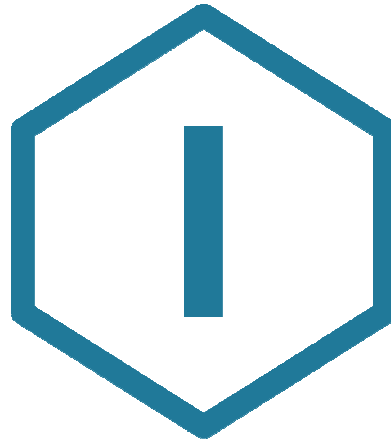




IMPACT
SUSTAINABILITY

163-165 Oxford Road, Reading

BREEAM Pre-Assessment Report

Impact Sustainability Ltd

T: 01273 905 693

M: 07792 670 919

E: george@impactsustainability.co.uk

Revision Schedule

Revision No.	Date	Details of Change
Rev 00	25/02/2021	First Issue

Table of Contents

Table of Contents	1
1.0 Introduction.....	2
2.0 BREEAM	2
2.1 Introduction to BREEAM.....	2
2.2 BREEAM Schemes	3
2.3 Minimum Performance Standards.....	4
2.4 BREEAM Assessment Stages.....	5
3.0 BREEAM Pre-Assessment	7
3.1 Summary	7
3.2 Pre-Assessment Matrix for Dental Surgery using BREEAM RFO 2014.....	10
3.3 Pre-Assessment Matrix for residential flats using BREEAM DR 2014	15
4.0 Conclusion	20

1.0 Introduction

Impact Sustainability has been instructed by Perfect Smile Group Holding Ltd to prepare a BREEAM pre-assessment report. The purpose of the pre-assessment report is to set out the BREEAM assessment strategy for the proposed mixed-use refurbishment at 163-165 Oxford Road, Reading. The current development proposals include the major refurbishment of an existing dental surgery to create a new dental surgery and 5 no single bed flats. The new dental surgery will occupy part of the basement floor and the ground floor level, with flats provided at basement, first and second floor levels. The property is Grade II listed and so is deemed to be an 'Historic Building' as defined by BREEAM.

The proposed development design will require consideration of Reading Borough Council's adopted Local Plan, November 2019. Within the Local Plan, Policy CC2 8 'Sustainable Design and Construction' refers to BREEAM. Here it is stated that all minor non-residential developments or conversions to residential are required to meet the most up to date BREEAM 'Very Good' standard as a minimum. Therefore, it is anticipated that the development will need to aim for a minimum BREEAM 'Very Good' rating to meet local policy requirements.

As the development comprises both dental surgery and residential areas two BREEAM assessments will be required. The dental surgery will be assessed under BREEAM Refurbishment and Fit Out (RFO) 2014 (healthcare), whilst the flats will be assessed under BREEAM Domestic Refurbishment (DR) 2014. Both of these BREEAM schemes are the current version of the most suitable scheme for each property type.

Within this report the proposed strategy for assessment under BREEAM RFO and DR is discussed, with key and mandatory issues also identified.

2.0 BREEAM

2.1 Introduction to BREEAM

BREEAM is the Building Research Establishment's (the BRE) Environmental Assessment Method. This is a voluntary environmental assessment tool that is used to assess the environmental impact of buildings. The performance of the building is assessed against a range of environmental factors, with different sections focusing on specific sustainability issues. These sections each have differing weighting factors, which vary from scheme to scheme. For a RFO 'Healthcare' 2014 and DR 2014 assessments they are:

	RFO 214	DR 2014
• Management	17.35%	12.00%
• Health & Wellbeing	19.66%	17.00%
• Energy	17.48%	43.00%
• Transport	2.02%	N/A
• Water	8.10%	11.00%
• Materials	17.51%	8.00%
• Waste	8.54%	3.00%

- Pollution 9.34% 6.00%
- Innovation Up to 10% Up to 10.00%

Within each of the sections of BREEAM are a range of different issues relating to the section, with credits awarded under an issue where the building meets or exceeds a performance benchmark defined by BREEAM. The percentage of available credits achieved within each section is multiplied by the section weighting factor and these are then summed to determine an overall percentage score. This BREEAM score corresponds to an overall rating as shown in table 2.1 below.

BREEAM Score (%)	BREEAM Rating
< 30	Unclassified
≥ 30 - < 45	Pass
≥ 45 - < 55	Good
≥ 55 - < 70	Very Good
≥ 70 - < 85	Excellent
≥ 85	Outstanding

Table 2.1 BREEAM Ratings

2.2 BREEAM Schemes

As previously mentioned, BREEAM can be used to assess a range of development types. In the UK the available BREEAM schemes are currently as follows:

- **BREEAM New Construction** – Used to assess new non-domestic construction. The default assessment type is for fully fitted buildings, but this can be adapted to assess ‘Simple Buildings’ (by filtering out some more technical credits and simplifying others), shell only and shell and core construction.
- **BREEAM Refurbishment & Fit Out** – Used to assess major refurbishment, minor refurbishment, reconfiguration and fit out of shell construction
- **BREEAM Domestic Refurbishment** – Used to assess buildings refurbished to provide residential accommodation
- **BREEAM Communities** – Used to assess master planning and frameworks
- **BREEAM Infrastructure** – Used to assess civil engineering and public realm projects
- **BREEAM In Use** – Used to assess the performance of buildings during operation

2.3 Minimum Performance Standards

Under the BREEAM method minimum performance standards are required within issues to achieve specific ratings. As one would expect, the number of applicable minimum performance standards increases with the higher BREEAM rating that is sought. Tables 2.2 and 2.3 below summarise the minimum performance standards required under a BREEAM RFO 2014 assessment and BREEAM DR 2014 assessment respectively.

BREEAM Issue	Pass	Good	Very Good	Excellent	Outstanding
Man03: Responsible construction practices	-	-	-	1 credit (Considerate construction)	2 credits (Considerate construction)
Man04: Commissioning & handover	-	-	-	Criterion 9 (Building User Guide)	Criterion 9 (Building User Guide)
Man05: Aftercare	-	-	-	1 credit: (Seasonal commissioning)	1 credit: (Seasonal commissioning)
Ene01: Reduction of CO2	-	-	-	6 credits	10 credits
Ene02:	-	-	1 credit (First sub-metering credit)	1 credit (First sub-metering credit)	1 credit (First sub-metering credit)
Wat01: Water consumption	-	1 credit (where applicable)	1 credit (where applicable)	1 credit (where applicable)	2 credits (where applicable)
Wat02: Water monitoring	-	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Mat03 Responsible sourcing of materials	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Wst01: Project waste management	-	-	-	-	1 credit
Wst03: Operational waste	-	-	-	1 credit	1 credit

Table 2.2 Minimum Performance Standards of BREEAM RFO 2014

BREEAM Issue	Pass	Good	Very Good	Excellent	Outstanding
Ene 02 Energy efficiency rating post-refurbishment	0.5 Credits	1 Credit	2 Credits	2.5 Credits	3.5 Credits
Wat 01 Internal water use	-	-	1 Credit	2 Credits	3 Credits
Hea 05 Ventilation	1 Credit	1 Credit	1 Credit	1 Credit	1 Credit
Hea 06 Safety	1 Credit	1 Credit	1 Credit	1 Credit	1 Credit
Pol 03 Flooding	-	-	-	2 Credits	2 Credits
Mat 01 Environmental impact of materials	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only

Table 2.3 Minimum Performance Standards of BREEAM DR 2014

2.4 BREEAM Assessment Stages

A BREEAM assessment typically comprises several different stages. Initially, a pre-assessment is completed to undertake a high-level review of current proposals against BREEAM compliance criteria. The aim of this pre-assessment stage is to establish a target score / rating and to identify any areas requiring action at an early stage.

During the design stages a design stage assessment is completed, where design information and commitments are used to demonstrate how the development will comply with BREEAM criteria. At the end of this process a design stage 'interim' BREEAM certificate is issued.

Finally, towards the end of the construction phase a post construction assessment is completed, in which the actual building features and performance are assessed against BREEAM compliance criteria. At the end of the post construction assessment a final post construction BREEAM certificate is issued.

The different stages of BREEAM are shown below against the relevant RIBA stages.

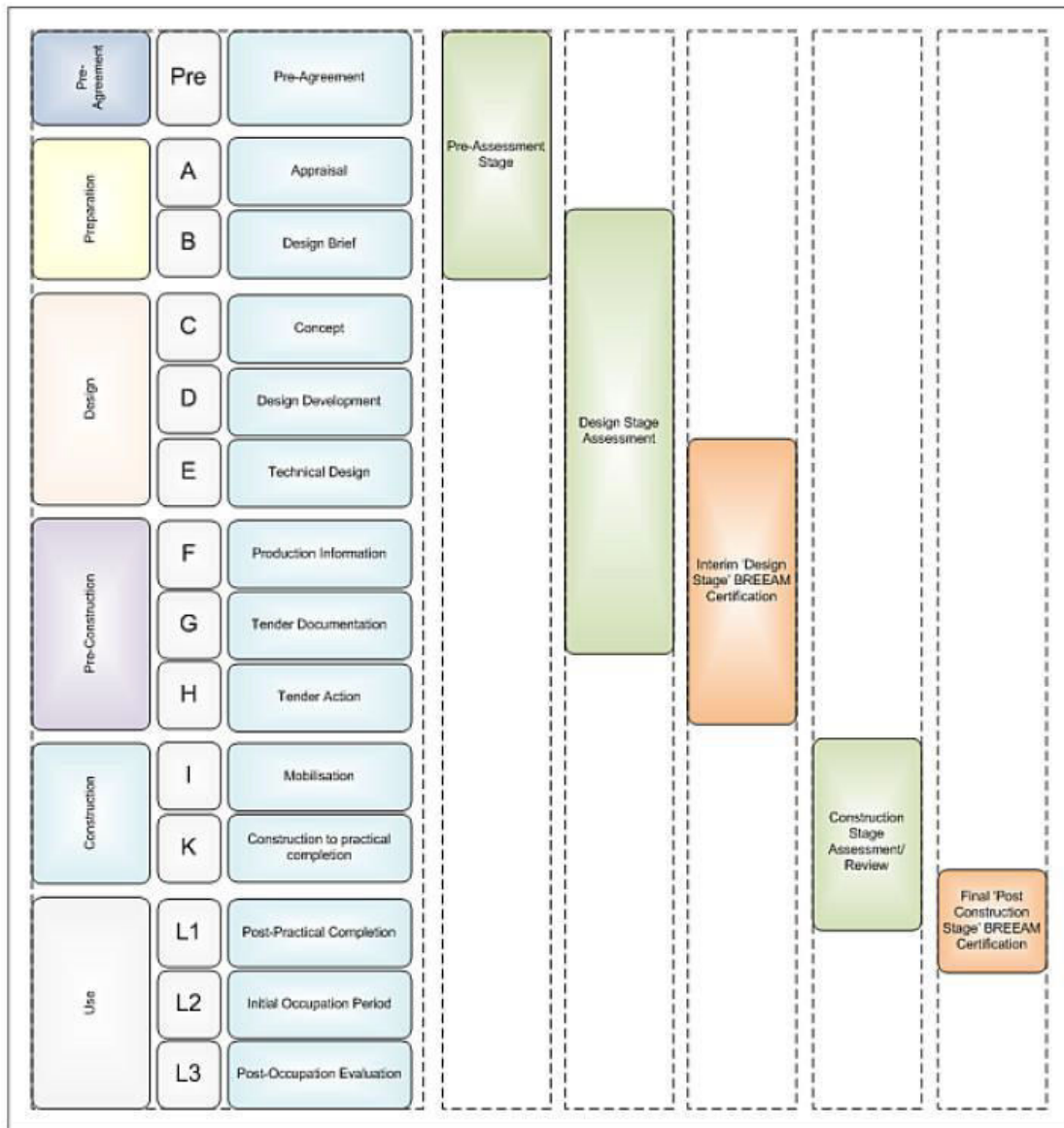


Figure 2.1 BREEAM assessment and RIBA stages

3.0 BREEAM Pre-Assessment

3.1 Summary

A BREEAM pre-assessment has been completed for each element of the proposed development under the BREEAM RFO 2014 and BREEAM DR 2014 schemes. These have been based upon discussions with the project team, pre-application information provided, site location / opportunities / constraints and similar project experience. The primary purpose of this exercise is to determine the maximum BREEAM rating that could be achieved in each case should a full assessment be completed and to advise the project team of any BREEAM related considerations at this early stage. The review also allowed any issues that are programme dependant or that could affect the planning process to be identified.

The pre-assessments have been completed for the proposed development based on current design intent. The criteria are assessed as 'fully fitted', which assumes that the fit out will be completed under the contract.

The BREEAM pre-assessment score for the dental surgery assessment is 59.7%, which achieves a 'Very Good' rating with all mandatory requirements met. Table 3.1 provides a summary of the scores achieved in each section, whilst figure 3.1 shows the targeted credits against the BREEAM ratings.

BREEAM Section	Credits Available	Credits Targeted	% Achieved	% Section Weighting	Overall % Contribution
Management	20	14	70.00%	17.35%	12.15%
Health & Wellbeing	19	10	52.63%	19.66%	10.35%
Energy	20	9	45.00%	17.48%	7.87%
Transport	9	6	66.67%	2.02%	1.35%
Water	8	5	62.50%	8.10%	5.06%
Materials	12	6	50.00%	17.51%	8.76%
Waste	9	4	44.44%	8.54%	3.80%
Pollution	8	8	100.00%	9.34%	9.34%
Innovation	10	1	10.00%	10.00%	1.00%
BREEAM Pre-Assessment Score					59.66%

Table 3.1 BREEAM Pre-Assessment Score Summary for Dental Surgery using BREEAM RFO 2014

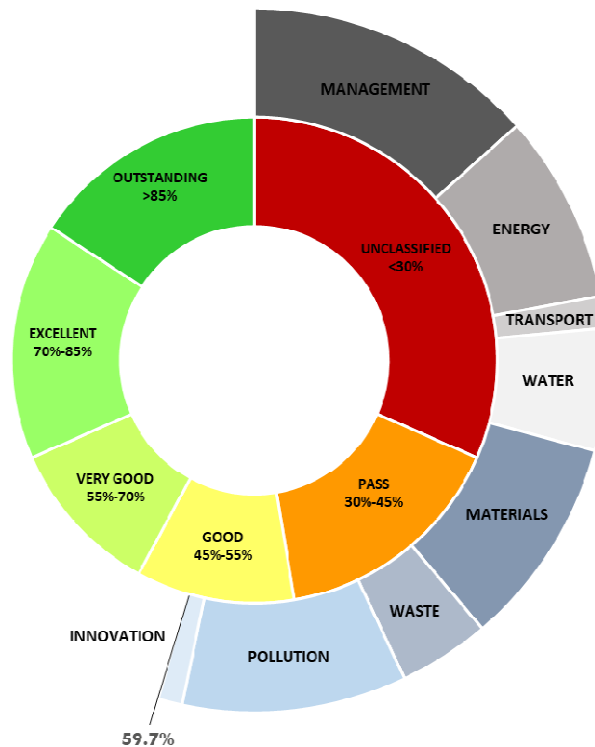


Figure 3.1 BREEAM Pre-Assessment Rating for Dental Surgery using BREEAM RFO 2014

The BREEAM pre-assessment score for the assessment of the residential flats is 62.5%, which achieves a 'Very Good' rating with all mandatory requirements met. Table 3.2 provides a summary of the scores achieved in each section, whilst figure 3.2 shows the targeted credits against the BREEAM ratings.

BREEAM Section	Credits Available	Credits Targeted	% Achieved	% Section Weighting	Overall % Contribution
Management	11	9	81.82%	12.00%	9.82%
Health & Wellbeing	12	5	41.67%	17.00%	7.08%
Energy	29	15.5	53.45%	43.00%	22.98%
Water	5	4	80.00%	11.00%	8.80%
Materials	48	32	66.67%	8.00%	5.33%
Waste	5	5	100.00%	3.00%	3.00%
Pollution	8	6	75.00%	6.00%	4.50%
Innovation	10	1	10.00%	10.00%	1.00%
BREEAM Pre-Assessment Score					62.52%

Table 3.2 BREEAM Pre-Assessment Score Summary for flats using BREEAM DR 2014

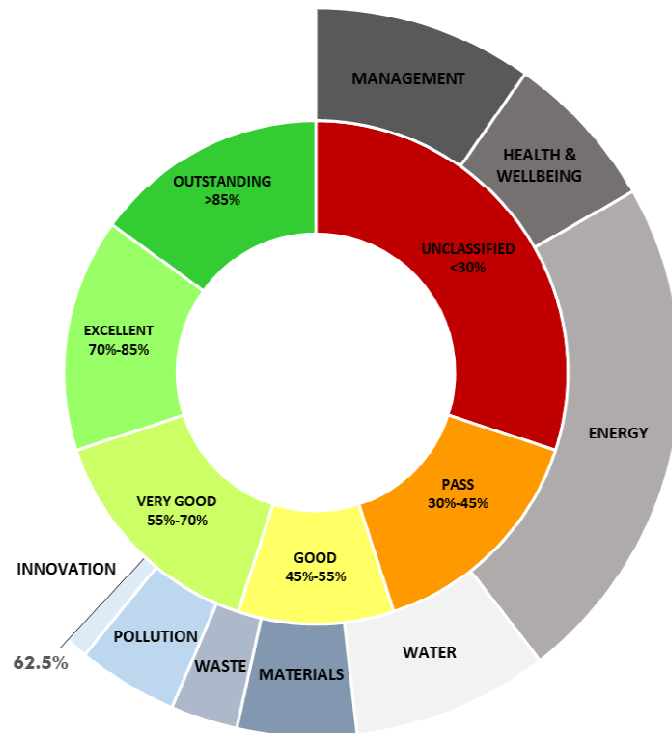


Figure 3.2 BREEAM Pre-Assessment Rating for flats using BREEAM DR 2014

3.2 Pre-Assessment Matrix for Dental Surgery using BREEAM RFO 2014

Management	Available		Targeted		Comments
	Credits	%	Credits	%	
Man 01.1: Project brief and design : Stakeholder consultation	2	1.74%	2	1.74%	Completed RIBA Plan of Works Toolbox and details of project delivery team consultation (i.e. feasibility / concept design stage meeting minutes demonstrating communication of client brief) and individual design roles / responsibilities required.
Man 01.2: Project brief and design : Sustainability Champion	2	1.74%	0	0.00%	Appointment of BREEAM AP prior to completion of RIBA stage 2-3 is unlikely to be of significant benefit on a project of this size.
Man 02: Life cycle cost and service life planning	4	3.47%	1	0.87%	Prepare a cost plan showing construction value in £/sqm. A Full Life Cycle Cost assessment will not be completed on a project of this scale.
Man 03.1: Responsible construction practices : Environmental management	1	0.87%	1	0.87%	Main Contractor to operate ISO14001 Environmental Management System or comparable EMS.
Man 03.2: Responsible construction practices : Sustainability Champion	1	0.87%	0	0.00%	Would require appointment of BREEAM AP during the construction phase to influence and monitor site activities, which is unlikely to be of benefit for a project of this scale.
Man 03.3: Responsible construction practices : Considerate construction	2	1.74%	2	1.74%	Main contractor to register site with the Considerate Constructor's Scheme and commit to achieving a score of 35, with at least 7 scored under each section.
Man 03.4: Responsible construction practices : Monitoring of construction site impacts	2	1.74%	2	1.74%	Main contractor to monitor and record energy use, water use, delivery vehicle CO ₂ and waste vehicle CO ₂ on a monthly basis and report against KPIs.
Man 04.1: Commissioning and handover : Commissioning and testing schedule and responsibilities	1	0.87%	1	0.87%	Prepare a commissioning schedule including equipment to be commissioned, standards to be commissioned to and programme. M&E consultant to monitor all commissioning activities. Should be a straightforward process due to lack of complex systems.
Man 04.2: Commissioning and handover : Commissioning building services	1	0.87%	1	0.87%	Appointment of M&E consultant to include: i. Undertaking design reviews and giving advice on suitability for ease of commissioning ii. Providing commissioning management input to construction programming and during installation stages iii. Management of commissioning, performance testing and handover/post-handover stages.

Man 04.4: Commissioning and handover : Handover	1	0.87%	1	0.87%	Main contractor to prepare a Building User Guide and a training schedule, covering the design intent, the available aftercare team, BUG, introduction to systems & maintenance requirements.
Man 05.1: Aftercare : Aftercare support	1	0.87%	1	0.87%	Main contractor to offer aftercare support to client by having a presence on site, facilitating training and being available for 12 months after handover. Client to monitor energy, water and occupancy satisfaction quarterly for first 3 years of occupation.
Man 05.2: Aftercare : Seasonal commissioning	1	0.87%	1	0.87%	Seasonal commissioning to be completed at 3, 6 & 9 months after handover to ensure systems are functioning correctly at all times of year.
Man 05.3: Aftercare : Post occupancy evaluation	1	0.87%	1	0.87%	Client to instruct a 3rd party to complete a POE 12 months after occupation, prepare a case study and publish this online.
Management Totals	20	17.35%	14	12.15%	

Health & Wellbeing	Available		Targeted		Comments
	Credits	%	Credits	%	
Hea 01.1: Visual comfort : Glare control	1	1.03%	0	0.00%	The listed status of the building may prevent blinds from being installed and so this credit is not targeted at this stage.
Hea 01.2: Visual comfort : Daylighting	3	3.10%	0	0.00%	Unlikely to be achievable as daylight levels cannot be improved by refurbishment and single sided glazing does not offer good daylight uniformity in occupied rooms.
Hea 01.3: Visual comfort : View out	2	2.07%	1	1.03%	The majority of occupied spaces have a view out of a window and so one credit should be sought.
Hea 01.4: Visual comfort : Internal and external lighting, Zoning and control	1	1.03%	1	1.03%	Lighting design to follow SLL Code for Lighting 2012, LG7 and be appropriately zoned.
Hea 02.1: Indoor air quality : Minimising sources of air pollution	4	4.14%	1	1.03%	Appropriate consultant to prepare an indoor air quality plan to ensure good air quality is maintained. Proximity of main road means that fresh credits are not possible, and VOC credits will adversely affect specification and supply chain.
Hea 02.2: Indoor air quality : Adaptability - potential for natural ventilation	1	1.03%	1	1.03%	The surgery will be naturally ventilated throughout.

Hea 04: Thermal comfort	3	3.10%	2	2.07%	Thermal modelling to be completed using dynamic simulation software to confirm thermal comfort is maintained all year and controls strategy is effective, although as the building envelope is not changing it is unlikely there will be an opportunity to allow for future climate change conditions.
Hea 05.1: Acoustic performance : Education, Healthcare, Office and Law Courts building types	3	3.10%	3	3.10%	Acoustic consultant to confirm that ambient noise levels, sound insulation and reverberation levels to occupied areas comply with BS8233:2014. Pre-completion testing to be completed to confirm this. The heavyweight nature of the building may allow these credits to be achieved.
Hea 06: Safety and security	1	1.03%	1	1.03%	Security specialist to be consulted by stage 3 to provide advice regarding security of the site. Secured by Design principles to be followed where possible.
Health and Wellbeing Totals	19	19.66%	10	10.35%	

Energy	Available		Targeted		Comments
	Credits	%	Credits	%	
Ene 01.1: Reduction of energy use and carbon emissions - Option 1: Whole building energy model	15	13.11%	7	6.12%	Part L2A calculation to be completed on existing building and proposed refurbishment, with relative improvement in CO ₂ emissions dictating credits awarded. Whilst the building envelope will remain unchanged there is scope to significantly improve heating, hot water and lighting efficiency.
Ene 02: Energy monitoring	2	1.75%	2	1.75%	Sub-metering regime to be installed to ensure that 90% of primary energy use is identifiable, i.e. sub metering of key systems. Also relevant function areas to be separately sub-metered.
Ene 04.1: Low carbon design : Passive design	2	1.75%	0	0.00%	Not addressed at appropriate time
Ene 04.2: Low carbon design : Low or zero carbon technologies	1	0.87%	0	0.00%	LZC technologies not feasible due to Grade II listed status.
Energy Totals	20	17.48%	9	7.87%	

Transport	Available		Targeted		Comments
	Credits	%	Credits	%	
Tra 01.1: Sustainable transport solutions : Accessibility Index	5	1.12%	3	0.67%	Urban location of site has good access to public transport so a minimum of 3no credits should be achievable.
Tra 02: Proximity to amenities	1	0.22%	1	0.22%	Numerous amenities in close proximity to site.
Tra 03: Cyclist facilities	2	0.45%	1	0.22%	1 cycle space for every 10 staff and 2 consulting rooms to be installed at the rear of the property.

Tra 05: Travel plan	1	0.22%	1	0.22%	A transport consultant should be engaged to prepare transport assessment and travel plan, ensuring impact on local environment of additional travel is minimised.
Transport Totals	9	2.02%	6	1.35%	

Water	Available		Targeted		Comments
	Credits	%	Credits	%	
Wat 01: Water consumption	5	5.06%	3	3.04%	Low water consumption sanitary fittings to be specified.
Wat 02: Water monitoring	1	1.01%	1	1.01%	Pulsed output water meter to be installed on incoming after supply.
Wat 03: Water leak detection	2	2.03%	1	1.01%	Water supply to WC areas to be controlled via PIR to be switched off when WC not in use. A water leak detection system is not proposed due to the scale of the development.
Water Totals	8	8.10%	5	5.06%	

Materials	Available		Targeted		Comments
	Credits	%	Credits	%	
Mat 01.2: Environmental impact of materials - Option 2: Elemental assessment of environmental performance information	6	8.76%	2	2.92%	Robust environmental performance information such as EPDs to be collected for newly specified materials or where materials are retained in situ.
Mat 03: Responsible sourcing of materials	4	5.84%	3	4.38%	Main contractor to adopt a sustainable procurement policy and to procure key materials from supplier capable of providing EMS certification for the product such as ISO 14001 or BES 6001.
Mat 05: Designing for durability and resilience	1	1.46%	1	1.46%	Architect to identify areas of the design at risk from 'wear and tear' and environmental degradation, with appropriate protection measures specified.
Mat 06: Material efficiency	1	1.46%	0	0.00%	
Materials Totals	12	17.51%	6	8.76%	

Waste	Available		Targeted		Comments
	Credits	%	Credits	%	
Wst 01.1: Project waste management : Construction resource efficiency	1	0.95%	0	0.00%	Pre-refurbishment audit will not be completed as materials are unlikely to be fit for reuse.
Wst 01.2: Project waste management : Reuse and direct recycling of materials	2	1.90%	0	0.00%	Strip out materials are unlikely to be reused and cannot be sent back to manufacturer for closed loop recycling due to age of building.

Wst 01.3: Project waste management : Resource efficiency	3	2.85%	2	1.90%	Main contractor to register with Smartwaste or similar and ensure that construction waste is limited to 1.2 tonnes or 4.5m ³ per 100sqm GFA.
Wst 01.4: Project waste management : Diversion of resources from landfill	1	0.95%	1	0.95%	Main contractor to ensure that 85% of waste by volume or 90% by weight does not go to landfill.
Wst 03: Operational waste	1	0.95%	1	0.95%	Dedicated recycling waste storage area of at least 2sqm to be provided with easy access for collections.
Wst 06: Functional adaptability	1	0.95%	0	0.00%	Analysis not completed at appropriate time.
Waste Totals	9	8.54%	4	3.80%	

Pollution	Available		Targeted		Comments
	Credits	%	Credits	%	
Pol 01: Impact of refrigerants	3	3.50%	3	3.50%	At present it is assumed that refrigerant containing systems will not be installed and so these credits can be awarded on a default basis.
Pol 02: NOx emissions	3	3.50%	3	3.50%	Proposed gas fired heating system will utilise low NOx boilers.
Pol 03.1: Flood risk management and reducing surface water run-off : Flood risk management	2	2.34%	2	2.34%	EA maps identify site as having a low flood risk.
Pollution Totals	8	9.34%	8	9.34%	

Innovation	Available		Targeted		Comments
	Credits	%	Credits	%	
Inn 01: Innovation	10	10.00%	0	0.00%	
Man 03: Responsible construction practices	1	1.00%	0	0.00%	
Man 05: Aftercare	1	1.00%	1	1.00%	See Man05 comments.
Hea 01: Visual comfort	1	1.00%	0	0.00%	
Hea 02: Indoor air quality	2	2.00%	0	0.00%	
Ene 01: Reduction of energy use and carbon emissions	5	5.00%	0	0.00%	
Wat 01: Water consumption	1	1.00%	0	0.00%	
Mat 01: Life cycle impacts	1	1.00%	0	0.00%	
Mat 03: Responsible sourcing of materials	1	1.00%	0	0.00%	
Wst 01: Construction site waste management	1	1.00%	0	0.00%	
Wst 02: Recycled aggregates	1	1.00%	0	0.00%	
Wst 05: Adaptation to climate change	1	1.00%	0	0.00%	
Pol 03: Flood risk management and reducing surface water run-off	1	1.00%	0	0.00%	
Innovation Totals (Up to a maximum of 10 credits)	10	10.00%	1	1.00%	
Overall Totals	115	110.00%	63	59.66%	

3.3 Pre-Assessment Matrix for residential flats using BREEAM DR 2014

Management	Available		Targeted		Comments
	Credits	%	Credits	%	
Man 01: Home user guide	3	3.27%	3	3.27%	Home user guide to be prepared as per BREEAM recommended contents page and provided to all future occupants.
Man 02: Responsible construction practices	2	2.18%	2	2.18%	Successful contractor to register the site with the Considerate Constructors Scheme and commit to achieving a score of 35, with a score of at least 7 in each section.
Man 03: Construction site impacts	1	1.09%	1	1.09%	Successful contractor to ensure that 2 or more of the sections a-d in BREEAM checklist A-5 are completed during the works. Please refer to BREEAM manual for a copy of checklist A-5. Broadly speaking this can be achieved through monitoring, recording and managing energy use and water use whilst undertaking the works.
Man 04: Security	2	2.18%	0	0.00%	To achieve this credit all existing windows will need to comply with minimum security requirements. As the property is listed and windows cannot be upgraded / replaced this credit is not deemed to be possible.
Man 05: Protection & enhancement of ecology	1	1.09%	1	1.09%	Site survey to be undertaken to confirm presence of any ecology. Where protected species are identified the relevant Statutory Nature Conservation Organisation (SNCO) Should be notified and protected species should be adequately protected. Any existing ecological features should be retained under the works.
Man 06: Project management	2	2.18%	2	2.18%	Project manager to hold an initiation meeting to assign specific roles to a dedicated individual as per BREEAM CN3 and shared responsibilities to the project team as per BREEAM CN4. Please refer to BREEAM manual for CN3 and CN4. Furthermore, a handover meeting will be arranged and a site survey and post-occupancy interviews 2 months after occupation will be arranged.
Management Totals	11	12.00%	9	9.82%	

Health & Wellbeing	Available		Targeted		Comments
	Credits	%	Credits	%	
Hea 01: Daylighting	2	2.83%	2	2.83%	Glazing will remain the same under the refurbishment works due to the listed status of the building. Therefore, daylight levels internally will not be adversely affected by the refurbishment works and the no skyline in each room will remain the same.
Hea 02: Sound insulation	4	5.67%	1	1.42%	Airborne and impact sound levels between living spaces will be remain unchanged after refurbishment as the walls and floors will not be acoustically upgraded. Therefore, a single credit is available. May require acoustic testing to be completed.
Hea 03: Volatile organic compounds	1	1.42%	0	0.00%	This credit requires all internal finishes products used within the refurbishment to have a low VOC content and comply with BREEAM requirements for low VOC emissions. This may alter specifications and normal supply routes for contractor and can be quite involved, so it not recommended for a project of this scale.
Hea 04: Inclusive design	2	2.83%	0	0.00%	The flats are not likely to comply with inclusive design requirements of BREEAM due to access to these levels.
Hea 05: Ventilation	2	2.83%	1	1.42%	Background ventilation, purge ventilation and wet room / kitchen ventilation will be provided in accordance with section 7, Building Regulations Approved Document Part F, 2010.
Hea 06: Safety	1	1.42%	1	1.42%	Hard wired carbon monoxide and smoke alarms will be installed in accordance with BS 5839-6:2013 and will be located appropriately.
Health and Wellbeing Totals	12	17.00%	5	7.08%	

Energy	Available		Targeted		Comments
	Credits	%	Credits	%	
Ene 01: Improvement in energy efficiency rating	6	8.90%	3	4.45%	SAP calculations will be completed based upon the existing building and the proposed design to establish the relative energy efficiency improvement. An energy efficiency rating of at least 26 will be targeted.
Ene 02: Energy efficiency rating post-refurbishment	4	5.93%	2.5	3.71%	SAP calculations will be completed to confirm that the post construction EER will be at least 55 within each flat.

Ene 03: Primary energy demand	7	10.38%	2	2.97%	SAP calculations will be completed to confirm that the primary energy use within the flats will be below 320 kWh/m ² /yr through the specification of energy efficient heating, hot water and lighting.
Ene 04: Renewable technologies	2	2.97%	0	0.00%	At present it is understood that the inclusion of onsite LZC technologies is not possible due to the listed status of the building.
Ene 05: Energy labelled white goods	2	2.97%	2	2.97%	EU energy efficiency labelling scheme information leaflet will be provided to each dwelling to ensure A+ rated appliances are considered.
Ene 06: Drying space	1	1.48%	1	1.48%	Retractable drying line with total length of 4m to be installed above showers and adequate ventilation to be provided.
Ene 07: Lighting	2	2.97%	2	2.97%	Communal areas lighting will be LED with push switch of PIR control. The average wattage of all internal lighting will not exceed 9W/m ² .
Ene 08: Display energy devices	2	2.97%	2	2.97%	Smart meters will be provided for heating fuel and general electrical use to monitor and provide a visual display of usage.
Ene 09: Cycle Storage	2	2.97%	1	1.48%	A secure cycle storage facility with storage for at least 3no bicycles is proposed within the parking area to the rear of the site.
Ene 10: Home Office	1	1.48%	0	0.00%	Home office credit not available as the basement flat does not have a sufficient view out of a window and bedrooms generally are not of a sufficient size to include a desk.
Energy Totals	29	43.00%	16	22.98%	

Water	Available		Targeted		Comments
	Credits	%	Credits	%	
Wat 01: Internal water use	3	6.60%	2	4.40%	Low water consuming fittings will be installed with the following performance: Showers - 8L/min Bath - Max 140L capacity WCs - Dual flush 6/3L flush volume Bathroom taps - 5L/min Kitchen taps - 5L/min Dishwashers - 13 L/cycle Washing machines - 60L per use
Wat 02: External water use	1	2.20%	1	2.20%	The flats have no garden space and so this credit will be achieved by default.

Wat 03: Water meter	1	2.20%	1	2.20%	Visible water meter to be installed within each flat that can record usage to allow monitoring over time.
Water Totals	5	11.00%	4	8.80%	

Materials	Available		Targeted		Comments
	Credits	%	Credits	%	
Mat 01: Environmental impact of materials	25	4.17%	15	2.50%	As the building is listed all thermal elements are to be retained, with no new thermal elements being constructed. As all elements are being retained these will be assigned A+ rating in the green guide to specification. Thermal performance of elements will not significantly change, although there may be an opportunity to enhance roof insulation levels.
Mat 02: Responsible sourcing of materials	15	2.50%	9	1.50%	Main contractor to ensure all timber used is FSC certified and adopt a sustainable procurement policy to ensure the following: 1. All materials will be locally sourced where possible 2. Any new materials will be sourced to maximise responsible sourcing (i.e. ISO14001 or BES6001 certified) 3. Procedures are in place and implemented to check the materials are responsibly and locally sourced
Mat 03: Insulation	8	1.33%	8	1.33%	Any new insulation specified will be responsibly sourced (i.e. hold ISO14001 or BES6001 certification), will achieve a thermal conductivity of at least 0.035 W/m/K and will be A or A+ rated within the Green Guide to Specification.
Materials Totals	48	8.00%	32	5.33%	

Waste	Available		Targeted		Comments
	Credits	%	Credits	%	
Was 01: Household waste	2	1.20%	2	1.20%	A dedicated 30L recycling bin and a food waste bin will be provided within each of the kitchens.
Was 02: Refurbishment site waste management	3	1.80%	3	1.80%	Waste generated throughout the project will be managed by the contractor in accordance with BREEAM Checklist A-10. Please refer to the BREEAM manual for checklist A-10.
Waste Totals	5	3.00%	5	3.00%	

Pollution	Available		Targeted		Comments
	Credits	%	Credits	%	
Pol 01: NOx emissions	3	2.25%	3	2.25%	The proposed heating system will have dry NOx emissions below 49mg/kWh at 0% excess O ₂ (i.e. low NOx boiler or direct electric).
Pol 03.2: Surface water run-off	3	2.25%	1	0.75%	There will be no increase in hard surfaces as a it is not possible to put measures in place to reduce run-off from existing levels.
Pol 03: Flooding	2	1.50%	2	1.50%	A flood risk assessment will be completed to confirm the risk of flooding at the site is low.
Pollution Totals	8	6.00%	6	4.50%	

Innovation	Available		Targeted		Comments
	Credits	%	Credits	%	
Inn 01: Innovation	10	10.00%	0	0.00%	
Hea 04: Inclusive design	1	1.00%	0	0.00%	
Man 02: Responsible construction practices	1	1.00%	0	0.00%	
Man 05: Protection & enhancement of ecology	1	1.00%	0	0.00%	
Man 06: Project management	2	2.00%	0	0.00%	
Ene 02: Energy efficiency rating post-refurbishment	2	5.00%	0	0.00%	
Ene 08: Display energy devices	1	1.00%	1	1.00%	Energy display devices (smart meters) will be capable of recording consumption data.
Wat 01: Internal water use	1	1.00%	0	0.00%	
Mat 02: Responsible sourcing of materials	1	1.00%	0	0.00%	
Was 02: Refurbishment site waste management	1	1.00%	0	0.00%	
Pol 03.2: Surface water run-off	1	1.00%	0	0.00%	
Innovation Totals (Up to a maximum of 10 credits)	10	10.00%	1	1.00%	
Overall Totals	128	110.0%	78	62.5%	

4.0 Conclusion

The proposed refurbishment of 163-165 Oxford Road, Reading has been designed to minimise the environmental impact of the construction process and maximise its sustainability, creating a low energy, environmentally conscious and crucially pleasant environment for the future occupants. A number of sustainable features will be incorporated into the design to achieve this as detailed within this report.

The refurbishment has been assessed against BREEAM using two different BREEAM schemes: BREEAM Refurbishment and Fit Out 2014 (Healthcare) to assess the Dental Surgery and BREEAM Domestic Refurbishment 2014 to assess the new flats. The Grade II listed status of the building has presented a significant number of constraints, making many of the BREEAM credits challenging to achieve or unattainable. Notwithstanding this, the BREEAM pre-assessments indicate a predicted BREEAM score of 59.7% for the Dental Surgery and 62.5% for the flats. It has therefore been demonstrated that in both cases a 'Very Good' rating will be achieved when the full assessment is undertaken. The minimum score required to achieve a 'Very Good' rating is 55%, and therefore the proposed scores includes an additional 4.7% and 7.5% over this threshold score respectively to allow for any unforeseen short fall during the assessment process.

From the pre-assessment exercise it is clear that a BREEAM 'Very Good' rating is the highest realistic rating that the proposed refurbishment could achieve under full certification. A BREEAM 'excellent' rating requires a minimum target score of 70% and neither pre-assessment indicates a score that is close to this. The constraints to the design caused by the listed building status and the overall scale of the development limit the opportunities for improving the score further.

Therefore, the proposed BREEAM strategy for the refurbishment is to target a BREEAM 'Very Good' rating, which meets the requirements of Reading Borough Council's adopted Local Plan Policy CC2.

The client and project team are fully committed to exploring all available options to improve the target score and maintain the 'Very Good' rating throughout the assessment process.