits available	4	Available contribution to overall score	5.38%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria		Compliant?	Credits available	Credits achieved
All timber and timber based products are 'legally harvested and traded timber' Is there a documented sustainable procurement plan? Percentage of available responsible sourcing of materials points achieved	Yes	Yes	1	1
	Yes	Yes	3	1
	18.00%	Yes	3	1
Please confirm the route used to assess Mat03		Route 1: Lowest RSCS point score		
Total BREEAM credits achieved			2	
Total contribution to overall building score			2.69%	
Total BREEAM innovation credits achieved			0	
Minimum standard(s) level			Outstanding level	

Comments/notes:

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Comments/notes:

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Total BREEAM credits achieved	1
Total contribution to overall building score	1.38%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Comments/notes:

Wst 04 Speculative Floor and Ceiling Finishes		Assessment issue not applicable	
No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Total BREEAM credits achieved	N/A		
Total contribution to overall building score	N/A		
Total BREEAM innovation credits achieved	N/A		
Minimum standard(s) level	N/A		

Comments/notes:

Wst 05 Adaption to climate change			
No. of BREEAM credits available	1	Available contribution to overall score	1.38%
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a climate change adaptation strategy appraisal for structural and fabric resilience be conducted by the end of Concept Design (RIBA Stage 2 or equivalent)?	No	1	0
Will exemplary level criteria – Responding to adaptation to climate change be met?			
Total BREEAM credits achieved	0		
Total contribution to overall building score	0.00%		
Total BREEAM innovation credits achieved	0		
Minimum standard(s) level	N/A		

Comments/notes:

WASTE			
Wst 01 Construction Waste Management			
No. of BREEAM credits available	4	Available contribution to overall score	5.50%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes
How do you wish to assess the number of BREEAM credits to be achieved for this issue?		Define a target number of BREEAM credits	
Select the number of BREEAM credits being targeted for issue Wst 01:		3	BREEAM Wst01 Innovation credits:

Assessment Criteria	Compliant?
Construction resource management plan	
Compliant Pre-demolition audit	
Does the excavation waste meet the exemplary level requirements?	
Key Performance Indicators - Construction Waste	
Measure/units for the data being reported	
Non-hazardous construction waste (excluding demolition/excavation)	
Total non-hazardous construction waste generated	
Non-hazardous non-demolition const. waste diverted from landfill	
Total non-hazardous non-demolition const. waste diverted from landfill	
Total non-hazardous demolition waste generated	
Non-hazardous demolition waste diverted from landfill	
Total non-hazardous demolition waste to disposal	
Material for reuse	
Material for recycling	
Material for energy recovery	
Hazardous waste to disposal	
Total BREEAM credits achieved	3
Total contribution to overall building score	4.13%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

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Comments/notes:

Wst 02 Recycled Aggregates			
No. of BREEAM credits available	1	Available contribution to overall score	1.38%
No. of BREEAM innovation credits available	1	Minimum standards applicable	No

Assessment Criteria	Total
What is the target total % of high-grade aggregate that will be recycled/secondary aggregate?	0%
% of high-grade aggregate that is recycled/secondary aggregate - by application	
Structural frame	
Bitumen/hydraulically bound base, binder and surface courses	
Building foundations	
Concrete road surfaces	
Pipe bedding	
Granular fill and capping	
Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Wst 03 Operational Waste			
No. of BREEAM credits available	1	Available contribution to overall score	1.38%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will operational recyclable waste volumes be segregated and stored?	Yes	1	1
Will static waste compactor(s) or baler(s) be specified where appropriate?	Yes		
Will vessel(s) for composting suitable organic waste where appropriate?	N/A		

LE 02 Ecological Value of Site and Protection of Ecological Features

No. of BREEAM credits available	2	Available contribution to overall score	2.60%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No
Ecological value of the land defined using A Suitably Qualified Ecologist			

Assessment Criteria	Compliant?	Credits available	Credits achieved
Can the land within the construction zone be defined as 'land of low ecological value'?	Yes	1	1
Will all features of ecological value surrounding the construction zone/site boundary be protected?	Yes	1	1

Total BREEAM credits achieved	2
Total contribution to overall building score	2.60%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

LE 03 Mitigating Ecological Impact

No. of BREEAM credits available	2	Available contribution to overall score	2.60%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Data sourced for calculating the change in ecological value from	Suitably Qualified Ecologist site survey of plant species
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Assessment Criteria	What is the likely change in ecological value as a result of the sites development?	20 species (i.e. no negative change)	Plant species rich
Total BREEAM credits achieved	2		
Total contribution to overall building score	2.60%		

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Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Comments/notes:

Wst 06 Functional adaptability

No. of BREEAM credits available	1	Available contribution to overall score	1.38%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a building specific functional adaptation strategy appraisal be conducted by Concept Design (RIBA Stage 2 or equivalent) and will functional adaptation measures be implemented?	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

LAND USE & ECOLOGY

LE 01 Site Selection

No. of BREEAM credits available	2	Available contribution to overall score	2.60%
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No. of BREEAM innovation credits available	0	Minimum standards applicable	No
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Assessment Criteria	Compliant?	Credits available	Credits achieved
Will at least 75% of the proposed development's footprint be located on previously occupied land?	Yes	1	1
Is the site deemed to be significantly contaminated?	No	1	0

Total BREEAM credits achieved	1
Total contribution to overall building score	1.30%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

POLLUTION			
Pol 01 Impact of Refrigerants		Assessment issue not applicable	
No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Credits available	Credits achieved
Refrigerant containing systems installed in the assessed building?		
Do all systems (with electric compressors) comply with the requirements of BS EN 378:2006 (parts 2 & 3) & where refrigeration systems containing ammonia are installed, the IOR Ammonia Refrigeration Systems Code of Practice?		
Global Warming Potential of the specified refrigerant(s) 10 or less?		
What is the target range Direct Effect Life Cycle CO2eq. emissions for the system?		
Cooling/Heating capacity of the system		
Will a refrigerant leak detection and containment system be specified/installed?		
Total BREEAM credits achieved	N/A	
Total contribution to overall building score	N/A	
Total BREEAM innovation credits achieved	N/A	
Minimum standard(s) level	N/A	

Comments/notes:

Pol 02 NO _x Emissions		Assessment issue not applicable	
No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	
NO _x emission level - space heating	
NO _x emission level - cooling	

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Does this building meet BREEAM's definition of a highly insulated building?	
Energy consumption: heating and hot water	
Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

LE 04 Enhancing Site Ecology			
No. of BREEAM credits available	2	Available contribution to overall score	2.60%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a suitably qualified ecologist be appointed to report on enhancing and protecting site ecology?	Yes	2	1
Will the suitably qualified ecologist's general recommendations be implemented?	Yes		
What is the targeted/intended improvement in ecological value as a result of enhancement actions?	<6 species (small positive change)		Plant species rich
Total BREEAM credits achieved	1		
Total contribution to overall building score	1.30%		
Total BREEAM innovation credits achieved	N/A		
Minimum standard(s) level	N/A		

Comments/notes:

LE 05 Long Term Impact on Biodiversity			
No. of BREEAM credits available	2	Available contribution to overall score	2.60%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a Suitably Qualified Ecologist be appointed to monitor/minimise impacts of site activities on biodiversity?	Yes	2	2
Will a landscape and habitat management plan be produced covering at least the first five years after project completion in accordance with British Standards?	Yes		
Number of applicable measures to improve biodiversity confirmed by SQE	5		
Number of applicable measures implemented:	4		

Total BREEAM credits achieved	2
Total contribution to overall building score	2.60%

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Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Pol 05 Noise Attenuation		Assessment issue not applicable	
No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will there be noise-sensitive areas/buildings within 800m radius of the development?			
Will a noise impact assessment be carried out and, if applicable, noise attenuation measures specified?			
Total BREEAM credits achieved		N/A	
Total contribution to overall building score		N/A	
Total BREEAM innovation credits achieved		N/A	
Minimum standard(s) level		N/A	

Comments/notes:

INNOVATION

Inn 01 Innovation			
No. of BREEAM innovation credits available	10	Available contribution to overall score	10.00%
		Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Man 03 Responsible construction practices	Yes	1	1
Man 05 Aftercare	N/A	N/A	0
Hea 01 Visual Comfort	No	1	0
Hea 02 Indoor Air Quality	N/A	N/A	0
Ene 01 Reduction of energy use and carbon emissions	No	5	0
Wat 01 Water Consumption	No	N/A	0
Mat01 Life Cycle Impacts	No	3	0
Mat03 Responsible Sourcing of Materials	No	1	0

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Wst01 Construction Waste Management	No	1	0
Wst02 Recycled Aggregates	No	1	0
Wst 05 Adaption to climate change	N/A	N/A	0
Number of 'approved' innovation credits achieved?			
Total BREEAM innovation credits achieved		1	
Total contribution to overall building score		1.00%	
Minimum standard(s) level		N/A	

Comments/notes:

Pol 03 Surface Water Run off			
No. of BREEAM credits available	5	Available contribution to overall score	5.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
What is the actual/likely annual probability of flooding for the assessed site?	Low	2	2
Will a Flood Risk Assessment be undertaken?	Yes	1	1
Will the site meet the BREEAM criteria for peak rate surface water run off?	Yes	1	1
Will the site meet the criteria for surface water run off volume, attenuation and/or limiting discharge?	Yes	1	1
Will the site be designed to minimise watercourse pollution in accordance with the BREEAM criteria?	No	1	0
Total BREEAM credits achieved		4	
Total contribution to overall building score		4.00%	
Total BREEAM innovation credits achieved		N/A	
Minimum standard(s) level		N/A	

Comments/notes:

Pol 04 Reduction of Night Time Light Pollution			
No. of BREEAM credits available	1	Available contribution to overall score	1.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will the external lighting specification be designed to reduce light pollution?	Yes	1	1
Total BREEAM credits achieved		1	
Total contribution to overall building score		1.00%	
Total BREEAM innovation credits achieved		N/A	
Minimum standard(s) level		N/A	

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Comments/notes: