75-81 George Street, Richmond

Breeam review & Sustainable Construction Checklist

Envision

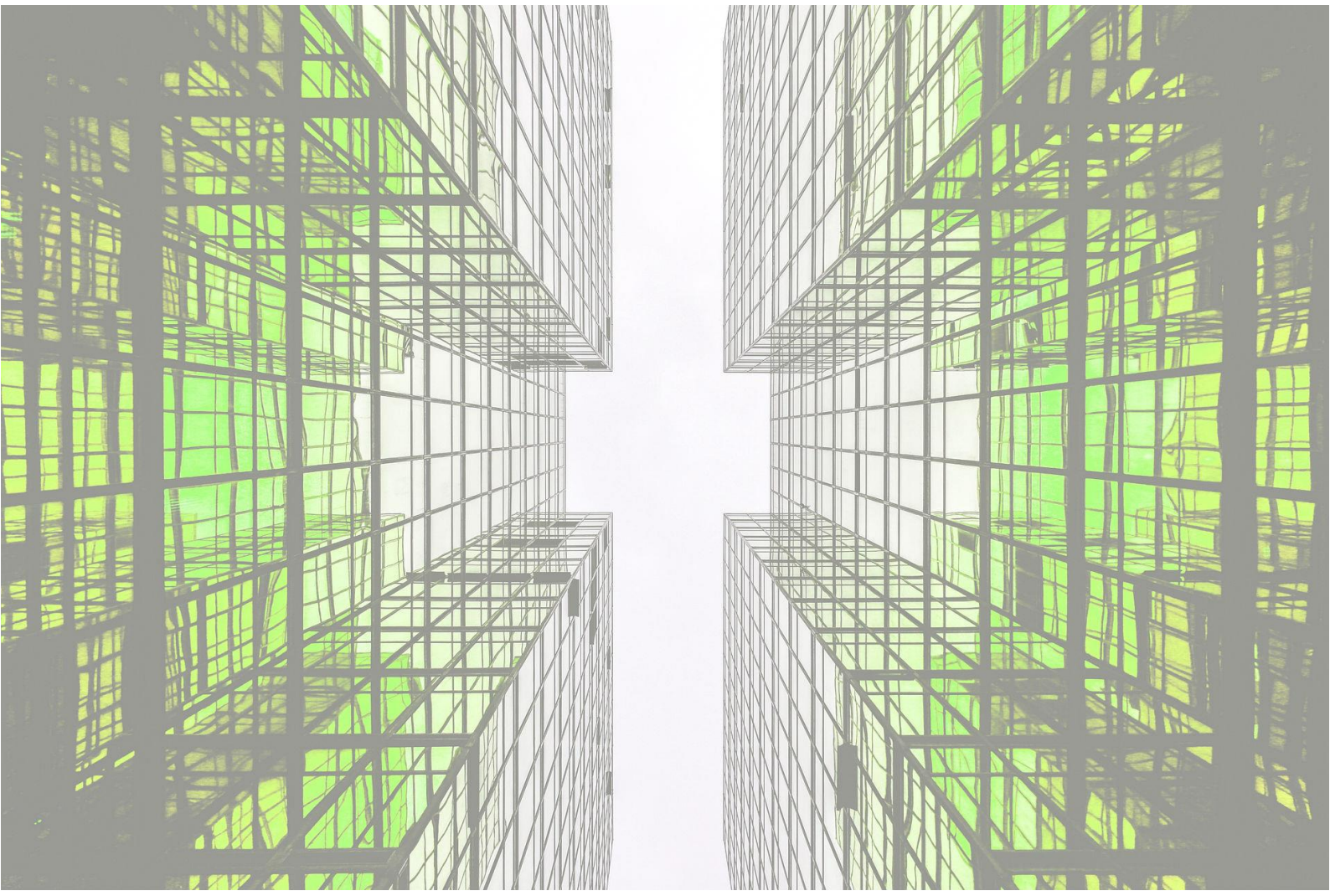
7/10/2019

BREEAM Review

Incorporating Sustainability Checklist

75-81 George Street, Richmond, TW9 1HA

Prepared for Canadian & Arcadia Ltd
18th June 2019



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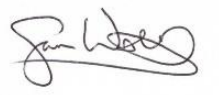
Sam Wallis BSc (Hons) M Arch Sc OCDEA	
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1 INTRODUCTION

1.1 Envision has been appointed by Canadian & Arcadia (The Applicant) to prepare a BREEAM Review incorporating Sustainability Checklist in support of the planning application at 75-81 George Street for the erection of additional storey at fourth floor (with associated roof terrace) and plant room above; 2nd floor rear extension; replacement of roof to the adjacent existing single storey extension at rear to include roof light; enclosed staircase to rear; terraces to rear; and associated plant. Other elevational alterations include; removal of canopy to 80 George Street; new shopfronts to 4 Paved Court, Golden Court entrance, and King Street and George Street frontages; new fenestration throughout; and new canopies.

1.2 In addition, the scheme comprises the change of use of 80 George Street from A1 (retail) to mixed use comprising: Class B1 to the existing floors 2,3 and the new fourth floor; Flexible Class A1 and Class B1 (existing floor 1); Class A1 (existing ground); Flexible Class A1 and Class D2 (existing basement); and Change of use of 16 Paved Court/20 King Street to Class B1 (existing floors 1,2).

Scope

1.3 This report provides a summary of the sustainability measures included as part of the BREEAM assessment which will be put forward for the development. This statement is structured as follows:

- Section 2 provides a description of the site and the development proposals;
- Section 3 provides a description of the main policies and drivers for sustainability relevant to the application;
- Section 4 examines how the scheme will approach the BREEAM requirements required by local policy;
- Section 5 details the key sustainable design measures incorporated as part of the BREEAM assessment;
- The LBRuT Sustainable Construction Checklist is provided in Appendix I;
- The formal BREEAM Predictive Assessment is provided in Appendix II.

2 CONTEXT AND PROPOSALS

Location

2.1 The proposed development site is located northern side of George Street (A307), in Richmond town centre. The site is located in an area of predominately retail and commercial land uses comprising Richmond town centre. The site is bound by George Street to the east, King Street to the south and commercial/residential properties to the north. The existing Site is currently occupied by a House of Fraser department store and measures a total Gross Internal Area (GIA) of 7,424m² over six floors (including basement and ground levels).

Figure 2.1 – Site Location Plan

The Proposed Development

2.2 The application is for full planning permission at 75-81 George Street for the erection of additional storey at fourth floor (with associated roof terrace) and plant room above; 2nd floor rear extension; replacement of roof to the adjacent existing single storey extension at rear to include roof light; enclosed staircase to rear; terraces to rear; and associated plant. Other elevational alterations include; removal of canopy to 80 George Street; new shopfronts to 4 Paved Court, Golden Court entrance, and King Street and George Street frontages; new fenestration throughout; and new canopies.

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3 SUSTAINABILITY POLICY CONTEXT

3.1 Many definitions of sustainable development exist, although the common objective for all is the integration of economic, social and environmental issues to ensure a better quality of life for people today, without compromising the needs of future generations. A key mechanism for delivering the principles of sustainable development lies within the UK planning system, which is implemented through national guidance and local planning policies. A review of all the relevant policy documents was undertaken in order to gain an understanding of the guiding policies for sustainability.

National Planning Policy Framework

3.1 The revised National Planning Policy Framework (NPPF) was published on 24th July 2018 and updated in February 2019. It sets the framework for all planning policy in England and how these are expected to be applied. The NPPF establishes a presumption in favour of sustainable development, and the need to support economic growth through the planning system.

- Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives: An economic role – to help build a strong, responsive and competitive economy, by ensuring that sufficient land if the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;
- A social role – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- An environmental role – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

3.2 Planning plays a key role in helping shape places to achieve radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development. The NPPF does not include detailed measures on sustainable design codes and standards to apply, although expects that when setting any local requirement for a building's sustainability, local planning authorities should do so in a way consistent with the national technical standards.

London Plan 2016

3.3 The London Plan (2016) sets out the Mayor's vision for London. In accordance with the NPPF, it promotes economic development, and endorses the principles of sustainable development. It is the main vehicle for strategic decision-making on London's development, including development decisions. The current London Plan was adopted in March 2016. It contains a number of policies directly related to a development's sustainable design, including:

- Policy 5.1 Climate change mitigation;
- Policy 5.2 Minimising carbon dioxide emissions;
- Policy 5.3 Sustainable design and construction;
- Policy 5.6 Decentralised energy in development proposals;
- Policy 5.7 Renewable energy;
- Policy 5.9 Overheating and cooling;
- Policy 5.10 Urban greening;
- Policy 5.11 Green roofs and development site environs;
- Policy 5.12 Flood risk management;
- Policy 5.15 Water use and supplies, and
- Policy 7.2 An inclusive environment.

Draft New London Plan

3.4 The Mayor of London has consulted on a Draft New London Plan which was published for consultation in December 2017. The consultation period ended on Friday 2 March 2018. The Draft New London Plan showing Minor Suggested Changes, which includes clarifications, corrections and factual updates to the Consultation Draft Plan, was published on 13th August 2018. The Examination in Public commenced in January 2019 and is running to the end of May 2019. Whilst the current 2016 London Plan is still the adopted Development Plan, the Draft London Plan may be a material consideration in planning decisions. The significance given to it is a matter for the decision maker, but it gains more weight as it moves through the process to adoption. At this stage, limited weight is expected to be afforded to the draft New London Plan.

London Plan Supplementary Planning Guidance: Sustainable Design and Construction

3.5 The Mayor of London Published its Sustainable Designed Construction SPG in April 2014. The SPG provides guidance on the implementation of London Plan policy 5.3 - Sustainable Design and Construction, as well as a range of policies, primarily in Chapters 5 and 7 of the London Plan which address matters relating to environmental sustainability. As an SPG, the document does not set new policy, but explains how policies in the London Plan should be carried through into action.

3.6 It will be a material planning consideration when determining planning applications. The SPG includes the Mayor's priorities, as well as best practices that should be followed. The requirements of the SPG are discussed throughout this Sustainability Statement and fully appraised in Annex 1.

London Borough of Richmond upon Thames Sustainability Policy

3.7 The site falls within the London Borough of Richmond upon Thames (LBRuT). The development plan for the site comprises of the LBRuT Local Plan (adopted in July 2018). Policy LP 22 (Sustainable Design & Construction) of the local plan has a requirement for developments to achieve the highest standards of sustainable design and construction to mitigate the likely effects of climate change by:

- All new non-residential buildings over 100 m² to achieve a BREEAM 'Excellent' rating;
- All new non-residential buildings over 100 m² to follow and submit the council's Sustainable Construction Checklist.

4 APPROACH TO BREEAM

4.1 The development at 75-81 George Street Richmond consists of three constituent parts which under the BREEAM guidance requires individual assessment and certification as follows:

Table 4.1 – BREEAM Zones for Certification

Floor	Use	Fit-Out	Most Relevant Assessment Method
-1 to 0 (Refurbished)	Retail (A1/A3)	Developer builds to shell only	BREEAM NC 2018 New Construction (Shell Only)
1 to 4 (Refurbished)	Office (B1)	Cat A Fit-Out, i.e. fully-fitted.	BREEAM Non-Domestic Refurbishment 2014 (Parts 1,2 and 3)
5 (new-build)	Office (B1)	Cat A Fit-Out, i.e. fully-fitted.	BREEAM NC 2018 New Construction (Shell & Core)

4.2 *BREEAM UK New Construction 2018* 'Excellent' (as required by LB Richmond Policy LP22) applies exclusively to new construction, and is therefore not applicable to the development as a whole as it constitutes primarily of refurbishment with a minor rooftop extension.

4.3 Therefore, given the majority of the building constitutes refurbishment with a minor new-build extension, the appropriate standard to assess against is *BREEAM Non-Domestic Refurbishment (2014*). Under this standard, if the original building area is greater than 500m² and the new extension is less than 20% of the original building area, then the whole building can be assessed against this standard provided that the building is; **1) all the same use-class**, and, **2) of the same level of fit-out.**

4.4 The current proposal is for a mixed-use building in response to the Council's priorities to maintain ground floor retail. As detailed in Clause 1.3, this mix of uses and a rooftop extension greater than 20% of original floor area would not enable a 'whole building' assessment against *BREEAM Non-Domestic Refurbishment (2014*). However, whilst it is not feasible to undertake a whole building assessment against BREEAM, in order to respond positively to the Council's request for a BREEAM review, it is possible and proposed to undertake an assessment of the entire office element against the *BREEAM Non-Domestic Refurbishment (2014*) standard. This approach accords fully with BREEAM guidelines and would allow a majority of the building floorspace to be subject to a BREEAM assessment and certification, as opposed to solely the roof-top extension.

4.5 The building will be designed and constructed to achieve a score of 'Excellent' in line with Policy LP22. Whilst no formal BREEAM certification is proposed for the speculative retail floorspace, the design and construction measures recognised by BREEAM will be implemented in these areas. The approach is considered to be most pragmatic and will assist to deliver a highly sustainable building in line with Policy LP 22. On this basis it is proposed to undertake a single *BREEAM Non-Domestic Refurbishment (2014)* to 'Excellent' on Floor 1 to 5 of the development.

Approach to Pre-Assessment

4.6 As part of the planning obligations on the development, the proposal is for the office portion of the development element to achieve 'Excellent' under *'BREEAM UK Refurbishment and Fit-out 2014: Non-domestic buildings'.*

4.7 The BREEAM 'Excellent' standard is equal to or greater than a score of 70. The BREEAM scoring bands are shown below.

Table 4.2 – BREEAM Scoring Bands

Target	Score
UNCLASSIFIED	<30
PASS	≥30
GOOD	≥45
V GOOD	≥55
EXCELLENT	≥70
OUTSTANDING	≥85

Approach to Pre-Assessment

4.8 A BREEAM predictive assessment has been undertaken for the proposed scheme to illustrate the performance expected to be achievable. The main outcomes of the assessment are discussed in further detail in the following section, including details of the efforts that will be taken to achieve individual credits. The assessment is based on an evaluation of site constraints, liaison with the design team and on the assumption that various measures and activities can be adopted in detailed design and construction.

Assessment Scope

4.9 The BREEAM UK Non-domestic Refurbishment and Fit-out 2014 scheme provides a modular set of criteria that are applied depending upon the scope of works for a particular project type.

4.10 The scheme is split into the different parts to allow the scheme to reflect the aspects of a building that are tenant or landlord responsibilities, as well as the varied life cycle stages that each component or element is upgraded. The table below gives details on each part as well as outlining their applicability to this project.

Table 4.3 – BREEAM Non-Domestic Refurbishment Assessment Scope

Section	Comment	Applicable
Part 1 – Fabric & Structure	This part applies where major alterations to the building façade, roof or windows are being undertaken and where the area to be renovated is greater than 50% of the surface of the individual element or 25% of the total building envelope.	**Part 1 is applicable.** All external walls will be upgraded both externally and internally and a large amount of new external wall is being installed in the rooftop extension New roof fabrics are to be installed throughout. All retained windows will be upgraded with the addition of new glazing in multiple areas.
Part 2 – Core Services	BREEAM considers 'core services' as services that supply multiple areas and will generally be centralised plant. Part 2 applies where two of the listed systems are to be installed or upgraded.	**Part 2 is applicable.** 5 of the listed 'core services' are being installed; 1 – Central Air Handling Unit. 2 – More than 50% of heat distribution. 3 – More than 50% of chiller distribution. 4 - Water services (sanitary fittings in core). 5 – Low and zero carbon technologies.
Part 3 – Local Services	Part 3 applies where two of the listed fixed building services are to be installed or upgraded.	**Part 3 is applicable.** At least 3 of the listed 'local services' are being installed; 1 – Replacement of more than 50% of light fittings, system and controls. 2 – Upgrade of zone controls. 3 – Local ventilation.
Part 4 – Interiors Design	Part 4 applies where the refurbishment or fit-out works involve changes to the layout and/or redecoration of the refurbishment or fit-out area.	**Part 4 is applicable.** There will be extensive interior redecoration and alteration including; Change to all floor coverings. Change to all ceiling coverings. Change to office and sanitary fittings.

Predicted Score

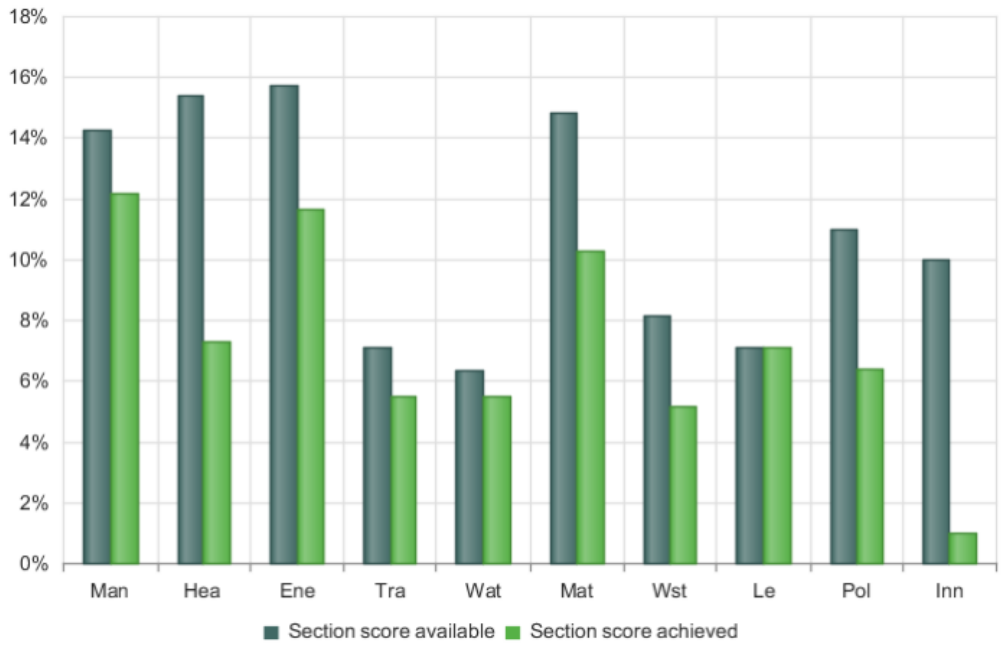
4.11 As taken from the pre-assessment provided in Appendix II, the office development at 75-81 George Street, Richmond is predicted to achieve a score of 72.26%, equivalent to a rating of 'Excellent' against the *'BREEAM UK Refurbishment and Fit-out 2014: Non-domestic buildings'* assessment criteria.

Fig 4.1 – Predicted BREEAM Score

BREEAM Rating

	Credits available	Credits achieved	% Credits achieved	Weighting	Category score
Man	21.0	18.0	85.71%	14.26%	12.22%
Hea	19.0	9.0	47.37%	15.40%	7.29%
Ene	23.0	17.0	73.91%	15.74%	11.63%
Tra	9.0	7.0	77.78%	7.13%	5.54%
Wat	8.0	7.0	87.50%	6.34%	5.54%
Mat	13.0	9.0	69.23%	14.86%	10.28%
Wst	11.0	7.0	63.64%	8.17%	5.19%
Le	3.0	3.0	100.00%	7.13%	7.13%
Pol	12.0	7.0	58.33%	10.97%	6.39%
Inn	10.0	1.0	10.00%	10.00%	1.00%
Total	129.0	85.0	65.89%	-	72.26%
Rating	-	-	-	-	Excellent

Performance by environmental category



5 PREDICTIVE ASSESSMENT FINDINGS

5.1 The table below details the key design measures for review by the design team. These are taken from the pre-assessment (in Appendix II) which has identified a route to achieving **72.26%.**

Credit	Principle	Proposals for BREEAM	Required by	Action by
Man 01	Stakeholder Consultation (Third Party)	Prior to completion of the Concept Design stage, all relevant third-party stakeholders (including future tenants if known) will have been consulted by the design and project team. It is expected that this credit is achieved by default with the consultation strategy led by **Local Dialogue/Statement of Community Involvement.**	RIBA 2	Dp9
Man 03	Responsible Construction Practices	The principal contractor contracted to construct the extension will be required to hold an EMS to ISO 14001.	*Passed through in ERs*	Colliers
Man 03	Sustainability Champion (Construction)	A Sustainability Champion is appointed to monitor the project to ensure ongoing compliance with the relevant sustainability performance/process criteria, and therefore BREEAM target(s), during the Construction, Handover and Close Out stages. The Sustainability Champion will be a member of the contractor team, and able to carry out spot checks, with the relevant authority to do so, and will require action to be taken to address shortcomings in compliance. They will report on progress at relevant project team meetings including identifying potential areas of non-compliance and any action needed to mitigate. This requirement can be passed to the contractor as an additional responsibility of the site manager or undertaken by Envision.	*Passed through in ERs* or Envision	Colliers
Man 03	Considerate Constructors	The contractor is required to sign up to the CCS scheme and achieve a score in excess of 40 points. This will require that the site is registered with the CCS and two site visits occur by a CCS representative.	*Passed through in ERs*	Colliers
Man 03	Utility Consumption	The contractor's site manager must monitor and record energy and water consumption at monthly intervals during the build. This may require that meters are installed early, or that temporary meters are installed during the construction works.	*Passed through in ERs*	Colliers
Man 04	Commissioning and Testing Schedule of Responsibilities	A schedule of commissioning and testing must be prepared that identifies appropriate commissioning standards, a suitable timescale for commissioning and re-commissioning of all relevant works carried out. This will include seasonal commissioning.	*Passed through in ERs*	Colliers

Man 04	Testing Building Fabric	The building will including the new extension will be tested to ensure that the integrity of the building fabric, including continuity of insulation, avoidance of thermal bridging and air leakage paths is quality assured. This will be achieved through completion of a thermographic survey as well as airtightness testing and visual inspection at appropriate times during the refurbishment. Any defects identified in the site inspection, thermographic survey and the airtightness testing reports are rectified prior to building handover and close out.	*Passed through in ERs*	Colliers
Man 04	Building User Guide & Training	Prepare a Building User Guide (BUG) and develop a training schedule for the Facilities Management team at handover. This is expected to have a small administrative cost associated with the preparation of a document, and training of users.	*Passed through in ERs*	Colliers
Man 05	Aftercare	There is (or will be) operational infrastructure and resources in place to provide aftercare support to the building occupier(s). The client or building occupier makes a commitment to carry out a post occupancy evaluation (POE) exercise one year after initial building occupation. This is done to gain in-use performance feedback from building users to inform operational processes, including re-commissioning activities, and maintain or improve productivity, health, safety and comfort. The POE is carried out by an independent party.	RIBA 6	Colliers
Hea 01	Daylight Levels	A 2% daylight factor must be achieved over 40% of the existing occupied spaces (where dwell time is greater than 30 mins). This must be assessed and proven through internal lighting calculations. The uniformity levels of 0.3 must also be achieved. **Not included but feasibility to be reviewed at Stage 3.**	RIBA 3	Envision / DSA Engineering
Hea 01	Glare Control	Risks from glare must be assessed. This is easiest achieved with occupant control blinds to mitigate glare.	RIBA 3	Colman Architects
Hea 01	Internal and External Lighting Levels	New lighting will be installed throughout the existing floor area in the south wing. The lighting design strategy to provide illuminance levels in accordance with the SLL Code for Lighting 2012. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7. Internal lighting is zoned to allow for occupant control in accordance with the criteria below for relevant areas present within the building: - In office areas, zones of no more than four workplaces - Workstations adjacent to windows/atria and other building areas separately zoned and controlled	RIBA 3	DSA Engineering

Hea 02	Limiting Volatile Organic Compounds.	This will have implications on the paints and finishing materials specified, however can generally be achieved with careful specification. All decorative paints and varnishes specified must meet the criteria in Table – 20 of BREEAM, relating to VOC levels and testing requirements. All wood-based panels, such as MDF /OSB must meet testing and performance requirements. Timber structures, wood flooring, textile and laminate floor coverings, suspended ceilings, flooring adhesives; wall coverings must also comply with Table - 20 meet the testing requirements and emission levels criteria for volatile organic compound (VOC) emissions (requirements listed in the table).	RIBA 3	Colman Architects
Hea 02	Indoor Air Quality & Ventilation	An indoor air quality plan has been produced and implemented, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during the design. Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation.	RIBA 3	DSA Engineering
Hea 04	Thermal Comfort	A thermal comfort analysis of the design will be undertaken to demonstrate that summer and winter temperatures are in accordance with the criteria set out in CIBSE Guidance A on Environmental Design and in Future Weather Scenarios. In addition, the thermal comfort analysis will inform the temperature control strategy for the building and its users.	RIBA 3	Energy Consultant)
Hea 06	Safety & Security	There is a need to consult a security specialist such as a CPDA / ALO at concept stage. They must conduct an evidence-based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent). The consultation has been undertaken, however not all measures are practical to implement.	RIBA 2	Colliers
Ene 01	Energy Reduction	BRUKL for existing building and proposed office space to be provided to demonstrate maximum improvement in energy performance.	RIBA 2	Energy Consultant
Ene 02	Energy Sub Metering	Energy Sub meters must be provided on all major energy consuming plant items and tenancy area, i.e. VRF system, fans, boiler, small power and lighting and each floor plate.	RIBA 3	DSA Engineering
Ene 04	Renewable Energy	A BREEAM compliant LZC feasibility study is to be undertaken.	RIBA 3	Energy Consultant
Ene 08	Energy Efficient Transportation	An analysis of the transportation demand and usage patterns for the building has been carried out to determine the optimum number and size of lifts, escalators and/or moving walks. The energy consumption has been calculated in accordance with BS EN ISO 25745 Energy performance of lifts, escalators and moving walks, Part 2 : Energy calculation and classification for lifts (elevators) and the lift with lowest energy consumption chosen and energy efficiency measures specified.	RIBA 3	DSA/Lift Specialist

Tra 03	Cycle storage provision & Facilities	Office provision is 1 space for every 20 staff in addition to shower & changing facilities.	RIBA 2	Colman Architects
Tra 04	Production of a Travel Plan	A Travel Plan will be produced for the scheme.	*Planning Application*	WYG
Wat 01	Water Consumption	Targeted 40% improvement with general upgrades to current market water efficient products. This will require the specification of new efficient sanitaryware throughout the building.	RIBA 3	DSA Engineering
Wat 02	Water Meters	The specification of a water meter on the mains water supply to the building; this includes instances where water is supplied via a borehole or other private source. Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, are either fitted with easily accessible pulsed sub-meters or have water monitoring equipment integral to the plant or area *Existing water meters can be recognised where they have a pulsed/digital or other open protocol communication output to enable connection to an appropriate utility monitoring and management system.*	RIBA 3	DSA Engineering
Wat 03	Water leak detection	A leak detection system which is capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter is installed. *Existing water meters can be recognised where they have a pulsed/digital or other open protocol communication output to enable connection to an appropriate utility monitoring and management system.*	RIBA 3	DSA Engineering
Wat 03	Flow Control Devices	Flow control devices that regulate the supply of water to each WC area/facility must be provided. A presence detector and controller, i.e. an automatic device detecting occupancy or movement in the WC should be included in each WC core. This will require PIR lighting in bathrooms and solenoid shut off systems for each toilet core.	RIBA 3	DSA Engineering
Mat 01	Material specification	<u>Refurbished Office (Floor 1 to 3)</u> Focus should be given to the new materials specified within the building, including Internal floor finishes, ceiling finishes (including suspended/ access ceilings), Internal walls and partitions, Internal wall finishes, Internal windows; Internal doors; Furniture (desks, chairs, display cabinets, shelving. These must be supported with robust environmental information. This is expected to be cost neutral, however will require administrative time to collect and review the information. <u>Roof-top Extension</u>	RIBA 3	Colman Architects

		New material to form the extension should be supported with an Environmental Product Declaration (EPD). This may restrict materials to more expensive varieties. Consideration should be given to materials in wall, roof, structural frame, glazing and external solar shading (if present in final design) to be supported with EPDs.		
Mat 03	Material Sourcing	A Sustainable Procurement Plan should be put in place and materials responsibly sourced to ensure that they are accredited with environmental certification such as EMS / EPDs / CoC. A basic plan must be pulled together by the team for the contractor. >36% all available responsible sourcing points to be achieved	*Passed through in ERs*	Colliers
Mat 03	Timber	All timber should be sourced from FSC / PEFC sources in accordance with UK Gov Timber Procurement.	*Passed through in ERs*	Colliers
Mat 04	Insulation	Any new insulation specified for use within the external walls androof of the extension and building services must be low impact having low GWP, ODP and be A to A+ rated in the Green Guide.	RIBA 3	Colman/DSA Engineering
Mat 05	Durability and Resilience – material degradation	Newly specified materials must have appropriate design and specification to limit degradation between environmental factors. The existing building fabric has been reviewed from the perspective of material degradation and an assessment is made to grade the severity of environmental factors / environmental agents from affecting the existing structure. Measures are put in place to repair / protect materials at risk.	RIBA 3	Colman Architects
Mat 06	Material Efficiency	Opportunities must be identified, and appropriate measures investigated and implemented to optimise the use of materials through building design, procurement, refurbishment, maintenance and end of life. Table 60 of the BREEAM Manual sets out actions at each RIBA Stage which must be followed. • At preparation and Brief Stage this should include a pre refurb audit, setting waste forecasts and assessment of site opportunities and constraints.	RIBA 2	Colman Architects
Wst 01	Waste Audit	A Pre refurbishment Waste Audit must be undertaken by contractor to review opportunities for reusing materials / diverting material from landfill.	*Passed through in ERs*	Colliers
Wst 01	Waste targets - Generation	A target of <7.5 tonnes per 100 m_2 of waste generated from construction work should be included in the contract.	*Passed through in ERs*	Colliers
Wst 01	Waste Targets - disposal	A target 90% waste diverted from landfill for refurbishment / fit out waste.	*Passed through in ERs*	Colliers
Wst 03	Waste storage - operation	Storage will be provided for operational waste of a minimum of 2m^2 per 1000 m^2 floor area.	RIBA 2	Colman Architects

Le 04	Ecological Enhancement	Rachel Hacking Ecology has produced an Ecology Report providing advice on enhancing the biodiversity of the Green Roof. The advice would likely include the planting of native species and the installation of bird boxes.	RIBA 2	Colliers
Le 05	Long Term Impact on Biodiversity	Production of Landscape Habitat & Management plan (for Green Roof) and ecologist to provide recommendations for on-site contractor activities.	RIBA 2	Colliers
Pol 01	Impact of refrigerants	Where systems using refrigerants have a permanent automated refrigerant leak detection system installed; OR where an inbuilt automated diagnostic procedure for detecting leakage is installed. In all instances a robust and tested refrigerant leak detection system must be installed and must be capable of continuously monitoring for leaks. The system must be capable of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident)	RIBA 3	DSA Engineering
Pol 03	Flood Risk	Low risk of flooding has been confirmed from flood maps. The credits are available by default.	RIBA 3	Webb Yates
Pol 03	SUDs & Watercourse Pollution	There is to be no increase in impermeable areas associated with the works. Therefore, and through the aid of a Green Roof, the following is proposed; • There is a decrease in the impermeable area by 50% or more, from the pre-existing impermeable hard surfaces using Green Roof; • There is no discharge from the site for rainfall up to 5mm (assumed held using Green Roof).	RIBA 3	Webb Yates
Pol 05	Noise Attenuation	A noise assessment has been carried out by Venta to measure background noise levels and determine the noise rating resulting from the proposed external plant. The noise levels at the closest receptor will be no greater than + 5 dB during the day, and + 3dB at night.	RIBA 2	Colliers

APPENDIX I – RICHMOND SUSTAINABILITY CHECKLIST

1. This appendix contains the Sustainable Construction Checklist as required by LBRuT Local Plan Policy LP 22. The development will comprise primarily of the refurbishment and change-of-use of an existing building in central Richmond with a roof-top extension. Therefore, opportunities to implement sustainable design features are restricted by site constraints and the nature of development.

2. As outlined in BS 7913:2013, in environmental terms, the continued use of existing building stock, coupled with measures to improve energy efficiency is a global priority. This is further supported by London Plan policies 5.3 & 5.4 which detail that; "Any existing buildings that can be practically refurbished, retrofitted, altered, or extended should be retained and reused."

3. Following the application of the LBRuT Sustainability Checklist, the design is expected to achieve a score of 51, equivalent to a rating of 'B', meaning the development is expected to help significantly improve the Borough's stock of sustainable developments, which is notable given the existing nature of the development. In addition, by undertaking an energy-efficient refurbishment of the existing building, life-cycle CO_2 emissions will be significantly reduced when compared to the demolition and construction of a new building.

LBRUT Sustainable Construction Checklist - January 2016

This document forms part of the Sustainable Construction Checklist SPD. This document **must** be filled out as part of the planning application for the following developments: all residential development providing **one or more new residential units (including conversions leading to one or more new units)**, and all other forms of development providing **100sqm or more of non-residential floor space**. Developments including new non-residential development of less than 100sqm floor space, extensions less than 100sqm, and other conversions are strongly encouraged to comply with this checklist. Where further information is requested, please either fill in the relevant section, or refer to the document where this information may be found in detail, e.g. Flood Risk Assessment or similar. **Further guidance** on completing the Checklist may be found in the Justification and Guidance section of this SPD.

Property Name (if relevant): 75-81 George Street Richmond Application No. (if known): TBC

Address (include. postcode): 75-81 George Street Richmond
Completed by: Sam Wallis (Senior Consultant - Envision Sustainability)

For Non-Residential
Size of development (m2): 8145

For Residential
Number of dwellings:

1 MINIMUM COMPLIANCE (RESIDENTIAL AND NON-RESIDENTIAL)

Energy Assessment

Has an energy assessment been submitted that demonstrates the expected energy and carbon dioxide emissions saving from energy efficiency and renewable energy measures, including the feasibility of CHP/CCHP and community heating systems? If yes, please tick. Yes

Carbon Dioxide emissions reduction

What is the carbon dioxide emissions reduction against a Building Regulations Part L (2013) baseline: 35

Policy DM SD 1 and London Plan Policy 5.2 (2015) require a 35% reduction in CO_2 emissions beyond Building Regulations 2013.

Percentage of **total** site CO2 emissions saved through renewable energy installation? 1.03

1A MINIMUM POLICY COMPLIANCE (NON-RESIDENTIAL AND DOMESTIC REFURBISHMENT)

Please check the Guidance Section of this SPD for the policy requirements

Environmental Rating of development:

Non-Residential new-build (100sqm or more)
BREEAM Level: Please Select — Have you attached a pre-assessment to support this? ☐

Extensions and conversions for residential dwellings
BREEAM Domestic Refurbishment: Please Select — Have you attached a pre-assessment to support this? ☐

Extensions and conversions for non-residential buildings
BREEAM Level: Excellent — Have you attached a pre-assessment to support this? ☒

Score awarded for Environmental Rating:
BREEAM: Good = *0* , Very Good = 4, Excellent = *8,* Outstanding = *16*

Subtotal 8

1B MINIMUM POLICY COMPLIANCE (RESIDENTIAL)

Water Usage

Internal water usage limited to 105 litres person per day. (Excluding an allowance 5 litres per person per day for external water consumption). Calculations using the water efficiency calculator for new dwellings have been submitted. ☐ *1*

Subtotal 0

2. ENERGY USE AND POLLUTION

2.1 Need for Cooling

		Score
a.	How does the development incorporate cooling measures? Tick all that apply:	
	Energy efficient design incorporating specific heat demand to less than or equal to 15 kWh/sqm	☐ 6
	Reduce heat entering a building through providng/improving insulation and living roofs and walls	☒ 2
	Reduce heat entering a building through shading	☑ 3
	Exposed thermal mass and high ceilings	☒ 4
	Passive ventilation	☐ 3
	Mechanical ventilation with heat recovery	☑ 1
	Active cooling systems, i.e. Air Conditioning Unit	☐ 0

2.2 Heat Generation

b.	How have the heating and cooling systems, with preference to the heating system hierarchy, been selected (defined in London Plan policy **5.6**)? Tick all heating and cooling systems that will be used in the development:	
	Connection to existing heating or cooling networks powered by renewable energy	☐ 6
	Connection to existing heating or cooling networks powered by gas or electricity	☐ 5
	Site wide CHP network powered by renewable energy	☐ 4
	Site wide CHP network powered by gas	☐ 3
	Communal heating and cooling powered by renewable energy	☑ 2
	Communal heating and cooling powered by gas or electricity	☐ 1
	Individual heating and cooling	☐ 0

2.3 Pollution: Air, Noise and Light

a.	Does the development plan to implement reduction strategies for dust emissions from construction sites?	☑ 2
b.	Does the development plan include a biomass boiler?	☐ -
	If yes, please refer to the biomass guidelines for the Borough of Richmond, please see guidance for supplementary information. If the proposed boiler is of a qualifying size, you may need to completed the information request form found on the Richmond website.	☐ -
c.	Please tick only one option below	
	Has the development taken measures to reduce existing noise and enhance the existing soundscape of the site?	☑ 3
	Has the development taken care to not create any new noise generation/transmission issues in its intended operation?	☑ 1
d.	Has the development taken measures to reduce light pollution impacts on character, residential amenity and biodiversity?	☑ 3
e.	Have you attached a Lighting Pollution Report?	☐ -

Subtotal 21

Please give any additional relevant comments to the Energy Use and Pollution Section below

The proposed development will consist of a centralised plant deck with condensers serving individual offices and retail areas.
With regards to pollution, the principal contractor will be required to implement best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG61. A noise survey has also been undertaken by Venta Acoustics detailing plant noice emission limits, below the measures background measured noise levels. With regards to light pollution, the roof-top extension is set back from the front elevation, resulting in no increase in light pollution over the exisitng

3. TRANSPORT

3.1 Provision for the safe efficient and sustainable movement of people and goods

a.	Does your development provide opportunities for occupants to use innovative travel technologies?	

Please explain:

A named Travel Plan Coordinator (TPC) will be in place to take responsibility for moving the Travel Plan Framework forwards prior to first occupation of the development.
Within six months of occupation, a full office and retail travel survey will be undertaken and the information used as a baseline against which the remaining targets will be measured. These targets include a 3% increase in foot and cycel travel and to reduce the expected level of public transport by 5%

b.	Does your development include charging point(s) for electric cars?	☐ 2
c.	**For major developments ONLY**: Has a Transport Assessment been produced for your development based on TfL's Best Practice Guidance?	
	If you have provided a Transport Assessment as part of your planning application, please tick here and move to Section 3 of this Checklist.	☑ 5
d.	**For smaller developments ONLY**: Have you provided a Transport Statement?	☐ 5
e.	Does your development provide cycle storage? (Standard space requirements are set out in the the Council's Parking Standards - DM DPD Appendix 4)	☑ 2
	If so, for how many bicycles? 59	
	Is this shown on the site plans?	☑ -
f.	Will the development create or improve links with local and wider transport networks? If yes, please provide details.	☐ 2

Subtotal 7

Please give any additional relevant comments to the Transport Section below

4 BIODIVERSITY

4.1 Minimising the threat to biodiversity from new buildings, lighting, hard surfacing and people

a. Does your development involve the loss of an ecological feature or habitat, including a loss of garden or other green space? (Indicate if yes) ☐ -2

If so, please state how much in sqm? _____ sqm

b. Does your development involve the removal of any tree(s)? (Indicate if yes) ☐

If so, has a tree report been provided in support of your application? (Indicate if yes) ☐

c. Does your development plan to add (and not remove) any tree(s) on site? (Indicate if yes) ☐

d. Please indicate which features and/or habitats that your development will incorporate to improve on site biodiversity:

Pond, reedbed or extensive native planting	6	☐	Area provided:	sqm
An extensive green roof	5	☐	Area provided:	sqm
An intensive green roof	4	☒	Area provided:	sqm
Garden space	4	☐	Area provided:	sqm
Additional native and/or wildlife friendly planting to peripheral areas	3	☐	Area provided:	sqm
Additional planting to peripheral areas	2	☐	Area provided:	sqm
A living wall	2	☐	Area provided:	sqm
Bat boxes	0.5	☒		
Bird boxes	0.5	☒		
Other	0.5	☐		

Subtotal 5

Please give any additional relevant comments to the Biodiversity Section below

The Ecology Report produced by Rachel Hacking Ecology details the range of ecological enhancement measures proposed, including the planting of native species and bird boxes..

5 FLOODING AND DRAINAGE

5.1 Mitigating the risks of flooding and other impacts of climate change in the borough

a. Is your site located in a high flood risk zone (Zone 3)? (Indicate if yes) ☐ -2

Have you submitted a Flood Risk Assessment? (Indicate if yes) ☒ -

b. Which of the following measures of the drainage hierarchy are incorporated onto your site? (tick all that apply)

Store rainwater for later use	☐ 5
Use of infiltration techniques such as porous surfacing materials to allow drainage on-site	☒ 3
Attenuate rainwater in ponds or open water features	☐ 4
Store rainwater in tanks for gradual release to a watercourse	☐ 3
Discharge rainwater directly to watercourse	☐ 2
Discharge rainwater to surface water drain	☒ 1
Discharge rainwater to combined sewer	☐ 0

c. Please give the change in area of permeable surfacing which will result from your development proposal: _____ sqm

Please provide details of the permeable surfacing below *please represent a loss in permeable area as a negative number*

Subtotal 4

Please give any additional relevant comments to the Flooding and Drainage Section below

The Sustainable Drainage Strategy Report issued by Webb Yates details how the installation of a 536m2 green roof will result in a 60.15% reduction of the existing flow rates.
Section 6.1 details the aimto connect to the Thames Water Surface Water sewer.

6 IMPROVING RESOURCE EFFICIENCY

6.1 Reduce waste generated and amount disposed of by landfill though increasing level of re-use and recycling

a. Will demolition be required on your site prior to construction? *[Points will only be awarded if 10% or greater of demolition waste is reused/recycled]* ☒ 1

If so, what percentage of demolition waste will be reused in the new development? 0 %

What percentage of demolition waste will be recycled? 90 %

b. Does your site have any contaminated land? ☐ 1

Have you submitted an assessment of the site contamination? ☐ 2

Are plans in place to remediate the contamination? ☐ 2

Have you submitted a remediation plan? ☐ 1

Are plans in place to include composting on site? ☐ 1

6.2 Reducing levels of water waste

a. Will the following measures of water conservation be incorporated into the development? (Please tick all that apply):

Fitting of water efficient taps, shower heads etc	☒ 1
Use of water efficient A or B rated appliances	☒ 1
Rainwater harvesting for internal use	☐ 4
Greywater systems	☐ 4
Fit a water meter	☒ 1

Subtotal 4

Please give any additional relevant comments to the Improving Resource Efficiency Section below

The diversion of waste from landfill will be led by the BREEAM Wst 01 targets which requires 90% (by tonnage) of waste to be diverted fron landfill
Water efficiency targets have been set through BREEAM and will be co-ordinated between the BREEAM assessor and Mechanical Engineer during Stage 3 design to ensure inclusion.

7 ACCESSIBILITY

7.1 Ensure flexible adaptable and long-term use of structures

a. **If the development is residential,** will it meet the requirements of the nationally described space standard for internal space and layout? ☐ *1*

If the standards are not met, in the space below, please provide details of the functionality of the internal space and layout

AND

b. **If the development is residential**, will it meet Building Regulation Requirement M4 (2) 'accessible and adaptable dwellings'? ☐ *2*

If this is not met, in the space below, please provide details of any accessibility measures included in the development.

For major residential developments, are 10% or more of the units in the development to Building Regulation Requirement M4 (3) 'wheelchair user dwellings'? ☐ *1*

OR

c. **If the development is non-residential,** does it comply with requirements included in Richmond's Design for Maximum Access SPG ☒ *2*

Please provide details of the accessibility measures specified in the Maximum Access SPG that will be included in the development

Please refer to Colman Architects DAS for further details on the accessibility measures proposed in the development.

Subtotal **2**

Please give any additional relevant comments to the Design Standards and Accessibility Section below

LBRUT Sustainable Construction Checklist- Scoring Matrix for *New Construction* **(Non-Residential and domestic refurb)** ***TOTAL*** ***51***

Score	Rating	Significance
80 or more	*A+*	Project strives to achieve highest standard in energy efficient sustainable development
71-79	*A*	Makes a major contribution towards achieving sustainable development in Richmond
51-70	*B*	Helps to significantly improve the Borough's stock of sustainable developments
36-50	*C*	Minimal effort to increase sustainability beyond general compliance
35 or less	*FAIL*	Does not comply with SPD Policy

LBRUT Sustainable Construction Checklist- Scoring Matrix for New Construction **Residential new-build**

Score	Rating	Significance
81 or more	**A++**	Project strives to achieve highest standard in energy efficient sustainable development
64-80	*A+*	Project strives to achieve highest standard in energy efficient sustainable development
55-63	*A*	Makes a major contribution towards achieving sustainable development in Richmond
35-54	*B*	Helps to significantly improve the Borough's stock of sustainable developments
20-34	*C*	Minimal effort to increase sustainability beyond general compliance
19 or less	*FAIL*	Does not comply with SPD Policy

Authorisation:

I herewith declare that I have filled in this form to the best of my knowledge

Signature _____ Date 21stMay

APPENDIX II – BREEAM PRE-ASSESSMENT

BREEAM®

Code for a Sustainable Built Environment
www.breeam.com

BREEAM UK Refurbishment & Fit-out 2014 - Pre-assessment

OFFICE DEVELOPMENT - 75-81 GEORGE STREET

Pre-assessment

Office Development - 75-81 George Street

10 July 2019 Assessment Report

PwC's BREEAM Outstanding rated One Embankment Place in London. Image Hufton + Crow.

bre

Assessment details

Assessment references

Registration number:	TBC	**Date created:**	15/3/2019
Created by:	Charlotte Brewin {Envision}		
Architect name:	Colman Architects		
Developer name:	Canadian & Arcadia Ltd		
Property owner			

Site details

Site name:	Office Development - 75-81 George Street
Address:	75-81 George Street
	Richmond
Town:	London
County:	
Post code:	
Country:	United Kingdom

Certificate details

The certificate will have the name of the architect (if entered above) and the name of the developer (from above).

Any other names to appear on the certificate are listed below:

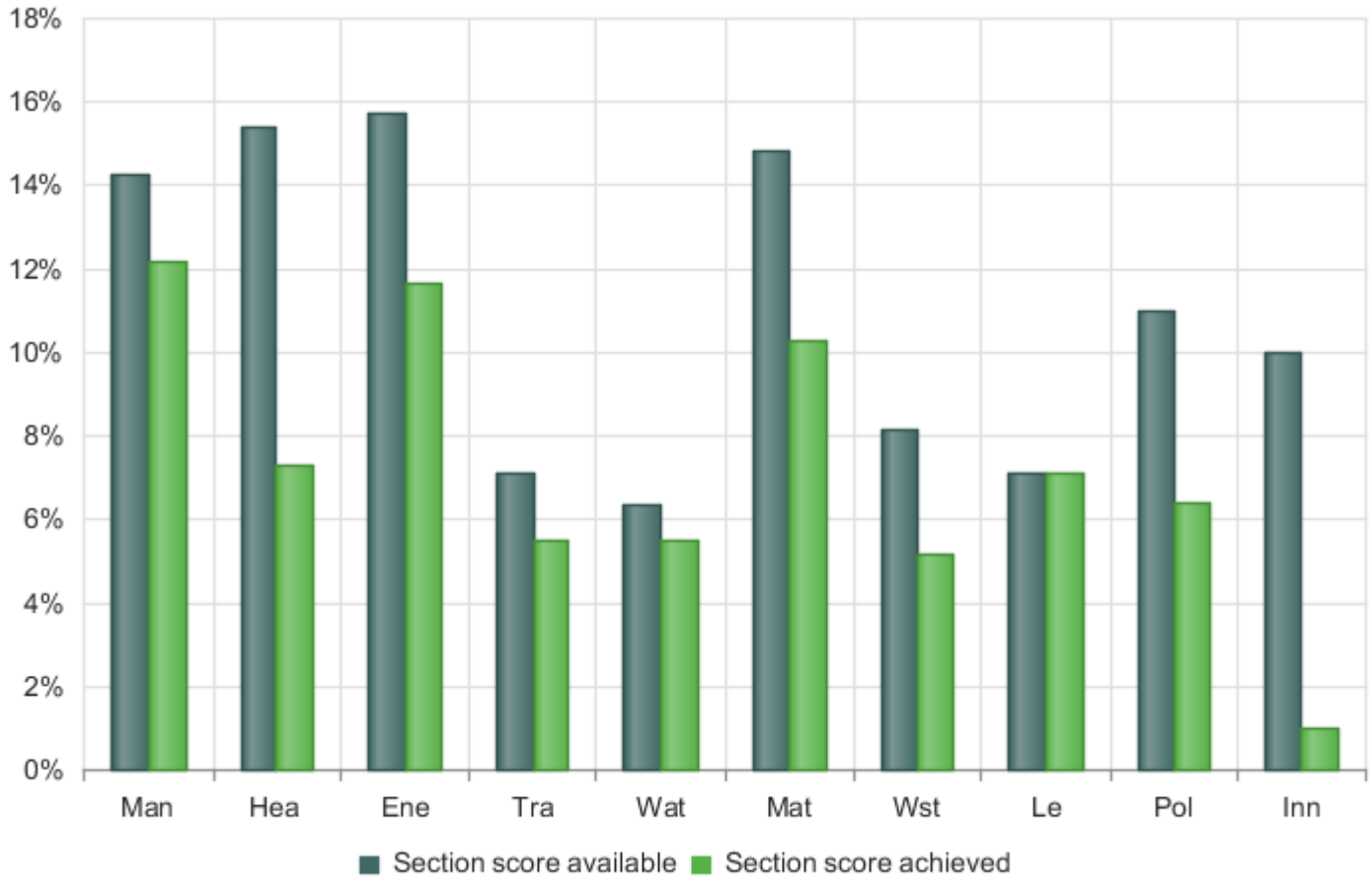
Name	Label

BREEAM rating

BREEAM Rating

	Credits available	Credits achieved	% Credits achieved	Weighting	Category score
Man	21.0	18.0	85.71%	14.26%	12.22%
Hea	19.0	9.0	47.37%	15.40%	7.29%
Ene	23.0	17.0	73.91%	15.74%	11.63%
Tra	9.0	7.0	77.78%	7.13%	5.54%
Wat	8.0	7.0	87.50%	6.34%	5.54%
Mat	13.0	9.0	69.23%	14.86%	10.28%
Wst	11.0	7.0	63.64%	8.17%	5.19%
Le	3.0	3.0	100.00%	7.13%	7.13%
Pol	12.0	7.0	58.33%	10.97%	6.39%
Inn	10.0	1.0	10.00%	10.00%	1.00%
Total	129.0	85.0	65.89%	-	72.26%
Rating	-	-	-	-	Excellent

Performance by environmental category



Issue scores

Please Note: X means the exemplary credit for the relevant issue

Management

Man 01	Man 02	Man 03	Man 03X	Man 04	Man 05	Man 05X
4	1	6	1	4	3	0

Health and Wellbeing

Hea 01	Hea 01X	Hea 02	Hea 02X	Hea 03	Hea 04	Hea 05	Hea 06
2	0	3	0	N/A	3	0	1

Energy

Ene 01	Ene 01X	Ene 02	Ene 03	Ene 04	Ene 05	Ene 06	Ene 07	Ene 08	Ene 09
11	0	2	N/A	1	N/A	3	N/A	N/A	N/A

Transport

Tra 01	Tra 02	Tra 03	Tra 04	Tra 05
3	1	0	2	1

Water

Wat 01	Wat 01X	Wat 02	Wat 03	Wat 04
4	0	1	2	N/A

Materials

Mat 01	Mat 01X	Mat 03	Mat 03X	Mat 04	Mat 05	Mat 06
3	0	3	0	1	1	1

Waste

Wst 01	Wst 01X	Wst 02	Wst 03	Wst 04	Wst 05	Wst 05X	Wst 06
4	0	N/A	1	1	0	0	1

Land use and ecology

Le 2	Le 4	Le 5
N/A	1	2

Pollution

Pol 01	Pol 02	Pol 03	Pol 03X	Pol 04	Pol 05
1	0	5	0	N/A	1

Innovation

Inn 01	Inn 01X
N/A	0

Initial details

75-81 George Street

Stage 1 filtering: Scope of the assessment

Part 1 : Fabric and structure : Yes

Part 2 : Core services : Yes

Part 3 : Local services : Yes

Part 4 : Interior design : Yes

Stage 2 filtering: Project specific filtering

Is the project a change of use? (e.g. change from office to a hotel) : Yes

Are transportation systems specified or present within the refurbishment or fit-out zone? (lifts, escalators, moving walks) : Yes, newly specified transportation systems

Are there laboratories present and if so what % of total building area do they represent : No laboratories present

Project Type : Major, whole building refurbishment

Laboratory containment area : No laboratories present

Is cold storage specified or present within the refurbishment or fit-out zone? : No

Are there new or existing landscaping areas within the refurbishment or fit-out zone and within developer control? : Yes - new only

Are there any external areas within the refurbishment or fit-out zone and within developer control that can feasibly be enhanced in line with LE 04 : Yes

If the asset undergoing refurbishment or fit-out is part of a larger building, is the cooling generation plant centralised or localised? : Central

If the asset undergoing refurbishment or fit-out is part of a larger building, is the heating generation plant centralised or localised? : Central

Is Wat01 within the scope of the assessment in accordance with Table 42? : Yes

What is the building type? : Offices

Is this a speculative refurbishment? : No

If Industrial, does the building have office areas? : N/A

Does the building have or mitigate any unregulated water demand? e.g. irrigation or soft-landscaped areas requiring no irrigation, car washing, other significant process related : No

Does the building have unregulated energy demands from significantly contributing systems? : No

Is the project a simple building? : No

Does the building have external lighting within the scope of works? : No

Does the building have any existing or newly specified externally mounted plant? : Yes

If undertaking a Part 4 assessment, is there any equipment specified that requires commissioning (see Man04 CN13) : Yes

Historic building (listed building or building in a conservation area) : No

Is any new insulation specified? : Yes

Are high grade aggregates to be used in the refurbishment scheme? : No

Category assessment

Management | Man

Man Management

Site : 75-81 George Street

MAN 01 PROJECT BRIEF AND DESIGN	
Stakeholder consultation (project delivery) :	1
Stakeholder consultation (third party) :	1
Sustainability champion (design) :	1
Sustainability champion (monitoring progress) :	1

MAN 02 LIFECYCLE COST AND SERVICE LIFE PLANNING	
Elemental lifecycle cost :	0
Componnent level LCC plan :	0
Capital cost reporting :	1

MAN 03 RESPONSIBLE CONSTRUCTION PRACTICES	
Is all timber used in the project 'legally harvested and traded timber'? :	Yes
Environmental management :	1
Construction stage sustainability champion :	1
Considerate construction :	2
Exemplary level criteria :	Yes
Has the project achieve the minimum standard for an Excellent or Outstanding rating? :	Minimum standard for Excellent rating
Monitoring of refurbishment or fit-out site impacts :	2
Utility consumption :	Yes
Transport of construction materials and waste :	Yes

MAN 04 COMMISSIONING AND HANDOVER	
Commissioning and testing schedule and responsibilities :	1
Commissioning building services :	1
Testing and inspecting building fabric :	1
Handover :	1
Has criterion 9 been met? :	Yes

MAN 05 AFTERCARE	
Aftercare support :	1
Exemplary level criteria :	
Seasonal commissioning :	1
Post occupancy evaluation :	1

Credits awarded : 18.0
Exemplary credits awarded : 1.0

Health and Wellbeing | Hea

Hea Health & Wellbeing

Site : 75-81 George Street

HEA 01 VISUAL COMFORT	
Glare control :	1
Daylighting :	0
Exemplary level criteria :	
View out :	0
Internal and external lighting :	1
HEA 02 INDOOR AIR QUALITY	
Indoor air quality plan :	1
Ventilation :	1
Volatile organic compounds :	1
Exemplary level criteria :	0
Potential for natural ventilation :	0
HEA 03 SAFE CONTAINMENT IN LABORATORIES - NA	
HEA 04 THERMAL COMFORT	
Thermal modelling :	1
Adaptation - for a projected climate change scenario :	1
Thermal zoning and controls :	1
HEA 05 ACOUSTIC PERFORMANCE	
Acoustic performance :	0
HEA 06 SAFETY AND SECURITY	
Security of site and building :	1
Credits awarded : 9.0	

Energy | Ene

Ene Energy

Site : 75-81 George Street

ENE 01 ASSESSMENT OPTION

Which option is being followed :	Option 1a simple estimate (whole building)

ENE 01 - OPTION 1A

Credits :	11
Exemplary credits :	0

ENE 02 ENERGY MONITORING

Sub-metering of major energy consuming systems :	1
Sub-metering of high energy load and tenancy areas :	1

ENE 03 EXTERNAL LIGHTING

ENE 04 LOW CARBON DESIGN

Passive design analysis :	0
Free cooling :	0
Low and zero carbon technologies :	1

ENE 05 ENERGY EFFICIENT COLD STORAGE - NA

ENE 06 ENERGY EFFICIENT TRANSPORTATION SYSTEMS

Energy consumption :	1
Energy efficient measures :	2

ENE 07 ENERGY EFFICIENT LABORATORY SYSTEMS - NOTAPPLICABLE

ENE 08 ENERGY EFFICIENT EQUIPMENT

ENE 09 DRYING SPACE

Credits awarded : 17.0

Transport | Tra

Tra Transport

Site : 75-81 George Street

TRA 01 SUSTAINABLE TRANSPORT SOLUTIONS

Sustainable transport options :	3

TRA 02 PROXIMITY TO AMENITIES

Proximity to amenities :	1

TRA 03 CYCLIST FACILITIES

Cycle storage :	0
Cylist facilities :	0

TRA 04 MAXIMUM CAR PARKING CAPACITY

Car parking capacity :	2

TRA 05 TRAVEL PLAN

Travel plan :	1

Credits awarded : 7.0

Water | Wat

Wat Water

Site : 75-81 George Street

WAT 01 WATER CONSUMPTION

Water consumption :	4
Exemplary level criteria :	

WAT 02 WATER MONITORING

Water monitoring :	1
Has criterion 1 been met? :	Yes

WAT 03 LEAK DETECTION

Leak detection system :	1
Flow control devices :	1

WAT 04 WATER EFFICIENT EQUIPMENT - NA

Credits awarded : 7.0

Materials | Mat

Mat Materials

Site : 75-81 George Street

MAT 01 ENVIRONMENTAL IMPACT OF MATERIALS

Options :	Option 2
Environmental impact of materials :	3
Exemplary level criteria :	

MAT 03 RESPONSIBLE SOURCING OF MATERIALS

Sustainable procurement plan :	1
Has criterion 1 been met? :	Yes
Responsible sourcing of materials :	2
Exemplary level criteria :	

MAT 04 INSULATION

Insulation :	1

MAT 05 DESIGNING FOR DURABILITY AND RESILIENCE

Designing for durability and resilience :	1

MAT 06 MATERIAL EFFICIENCY

Material efficiency :	1

Credits awarded : 9.0

Waste | Wst

Wst Waste

Site : 75-81 George Street

WST 01 CONSTRUCTION WASTE MANAGEMENT

Pre-refurbishment audit :	1
Re-use and direct recycling of materials :	0
Resource efficiency :	2
Diversion of waste from landfill :	1
Exemplary level criteria :	

WST 02 RECYCLED AGGREGATES - NA

WST 03 OPERATIONAL WASTE

Operational waste :	1

WST 04 SPECULATIVE FINISHES

Speculative finishes :	1

WST 05 ADAPTATION TO CLIMATE CHANGE

Adaptation to climate change - structural and fabric resilience :	0
Exemplary criteria: Responding to adaptation to climate change :	

WST 06 FUNCTIONAL ADAPTABILITY

Functional adaptabiliy :	1

Credits awarded : 7.0

Land use and ecology | Le

Le Land use and ecology

Site : 75-81 George Street

LE 02 PROTECTION OF ECOLOGICAL FEATURES - NA

LE 04 ECOLOGICAL ENHANCEMENT

Ecological enhancement :	1

LE 05 LONG TERM IMPACT ON BIODIVERSITY

Long term impact on biodiversity :	2

Credits awarded : 3.0

Pollution | Pol

Pol Pollution

Site : 75-81 George Street

POL 01 IMPACT OF REFRIGERANTS

Impact of refrigerants :	0
Leak detection :	1

POL 02 NOX EMISSIONS

NOx emissions :	0

POL 03 FLOOD RISK AND REDUCING SURFACE WATER RUN-OFF

Flood risk management :	2
Exemplary level criteria :	
Surface water run-off :	2
Minimising watercourse pollution :	1

POL 04 REDUCTION OF NIGHT TIME LIGHT POLLUTION

POL 05 NOISE ATTENUATION

Noise attenuation :	1

Credits awarded : 7.0

Innovation | Inn

Inn Innovation

Site : 75-81 George Street

INN 01 APPROVED INNOVATIONS

Approved innovations :	0

Credits awarded : 0.0