



Client: GMI Construction

**Malmaison Hotel, Princess Street,
Manchester**

**Bespoke BREEAM 2014 RFO/NC Report -
Abridged**

breeam

Date: 29th August 2023

Report Status: Rev 1.14 – For Issue

SBL Project No: SBL399

BREEAM Assessor: Phil Garlick

Quality Assurance

This report has been checked in accordance with SBL's internal QA procedures.

Issue	Rev	Prepared & checked by	Description	Issued
1	0	Phil Garlick	For Issue	09.04.19
1	1	Phil Garlick	For Issue	10.04.19
1	2	Phil Garlick	For Issue	12.04.19
1	3	Phil Garlick	For Issue	03.12.19
1	4	Phil Garlick	For Issue	21.01.20
1	5	Phil Garlick	For Issue	25.02.20
1	6	Phil Garlick	For Issue	27.04.20
1	7	Phil Garlick	For Issue	08.02.21
1	8	Phil Garlick	Abridged - For Issue	27.07.21
1	9	Phil Garlick	Abridged - For Issue	07.09.21
1	10	Phil Garlick	Abridged - For Issue	05.11.21
1	11	Phil Garlick	Abridged - For Issue	06.10.22
1	12	Phil Garlick	Abridged - For Issue	18.11.22
1	13	Phil Garlick	Abridged - For Issue	25.01.23
1	14	Phil Garlick	Abridged - For Issue	29.08.23

It should be noted that this is an abridged report providing extracts from the main report comprising:

- **Current scoring**
- **Results and improvement options**
- **Main credits table.**

The reader should refer the Rev 1.7 report above for full details of the assessment.

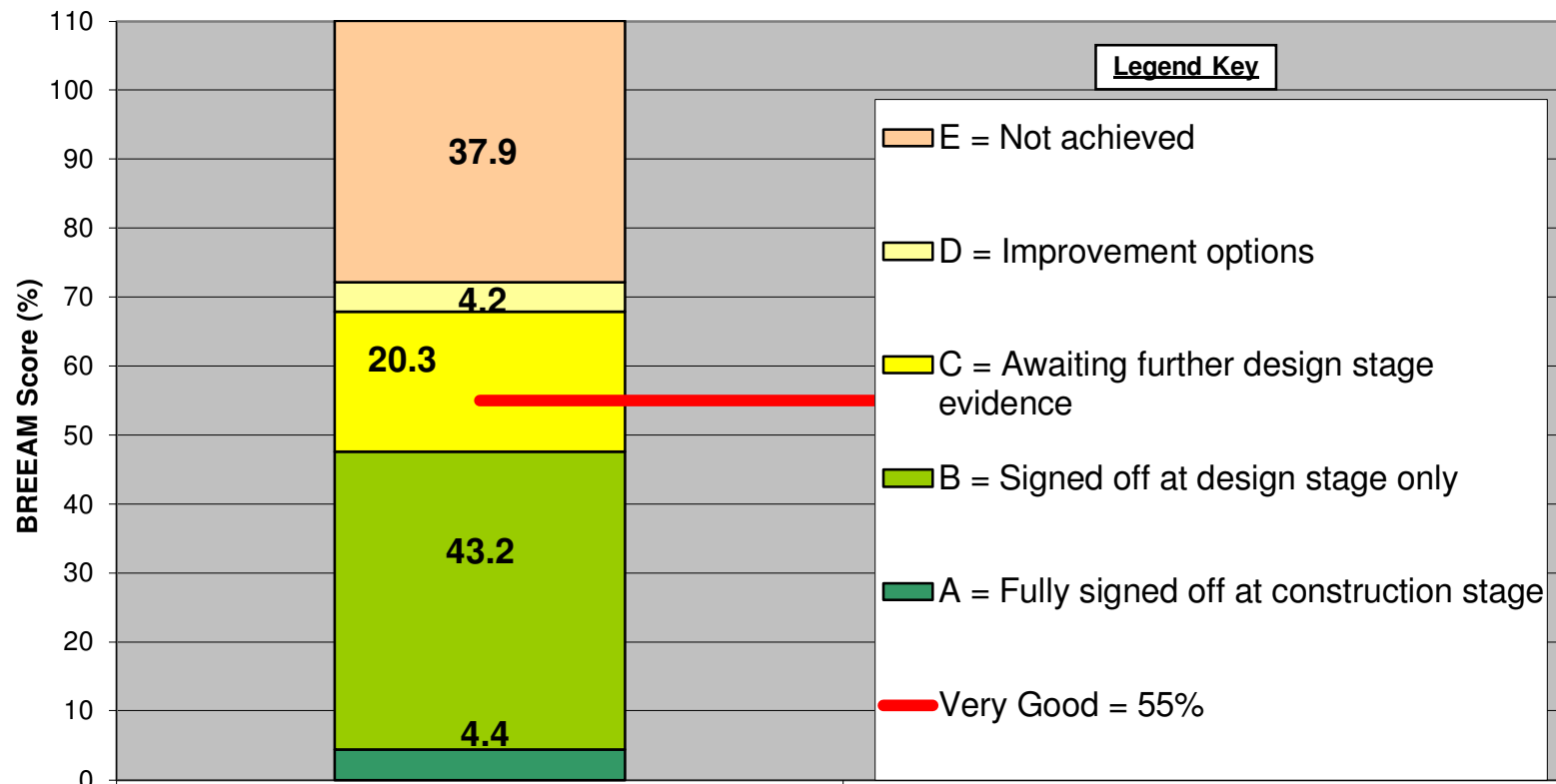
Contact Details

Phil Garlick, Director
 Sustainably Built Ltd
 Office 15, York Eco Business Centre
 Amy Johnson Way, Clifton Moor
 York, YO30 4AG

Tel: 07786 195695

Email: phil.garlick@sustainablybuilt.co.uk

Figure 1 - BREEAM 2014 Bespoke RFO/NC Scoring Prediction



Predicted score = 67.9 %

Margin of comfort = 12.9 %

7.0 RESULTS, CONCLUSIONS AND RECOMMENDATIONS

Fig 1 shows the current predicted BREEAM score and rating. This shows the following:

- 4.4% is fully signed off at construction stage.
- 43.2% is signed off at design stage only.
- 20.3% is awaiting further design stage evidence.

This totals 67.9% and achieves the required minimum rating of Very Good (minimum 55% required) with a substantial margin of comfort. All mandatory credits and criterion will be met for a Very Good rating. Further to this, there are 4.2% of improvement options available. The actions required to achieve this credit is set out in Table 2 below.

A BREEAM rating of 'Very Good' is achievable on this project. The following are recommended at this stage:

- The improvement options in Table 2 should be reviewed to confirm whether the margin of comfort in achieving a Very Good rating can be increased without incurring significant cost.
- In order to achieve any BREEAM rating, a margin of comfort of at least 5% should be considered as the target minimum. This is as a contingency to allow for unforeseen issues arising between now and the end of construction and also to allow for BRE's QA check of the final BREEAM report.

Table 2 - Actions Required to Implement Cost Options

Notes: Table 2 only provides 'headline' details of the actions required to achieve the improvement options (rated as 'D' in Table 3). Further details of the required actions are given in Table 3.

Credit Ref.	Credit Title	Credit % worth	Actions required (all to meet full BREEAM requirements)
Man01	Stakeholder consultation (project delivery)	0.64	If this credit is to be pursued, Greenlane to compile sustainability brief from Stage 1.
Man04	Testing and inspecting building fabric	0.64	If this credit is to be pursued, GMI to undertake a thermographic survey and air permeability testing and rectify any defects if found.
Hea05	Acoustic performance	1.52	Confirm whether the following are met: - Guest bedrooms - Airborne sound insulation values are at least 5dB higher and impact sound insulation values are at least 5dB lower than the performance standards in the Building Regulations Part E. - Other occupied spaces – Meet the criteria for indoor ambient noise levels, sound insulation and reverberation in Table 25, Hea05, BREEAM RFO 2014 Manual.
Wst01	Construction waste management	0.70	Confirm whether non-hazardous construction waste output (excluding excavation and demolition waste) can be limited to no more than 2.6 tonnes /100m ² GIFA.
Wst01	Diversion of resources from landfill	0.70	GMI to divert the following from landfill: - At least 87% by weight of non-hazardous construction waste. - At least 93% by weight of non-hazardous demolition waste. (E-mail query to GMI 03.06.22)
	Total %	4.2	



Table 3 - BREEAM Credit Assessment

Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
Management								
Man01 Project brief and design	Stakeholder consultation (project delivery)	1. A clear sustainability brief is developed prior to Concept Design which sets out: a. Client requirements e.g. internal environmental conditions required. b. Sustainability objectives and targets including target BREEAM rating, business objectives etc. c. Timescales and budget. d. List of consultees and professional appointments that may be required e.g. Suitably Qualified Acoustician etc. e. Constraints for the project e.g. technical, legal, physical, environmental. 2. Prior to completion of the Concept Design (RIBA Stage 2 or equivalent), the project delivery stakeholders (see Relevant definitions) have met to identify and define their roles, responsibilities and contributions for each of the key phases of project delivery. 3. In defining the roles and responsibilities for each key phase of the project, the following must be considered [see manual]. 4. The project team demonstrate how the project delivery stakeholder contributions and the outcomes of the consultation process have influenced or changed the Initial Project Brief, including if appropriate, the Project Execution Plan, Communication Strategy, and the Concept Design.	1	0.64	D	The project team confirmed the following: - Malmison 'band standards' to be checked to see if this includes a Sustainability brief - Appointment documentation is in place at RIBA Stage 2 confirming suitable roles and responsibilities. - Early stage meeting minutes evidence the design evolution. REF 7 provides an architects deliverables schedule for Stages 3 & 4. REF 23 provides the following: - DTM minutes for Mtg Nos. 1-12 inc. - Early Stage Development Programme. REF 25 provides a Design Responsibility Matrix. GMI BREEAM meeting 04.02.21 - Project team confirmed that Sustainability Brief not in place at RIBA Stage 1. This credit is improvement option at this stage.	If this credit is to be pursued, Greenlane to compile sustainability brief from Stage 1.	Greenlane
	Stakeholder consultation (third party)	5. Prior to completion of the Concept Design stage, all relevant third party stakeholders have been consulted by the design team and this covers the minimum consultation content (see compliance note CN3). 6. The project must demonstrate how the stakeholder contributions and outcomes of the consultation exercise have influenced or changed the Initial Project Brief and Concept Design. 7. Prior to completion of the detailed design (RIBA Stage 4, Technical Design or equivalent), consultation feedback has been given to, and received by, all relevant parties. Bespoke Note: Pt 8 not relevant for hotel buildings.	1	0.64	E	The project team confirmed that consultation to date includes the following: - Local authority - Historic England - Rights to light - Party wall. It is unlikely that a full consultation meeting BREEAM criteria is in place. GMI BREEAM meeting 04.02.21 - Project team confirmed that stakeholder consultation at planning stage did not meet full BREEAM criteria. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
	Sustainability Champion (design)	9. A Sustainability Champion has been appointed to facilitate the setting and achievement of BREEAM performance targets for the project. The design stage Sustainability Champion is appointed to perform this role during the feasibility stage (Stage 1, Preparation and Brief stage, as defined by the RIBA Plan of Work 2013 or equivalent). 10. The defined BREEAM performance target(s) has been formally agreed (see Relevant definitions) between the client and design/project team no later than the Concept Design stage (RIBA Stage 2 or equivalent). 11. To achieve this credit at the interim design stage assessment, the agreed BREEAM performance target(s) must be demonstrably achieved by the project design. This must be demonstrated via the BREEAM assessor's design stage assessment report.	1	0.64	E	The project team confirmed the following: - Adam Willis, MDA was appointed as Sustainability Champion RIBA Stage 1. - BREEAM target was established at the planning pre-application meeting and briefed out to the project team via the checklist of planning deliverables. REF 1 provides the Greenbooklive entry for Adam Willis, MDA confirming he has a current registration as a BREEAM AP. REF 18 provides an Outline Specification. Section 18 confirms the BREEAM Very Good requirement. BREEAM Meeting 21.01.20 - Project team confirmed that AW had not been attending DTMs and may be hard to demonstrate early stage involvement. See also AW email 27.02.20. REF 23 provides an early stage Development Programme. GMI BREEAM meeting 04.02.21 - Project team confirmed that a Sustainability Champion did not attend early project meetings. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
	Sustainability Champion (monitoring progress)	11. The Sustainability Champion criteria 9, 10 and 11 have been achieved. 12. A Sustainability Champion is appointed to monitor progress against the agreed BREEAM performance target(s) throughout the design process and formally report progress to the client and design team. To do this the Sustainability Champion must attend key project/design team meetings during the Concept Design, Developed Design and Technical Design stages, as defined by the RIBA Plan of Work 2013, reporting during, and prior to, completion of each stage, as a minimum.	1	0.64	E	The project team confirmed the following: - Adam Willis, MDA attended DTMs RIBA Stage 2 & 3. - AW will provide stage AP reports. - DTM minutes will confirm AW attendance. SBL emailed sample AP report to MDA 09.04.19. REF 3 provides DTM minutes confirming BREEAM issues covered. BREEAM Meeting 21.01.20 - Project team confirmed that AW had not been attending DTMs. REF 23 provides an early stage Development Programme. GMI BREEAM meeting 04.02.21 - Project team confirmed that a Sustainability Champion did not attend early project meetings. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A



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Man 02 Life cycle cost and service life planning	Elemental life cycle cost (LCC)	1. An outline, entire asset elemental life cycle cost (LCC) plan has been carried out at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:2008'.	1	0.64	E	The project team confirmed that an elemental life cycle cost (LCC) plan meeting BREEAM criteria was not undertaken at RIBA Stage 2.	No further design or construction stage actions or evidence required.	N/A
		2. The elemental LCC plan: a. An outline LCC plan has been undertaken for the project based on the building's basic structure and envelope, appraising a range of options and based on the life expectancy of the refurbished building, e.g. 20, 30, 50+ years. b. The servicing strategy for the project outlining services component over a 15-year period, in the form of an 'elemental LCC Plan'. c. A fit-out strategy is developed outlining fit-out options over a 10-year period.	1	0.64	E	BREEAM Meeting 21.01.20 - Project team confirmed that an elemental LCC exercise had not been carried out. Two credits are not achieved.		
Man 02 Life cycle cost and service life planning	Component level LCC option appraisal	3. A component level LCC option appraisal has been developed by the end of Process Stage 4 (equivalent to Technical Design - RIBA Stage 4) in line with PD 156865:2008 and includes the following component types (where present): a. Envelope, e.g. cladding, windows, and/or roofing b. Newly specified local and/or core service equipment, e.g. boiler, air-conditioning, air handling unit, and/or controls etc. c. Finishes, e.g. walls, partitions, floors and/or ceilings etc. d. External spaces (where external spaces are within scope of works), e.g. alternative hard landscaping, boundary protection. Where carrying out a major refurbishment covering all parts of the scheme, a component level LCC plan shall be developed as above.	1	0.64	E	The project team confirmed that developing a component level LCC option appraisal meeting BREEAM criteria by the end of Process Stage 4 would be a cost option. SBL emailed LCC contacts 24.02.20. RB email 08.03.21 confirms - "This [component level LCC study] will not be undertaken." This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
	Capital cost reporting	4. Report the capital cost for the building in pounds per square metre (£/m ²), via the BREEAM Assessment Scoring and Reporting tool.	1	0.64	B	The project team confirmed that capital cost will be reported. REF 98 provides written confirmation of the predicted capital cost of the development with breakdown against BREEAM criteria. This credit is signed off at design stage only.	Construction stage GMI to confirm the final capital cost - The capital cost for the building includes the expenses related to the initial construction of the building: - Construction, including preparatory works, materials, equipment and labour - Site management - Construction financing - Insurance and taxes during construction - Inspection and testing. Note: Costs relating to land procurement, clearance, design, statutory approvals and post occupancy aftercare should not be included.	GMI
Man 03 Responsible construction practices	Pre-requisite	1. All timber and timber-based products used on the project is 'Legally harvested and traded timber'.	0	0.00		The project team confirmed that the contractor will be required to procure all timber and timber-based products on the project from 'legally harvested and traded timber' sources. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. SBL emailed Materials Tracker 05.11.21. The pre-requisite requirements are signed off at design stage only.	Construction stage GMI to provide updated Materials Tracker and FSC/PEFC certs for any temporary timber use during the refurbishment (email request 05.11.21 & 26.05.22).	GMI
	Environmental management	2. The principal contractor operates an environmental management system (EMS) covering their main operations. The EMS must be either: a. Third party certified, to ISO 14001/EMAS or equivalent standard; or b. Have a structure that is in compliance with BS 8555:2003 and has reached phase four of the implementation stage, 'implementation and operation of the environmental management system', and has completed phase four of the implementation stage, 'implementation and operation of the environmental management system', and has completed phase audits one to four, as defined in BS 8555:2003. For Healthcare NHS buildings, see the pre-requisite for this issue in compliance note CN4. 3. The principal contractor implements best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG6.	1	0.64	B	The project team confirmed that it is uncertain whether the principal contractor will be ISO14001 certified. BREEAM Meeting 21.01.20 - Rayner Rowen confirmed that they are not ISO14001 certified. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 42 provides a copy of GMI's (as principal contractor) ISO14001 certificate. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. This credit is signed off at design stage only.	Construction stage GMI to provide written details of the implementation of pollution prevention policies and procedures (in accordance with PPG6) during the refurbishment.	GMI



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Man 03 Responsible construction practices	Sustainability Champion (construction)	4. 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 (as defined by the RIBA Plan of Works 2013, Stages 5 and 6). To do this the Sustainability Champion will ideally be site based or will visit the site regularly to carry out spot checks, with the relevant authority to do so, and will require action to be taken to address shortcomings in compliance. The Sustainability Champion will monitor site activities with sufficient frequency (see compliance note CN4.1) to ensure that risks of non-compliance are minimised. They will report on progress at relevant project team meetings including identifying potential areas of non-compliance and any action needed to mitigate. 5. The defined BREEAM performance target forms a requirement of the principal contractor's contract (see Man 01 Project brief and design – CN3.2 and Man 01 Project brief and design – Relevant definitions). 6. To achieve this credit at the final post construction stage of assessment, the BREEAM-related performance target for the project must be demonstrably achieved by the project. This is demonstrated via the BREEAM assessor's final post construction stage assessment report.	1	0.64	E	The project team confirmed that the contractor will be required to employ a Sustainability Champion role at RIBA Stages 5&6. BREEAM Meeting 21.01.20 - Rayner Rowen confirmed that it would be a cost option to employ a Sustainability Champion during construction. BREEAM Meeting 21.02.20 - RR/BHA confirmed that a Sustainability Champion would be employed during construction. SBL emailed RR a proposal for construction stage Sustainability Champion 21.02.20. Forwarded to GMI 07.02.21. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. BREEAM meeting 05.11.21 - Credit will not be achieved. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
	Considerate construction	7. Applicable to small scale or low value refurbishment or fit-out projects only. 8. Where the refurbishment or fit-out project does not meet the definition of a small scale or low value project (see Relevant definitions) the principal contractor has used a 'compliant' organisational, local or national considerate construction scheme and their performance against the scheme has been confirmed by independent assessment and verification. The BREEAM credits can be awarded as follows: a. One credit where the contractor achieves 'compliance' with the criteria of a compliant scheme. b. Two credits where the contractor significantly exceeds 'compliance' with the criteria of the scheme. Refer to the Relevant definitions section for a list of compliant schemes and therefore how performance, as determined by a compliant scheme, translates into BREEAM credits.	1	0.64	B	The project team confirmed that the contractor will be required to register with CCS and achieve a minimum score of 40/50 (with no less than 7/10 in each category). BREEAM Meeting 21.01.20 - Rayner Rowen confirmed that it is uncertain whether a CCS score of 35/50 would be achieved due to site constraints. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. GMI BREEAM meeting 04.02.21 - Project team confirmed that a CCS score of at least 35/50 (with no less than 7/10 in each section) will be achieved. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. Construction REF 81 provides the CCS MSR2 confirming a score of 43/45 with no less than 14 in each section. Two credits are signed off at design stage only.	Construction stage GMI to provide the CCS certificate.	GMI
	Monitoring of refurbishment or fit-out-site impacts	9. Responsibility has been assigned to an individual(s) for monitoring, recording and reporting energy use, water consumption and transport data (where measured) resulting from all on-site construction processes (and dedicated off-site monitoring) throughout the fit-out programme. To ensure the robust collection of information, this individual(s) must have the appropriate authority and responsibility to request and access the data required. Where appointed, the Sustainability Champion could perform this role.	0	0.00		The project team confirmed that the contractor will be required to assign responsibility to a suitable person as required in BREEAM. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. The pre-requisite requirements are signed off at design stage only.	Construction stage GMI to provide: - Name of the individual(s) responsible for monitoring, recording and reporting data resulting from all construction processes. - Summary detail of the monitoring and data gathering mechanism / protocols / system used to collate and process site energy water & transport data.	GMI
	Energy consumption	10. Criterion 9 is achieved. 11. Monitor and record data on principal constructor's and subcontractors' energy consumption in kWh (and where relevant, litres of fuel used) as a result of the use of construction plant, equipment (mobile and fixed) and site accommodation. 12. Report the total carbon dioxide emissions (total kgCO₂/project value) from the construction process via the BREEAM Assessment Scoring and Reporting tool. Water consumption 13. Criterion 9 is achieved. 14. Monitor and record data on principal constructor's and subcontractors' potable water consumption (m³) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation. 15. Using the collated data report the total net water consumption (m³), i.e. consumption minus any recycled water use from the construction process via the BREEAM Assessment Scoring and Reporting tool.	1	0.64	B	The project team confirmed that the contractor will be required to monitor energy and water consumption as required in BREEAM. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. SBL emailed monitoring template 05.11.21. This credit is signed off at design stage only.	Construction stage GMI to provide collated construction phase data / information as follows: 1. Total site energy carbon dioxide emissions. 2. Total site net water consumption (m ³). 3. Targets set for the above parameters.	GMI



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Man 03	Responsible construction practices	Monitoring of refurbishment or fit-out-site impacts Transport of construction materials and waste 16. Criterion 9 is achieved. 17. Monitor and record data on transport movements and impacts resulting from delivery of the majority of refurbishment or fit-out materials to site and refurbishment, fit-out and demolition or strip-out waste from site. As a minimum this must cover: a. Transport of materials from the factory gate to the building site, including any transport, intermediate storage and distribution, (see Relevant definitions). Scope of this monitoring must cover the following as a minimum: i. Where Part 1 is being assessed, materials used in major building elements, including insulation materials ii. Where Part 2 is being assessed, materials used for core services iii. Where undertaking a comprehensive refurbishment including fit-out with a combination of Parts 1 - 4, materials used for major building elements, services and interior fit-out iv. Where within scope, ground works and landscaping materials v. Where undertaking a Parts 3 & 4 only assessment, materials used in the fit-out are included with the exception of small scale and low value refurbishment of fit-out projects (see Man 03 Responsible construction practices) where this credit is not applicable. c. Transport of construction waste from the construction gate to waste disposal processing/recovery centre gate. Scope of this monitoring must cover the construction waste groups outlined in the project's waste management plan. 18. Using the collated data, report separately for materials and waste, the total fuel consumption (litres) and total carbon dioxide emissions (kgCO₂ eq), plus total distance travelled (km) via the BREEAM Assessment Scoring and Reporting tool.	1	0.64	B	The project team confirmed that the contractor will be required to monitor delivery and waste transport as required in BREEAM. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. SBL emailed monitoring template 05.11.21. This credit is signed off at design stage only.	Construction stage GMI to confirm totals for distance travelled and CO₂ emissions for both deliveries to site and waste transport from site (SBL email feedback on GMI's Biosite Report 30.07.21 with brief and monitoring sheet (forwarded 05.11.21)).	GMI
Man 04	Commissioning and testing schedule and responsibilities	1. There is a schedule of commissioning and testing that identifies appropriate commissioning required for the scope of works that includes a suitable timescale for commissioning and re-commissioning of all relevant works carried out. Commissioning should be carried out where changes are being made to the following: a. Building services (including both complex and non-complex systems) b. Building services control systems (including Building Management Systems) c. Changes to the building fabric that will affect thermal performance. 2. The schedule will identify the appropriate standards that all commissioning activities will be conducted in accordance with such as current Building Regulations, BSRIA and CIBSE guidelines and/or other appropriate standards, where applicable. Where a building management system (BMS) is specified, refer to compliance note Man 04 Commissioning and handover on BMS commissioning procedures. 3. An appropriate project team member(s) is appointed to monitor and programme pre-commissioning, commissioning, testing and, where necessary, re-commissioning activities on behalf of the client. 4. The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and main programme of works, allowing for the required time to complete all commissioning and testing activities prior to handover.	1	0.64	C	The project team confirmed that commissioning will be scheduled and responsibilities assigned as required in BREEAM. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed the following: - RR will provide a copy of the construction programme to include commissioning. - Chris Martin, MDA will undertake the role of Design Team Commissioning Monitor (re-confirmed in BREEAM mtg 21.04.22). REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 27 provides the Particular Electrical Specification. Section 28 details testing and commissioning requirements. REF 28 provides the Particular Mechanical Specification. Section 24 details testing and commissioning requirements. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. REF 67 provides a copy of the main construction completion programme with item 499 for commissioning. REF 84 provides a commissioning schedule from the MEP contractor. REF 104 provides written confirmation of the date for the start of MEP commissioning. This credit is awaiting further design stage evidence.	Design stage Spring (on behalf of Greenlane) to provide an appointment letter (SBL emailed letter template 06.10.22). Construction stage Gallant to provide the following: - Commissioning schedules - Commissioning records/reports. Above records to evidence DTCM involvement.	Spring Gallant
	Commissioning building services	5. The commissioning and testing schedule and responsibilities credit is achieved. 6. For projects where work is being undertaken to upgrade, renovate or install new building services and systems. a. For complex building services and systems, a specialist commissioning manager is appointed during the design stage (by either client or contractor) with responsibility for: 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. b. For simple building services, this role can be carried out by an appropriate project team member (see criterion 3), provided they are not involved in the general installation works for the building services system(s).	1	0.64	C	The project team confirmed that complex systems will be commissioned as required in BREEAM. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract for appointing a Specialist Commissioning Manager. Also that Chris Martin, MDA will undertake this role as well as that of Design Team Commissioning Monitor for the credit above. REF 28 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. BREEAM Meeting 21.04.22 - MDA confirmed that Steve Mercer, Gallant will be SCM. BREEAM Site Meeting 26.05.22 - MDA confirmed that Steve Mercer is leaving Gallant. Either Mark Bramhall or Dave Craggs will be SCM. REF 84 provides a letter of appointment for Dave Craggs of GBS as Specialist Commissioning Manager for complex systems. Letter includes seasonal commissioning duties/responsibilities. This credit is awaiting further design stage evidence (for credit above).	Design stage As credit above. Construction stage Gallant to provide the following: - Commissioning schedules - Commissioning records/reports. Above records to evidence DTCM involvement.	Spring Gallant
	Testing and inspecting building fabric	7. Projects where the fabric of the building is being upgraded, the integrity of the building fabric, including continuity of insulation, avoidance of thermal bridging and air leakage paths is quality assured through completion of a thermographic survey as well as airtightness testing and visual inspection at appropriate times during the refurbishment. The survey/testing is undertaken by a Suitably Qualified Professional (see Man 04 Commissioning and handover) in accordance with the appropriate standard, with visual inspection conducted by a representative of the main contractor or by an independent inspector such as a clerk of works. 8. Any defects identified in the site inspection, thermographic survey and the airtightness testing reports are rectified prior to building handover and close out. Any remedial work must meet the required performance characteristics for the building/element.	1	0.64	D	The project team confirmed the following: - An air permeability test will be carried out for the whole building with a target of 5m3. - It is unlikely that there will be additional insulation to the inside of the existing stone facade. - Therefore, a thermographic survey may show up cold bridging. RB email 08.03.21 confirms - "A thermographic survey will not be undertaken." This credit is improvement option at this stage.	If this credit is to be pursued, GMI to provide commitment to undertake thermographic survey and air permeability testing and rectify any defects if found (latest is RP email 17.11.22).	GMI



Table 3 - BREEAM Credit Assessment

Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
Man 04 Commissioning and handover	Handover	9. A Building User Guide is developed or (where present) an existing Building User Guide is updated, prior to handover for distribution to the building occupiers and premises managers (see Man 04 Commissioning and handover), with a draft copy developed and discussed with users first (where the building occupants are known) to ensure the guide is most appropriate and useful to potential users. 10. A training schedule is prepared for building occupiers/premises managers, timed appropriately around handover and proposed occupation plans, which includes the following content as a minimum: a. The design intent of refurbishment/fit-out works b. The available aftercare provision and aftercare team main contact(s), including any scheduled seasonal commissioning and post occupancy evaluation c. Introduction to, and demonstration of, installed systems and key features, particularly building management systems, controls and their interfaces, to ensure they are fully conversant with the detailed operation of the building d. Introduction to the Building User Guide and other relevant building documentation, e.g. design data, technical guides, maintenance strategy, operations and maintenance (O&M) manual, commissioning records, log book etc. e. Maintenance requirements, including any maintenance contracts and regimes in place.	1	0.64	B	The project team confirmed that the contractor will be required to provide a BUG and training schedule to meet full BREEAM criteria. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. This credit is signed off at design stage only.	Construction stage GMI to provide the following (email brief & request 17.11.22. Latest is RP & JF & JA emails 17.11.22 & RP 21.11.22. Latest is JA email 08.12.22 & RP email 26.01.23): - Copy of BUG and confirm distribution to Malmeson as hotel occupier - Copy of the training schedule.	GMI
Man 05 Aftercare	Aftercare support	1. There is (or will be) operational infrastructure and resources in place to provide aftercare support to the building occupier(s), which includes the following as a minimum: a. A meeting programmed to occur between the aftercare team/individual and the building occupier/management (prior to initial occupation, or as soon as possible thereafter) to: i. Introduce the aftercare team or individual to the aftercare support available, including the Building User Guide (where existing) and training schedule/content. ii. Present key information about features of the refurbished building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible (including the use of local services and controls and central services, as applicable). b. On-site facilities management training, to include a walkabout of the refurbished area of the building and introduction to, and familiarisation with the building systems, their controls and how to operate them in accordance with the design intent and operational demands. c. Initial aftercare support provision for at least the first month of building occupation, e.g. on-site attendance on a weekly basis to support building users/and management and to conduct a walk-around to examine how the refurbished area of the building is being used/operated to identify any issues that need to be communicated to building users/facilities managers (this could be more or less frequent depending on the complexity of the building and building operations). d. Longer term aftercare support provision for occupants for at least the first 12 months from occupation, e.g. a helpline, nominated individual or other appropriate system to support building users/management. 2. There is (or will be) operational infrastructure and resources in place to coordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months (for Part 4, where local metering is available and accessible), once the building is occupied. Discrepancies between actual and predicted performance should be identified, with a commitment to identify actions required to address any discrepancies such as adjusting systems and/or to develop/review operational policies to influence user behaviours accordingly.	1	0.64	B	The project team confirmed that the contractor will be required to provide full aftercare support as required in BREEAM. Energy and water consumption will be monitored as required in BREEAM for 12 months post-occupation. BREEAM Meeting 21.02.20 - BHA confirmed that Greenlane as opposed to Malmeson will be responsible for meeting post-completion criteria. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. Pt 2 - REF 85 provides a letter from Malmeson as hotel occupier confirming a commitment to meet the relevant criteria. This credit is signed off at design stage only.	Construction stage Pt 1 - Aftercare support - GMI to provide a contract to provide compliant aftercare support and training. Pt 2 - Post-completion monitoring - Malmeson to provide evidence that the relevant mechanism(s) and procedures are in place and there is a commitment to use them.	GMI
Man 05 Aftercare	Seasonal commissioning	3. The following seasonal commissioning activities will be completed over a minimum 12 month period, once the building becomes substantially occupied: a. Complex systems - Specialist Commissioning Manager: i. Testing of all building services under full load conditions, i.e. heating equipment in mid-winter, cooling/ventilation equipment in mid-summer, and under part load conditions (spring/autumn). ii. Where applicable, testing should also be carried out during periods of extreme (high or low) occupancy. iii. Interviews with building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems. iv. Re-commissioning of systems (following any work needed to serve revised loads), and incorporating any revisions in operating procedures into the operations and maintenance (O&M) manuals. b. Simple systems (naturally ventilated) - external consultant/aftercare team/facilities manager: i. Review thermal comfort, ventilation, and lighting, at three, six and nine month intervals after initial occupation, either by measurement or occupant feedback. ii. Take all reasonable steps to re-commission systems following the review to take account of deficiencies identified and incorporate any relevant revisions in operating procedures into the O&M manuals.	1	0.64	C	The project team confirmed that seasonal commissioning will be carried out to meet all BREEAM requirements. BREEAM Meeting 21.02.20 - Raynor Rowen confirmed that they will be responsible post-contract for undertaking seasonal commissioning. Also that Chris Martin, MDA will undertake the roles of both Design Team Commissioning Monitor and Specialist Commissioning Manager. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. REF 84 provides a letter of appointment for Dave Craggs of GBS as Specialist Commissioning Manager for complex systems. Letter includes seasonal commissioning duties/responsibilities. This credit is awaiting further design stage evidence.	Design stage Spring (on behalf of Greenlane) to provide an appointment letter (SBL emailed letter template 06.10.22). Construction stage Gallant to provide details of proposed seasonal commissioning visits/tasks.	Spring Gallant



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Man 05 Aftercare	Post occupancy evaluation	4. The client or building occupier makes a commitment to carry out a post occupancy evaluation (POE) exercise one year after initial building occupation (see compliance note Man 05 Aftercare). 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 (see Man 01 Project brief and design – Relevant definitions) and needs to cover: a. A review of the design intent and construction process (review of design, procurement, construction and handover processes). b. Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering: i. Internal environmental conditions (light, noise, temperature, air quality) ii. Control, operation and maintenance iii. Facilities and amenities iv. Access and layout v. Other relevant issues. c. Sustainability performance (energy/water consumption, performance of any sustainable features or technologies, e.g. materials, renewable energy, rainwater harvesting etc.). 5. The client or building occupier makes a commitment to carry out the appropriate dissemination of information on the building's post occupancy performance. This is done to share good practice and lessons learned and inform changes in user behaviour, building operational processes and procedures, and system controls. Refer to compliance notes CN7.1 and CN7.2 for a definition of appropriate dissemination. This also provides advice on appropriate dissemination where the building or building information is commercially or security sensitive.	1	0.64	A	The project team confirmed that a POE will be carried out 12 months after initial occupation with findings disseminated. BREEAM Meeting 21.02.20 - BHA confirmed that Greenlane as opposed to Malmaison will be responsible for meeting post-completion criteria. REF 85 provides a letter from Malmaison as hotel occupier confirming a commitment to meet the relevant criteria. This credit is fully signed off at construction stage.	No further design or construction stage actions or evidence required.	N/A
		Subtotals	21	13.4				
Health and Wellbeing								
Hea 01 Visual comfort	Glare control	1. The potential for disabling glare has been designed out of all relevant building areas using a glare control strategy, either through building form and layout and/or building design measures (see compliance note CN7). 2. The glare control strategy avoids increasing lighting energy consumption, by ensuring that: a. The glare control system is designed to maximise daylight levels under all conditions while avoiding disabling glare in the workplace or other sensitive areas. The system should not inhibit daylight from entering the space under cloudy conditions, or when sunlight is not on the façade. AND b. The use or location of shading does not conflict with the operation of lighting control systems.	1	0.76	B	The project team confirmed that there are offices and meeting rooms located in the basement, all rooms with no windows. REFs 12 & 30 provide floor plans basement to 2nd and 6th, 7th & roof plans and updated drwgs. These confirm that the only relevant building areas for glare control are the meeting rooms and offices in the basement. These have no windows requiring glare control. REF 13 provides elevation drwgs confirming that there are no high level windows to the basement rooms. REF 53 provides a 2nd floor plan (with note confirming that ... "LAYOUT SHOULD BE TREATED [AS] TYPICAL FOR LEVELS 2-5." This confirms that there are no 'relevant building areas' for glare control on Levels 3-5 inc. This credit is signed off at design stage only.	Construction stage LRW to provide as-built floor plans and elevation drwgs.	LRW
	Daylighting	3. Up to three credits are awarded on a sliding scale depending on the percentage of relevant building areas that comply with one of the following daylighting criteria: a. The relevant building areas meet good practice daylight factor(s) and other criterion as outlined in Table 12 and Table 13; OR b. The relevant building areas meet good practice average and minimum point daylight illuminance criteria as outlined in Table 14. 4. Two credits where daylighting provision, averaged over all relevant spaces, has improved after refurbishment or fit-out by 30% or more and there is a minimum glazing to floor area ratio of either: a. 5% glass to floor area ratio for side windows; OR b. 2.5% glass to floor area ratio for roof lights; 5. One credit where daylighting provision, averaged over all relevant spaces, has improved after refurbishment or fit-out by 15% or more and there is a minimum glazing to floor area ratio of either: a. 5% glass to floor area ratio for side windows; OR b. 2.5% glass to floor area ratio for roof lights Note: The improvement in daylighting provision is calculated using the BREEAM Hea 01 Calculator tool based upon either the increase in glazing area, transmittance, illuminance or percentage daylight factor. Please refer to the Methodology section for calculation procedures. Bespoke Note: Refer to Bespoke Project Criteria Appendix Tables tab.	1	0.76	E			
	Daylighting		1	0.76	E	The project team confirmed the following: - There are offices and meeting rooms located in the basement, all rooms with no windows. - Existing windows will be reused with no increase in window size. - BREEAM daylighting criteria will not therefore be met. Three credits are not achieved.	No further design or construction stage actions or evidence required.	N/A
	Daylighting		1	0.76	E			



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	View out	6. Two credits where 95% of the floor area in relevant building areas is within 7m of a wall which has a window or permanent opening that provides an adequate view out. 7. One credit where 80% of the floor area space in relevant building areas is within 7m of a wall which has a window or permanent opening that provides an adequate view out and criterion 8 is met. 9. The window/opening must be $\geq 20\%$ of the surrounding wall area (refer to Hea 01 Visual comfort in the Additional information section). Where the room depth is greater than 7m, compliance is only possible where the percentage of window/opening is the same as, or greater than, the values in Table 1.0 of BS 8206. 9. In addition, the building type criteria in Table - 13 are applicable to view out criteria. Bespoke Note: Refer to Bespoke Project Criteria Appendix Tables tab.	1	0.76	E	The project team confirmed the following: - There are offices and meeting rooms located in the basement, all rooms with no windows. - BREEAM view out criteria will not therefore be met. Two credits are not achieved.	No further design or construction stage actions or evidence required.	N/A
	Internal and external lighting levels, zoning and control	Internal lighting 10. All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts. 11. Internal lighting in all relevant areas of the building is designed to provide an illuminance (lux) level appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. This can be demonstrated through a lighting design strategy that provides illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. 12. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 3.3, 4.6, 4.7, 4.8 and 4.9. This gives recommendations highlighting: a. Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this.) b. For uplighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this. c. Recommendations for direct lighting, ceiling illuminance, and average wall illuminance. External lighting 13. All external lighting located within the refurbishment or fit-out zone is designed to provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately, especially during the night. To demonstrate this, external lighting provided is specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places. Zoning and occupant control 14. Internal lighting is zoned to allow for occupant control (see Relevant definitions) in accordance with the criteria (in the manual) for relevant areas present within the building.	1	0.76	B	The project team confirmed the following: - The required internal and external lighting standards will be met. - Internal lighting to all required areas will be zoned and controlled to meet BREEAM criteria. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with MDA) for meeting relevant lighting standards and layouts. REF 27 provides the Particular Electrical Specification. Section 18 details the lighting requirements and confirms LED lighting throughout. REF 29 provides lighting layout dwgs for the basement, ground, 6th & 7th floors. These confirm the following: - LED lighting throughout. - Zoning and controls to rooms on these floors. REF 60 provides updated lighting layout dwgs for each floor which confirm zoning and controls to each area. REF 84 provides the following from the MEP contractor: - Written confirmation that there is no external lighting in the scheme. - Lighting dwgs showing the zoning and control to the ground and 7th floor bars, restaurant and services - "All the zoning requirements to be advised by Malmison as part of the commissioning process." BREEAM meeting 05.12.22 - There is external lighting to the balcony & Sky Bar. REF 104 provides written confirmation from the MEP contractor of internal lighting compliance with SLL Code for Lighting 2012 and CIBSE LG7. Also, no external lighting. This credit is signed off at design stage only.	Construction stage Gallant to provide as-built internal & external lighting dwgs.	Gallant
	Indoor air quality (IAQ) plan	1. 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, construction and occupation of the building. The indoor air quality plan must consider the following: a. Removal of contaminant sources b. Dilution and control of contaminant sources c. Procedures for pre-occupancy flush out d. Protection of Heating Ventilation and Air Conditioning (HVAC) systems from sources of pollution during refurbishment/fit-out works e.g. dust e. Procedures for protecting the indoor air quality of areas outside of the refurbishment or fit-out zone that may be affected by the refurbishment/fit out works f. Procedures for identifying and implementing third party testing and analysis required to ascertain that the contaminant sources have been removed effectively before occupancy g. Commitments for maintaining indoor air quality in-use, e.g. maintenance and cleaning of the HVAC system, ductwork and filters.	1	0.76	B	The project team confirmed that the contractor will be required to provide an IAQP as required in BREEAM. BREEAM Meeting 21.01.20 - Rayner Rowen confirmed that it would be a cost option to provide an IAQP. BREEAM Meeting 21.02.20 - RRBHA confirmed that an IAQP would be developed. RR will be responsible post-contract for provision of an IAQP. SBL emailed IAQP contact to RR 21.02.20 & GMI 07.02.21. REF 26 provides extracts from the Employer's Requirements, Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. REF 59 provides a copy of the IAQP which complies in full with BREEAM criteria. IAQP emailed to GMI 05.11.21. This credit is achieved and signed off at design stage.	Construction stage LRW/GMI to review the IAQP Task Planner (in Appendix 4) and provide evidence of implementation.	LRW GMI
	Ventilation	Refurbishment and fit-out works include measures to minimise the concentration and recirculation of pollutants in the building as follows: 2. Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation. 3. Design ventilation pathways to minimise the build-up of air pollutants in the building, as follows: a. In air conditioned and mixed mode buildings/spaces: i. The building's air intakes and exhausts are over 10m apart and intakes are over 20m from sources of external pollution; OR ii. The location of the building's air intakes and exhausts, in relation to each other and external sources of pollution, is designed in accordance with BS EN 13779:2007 Annex A2 b. In naturally ventilated buildings/spaces: operable windows/ventilators are over 10m from sources of external pollution. 4. Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 13779:2007 Annex A3. 5. Areas of the building subject to large and unpredictable or variable occupancy patterns have carbon dioxide (CO2) or air quality sensors specified and: a. In mechanical ventilated buildings/spaces: sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space. b. In naturally ventilated buildings/spaces: sensors either have the ability to alert the building owner or manager when CO2 levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows/roof vents.	1	0.76	E	The project team confirmed the following: - Mechanical ventilation intakes and extracts are located close to each other for each bedroom. - There are some opening windows within 10m of the nearest road kerbline. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A



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Hea 02 Indoor air quality	Hea 02 indoor air quality (products)	6. All decorative paints and varnishes specified meet the criteria in Table 20. 7. At least five of the seven remaining product categories listed in Table 20 meet the testing requirements and emission levels criteria for volatile organic compound (VOC) emissions (listed in the table).	1	0.76	E	Project team confirmed the following: - The internal finishes are bespoke. - All relevant finishes will meet BREEAM VOC criteria. BREEAM Meeting 21.01.20 - The project team confirmed that it is uncertain whether all required product VOC standards will be achieved. There are a number of wall coverings in the wall finishes. REF 83 provides product VOC product emissions and testing data confirming that the following Johnstones paints have Indoor Air Comfort certification: - Acrylic Durable Matt inc. Mould Resistant (IAC only). - Aqua Undercoat (IAC Gold). - Aqua Water Based Satin (IAC Gold). SBL email 12.12.22 with GN22 for alternative VOC standards. BREEAM Meeting w LRW 23.08.23 - This credit is no longer being pursued. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
	Volatile organic compound (VOC) emission levels (post construction)	8. The formaldehyde concentration level is measured post construction (but pre-occupancy) and is found to be less than or equal to 100µg/m3 averaged over 30 minutes (WHO guidelines for indoor air quality: Selected pollutants, 20102). 9. The total volatile organic compound (TVOC) concentration level is measured post construction (but pre-occupancy) and found to be less than 300µg/m3 over 8 hours, in line with the Building Regulation requirements. 10. Where VOC and formaldehyde levels are found to exceed the limits defined in criteria 8 and 9, the project team confirms the measures that have, or will be taken, in accordance with the IAQ plan, to reduce the level to within these limits, including re-measurement. 11. The testing and measurement of the above pollutants are in accordance with the following standards where relevant: a. BS ISO 16000-4: 2011 Diffusive sampling of formaldehyde in air3 b. BS ISO 16000-6: 2011 VOCs in air by active sampling4 c. BS EN ISO 16017-2: 2003 VOCs - Indoor, ambient and workplace air by diffusive sampling5 d. BS ISO 16000-3: 20116 Formaldehyde and other carbonyls in air by active sampling. 12. The measured concentration levels of formaldehyde (µg/m³) and TVOC (µg/m³) are reported, via the BREEAM Assessment Scoring and Reporting Tool.	1	0.76	B	The project team confirmed that the contractor will be required to carry out pre-occupancy testing for formaldehyde and TVOCs. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract for undertaking pre-occupancy air quality testing. SBL emailed contact for pre-occupancy air quality testing 21.02.20. Forwarded to GMI 05.11.21. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. REF 71 provides a quotation for Air Quality Plan to undertake the pre-occupancy air quality testing. REF 102 provides an updated construction programme. Items 402 & 493 confirm the time allowance for the pre-occupancy air quality testing. This credit is signed off at design stage only.	Construction stage GMI to provide air quality test report.	GMI
Hea 02 Indoor air quality	Adaptability - Potential for natural ventilation	13. The building ventilation strategy is designed to be flexible and adaptable to potential building occupant needs and climatic scenarios. This can be demonstrated as follows: a. Occupied spaces of the building are designed to be capable of providing fresh air entirely via a natural ventilation strategy. The following are methods deemed to satisfy this criterion dependent upon the complexity of the proposed system: i. Room depths are designed in accordance with CIBSE AM10 (section 2.4) to ensure effectiveness of any natural ventilation system. The operable window area in each occupied space is equivalent to 5% of the gross internal floor area of that room/floor plate; OR ii. The design demonstrates that the natural ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates. This is demonstrated using ventilation design tool types that meet the requirements of CIBSE AM107 (or for education buildings by using the ClassVent tool). b. For fit-out projects (Part 3 assessments), local services are designed to provide fresh air via a natural ventilation strategy and are appropriately designed according to the room depth in accordance with CIBSE AM10. 14. The natural ventilation strategy is capable of providing at least two levels of user-control on the supply of fresh air to the occupied space (see compliance note CN6.3 for further details). Note: Any opening mechanisms must be easily accessible and provide adequate user-control over air flow rates to avoid draughts. Relevant industry standards for ventilation can be used to define 'adequate levels of fresh air' sufficient for occupancy and internal air pollution loads relevant to the building type.	1	0.76	E	The project team confirmed that the building has a largely sealed façade and will not meet BREEAM requirements for natural ventilation. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
Hea 04 Thermal comfort	Thermal modelling	1. Thermal modelling has been carried out using software in accordance with CIBSE AM111 Building Energy and Environmental Modelling. 2. The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating or cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11). 3. The modelling demonstrates that: a. For air conditioned buildings, summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design2, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type). b. For naturally ventilated/free running buildings: i. Winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement/level for the building type). ii. The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in CIBSE TM52: The limits of thermal comfort: avoiding overheating in European buildings3. 4. Where undertaking a Part 4 assessment a competent person (e.g. chartered building services engineer) must assess the suitability of existing building services and controls to identify any changes that may be required as a result of fit-out works (e.g. as a result of changes to internal layout, occupant density, additional equipment that may increase cooling loads etc.). 5. For air conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.	1	0.76	B	The project team confirmed that thermal comfort modelling will be carried out with the required standards met. The set points on the space heating and cooling system will meet CIBSE Guide A thermal comfort criteria. KBCN0035 'Air-conditioned spaces' confirms - "Air-conditioned spaces are assessed to ensure appropriate thermal comfort levels are achieved. Cooling capacity should be sufficient to comply with the requirements of CIBSE Guide A, however providing sufficient space to install additional capacity to meet the requirements at a later date in line with projected climate change scenarios is also acceptable. In addition, if it can be demonstrated that the air-conditioning system can achieve the thermal comfort criteria in accordance with CIBSE Guide A, Table 1.5, thermal modelling does not need to be carried out. The 'time out of range' (TOR) metric should be reported as 0%". BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with MDA) for undertaking thermal comfort modelling. REF 87 provides the following written confirmation from the M&E Engineer: "The building has been thermally modelled to establish both heating and cooling loads. The established loads are based upon current UK weather data for Manchester. However, the internal conditions will be maintained by a mechanical cooling installation. We confirm that should there be a significant rise in external temperature the mechanical cooling installation could be upgraded to provide increased cooling duties to match the elevated room heat gains." "The thermal modelling and heating and cooling load assessments have been calculated to achieve the temperatures as set out in the CIBSE Guide A tables A1.1, A1.2 and A1.3". REF 104 provides the following from the MEP contractor: - Air conditioning schedule which confirms cooling loads and the associated internal temperatures designed to. - Written confirmation of compliance with KBCN0035. This credit is signed off at design stage only.	Construction stage MDA/Gallant to provide written confirmation of any changes to the design stage thermal comfort model.	MDA Gallant



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Hea 04 Thermal comfort	Adaptability - for a projected climate change scenario	6. Criteria 1 to 4 are achieved. 7. The thermal modelling demonstrates that the relevant requirements set out in criterion 3 are achieved for a projected climate change environment (see Hea 04 Thermal comfort). 8. Where thermal comfort criteria are not met for the projected climate change environment, the project team demonstrates how the building has been adapted, or designed to be easily adapted in the future using passive design solutions in order to subsequently meet the requirements under criterion 7. 9. For air conditioned buildings, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.	1	0.76	E	The project team confirmed that thermal comfort modelling would be carried out for a projected climate change environment. If the required standards were not met, the building could be adapted in the future via the addition of brise-soleil to the required facades. The additional glazing to the upper floors also has substantial overhanging. KBCN130 'Projected climate change environment' confirms - "The building design should be evaluated against the projected climate change environment using the DSY weather file for the 50th percentile in: Free Running Buildings - Time period: 2050s with emissions scenario: Medium (A1B) Mechanically Ventilated or Mixed Mode Buildings - Time period: 2030s with emissions scenario: Medium (A1B). The emissions scenarios are a minimum which can be exceeded should the design team feel that consideration of building occupant risk/sensitivity to overheating is necessary. BREEAM Meeting 21.01.20 - The project team confirmed the following regarding the provision of additional cooling capacity if required: - Bedroom MVHR is individual to each bedroom and so problematic to expand. - There is very limited space for the cooling plant in the base-build. AM email 22.01.20 confirms that this credit remains uncertain. REF 87 provides the following written confirmation from the M&E Engineer: "The building has been thermally modelled to establish both heating and cooling loads. The established loads are based upon current UK weather data for Manchester. However, the internal conditions will be maintained by a mechanical cooling installation. We confirm that should there be a significant rise in external temperature the mechanical cooling installation could be upgraded to provide increased cooling duties to match the elevated room heat gains." "The thermal modelling and heating and cooling load assessments have been calculated to achieve the temperatures as set out in the CIBSE Guide A tables A1.1, A1.2 and A1.3". REF 104 provides written confirmation from the MEP contractor that this credit is not pursued. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
	Thermal zoning and controls	10. Criteria 1 to 4 are achieved. 11. The thermal modelling analysis (undertaken for compliance with criteria 1 to 4) has informed the temperature control strategy for the building and its users. 12. The strategy for proposed heating/cooling system(s) demonstrates that it has addressed the following: a. Zones within the building and how the building services could efficiently and appropriately heat or cool these areas. For example consider the different requirements for the central core of a building compared with the external perimeter adjacent to the windows. b. Where specified, any new local cooling or heating services (or changes to existing services) are designed to ensure they do not conflict with core services (e.g. conflicts between two separate cooling systems, conflicts between core heating and locally provided cooling systems). c. The degree of occupant control required for these zones, based on discussions with the end user (or alternatively building type or use specific design guidance, case studies, feedback) considers: i. User knowledge of building services ii. Occupancy type, patterns and room functions (and therefore appropriate level of control required) iii. How the user is likely to operate or interact with the system(s), e.g. are they likely to open windows, access thermostatic radiator valves (TRV) on radiators, change air-conditioning settings etc. iv. The user expectations (this may differ in the summer and winter) and degree of individual control (i.e. obtaining the balance between occupant preferences, for example some occupants like fresh air and others dislike draughts). d. How the proposed systems will interact with each other (where there is more than one system) and how this may affect the thermal comfort of the building occupants. e. The need or otherwise for an accessible building user actuated manual override for any automatic systems. Bespoke Note: Occupant controls are intended for staff only.	1	0.76	B	The project team confirmed that the thermal comfort strategy will be based on the above modelling with required zoning and control parameters met. REF 9 provides an Outline Mechanical and Electrical Services Strategy. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with MDA) for thermal zoning and control. REF 61 provides the Developer's M&E Proposals. Section 4.02 details the space heating & cooling zoning and control strategy for the different spaces in the building. REF 62 provides lighting space heating & cooling layout dwgs for each floor which confirm the thermal strategy and zoning to each area. Also the controls to the guest bedrooms. REF 87 provides the following written confirmation from the M&E Engineer: "Please see attached the Service Strategy document that was prepared at the start of the design process." Section 5.0 details the space heating and cooling services strategy. REF 104 provides the Schedule of Service for the BMS. Sections 3.6 & 3.7 provide a description of the ventilation and space heating and cooling systems strategy. This credit is signed off at design stage only.	Construction stage SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	SBL



Table 3 - BREEAM Credit Assessment

Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
Hea 05 Acoustic performance		7. One, three or four credits are available for Multi-residential and Other, Residential institution buildings where the relevant criteria in the checklists and table section have been applied. Individual bedrooms: One credit Airborne sound insulation values are at least 3dB higher and impact sound insulation values are at least 3dB lower than the performance standards in the relevant Building Regulations or Standards. Three credits Airborne sound insulation values are at least 5dB higher and impact sound insulation values are at least 5dB lower than the performance standards in the relevant Building Regulations or Standards. Four credits Airborne sound insulation values are at least 8dB higher and impact sound insulation values are at least 8dB lower than the performance standards in the relevant Building Regulations or Standards. Bespoke Note: Refer to criterion 7 & Table 26.	1	0.76	B	The project team confirmed that a 3dB betterment on Pt E would be achieved, a 5dB betterment is uncertain and an 8dB betterment would not be achieved.	Construction stage GMI to provide the following: - Pre-completion acoustic testing results. - (If applicable) written confirmation of any failures rectified and re-testing prior to handover. - Confirm 'the use of an iKoustic MuteClip system, or equivalent acoustic hangers where applicable for separating floors in guest bedrooms, where a suspension system is required' (email request 13.04.22).	GMI
			1	0.76	D	REF 17 provides a baseline noise survey and assessment report. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract for acoustic testing. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria.		
			1	0.76	D	REFs 26g-i inc. provide acoustic reports which include recommendations for constructions to achieve given sound insulation levels. REF 38 provides an update on current status from the acoustician on the acoustic reports in REF 26 above. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. REF 54 provides an acoustic report which confirms the following: - Section 2 - Guest room party walls are likely to achieve a 3dB betterment on Bldg Regs Pt E subject to good workmanship. - Section 3 - Guest room party wall floors are likely to achieve a 3dB betterment on Bldg Regs Pt E subject to good workmanship and the use of an iKoustic MuteClip system, or equivalent acoustic hangers where a suspension system is required.		
			1	0.76	E	REF 55 provides a summary of Azymuth Acoustics (authors of report in REF 54 above) staff qualifications and professional memberships. REF 65 provides a CV for Dominic McCann of Azymuth Acoustics confirming he is an SQA. Dominic was the producer of the acoustic reports in REF 26g-i above. REF 66 provides the following written commitments from the principal contractor: - For separating floors in guest bedrooms, where a suspension system is required, confirm the use of an iKoustic MuteClip system, or equivalent acoustic hangers. - A written commitment to acoustic testing and remedial work (if required). One credit is signed off at design stage only. Two credits are improvement options at this stage and one credit is not achieved.		
Hea 06 Safety and security	Security of site and building	1. A Suitably Qualified Security Specialist (SQSS) conducts an evidence based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent), see compliance note where the refurbishment or fit-out zone comprises part of a larger building. 2. The SQSS develops a set of recommendations or solutions during or prior to Concept Design (RIBA Stage 2 or equivalent). These recommendations or solutions aim to ensure that the design of buildings, public and private car parks and public or amenity space are planned, designed and specified to address the issues identified in the preceding SNA. 3. The recommendations or solutions proposed by the SQSS are implemented (see CN5.2. Any deviation from those recommendations or solutions will need to be justified, documented and agreed in advance with a suitably qualified security specialist.	1	0.76	C	The project team confirmed that a 'Security Needs assessment' is being provided at RIBA Stage 2 via a Crime Impact Statement. Security recommendations will be implemented. REF 20 provides a Crime Impact Statement (CIS) from Greater Manchester Police Design for Security with Patrick Babb as the consultant. This meets the requirements for an SNA and makes recommendations to address the issues raised in the CIS. REF 23 provides an early stage Development Programme. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with LRW) for the implementation of the required security measures. CIS forwarded to GMI 05.11.21. REF 100 provides a ground floor drwg from the architect re-iterating the requirements of the CIS in REF 20 above for external doors and louvres. This credit is awaiting further design stage evidence.	Design stage LRW to provide drwgs/specs confirming implementation of security recommendations in the CIS (email request to GMI in BREEAM update 06.05.21). Construction stage LRW to provide as-built drwgs to confirm implementation of secure design features.	LRW
Subtotals			20	15.3				



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		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT		
Energy									
Ene 01 Reduction of energy use and carbon emissions		Up to fifteen credits - Whole building energy model (option 1) - For projects that want to gain recognition for improvements made at the whole building level, using whole building energy modelling National Calculation Methodology (NCM) compliant software. Bespoke Note: If the design team would prefer to assess both areas under the same energy model and follow CN6 'Extensions to existing buildings and newly constructed thermal elements'.	1	0.64	B	The project team confirmed the following: - A whole building SBEM calculation will be carried out therefore Option 1 will be pursued. - An EPR of at least 0.30 will be achieved. This includes pre-heat heat pump calorifier on the DHW. - An EPR of 0.36 is achievable at further cost. - Any improvements beyond this are improvement option at this stage with an EPR of at least 0.48 not achievable. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with MDA) for provision of EPCs. KBCN0574 'Energy modelling a change of use project' confirms ... "The energy model for the existing building in a change of use project should include the physical characteristics of the existing building but with the use class of the proposed refurbished building to enable a comparison to be made between the performances of the two buildings. Moreover, the existing building energy model needs to include the existing services as they were before the refurbishment. Where a particular system to be installed in the refurbished building is not present in the existing building, then the baseline system needs to meet the minimum requirements required to pass building regulations for it." REF 39 provides the pre & post-refurbishment/extension EPC INP files. REF 40 provides written confirmation from the M&E Engineer that the energy modelling to produce the pre & post-refurbishment/extension EPC INP files in REF 39 above complies with CN6. REF 41 provides the Ene01 outputs from the energy modelling in REFs 39 & 40 above. These confirm an EPR of 1 and 15 credits. Also that the development does not have zero CO2 emissions. Fifteen credits are signed off at design stage only.	Construction stage MDA/Gallant to provide the as-built EPC INP file.	MDA	Gallant
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
			1	0.64	B				
Ene 02 Energy monitoring	Sub-metering of major energy consuming systems	CREDIT MANDATORY FOR VERY GOOD 1. Energy metering systems are installed that enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems (see Methodology). 2. The energy consuming systems in buildings with a total useful floor area greater than 1,000m² are metered using an appropriate energy monitoring and management system. 3. The systems in smaller buildings are metered either with an energy monitoring and management system or with separate accessible energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system (see Relevant definitions). 4. The end energy consuming uses are identifiable to the building users, for example through labelling or data outputs.	1	0.64	B	The project team confirmed that relevant systems would be sub-metered and monitored via the BMS to meet BREEAM requirements. This includes gas metering to the DHW boiler and separate electrical sub-metering to lighting and small power by floorplate, lifts, space heating and cooling from the hybrid VRF and ventilation. All sub-meters would be connected to the BMS. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post contract (with MDA) for energy sub-metering/monitoring. REF 35 provides a ground floor domestics drwg confirming the location of the gas service entry point and meter location. REF 36 provides an LV schematic drwg confirming sub-metering/monitoring including the following: - Note 6 - Meters connected to BMS. - Separate sub-metering to lighting & power to basement and ground floor. - Separate sub-metering by floor plate to bedroom consumer units. - Separate sub-metering to Mech Control Panel, Signage/Ext Lighting, Grd fir kitchen, Sky Bar, Lifts, Plantroom, Coma & Beer Store. REF 64 provides an updated plantroom schematic drwg which confirms the provision of a Rahema Quinta 55 gas cooker in the ground floor kitchen - SUPERSEDED. BREEAM meeting 06.10.22 - No gas cooking. Gas supply to the building only feeds gas fired water heater. REF 84 provides an updated LV metering schematic drwg. REF 101 provides written confirmation from the principal contractor ... "a pulse meter has been installed for the gas supply". REF 104 provides a schedule from the MEP contractor together with relevant drwgs and calculations detailing energy monitoring to relevant systems. The BMS system description confirms the connection of the gas meters to the BMS. This credit is signed off at design stage only.	Construction stage Gallant to provide relevant as-fitted drwgs. SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	Gallant	SBL
Ene 03 External lighting		1. The building has been designed to operate without the need for external lighting (which includes on the building, signs and at entrances). OR alternatively, where the building does have external lighting, one credit can be awarded as follows: 2. The average initial luminous efficacy of the external light fittings within the construction zone is not less than 60 luminaire lumens per circuit Watt. 3. All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	1	0.64	C	The project team confirmed that external lighting will meet the required efficacies and be controlled to prevent operation during daylight hours. There are possible areas with intermittent pedestrian traffic to the rear Bow Lane elevation and if so, will have presence detection. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post contract (with MDA) for external lighting design. REF 27 provides the Particular Electrical Specification. Section 18 confirms ... "The external lighting shall comprise of perimeter building mounted LED bulkhead luminaires as indicated on the relevant drawing. The control of the building mounted external luminaires shall be via a photocell timeclock arrangement." REF 84 provides written confirmation from the MEP contractor that there is no external lighting in the scheme. BREEAM meeting 05.12.22 - There is external lighting to the balcony & Sky Bar. REF 103 provides written confirmation from the external signage provider: "the candela rating would be between 250-3000Cd/m², however the signs can be dimmed if required using the Dali control gear -- "Signage supplied with dali drivers to be connected into existing lighting control system. System can be used to control hours of illumination and brightness". Note: DALI is stands for Digital Addressable Lighting Interface. It is a lighting interface system that allows lighting to use a digital signal for more precise and flexible control. REF 104 provides written confirmation from the MEP contractor that there is no external lighting (other than sign lighting). This credit is awaiting further design stage evidence.	Design stage Signage lighting only - GMI to provide spec/drwgs to confirm the following (email request 12.12.22 & 25.08.23): - Average initial luminous efficacy of the external light fittings. Construction stage GMI to provide as-fitted external signage lighting drwgs. SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	GMI	SBL



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		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
Ene 04 Low carbon design	Passive design analysis	1. The first credit within issue Hea 04 Thermal comfort has been achieved to demonstrate the building design can deliver appropriate thermal comfort levels in occupied spaces. 2. The project team carries out an analysis of the existing building fabric, form, site location and outline scheme design to influence decisions made during the Concept Design stage (RIBA Stage 2 or equivalent) and identifies opportunities for the implementation of passive design solutions and retrofit measures that reduce demands for energy consuming building services (see compliance note CN5). 3. The building uses passive design measures to reduce the total heating, cooling, mechanical ventilation and lighting loads and energy consumption in line with the findings of the passive design analysis and the analysis demonstrates a meaningful reduction in the total energy demand as a result (see compliance note CN6.12).	1	0.64	E	The project team confirmed the following: - No Energy Statement required for planning. - It is uncertain whether a passive design analysis would be provided pre-planning. GMI BREEAM meeting 04.02.21 - Project team confirmed that a passive design study was not carried out at RIBA Stage 2. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
	Free cooling	4. The passive design analysis credit is achieved. 5. The passive design analysis carried out under criterion 2 includes an analysis of free cooling and identifies opportunities for the implementation of free cooling solutions. 6. The building uses ANY of the free cooling strategies listed in compliance note CN6.1 to reduce the cooling energy demand, i.e. it does not use active cooling.	1	0.64	E	The project team confirmed that conventional mechanical cooling will be specified. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
Ene 04 Low carbon design	Low zero carbon feasibility study	7. A feasibility study has been carried out by the completion of the Concept Design stage (RIBA Stage 2 or equivalent) by an energy specialist (see Relevant definitions) to establish the most appropriate recognised local (on-site or near-site) low or zero carbon (LZC) energy source(s) for the building/development (see compliance note CN6.3). 8. A local LZC technology/technologies has/have been specified for the building/development in line with the recommendations of this feasibility study and this method of supply results in a meaningful reduction in regulated carbon dioxide (CO2) emissions (see compliance note CN6.12).	1	0.64	C	The project team confirmed the following: - No Energy Statement required for planning. - ASHPs will provide a substantial reduction in CO2 from LZC. - AN LZC feasibility study will be provided. REF 23 provides an early stage Development Programme. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with MDA) for provision of LZC technologies. REF 28 provides the Particular Mechanical Specification. Section 14.03 provides details of the VRF and H-VRF installation with air source heat pumps. REF 34 provides an LZC study report detailing all relevant parameters apart from % reduction in CO2 from LZC and payback period. REF 63 provides a roof plant layout drwg. The Air Conditioning Schedule confirms that the outdoor VRF & H-VRF units are all heat pump outdoor units. REF 84 provides written confirmation from the MEP contractor - "All external units are air source heat pumps". REF 87 provides the following written confirmation from the M&E Engineer - "The design has been developed with air source heat pumps as they are the most efficient and cost effective method of providing both heating and cooling to this type of accommodation. The application of air source heat pumps is not dictated by a requirement to reduce carbon emissions or to provide a payback for carbon reduction." This credit is awaiting further design stage evidence.	Design stage MDA to provide the following: - Addendum to REF 34 report to confirm % reduction in CO2 and payback period from the ASHPs. Construction stage Gallant to provide as-built dwrgs for the ASHPs. SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	MDA Gallant SBL
Ene 05 Energy efficient cold storage	Refrigeration energy consumption	1. The refrigeration system, its controls and components have been designed, installed and commissioned as follows: a. In accordance with the Code of Conduct for carbon reduction in the refrigeration retail sector1 (see Other information) and BS EN 378-2 Refrigeration systems and heat pumps - Safety and environmental requirements. b. Using robust and tested refrigeration systems/components, normally defined as those included on the Enhanced Capital Allowance (ECA) Energy Technology Product List (ETPL)2 or an equivalent list (see CN6.2 for a list of components). 2. The refrigeration plant has been commissioned to comply with the criteria for commissioning outlined in BREEAM issue Man 04 Commissioning and handover.	1	0.64	B	The project team confirmed the following: - There will be a walk-in cold store as part of the catering refrigeration together with some standalone large fridge units. - It is uncertain whether the first credit criteria would be met. REF 58 provides BRE's response to a tech query on the scope of credit Ene05. REF 72 provides a layout drwg for the basement cold storage. REF 73 provides layout dwrgs for the catering installation and bar. REF 75 provides written confirmation from the catering specialist that "... The cold rooms are integral to the building; i.e. the store is specifically designed for the Malmison hotel". REF 90 provides a schedule, commissioning schedule with supporting documents to confirm the following: - Compliance with Code of Conduct for carbon reduction in the refrigeration retail sector and BS EN 378-2. - Refrigeration systems/components on the Enhanced Capital Allowance (ECA) Energy Technology Product List (ETPL). - Commissioned in accordance with relevant standards. This credit is signed off at design stage only.	Construction stage GMI to provide as-fitted refrigeration dwrgs.	GMI



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Ene 05 Energy efficient cold storage	Indirect greenhouse gas emissions	3. Criteria 1 and 2 have been achieved. 4. The installed refrigeration system demonstrates a saving in indirect greenhouse gas emissions (CO₂ eq.) over the course of its operational life. With reference to The Carbon Trust Refrigeration Road Map3, this can be demonstrated through specification of technologies described in CO2 emissions saving options available when designing a new store/retail concept that delivers savings in comparison with the 'baseline' building. Refer to the Methodology section for further information.	1	0.64	B	The project team confirmed that it is unlikely that the second credit criteria will be met. REF 72 provides a layout drwg for the basement cold storage. REF 73 provides layout drwgs for the catering installation and bar. REF 90 provides a schedule, commissioning schedule with supporting documents to confirm the following: - The installed refrigeration system demonstrates a saving in greenhouse gas emissions from energy use (CO2 eq.) over the course of its operational life with demonstration via the The Carbon Trust Refrigeration Road Map. This credit is signed off at design stage only.		
Ene 06 Energy efficient transportation systems	Energy consumption	1. Where new lifts, escalators and/or moving walks (transportation types) are specified within refurbishment works: a. 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. b. The energy consumption has been estimated 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/or Part 3 - Energy calculation and classification for escalators and moving walks, for one of the following: i. At least two types of system (for each transportation type required); OR ii. An arrangement of systems (e.g. for lifts, hydraulic, traction, machine room-less lift (MRL)); OR iii. A system strategy which is 'fit for purpose'. c. The use of regenerative drives should be considered, subject to the requirements in CN6. d. The transportation system with the lowest energy consumption is specified.	1	0.64	B	The project team confirmed that a suitable demand and energy consumption study would be carried out with the lowest energy solution adopted. The required energy efficiency lift features would be specified. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract for provision of lift information.	Construction stage GMI to provide as-fitted lift drwgs.	GMI
Ene 06 Energy efficient transportation systems	Energy efficient features	2. Criterion 1 is achieved for newly specified lifts. Lifts 3. For each newly specified lift, the following three energy efficient features are specified and for existing lifts, at least two of the following energy efficient features are specified: a. The lifts operate in a standby condition during off-peak periods. For example the power side of the lift controller and other operating equipment such as lift car lighting, user displays and ventilation fans switch off when the lift has been idle for a prescribed length of time. b. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of > 55 lamp lumens/circuit Watt. c. The lift uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. 4. Where the use of regenerative drives is demonstrated to save energy, they are specified.	1	0.64	B	REF 70 provides the following from Otis as the lift provider: - Demand study - Spec confirming lift study and specification to meet BREEAM criteria. Three credits are signed off at design stage only.		
Ene 08 Energy efficient equipment		1. Identify the building's unregulated energy consuming loads and estimate their contribution to the total annual unregulated energy consumption of the building, assuming a typical/standard specification. 2. Identify the systems and/or processes that use a significant proportion of the total annual unregulated energy consumption of the development and its operation. 3. Demonstrate a meaningful reduction in the total annual unregulated energy consumption of the building. See Table 32. Table 32 contains solutions deemed to satisfy compliance for common examples of significant contributors to unregulated energy consumption, for a number of different building types/functions.	1	0.64	E	The project team confirmed the following: - A - IT equipment will be Energy Star rated. - D - There will be a server room. It is uncertain whether the server equipment/room will meet the EU Code of Conduct on Data Centres but room temperature will be no less than 24oC. - F - White goods will meet the required EU Energy Label ratings. - H- Uncertain whether the catering installation will meet full BREEAM criteria. - J - Overhead warm air heaters will meet BREEAM criteria. REF 73 provides layout drwgs for the catering installation and bar. Two credits are not achieved.	No further design or construction stage actions or evidence required.	N/A
		Subtotals	27	17.4				



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Transport								
Tra 01 Sustainable transport solutions	Accessibility Index & Alternative transport measures	Up to five credits - Accessibility Index 1. The public transport Accessibility Index (AI) for the assessed building is calculated and BREEAM credits awarded according to the building type. For Accessibility Index benchmarks see Table 34 in the Checklists and tables section. 2. The Accessibility Index is determined by entering the following information into the BREEAM Tra 01 calculator: a. The distance (m) from the main building entrance to each compliant public transport node b. The public transport type(s) serving the compliant node, e.g. bus or rail c. The average number of services stopping per hour at each compliant node during the operating hours of the building for a typical day (see compliance notes and Table 36 in the Additional information section).	1	0.75	A	The following are assumed at this stage: - As an 'Other Bldg Type 2' all five credits are available for the AI. - The location in the centre of Manchester will have an AI > 18. REF 46 provides a local map with transport nodes marked and safe pedestrian routes to the development. REF 47 provide service timetables from the transport nodes in REF 46 above. REF 48 provides a schedule detailing the transport nodes and relevant services together with their average service frequency. REF 49 provides a copy of the Tra01 Calculator confirming an AI > 18. Five credits are fully signed off at construction stage.	No further design or construction stage actions or evidence required.	N/A
			1	0.75	A			
			1	0.75	A			
			1	0.75	A			
			1	0.75	A			
		Up to three credits - Alternative transport measures 3. Where alternative transport measures in Table 35 are provided, credits can be awarded based upon the number of measures implemented as detailed in Table 33. Bespoke Notes: For Alternative Transport Measure B, the building type is Other Bldg Type 2.						
Tra 02 Proximity to amenities		1. Where a building is located within close proximity of, and accessible to, local amenities which are likely to be frequently required and used by building occupants, as outlined in Table 37. Bespoke Note: The building is defined as Other Bldg Type 2 (Type 6).	1	0.75	B	It is assumed that the location in the centre of Manchester will have the required amenities close to the new hotel for at least the first credit. REF 50 provides a local map with relevant amenities marked and safe pedestrian routes to the development. This credit is signed off at design stage only.	Construction stage SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	SBL
Tra 03 Cyclist facilities	Cycle storage	1. Compliant cycle storage spaces that meet the minimum levels set out in Table 38 (see Checklists and tables) are installed. Bespoke Note: The building is defined as Other Bldg Type 2 (as Tra01 above).	1	0.75	B	The project team confirmed the following: - 70 beds therefore 7 cycle spaces required. - 20 staff therefore 2 cycle spaces required. - Therefore a total of 9 cycle spaces required x 50% (for Tra01 above) = 5 covered cycle spaces. - Five cycle spaces (likely hanging racks) will be provided in the bin store adjacent to the rear entrance. REF 4 provides an area schedule confirming GIA of 3849.6m2. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with LRW) for provision of cycle storage information. REF 26 provides extracts from the Employer's Requirements. The contents list in REF 26a confirms the hotel has 70 bedrooms. REF 30 provides updated floor plans basement to 2nd and 6th, 7th & roof plans. These confirm the cycle store, located in the basement with 5 No. cycle racks and 5 No. lockers. Access to the ground floor rear double doors to Bow Lane via the adjacent service lift. REF 56 provides written confirmation from the hotel operator that there will be no more than 30 hotel staff in the building at any one time. REF 79 provides a Basement GA Plan confirming provision of 5 No. wall-mounted BikeDock Solutions Wall Dock cycle racks. REF 80 provides manufacturer's literature for the BikeDock Solutions Wall Dock cycle racks. REF 100 provides a ground floor plan drwg from the architect showing the proposed signage directing building users to the basement cycle storage & facilities. This credit is signed off at design stage only.	Construction stage SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	SBL
	Cyclist facilities	2. Criterion 1 has been achieved. 3. At least two of the following types of compliant cyclist facilities have been provided for all building users (including pupils where appropriate to the building type) - see Relevant definitions for the scope of each compliant cyclist facility: a. Showers b. Changing facilities c. Lockers d. Drying spaces. Bespoke Notes: The unit of measure for visitors or beds does not apply to transient visitors where the visitor typically resides for less than one month.	1	0.75	B	The project team confirmed that a single shower cubicle with changing space will be provided for staff in the basement. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with LRW) for provision of cyclist facilities information. REF 30 provides updated floor plans basement to 2nd and 6th, 7th & roof plans. These confirm the following: - Cycle store located in the basement with 5 No. lockers. - Staff room with shower located in the basement. REF 79 provides a Basement GA Plan confirming provision of the following: - 1 No. accessible shower (not co-located with toilet). - Changing room with 39 No. lockers. REF 100 provides a basement floor plan drwg from the architect showing the 39 lockers to Staff/Canteen Changing Room are 3 HIGH: O/A 1780mm H x 300mm W x 460mm D. This credit is signed off at design stage only.	Construction stage SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	SBL

Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
Tr05	Travel plan	1. A travel plan has been developed as part of the feasibility and design stages. 2. A site specific travel assessment/statement has been undertaken to ensure the travel plan is structured to meet the needs of the particular site and covers the following (as a minimum): a. Where relevant, existing travel patterns and opinions of existing building or site users towards cycling and walking so that constraints and opportunities can be identified. b. Travel patterns and transport impact of future building users. c. Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children). d. Disabled access (accounting for varying levels of disability and visual impairment). e. Public transport links serving the site. f. Current facilities for cyclists. 3. The travel plan includes a package of measures to encourage the use of sustainable modes of transport and movement of people and goods during the building's operation and use. 4. If the occupier is known, they must be involved in the development of the travel plan and they must confirm that the travel plan will be implemented post refurbishment or fit-out and be supported by the building's management in operation.	1	0.75	C	The project team confirmed that a Transport Assessment is being provided for planning and a draft Travel Plan would be provided to meet full BREEAM requirements. Malmison will be involved in the development of the Travel Plan. REF 18 provides a Transport Statement which meets full BREEAM criteria apart from the following: - Visitors who may be accompanied by young children. - Disabled access to include varying levels of disability and visual impairment. REF 19 provides a Framework Travel Plan. Section 7 details the sustainable travel design measures as follows: - 7.4.1 & 7.6.4 - Provision of safe and secure cycle parking. - 7.5.2 - No new car parking would be provided as part of the development proposals. - 7.6.2 - Staff travel plan notice board within main staff common rooms / changing areas including public transport information. - 7.6.4 - Provision of cyclist facilities (lockers, showers). REF 23 provides an early stage Development Programme. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with LRW) for provision of information re Travel Plan design measures. Cycle racks and facilities as Tr03 above. BREEAM Meeting 03.11.22 - Project team confirmed that an addendum would be provided to the Transport Statement. REF 100 provides a site plan from the architect confirming no new parking for the development. This credit is awaiting further design stage evidence.	Design stage Spring to provide a revised Transport Statement or addendum to include the following will be provided (latest is NB email 09.02.21, SBL email request 09.03.21 - SM issue of original Transport Statement to all 03.11.22): - Visitors who may be accompanied by young children. - Disabled access to include varying levels of disability and visual impairment. GM/LRW to provide dwrgs/specs to <u>confirming details</u> of the staff travel plan notice board within main staff common rooms / changing areas including public transport information. Spring to provide the following: - Correspondence confirming the involvement of Malmison in the development of the Travel Plan (email request 25.02.20). A letter of confirmation on behalf of client/occupier (TBC) re implementation (<u>SBL to provide template</u>). Construction stage SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	Spring GMI LRW SBL
		Subtotals	9	6.7				

Wat 01 Water consumption	ONE CREDIT MANDATORY FOR VERY GOOD			1	0.75	B	The project team confirmed the following: - Rainwater harvesting and greywater recycling are not provided. - No urinals in the development. - Small number of baths provided in the development. - WCs - Likely 6/4 lit DF = 4.5 lit EFV. - WHBs - Likely 6 lit/min. - Showers - Likely 8 lit/min.	Construction stage Gallant/GMI to provide an as-installed sanitaryware schedule. SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	GMI Gallant SBL
	1. An assessment of the efficiency of newly specified domestic water-consuming components and (where relevant) measures specified to retrofit existing devices is undertaken using the BREEAM Wat 01 calculator, including all fittings applicable to the project type as detailed in Table 42 . Where there are no fittings within the scope of refurbishment or fit-out works, or only minimal water-consuming fittings present or specified, refer to compliance notes 5 or 6 to determine how this issue should be assessed.			1	0.75	B	The Alternative Wat01 Calculator likely to give overall Level 2 performance. REF 12 provides floor plans basement to 2nd and 6th, 7th & roof plans. These confirm the location of sanitaryware in the development.		
	2. The water consumption (litres/person/day) for the assessed building is compared against a baseline performance and BREEAM credits awarded based upon Table 41 .						BREEAM Meeting 21.02.20 - BHA/Rayner Rowen confirmed that Konzept will be responsible for provision of information re sanitary spec.		
	3. The efficiency of the following 'domestic scale' water-consuming components must be included in the assessment (where specified/relevant to project type as defined by Table 42):			1	0.75	E	REF 51 provides sanitaryware schedules (from LRW) for the guestrooms, public area and BOH areas. BREEAM meeting 27.07.21 - GMI confirmed that LRW are specifying sanitaryware for GMI and the schedules in REF 51 above are the latest spec.		
	a. WCs b. Urinals c. Taps (wash hand basins and where specified kitchen taps and waste disposal unit) d. Showers e. Baths f. Dishwashers (domestic and commercial sized) g. Washing machine (domestic and commercial or industrial sized)			1	0.75	E	REF 79 provides a Basement GA Plan confirming the location and numbers of sanitaryware to these floors. REF 88 provides written confirmation from the MEP contractor of the sanitaryware flow rates.		
	The BREEAM Wat 01 calculator defines the building types and activity areas for which the above components must be assessed. 4. Where a greywater and/or rainwater system is specified, its yield (l/person/day) is used to off-set non-potable water demand from components that would otherwise be supplied using potable water.						BREEAM meeting 12.12.22 - GMI confirmed there are no domestic washing machines or dishwashers in the base-build development.		
	5. Any greywater systems must be specified and installed in compliance with BS 8525-1:2010 Greywater Systems - Part 1 Code of Practice1. Any rainwater systems must be specified and installed in compliance with BS 8515:2009 Rainwater Harvesting Systems - Code of practice2. 6. Healthcare and prison buildings: refer to the relevant Compliance note for additional criteria regarding the specification of particular water-consuming component controls. Bespoke Note: Assess this Issue using the Other building type Wat 01 calculator. This follows the Alternative calculation methodology.			1	0.75	E	Catering REF 73 provides layout drwgs for the catering installation and bar. REF 77 provides a schedule from the catering specialist detailing flow rates of all taps and dishwasher in the catering installation. REF 78 provides manufacturer's literature for the Classeq P500A -D22 dishwasher confirming one rack, with 3.25 litres/cycle therefore 3.25 litres per rack water consumption. REF 89 provides manufacturer's literature for the water consuming appliances/sanitaryware in the ground and 7th floor kitchen installations. REF 96 provides the Wat01 Calculator confirming a component score of 2.51. Two credits are signed off at design stage only. Three credits are not achieved.		

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Table 3 - BREEAM Credit Assessment

Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
	Wat 02 Water monitoring	CRITERIA 1 MANDATORY FOR VERY GOOD 1. The specification of a water meter on the mains water supply to each building; this includes instances where water is supplied via a borehole or other private source. 2. Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, are either fitted with easily accessible sub-meters or have water monitoring equipment integral to the plant or area (see Compliance notes). 3. Each meter (main and sub) has a pulsed or other open protocol communication output to enable connection to an appropriate utility monitoring and management system, e.g. a building management system (BMS), for the monitoring of water consumption (see Relevant definitions). 4. If the refurbishment zone is within a site that has an existing BMS, managed by the same occupier/owner (as the space undergoing refurbishment or fit-out), the pulsed/digital water meter(s) for the refurbishment or fit-out zone must be connected to the existing BMS. 5. If the refurbishment or fit-out zone is within a building that is leasehold, the pulsed/digital water meter(s) for the refurbishment or fit-out zone must be connected to the incoming water supply for water using equipment in tenanted areas (see compliance note).	1	0.75	B	The project team confirmed that the following: - There will be a utility meter in the street and also a water meter on the rising main inside the building (Criterion 1) - Separate water sub-metering of the catering area will be provided. - All meters/sub-meters will have pulsed outputs and be connected to the BMS. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with MDA) for provision of information re water metering/monitoring. REF 28 provides the Particular Mechanical Specification: - Section 15.01 confirms ... "A new incoming mains cold water supply from the meter on the site boundary will be routed to the plantroom. On entry to the plantroom an internal fit secondary meter complete with pulsed output will be provided to allow major leak detection of the incoming service." - Section 18.18 confirms the provision of meters on the hot and cold water supplies to GF and Sky Bar kitchens with monitoring by the Building Energy Management (BEMS) and use identifiable through labelling or data outputs. REF 31 provides a plantroom schematic drwg which confirms the following: - Boundary water meter with connection to the BMS. - Water meter on the rising main with connection to the BMS. REF 35 provides a ground floor domestics drwg confirming the provision of a metered supply to the ground floor kitchens. REF 84 provides a water services layout drwg confirming the provision of water meters linked to BMS on the hot & cold water supplies to the ground and 7th floor kitchens. This credit is signed off at design stage only.	Construction stage Gallant to provide relevant as-fitted drwgs. SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	Gallant SBL
	Wat 03 Water leak detection	Leak detection system 1. 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. The leak detection system must be: a. A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks is installed. b. Activated when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time. c. Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods. d. Programmable to suit the owner/occupiers' water consumption criteria. e. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.	1	0.75	C	The project team confirmed the following: - No external works in the development. Façade up to the red line boundary therefore credit requires internal leak detection only. - There will be a utility meter in the street and also a water meter on the rising main inside the building. - The meter on the rising main will be connected to the BMS and will meet BREEAM criteria. REF 10 provides a site plan confirming that there are no external works associated with the development and therefore internal leak detection only is required. REF 11 provides a ground floor licensing plan confirming the limit of the hotel. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with MDA) for provision of information re major water leak detection. REF 28 provides the Particular Mechanical Specification. Section 15.01 confirms ... "A new incoming mains cold water supply from the meter on the site boundary will be routed to the plantroom. On entry to the plantroom an internal fit secondary meter complete with pulsed output will be provided to allow major leak detection of the incoming service." REF 31 provides a plantroom schematic drwg which confirms the following: - Boundary water meter with connection to the BMS. - Water meter on the rising main with connection to the BMS. REF 84 details the uncertainties around the water supply and metering arrangements. This credit is awaiting further design stage evidence.	Design stage Gallant/GMI to provide drwgs/spec/manufacturers product literature to confirm the following (email request to GMI 17.11.22): - Location of the utility water meter. - Whether the utility meter has a pulsed output. - Details of the proposed major water leak detection system. Construction stage Gallant to provide relevant as-fitted drwgs. SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	Gallant GMI SBL
	Flow control devices	2. Flow control devices that regulate the supply of water to each WC area/facility according to demand are installed (and therefore minimise water leaks and wastage from sanitary fittings).	1	0.75	E	The project team confirmed that flow control devices would be provided to all en-suites (70 No.). This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
		Subtotals	8	6.0				



Table 3 - BREEAM Credit Assessment

Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
Materials								
Mat 01 Life cycle impacts		Refurbished areas Up to six credits (option 1): Project lifecycle assessment study. OR Up to four credits (option 2): Elemental assessment of environmental performance information.	1	1.08	C	The project team confirmed the following: Refurbished areas - LCA assessment to be carried out to maximise credit score New-build extension Green Guide ratings are likely to be as follows: Ext. walls - Brick or natural stone with Metsec or similar inner leaf - GG A+ to B Roof - Metal deck with SPM - GG A+ Upper floors - Insitu RC on permanent metal deck - GG A+ Int. walls - Metal stud and plasterboard - GG A or B Floor finishes - Carpets, vinyl, ceramic tiles - GG A or B. LCA assessment to be carried out to maximise credit score. REF 22 provides written confirmation from BRE that only new materials are to be considered in the LCA study. Six credits are achieved subject to evidence.	Design stage LRW/ROC to provide spec/dwgs to confirm spec and areas of newly specified materials in the development (email request to GMI in BREEAM update 06.05.21 & to LRW 14.09.21) - SBL to review BK & CM emails 13-26.09.21. SBL to undertake LCA study. Construction stage GMI to provide written confirmation of any changes to design stage evidence.	LRW ROC SBL GMI
			1	1.08	C			
		New-build areas 1. BREEAM awards credits on the basis of the building's quantified environmental life cycle impact through assessment of the main building elements, as set out in Table 38. 2. Credits are awarded on the basis of the total number of points achieved, as set out in Table 39, and calculated using the BREEAM Mat 01 calculator. This point's score is based on the Green Guide rating(s) achieved for the specifications that make-up the main building elements (as in Table 38). Note: Where an independently verified third party Environmental Product Declaration (EPD), covering part of or the whole life cycle, is available for a material or product that forms part of an assessed building element, this can be used to increase the contribution of that element to the building's Mat 01 performance (refer to Mat 01 Life cycle impacts in the Methodology section for more details). 3. Life cycle greenhouse gas emissions (kgCO2eq.) for each element are also required to be reported based on a 60-year building life. Where specific data is not available for a product or element, generic data should be used. Generic data can be obtained from the online Green Guide for each element and must be entered in to the BREEAM Mat 01 calculator. Bespoke Note: The BREEAM RFO manual should be used for the refurbishment area and the BREEAM NC manual should be used for the new build. The tool will perform an area weighting to determine the number of credits achieved for the project. ALTERNATIVELY The whole project can be assessed under the BREEAM RFO criteria. Only Option 1: Project Lifecycle Assessment Study is available.	1	1.08	C			
			1	1.08	C			
			1	1.08	C			
			1	1.08	C			
Mat 03 Responsible sourcing of materials	Pre-requisite	CRITERIA 1 MANDATORY FOR VERY GOOD 1. All timber and timber-based products used on the project is Legally harvested and traded timber (see Relevant definitions). Note: a. It is a minimum requirement for achieving a BREEAM rating (for any rating level) that compliance with criterion 1 is confirmed. b. For other materials there are no pre-requisite requirements at this stage.	0	0.00		The project team confirmed that the contractor will be required to procure all timber and timber-based products on the project from 'legally harvested and traded timber' sources. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. SBL emailed Materials Tracker 05.11.21. The pre-requisite requirements are signed off at design stage only.	Construction stage GMI to provide updated Materials Tracker and FSC/PEFC certs for any timber in the permanent works (email request 05.11.21).	GMI
	Sustainable procurement plan	3. The principal contractor sources materials for the project in accordance with a documented sustainable procurement plan (see the Relevant definitions in the Additional information section).	1	1.08	C	The project team confirmed that the contractor will be required to provide a sustainable procurement plan and source materials accordingly. SBL emailed RR an SPP template 04.02.20 and to GMI 02.07.21 & 05.11.21. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. REF 74 provides a copy of GMI's corporate Sustainable Procurement Plan. This credit is awaiting further design stage evidence.	Design stage GMI to provide an addendum to the sustainable procurement plan to address shortfalls as SBL email feedback 06.10.22 & 30.11.22. Construction stage GMI to provide written summary of the implementation of the sustainable procurement plan.	GMI



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		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT		
Mat 03 Responsible sourcing of materials	Responsible sourcing of materials (RSM)	3. One credit can be awarded where at least three of the material types listed in Table 53 'Material categories' has been responsibly sourced from one of the responsible sourcing schemes recognised by BREEAM as detailed in Guidance Note 18. 4. Up to three of the available RSM credits (refer to Table 51) can be awarded where the applicable building materials (refer to Table 53) are responsibly sourced in accordance with the BREEAM methodology, as defined in steps 1 to 2 in the Mat 03 Responsible sourcing of materials.	1	1.08	C	The project team confirmed the following: - With the high degree of reuse in the refurbished areas, these elements/materials will score highly. - Therefore, overall at least 36% of the available points will be achieved with any further improvements improvement option at this stage.	Design stage LRW/ROC to provide spec/dwgs to confirm spec and areas of newly specified materials in each building element (email request to LRW 14.09.21). Gallant to confirm total quants of metal and plastic in the bdg services installation. GMI to provide updated Materials Tracker and responsible sourcing certification for relevant materials (email request 05.11.21 & 26.05.22). SBL to provide the Mat03 Calculator. Construction stage GMI to provide written confirmation of any changes to design stage evidence.	LRW ROC Gallant	GMI SBL
			1	1.08	C	BREEAM Meeting 21.01.20 - The project team confirmed that one credit only is likely to be achieved. 'Reused' materials does not include those re-used insitu.			
			1	1.08	E	BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that the 2nd credit will be achieved. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Rayner Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. Two credits are awaiting further design stage evidence. One credit is not achieved.			
Mat 04 Insulation	Embodied Impact	1. Any new insulation specified for use within the following building elements must be assessed: a. External walls b. Ground floor c. Roof d. Building services. 2. The Insulation Index for the building fabric and services insulation is the same as or greater than 2.5. See the Mat 04 Insulation section for a description of calculating the Insulation Index.	1	1.08	B	The project team confirmed the following: - No underfloor insulation in the existing construction. Confirmation is required whether the extension will have underfloor insulation. - Unlikely to be significant quantities of insulation in the existing external walls. - Overall, insulation materials will have an Insulation Index > 2.5. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with LRW/MDA) for provision of information re insulation. Fabric REF 32 provides the NBS Specification: - H92 CI 776 confirms 200mm thick Rockwool Duostab to the rainscreen cladding. - H92 CI 776A confirms Rockwool RWA45 in the stud backing wall to the rainscreen cladding. - J31 CI110A & 340A confirm IKO Enertherm XPS to the inverted roof. - J42 CI110A confirms tapered high performance rigid thermostat insulation to warm deck lift overrun. - F30 CI150A confirms Rockwool batts, full fill cavity insulation to masonry walls. REF 33 provides manufacturer's literature for IKO Enertherm insulation confirming GG A rating. REF 91 provides a schedule detailing fabric insulation. REF 92 provides manufacturer's literature for the fabric insulation in REF 91 above. REF 94 provides manufacturer's written confirmation of various Rockwool insulation details. Services REF 28 provides the Particular Mechanical Specification. Section 23 provides details of the proposed building services insulation. REF 86 provides a schedule together with manufacturer's literature confirming the spec, relevant parameters and volumes of the building services insulation. REF 93 provides the Mat04 Calculator confirming Insulation Index of 2.67. This credit is signed off at design stage only.	Construction stage GMI/Gallant to provide written confirmation of any changes to design stage evidence.	GMI	Gallant
Mat 05 Designing for durability and resilience		Protecting vulnerable parts of the building from damage 1. The building incorporates suitable durability and protection measures or designed features/solutions to prevent damage to vulnerable parts of the internal and external building and landscaping elements. This must include, but is not necessarily limited to: a. Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc.). b. Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. c. Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building façade for all car parking areas and within 2m for all delivery areas. Protecting exposed parts of the building from material degradation 2. Environmental factors have been identified that are relevant to the site location (see Table 58) 3. Existing applicable building elements that are exposed to any relevant environmental factors have been identified (see Table 58) 4. Existing applicable building elements (see Table 58) have been surveyed have been assessed to identify impacts of material degradation effects including an assessment to grade the severity of any degradation effects. Design and specification measures have been developed to repair and protect existing elements according to the severity of any degradation affects, to limit degradation. Where it is not feasible to implement measures to limit material degradation for existing elements, justification should be provided. 5. Newly specified materials or newly constructed elements (e.g. a new external wall) within the scope of refurbishment or fit-out works incorporate appropriate design and specification measures to limit material degradation due to environmental factors (See Mat 05 Designing for durability and resilience).	1	1.08	C	The project team confirmed the following: - Vulnerable parts inside the building will be suitably protected. - An analysis could be undertaken and protection provided to exposed parts of the building from material degradation. SBL email brief 21.02.20, forwarded 23.08.23. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with LRW/ROC) for provision of information re protection/resilience. This credit is awaiting further design stage evidence.	Design stage GMI/LRW/ROC to provide dwgs/specs/written statement(s) detailing the following (email request 21.02.20 & 27.07.21 & 14.09.21 & 23.08.23): - Vulnerable parts of the building and specified protection measures. - Parts of the building subject to material degradation and measures specified to limit this degradation. - Manufacturer's literature to support the above claims for protection/limiting degradation. Construction stage LRW to provide as-built dwgs. SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	GMI LRW	ROC
								SBL	



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Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
	Mat 06 Material efficiency	1. Opportunities have been identified, and appropriate measures investigated and implemented within the scope of refurbishment or fit-out works, to optimise the use of materials through building design, procurement, refurbishment, maintenance and end of life (see examples in Table 59 and Table 60, in the Additional Information section). 2. The above is carried out by the design/construction team in consultation with the relevant parties (see CN3) at each of the following RIBA stages: a. Preparation and Brief b. Concept Design c. Developed Design d. Technical Design e. Construction.	1	1.08	E	The project team confirmed the following: - Very limited consideration of specific material efficiency in the project early stages. - It is uncertain whether the criteria in Tables 59 & 60 is achievable. BREEAM Meeting 21.01.20 - The project team confirmed that this credit would not be achieved. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
		Subtotals	13	14.0				
Waste								
Wst 01 Construction waste management	Pre-refurbishment audit	1. The client shall ensure that a pre-refurbishment audit of all existing buildings, structures or hard surfaces within the scope of the refurbishment or fit-out zone is completed. The requirements for carrying out an appropriate pre-refurbishment audit are: a. The audit should be carried out at the Concept Design Stage (equivalent to RIBA stage 2) prior to strip-out or demolition works in order to use the audit results to guide the design, consideration of materials that can be reused, and to set targets for waste management and ensure all contractors are engaged in the process of maximising high grade reuse and recycling opportunities. b. The audit should be carried out by a competent person (see Relevant Definitions) who is independent of the project, has appropriate knowledge of buildings, waste and options for the reuse and recycling of different waste streams c. Actual waste arisings and waste management routes used should be compared with those forecast from the audit and barriers to achieving targets should be investigated. d. The audit must be referenced in the resource management plan and cover: d. Identification and quantification of the key materials where present on the project (see Table 66). e. Potential applications and any related issues for the reuse and recycling of the key materials in accordance with the waste hierarchy. f. Identification of local reproducers or recyclers for recycling of materials g. Identification of overall recycling rate for all key materials h. Identification of reuse targets where appropriate. i. Identification of overall landfill diversion rate for all key materials. Bespoke Note - The pre-refurbishment audit credit is applicable to refurbished areas only.	1	0.70	C	The project team confirmed that a pre-refurbishment audit could be carried out as a cost option. SBL emailed brief 05.04.19 and to Handleys 10.04.19. Also to RR 21.01.20. REF 2 provides a copy of Handley's SWMP/Pre-demo audit which confirms compliance with BREEAM criteria. REF 6 provides measured survey drawings of the existing pre-development building. REF 21 confirms that the scope of the pre-demo audit in REF 2 above covers only Handley's initial soft-strip. REF 23 provides an early stage Development Programme. BREEAM Meeting 21.02.20 - BHA/Rayner Rowen confirmed that BHA will be responsible for pre-demo audit for the two ground floor retail units and RR will be responsible post-contract for provision of pre-demo audit for the demolition to the rear of the building (all floors). SBL emailed pre-demo audit brief & templates to GMI (for main remaining strip-out & demo) and Spring (for 2 No. GF retail units) 29.01.21 & 02.02.21 respectively. REF 44 provides a copy of the pre-demolition audit for the two existing ground floor retail units. REF 45 provides a waste reconciliation between forecast (in REF 44 above) and actual demolition waste arising from the 2 No. ground floor retail units. REF 97 provides a SWMP from Inglenorth as the demolition contractor to GMI as principal contractor. This confirms quantities of each waste stream and disposal/recycling sites. This credit is awaiting further design stage evidence.	Design stage only GMI to provide the following for main remaining strip-out & demo: - Pre-demo/refurb audit covering the remaining demolition (SBL email request 29.01.21. Further email request in BREEAM update 06.05.21 & 02.07.21 & 05.11.21). - Copy of pre-demo audit in the SWMP. - Comparison of actual demo waste arisings with forecast (including Handley's initial strip-out waste and Inglenorth main demo contract). GMI to provide the following for 2 No. GF retail units (email request 09.03.21): - Copy of pre-demo audits in the main SWMP.	GMI
	Reuse and direct recycling of materials	2. Where waste material types detailed in Table 64 are either directly re-used on-site or off-site or are sent back to the manufacturer for closed loop recycling 3. One credit is achieved where 50% of the total available points for the waste material types detailed in Table 64, that are present on the project have been achieved (using the Was 01 calculator tool, see Table 65 in the Methodology section). 4. Two credits are achieved where 75% of the total available points for the waste material types detailed in Table 64, that are present on the project have been achieved (using the Was 01 calculator tool, see Table 65 in the Methodology section). Please note that in most instances any materials specified in Table 64 that are sent to a Material Recovery Facility (MRF) for recovery does not qualify for this credit. See compliance note CN2, Wst 01 Project waste management for further details. Bespoke Note - The reuse and direct recycling of materials credits are applicable to refurbished areas only.	1	0.70	E	The project team confirmed that 50% of the available points will not be achieved. Two credits are not achieved.	No further design or construction stage actions or evidence required.	N/A



Table 3 - BREEAM Credit Assessment

Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
Wst 01 Construction waste management	Resource efficiency	5. Develop and implement a compliant resource management plan covering the waste arising from the refurbishment or fit-out project with the aim of minimising waste (see Relevant definitions), recording and reporting accurate data on waste arisings. 6. The non-hazardous waste relating to on-site refurbishment or fit-out, and dedicated off-site manufacture or fabrication processes generated by the building's design and construction meets, or exceeds, the resource efficiency benchmarks set out in Table 61 and Table 62 as relevant to the project type. Bespoke Note: The resource efficiency credits are applicable to the whole project. See the area-weighted table 61 Bespoke Assessment Scoring and Reporting tool in place of those within the manual.	1	0.70	C	The project team confirmed the following: - GIFA approx 3800 m2. - The principal contractor will be required to provide an RMP. - For one credit, (38 x 11.3m3)/Approx 6.5m3 per skip = Approx 66 skips during construction. - One resource efficiency credit will be achieved with any further credits improvement option at this stage.	Design stage GMI to provide a revised copy of the compliant Resource Management Plan (to include pre-demo audits in credits above) as SBL email feedback 06.10.22. Construction stage GMI to provide a copy of the SWMP summary datasheets or equivalent monitoring records/report to confirm final refurbishment waste totals & % diverted from landfill.	GMI
	Diversion of resources from landfill	7. The following percentages [in Table 63] of non-hazardous construction and demolition waste (where applicable) generated have been diverted from landfill. Bespoke Note: The diversion of resources from landfill credit is applicable to the whole project. See the area-weighted table 63 within the Bespoke Assessment Scoring and Reporting tool in place of those within the manual.	1	0.70	D	Draft bespoke criteria confirms 5.51 tonnes/100m2 GIFA for one credit. Therefore no more than (38.5 x 5.51/3) = 70 No. 8 yard skips. REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. REF 69 provides GMI's (as principal contractor) SWMP. REF 99 provides an updated SWMP. One credit is awaiting further design stage evidence and one credit is improvement option at this stage. One credit is not achieved.		
Wst 02 Recycled aggregates	Resource efficiency	1. The percentage of high grade aggregate that is recycled or secondary aggregate, specified in each application (present) must meet the following minimum % levels (by weight or volume) to contribute to the total amount of recycled or secondary aggregate, as specified in Table 67. 2. The total amount of recycled or secondary aggregate specified, and meeting criterion 1, is greater than 25% (by weight or volume) of the total high grade aggregate specified for the project. Where the minimum level in criterion 1 is not met for an application, all the aggregate in that application must be considered as primary aggregate when calculating the total high grade aggregate specified. 3. The recycled or secondary aggregates are EITHER: a. Construction, demolition and excavation waste obtained on-site or off-site; OR b. Secondary aggregates obtained from a non-construction post-consumer industrial by product source (see Relevant definitions section).	1	0.70	E	The project team confirmed that the only substantial aggregate use in the project will be in the new extension foundations and floor slabs. It is unlikely that these will include sufficient recycled aggregates. BREEAM Meeting 21.01.20 - The project team confirmed that this credit would not be achieved. This credit is not achieved.	Design stage GMI to confirm whether the diversion of waste from landfill targets will be met (email request 03.06.22). Specifically: - The % of demo waste diverted from landfill from the strip out of the two grd fir retail units (see REF 45 above), Handleys strip out and from Inglenorth. - The % of construction waste diverted from landfill in GMI's refurbishment and extension works. Construction stage GMI to provide a copy of the SWMP summary datasheets or equivalent monitoring records/report to confirm final refurbishment waste totals & % diverted from landfill.	GMI
	Diversion of resources from landfill	7. The following percentages [in Table 63] of non-hazardous construction and demolition waste (where applicable) generated have been diverted from landfill. Bespoke Note: The diversion of resources from landfill credit is applicable to the whole project. See the area-weighted table 63 within the Bespoke Assessment Scoring and Reporting tool in place of those within the manual.	1	0.70	D	The project team confirmed that it is uncertain whether the required % of non-hazardous construction and demolition waste will be diverted from landfill. BREEAM Meeting 21.01.20 - Rayner Rowen confirmed that it would be a cost option (by partnering with a waste contractor) to achieve the required levels of recycling. RB email 08.03.21 confirms - "GMI to record waste diverted from landfill." REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. REF 97 provides a SWMP from Inglenorth as the demolition contractor to GMI as principal contractor. This confirms quantities of each waste stream and disposal/recycling sites. One credit is an improvement option at this stage.		
							No further design or construction stage actions or evidence required.	N/A



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Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
	Wst 03 Operational waste	1. Dedicated space(s) is provided for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. This space must be: a. Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams. b. Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors. c. Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates. 2. Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities are provided: a. Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space. b. Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use; OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility. c. Where organic waste is to be stored/composted on-site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes. Bespoke Note: Refer to assessment criteria 1 – 2 only.	1	0.70	B	The project team confirmed that suitable waste/recycling facilities will be provided. There is a substantial bin store to the rear of the ground floor extension. REF 4 provides an area schedule confirming GIA of 3849.6m². Therefore, BREEAM requires no more than 8m² each for recycling and compostable waste plus space for general waste. REF 10 provides a site plan confirming that the access from Bow Lane to the rear of the hotel to the Bin Store. REFs 12 & 30 provide floor plans basement to 2nd and 6th, 7th & roof plans & updated drags. The ground floor plan confirms that a bin store with a floor area of 19.5m² is located to the rear of the hotel, close to the service lift serving all floors and with double door access immediately onto the public footpath on Bow Lane to the rear of the hotel. REF 14 provides a waste management strategy for the new hotel together with a service proposal. This details the quantities of various waste streams, size of recycling and waste storage, frequency of collections and collections arrangements. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post contract (with LRW) for provision of information re waste storage. REF 35 provides a ground floor domestics drag confirming the provision of a water supply to a bib tap in the Refuse Store. REF 52 provides an area schedule confirming total NIA of 2906.5m². REF 57 provides an updated copy of Malmison's initial Operational Waste Strategy. REF 82 provides a drag confirming the layout and recycling bin provision in the bin store together with the provision of a bib tap. REF 84 provides a water services layout drag confirming the provision of a 'Cat 5 Bin Store washdown point'. This credit is signed off at design stage only.	Construction stage SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	SBL
	Wst 05 Adaptation to climate change Structural and fabric resilience	1. Conduct a climate change adaptation strategy appraisal for structural and fabric resilience by the end of Concept Design (RIBA Stage 2 or equivalent), in accordance with the following approach: a. Carry out a systematic (structural and fabric resilience specific) risk assessment to identify and evaluate the impact on the building over its projected life cycle from expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts. The assessment should cover the following stages: i. Hazard identification ii. Hazard assessment iii. Risk estimation iv. Risk evaluation v. Risk management.	1	0.70	E	The project team confirmed that a climate change adaptation strategy had not been developed to date and it is uncertain whether this would now be feasible pre-planning. BREEAM Meeting 21.01.20 - The project team confirmed that this credit would not be achieved. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
	Wst 06 Functional adaptability	1. A building-specific functional adaptation strategy study has been undertaken by the client and design team by Concept Design (RIBA Stage 2 or equivalent), which includes recommendations for measures to be incorporated to facilitate future adaptation. 2. Functional adaptation measures (see examples in Table 68) have been adopted in the design by Technical Design stage (RIBA Stage 4 or equivalent) in accordance with the functional adaptation strategy recommendations, where practical and cost effective. Omissions have been justified in writing to the assessor.	1	0.70	E	The project team confirmed that a suitable functional adaptation adaptation strategy would be provided pre-planning. SBL emailed brief 05.04.19 & 04.02.21. REF 23 provides an early stage Development Programme. BREEAM meeting 27.07.21 - Project team confirmed study has not been provided. Project is at RIBA Stage 4/5 so credit is no longer achievable. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
		Subtotals	11	7.7				
Land Use and Ecology								
	LE04 Enhancing site ecology Ecologist's report and recommendations	1. A suitably qualified ecologist (SQE) has been appointed by the client or their project representative by the end of the Preparation and Brief stage (RIBA Stage 1 or equivalent) to advise on enhancing the ecology of the site at an early stage. 2. The SQE has provided an Ecology Report with appropriate recommendations for the enhancement of the site's ecology at Concept Design stage (RIBA Stage 2 or equivalent). The report is based on a site visit/survey by the SQE (see also CN4.1). 3. The early stage advice and recommendations of the Ecology Report for the enhancement of site ecology have been, or will be, implemented in the refurbishment or fit-out.	1	2.80	B	KBCN0792 'Late appointment of the SQE and RFO scheme' confirms ... "The late appointment of the ecologist does not necessarily impinge on achieving the credit, provided they would have had no advice for the early site layout decisions. The ecologist needs to provide an explanation detailing this, that they would have had no advice if they were appointed during the Preparation and Brief stage." The project team confirmed that a bat survey had been carried out by ERAP for planning purposes. It is uncertain whether the ecologist's full enhancement recommendations would be implemented. REF 15 provides a planning stage ecology report. This confirms no significant ecological harm and with opportunities for biodiversity enhancements for bats and nesting birds. BREEAM Meeting 21.01.20 - The project team confirmed that this credit would be achieved. REF 23 provides an early stage Development Programme. REF 24 provides the GN13 Ecology Report which confirms the following: - Brian Robinson, ERAP is an SQE. - SQE appointed at RIBA Stage 1 with survey/recommendations at RIBA Stage 2. - Recommendations are made for ecological enhancements re lighting, bat boxes, habitat for nesting black redstart, green walls in the upper floor landscape design, if possible and appropriate. REF 68 provides manufacturer's details of two recommended bat boxes for the development. REF 82 provides a roof plan confirming the provision and location of two bat boxes and two 'SCHWIEGLER 2HW BLACK REDSTART NEST BOXES'. REF 95 provides proposals for the contractor with regard to the location of bat & bird boxes on the roof and roof lighting together with SQE confirmation of acceptance of these proposals in accordance with their ecology enhancement & protection recommendations. One credit is signed off at design stage only.	Construction stage SBL to provide the BREEAM Assessor's site inspection report and photographic evidence. LRW to provide as-built drags to confirm provision of bat & bird boxes.	SBL LRW

A = Fully signed off at construction stage
B = Signed off at design stage only
C = Awaiting further design stage evidence
D = Improvement options
E = Not achieved



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		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
LE 05	Long term impact on biodiversity	1. Where a Suitably Qualified Ecologist (SQE) is appointed prior to commencement of activities on-site and they confirm that all relevant UK and EU legislation relating to the protection and enhancement of ecology has been complied with during the design and construction process.	1	2.80	B	The project team confirmed that ERAP will be engaged to advise on legislative compliance and provide a LHMP. It is assumed that a majority of the Additional Requirements will be scoped out. REF 15 provides a planning stage ecology report. This confirms no significant ecological harm and with opportunities for biodiversity enhancements for bats and nesting birds. REF 23 provides an early stage Development Programme. REF 24 provides the GN13 Ecology Report with annexes which confirms the following: - Brian Robinson, ERAP is an SQE and appointed prior to activities in site. - No EU or UK legislation relating to wildlife related directly to the site. - Five year landscape and habitat management plan compliant with BS 42020:2013 Section 11.1 is provided in Annex B. - Additional measures 1, 2 & 3 are not applicable. - Habitat creation for Black Redstarts. - There is no requirement to time works to minimise disturbance to wildlife.	Construction stage SBL to provide the BREEAM Assessor's site inspection report and photographic evidence. LRW to provide as-built drawings to confirm provision of bat & bird boxes.	SBL LRW
		2. Where a landscape and habitat management plan, appropriate to the site, is produced covering at least the first five years after project completion in accordance with BS 42020:2013 Section 11.1. This is to be handed over to the building owner/occupants for use by the grounds maintenance staff.						
		3. Where additional measures to improve the assessed site's long term biodiversity are adopted, according to Table - 58.	1	2.80	B	REF 26 provides extracts from the Employer's Requirements. Section 2.2 provides a BREEAM Construction Specification as part of the Preliminaries confirming a requirement on Raynor Rowen as principal contractor to meet the relevant criteria. REF 43 provides written confirmation from GMI as the appointed principal contractor that the BREEAM specification in REF 26 above was included in the Employer's Requirements for GMI's appointment. REF 82 provides a roof plan confirming the provision and location of two bat boxes and two 'SCHWEGLER 2HW BLACK REDSTART NEST BOXES'. REF 95 provides proposals for the contractor with regard to the location of bat & bird boxes on the roof and roof lighting together with SQE confirmation of acceptance of these proposals in accordance with their ecology enhancement & protection recommendations. Two credits are signed off at design stage only.		
		Subtotals	3	8.4				
Pollution								
Pol01	Impact of refrigerants	Three credits - No refrigerant use 1. Where the building does not require the use of refrigerants within its installed plant/systems. OR alternatively, where the building does require the use of refrigerants, the three credits can be awarded as follows: Pre-requisite All systems (with electric compressors) must comply with the requirements of BS EN 378:2008 (parts 2 and 3) and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice. Two credits - Impact of refrigerant 3. Where the systems using refrigerants have Direct Effect Life Cycle CO ₂ equivalent emissions (DELCO ₂ e) of ≤ 100 kgCO ₂ e/kW cooling/heating capacity. To calculate the DELCO ₂ e please refer to the Relevant definitions in the Additional information section and the Methodology section. OR 4. Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤ 10. OR One credit - Impact of refrigerant 5. Where the systems using refrigerants have Direct Effect Life Cycle CO ₂ equivalent emissions (DELCO ₂ e) of ≤ 1000 kgCO ₂ e/kW cooling/heating capacity. One credit - Leak detection 6. 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. 7. The system must be capable of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident.	1	0.86	E		No further design or construction stage actions or evidence required.	N/A
			1	0.86	E	The project team confirmed the following: - Pre-requisite criteria will be met. - Refrigerants will have a GWP > 10 and a DELCO ₂ e > 100 kgCO ₂ e/kW cooling/heating capacity. - It is uncertain whether a DELCO ₂ e ≤ 1000 kgCO ₂ e/kW cooling/heating capacity will be achieved. - It is unlikely that refrigerant leak detection and recovery will be provided. REF 72 provides a layout drawing for the basement cold storage.		
			1	0.86	E	REF 73 provides layout drawings for the catering installation and bar. REF 76 provides the following from the M&E consultant: - Systems report from Samsung as mech cooling systems manufacturer. - Pol01 Calculator confirming DELCO ₂ e of 1152.07 kgCO ₂ e/kW cooling/heating capacity. Three credits are not achieved.		



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		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
Pol 02 NOx emissions		1. Where the plant installed to meet the building's delivered heating and hot water demand has, under normal operating conditions, a NOx emission level (measured on a dry basis at 0% excess O ₂) as follows: ≤ 100 mg/kWh - 1 credit ≤ 70 mg/kWh - 2 credits ≤ 40 mg/kWh - 3 credits.	1	0.86	E	The project team confirmed that space heating will be from mains electric via the ASHPs. DHW will be from gas-fired boiler plant. As such, BREEAM NOx thresholds will not be achieved. Three credits are not achieved.	No further design or construction stage actions or evidence required.	N/A
		2. Report via the BREEAM scoring and reporting tool the direct and indirect NOx emissions in mg/kWh and energy consumption in kWh/m ² /yr arising from systems installed to meet the building's space heating, cooling and hot water demands.	1	0.86	E			
			1	0.86	E			
Pol 03 Surface water run-off	Flood risk management	Low flood risk 1. Where flood maps from the appropriate statutory body (see Relevant definitions) confirm the refurbishment or fit-out is situated in a flood zone that is defined as having a low annual probability of flooding; OR 2. The project meets the requirements for avoidance of flooding in accordance with Checklist 1, (see Checklists and tables), e.g. where the refurbishment or fit-out zone is of a floor level that is 0.3m higher than the obtained/estimated flood level and safe access/escape routes are available/present. Medium/high flood risk 3. Where criterion 4 and either criterion 5 or 6 have been met. 4. Where flood maps from the appropriate statutory body (see Relevant definitions) confirm the site has a medium or high flood risk and a site specific FRA has been undertaken (as relevant to size of project in accordance with CN7). The FRA must take all current and future sources of flooding into consideration in accordance with compliance note. 5. Where the refurbishment or fit-out zone achieves avoidance from flooding through either: a. the refurbishment and fit-out zone is located entirely on the first floor or above and a flood emergency plan has been developed in accordance with 'Would your business stay afloat? A Guide to preparing your business for flooding', Environment Agency, 2011. b. As a result of the building's floor level or measures to keep water away, the building is defined as achieving avoidance from flooding by following Checklist A-1, Checklists and tables. 6. Where avoidance is not possible, two credits are achieved where a full flood resilience/resistance strategy is implemented for the building's scope of works in accordance with recommendations made by a Suitably Qualified Building Professional (see Relevant definitions). The following aspects of the design should be addressed for the relevant parts, in accordance with best practice guidance (see compliance note CN9): a. Part 1: Fabric – using flood resilient materials and flood protection measures for the building fabric, e.g. waterproof materials, impermeable membranes, flood barriers, safe access/exit points in the event of a flood etc. b. Part 2: Core services – core services and associated infrastructure (including equipment and vulnerable pipes/ducts/cables etc.) should be located/specified so as to protect services from flooding damage, e.g. location/routing/height, protection of building apertures (such as intakes/extracts/ventilation), non-return valves, etc. c. Part 3: Local services – the location/height of local services such as sockets, vents etc. and the location of the wiring/pipework/ductwork in relation to the flood level and other measures to protect local services. d. Part 4: Interior – the proposed function of spaces that are below the flood level (e.g. sacrificial spaces) should be limited to those which are not susceptible to flood damage, and the resilience of materials used for partitions, walls, floors, ceiling finishes, furniture and fittings and the location of equipment in relation to the flood level, e.g. avoid storing flood sensitive materials and functions in spaces that are below the flood level.	1	0.86	B	The EA flood map confirms Zone 1. REF 16 provides a Drainage Design Statement which confirms the following: - Para 1.2.8 - "A Flood Risk Assessment (FRA) has been carried out for the site by Stephenson Studio dated the 12th April 2019, which has established that the site is in flood risk zone 1. Within the FRA the risk of flooding from all sources was considered as low." REF 26e provides a Flood Risk Assessment & SuDs Statement which confirms that ... "The proposed scheme is located in flood zone 1, at least 0.4 miles from flood zone 2 or 3 in all directions of the site." REF 37 provides the Environment Agency flood map confirming the development is in a Flood Risk Zone 1. Two credits are signed off at design stage only.	Construction stage SBL to source updated EA flood map.	SBL
			1	0.86	B			
	Surface water run-off	Neutral impact on surface water 7. There is no increase in the impermeable surfaces as a result of the refurbishment works; OR 8. If there is an increase in the impermeable surface as a result of the refurbishment works then the following must be met: a. Hard standing areas - where there is an extension or increase in the hardstanding areas and hence an increase in the total impermeable area as a result of the refurbishment works, the hardstanding area must be permeable or be provided with on-site SuDS to allow full infiltration of the additional volume, to achieve the same end result. The permeable hardstanding must include all pavements and public rights of way, car parks, driveways and non-adoptable roads, but exclude footpaths that cross soft landscaped areas which will drain onto a naturally permeable surface. b. Building extension - where there is an increase in building footprint, extending onto any previously permeable surfaces, the additional run-off caused by the area of the new extension must be managed on-site using an appropriate SuDS technique for rainfall depths up to 5mm.	1	0.86	B	The project team confirmed that there is no change in impermeable surface area and hence a neutral impact on surface water. REF 5 provides a pre-development topo survey. REF 10 provides a proposed site plan. REF 16 provides a Drainage Design Statement which confirms the following: - Para 3.3.9 - "As the site area is currently 100% impermeable and drained to a public sewer, the proposed works within the site, whilst not offering a betterment will not increase the flood risk or reduce the capacity of the public sewer in Bow Lane." This credit is signed off at design stage only.	Construction stage LRW to provide as-built site plan.	LRW



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		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT		
Pol 03 Surface water run-off	Surface water run-off	Reducing run-off 9. An Appropriate Consultant (see Pol 03 Flood risk management and reducing surface water run-off) has been used to design an appropriate drainage strategy for the site. 10. Either of the following criteria are met: a. There is a decrease in the impermeable area by 50% or more, from the pre-existing impermeable hard surfaces; OR b. Where run-off as a result of the refurbishment is managed on-site using source control achieving the following requirements: i. The peak rate of run-off as a result of the refurbishment for the 1 in 100 year event has been reduced by 50% from the existing site. ii. The total volume of run-off discharged into the watercourses and sewers as a result of the refurbishment, for a 1 in 100 year event of 6 hour duration has been reduced by 50%. iii. An allowance for climate change must be included for all of the above calculations; this should be made in accordance with current best practice planning guidance.	1	0.86	E	The project team confirmed that impermeable surface area or peak run-off rate will not be reduced by 50%. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A	
	Minimising watercourse pollution	11. There is no discharge from the developed site (includes new and existing hard landscaping and buildings) for rainfall up to 5mm (confirmed by the Appropriate Consultant). 12. Where suitable pollution prevention measures are put in place (or already exist) for the different sources of pollution present on the assessed site, in accordance with compliance note CN20. 13. A comprehensive and up to date drainage plan of the site will be made available for the building/site occupiers. 14. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place.	1	0.86	E	The project team confirmed that pt 11 will not be met. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A	
Pol 04 Reduction of night time light pollution		1. Where external lighting pollution has been eliminated through effective design that removes the need for external lighting without adversely affecting the safety and security of the site and its users. OR alternatively, where the building does have external lighting, one credit can be awarded as follows: 2. The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011. 3. All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. 4. If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP's Guidance notes. 5. Illuminated advertisements, where specified, must be designed in compliance with ILP PLG 05 The Brightness of Illuminated Advertisements.	1	0.86	C	The project team confirmed that external lighting (likely only to be sign lighting) will meet BREEAM light pollution criteria. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with MDA) for the external lighting design. REF 27 provides the Particular Electrical Specification. Section 18 confirms "... "The external lighting shall comprise of perimeter building mounted LED bulkhead luminaires as indicated on the relevant drawing. The control of the building mounted external luminaires shall be via a photocell timelock arrangement." REF 84 provides written confirmation from the MEP contractor that there is no external lighting in the scheme. BREEAM meeting 05.12.22 - There is external lighting to the balcony & Sky Bar. REF 103 provides written confirmation from the external signage provider: - "the candela rating would be between 250-300Cd/m2, however the signs can be dimmed if required using the Dali control gear" - "Signage supplied with dali drivers to be connected into existing lighting control system. System can be used to control hours of illumination and brightness". Note: DALI is stands for Digital Addressable Lighting Interface. It is a lighting interface system that allows lighting to use a digital signal for more precise and flexible control. This credit is awaiting further design stage evidence.	Design stage Signage lighting only GMI to provide external lighting dwrgs/specs confirm the following (email request 12.12.22 & 25.08.23): - Compliance with ILP PLG 05 The Brightness of Illuminated Advertisements. Construction stage GMI to provide as-fitted external signage lighting dwrgs. SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	GMI	SBL
Pol 05 Reduction of noise pollution		1. Where there are, or will be, no noise-sensitive areas or buildings within 800m radius of the assessed site. OR 2. Alternatively, where the building does have noise-sensitive areas or buildings within 800m radius of the site, one credit can be awarded as follows: a. Where a noise impact assessment in compliance with BS 7445 has been carried out and the following noise levels measured/determined: i. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background conditions can be argued to be similar. ii. The rating noise level resulting from the new noise source (see CN7). 3. The noise impact assessment must be carried out by a suitably qualified acoustic consultant holding a recognised acoustic qualification and membership of an appropriate professional body (see Relevant definitions in the Additional information section). 4. The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development, is a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00) compared to the background noise level. 5. Where the noise source(s) from the proposed site/building is greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with criterion 4. Bespoke Note: The existing background noise level should not include existing plant associated with the assessed building (criterion 2.a.i.). Both existing and newly specified externally mounted plant should be considered within the noise impact assessment as part of the 'rating noise level' (criterion 2.a.i.).	1	0.86	C	The project team confirmed the following: - A suitable noise study will be carried out. - Noise attenuation is unlikely to be required. REF 17 provides a baseline noise survey and assessment report. Para 5.4 sets noise limits for externally mounted plant. BREEAM Meeting 21.02.20 - Rayner Rowen confirmed that they will be responsible post-contract (with LRW/MDA) for provision of a revised noise report and acoustic design measures. REFs 26g&h inc. provide acoustic reports which confirm details of a baseline noise survey and external plant noise limits. REF 38 provides an update on current status from the acoustician on the acoustic reports in REF 26 above. REF 65 provides a CV for Dominic McCann of Azymuth Acoustics confirming he is an SQA. Dominic was the producer of the acoustic reports in REF 26g&h above. REF 84 provides technical information for the roof mounted plant & the attenuation on the air system (drawing of plant layout included) - 1. VRF condensers, 2. Air handling unit, 3. Extract and supply fans for kitchen areas, 4. Smoke extract fans. This credit is awaiting further design stage evidence.	Design stage GMI to provide Noise Assessment Report or addendum to respond specifically to BREEAM criteria to confirm the following (email request 27.04.20 & 21.05.20. Feedback forwarded to Spring & RB, GMI 27.07.21 & LRW 06.10.22): 1. Location of proposed sources of noise from the new development. 2. Compliance with BS 7445. 3. Recommendations for noise attenuation measures (if required). Construction stage GMI (via Azymuth) to provide written confirmation of any changes from design stage compliance. SBL to provide the BREEAM Assessor's site inspection report and photographic evidence.	GMI	SBL
Subtotals			13	11.2					



Table 3 - BREEAM Credit Assessment

Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
Exemplary & Innovation Credits								
Exemplary Man03	Considerate construction	19. With reference to the considerate construction criterion 7, in addition to meeting the criteria for two credits, the contractor achieves compliance with the criteria of the compliant scheme to an exemplary level of practice.	1	1.00	B	The project team confirmed that the contractor will be required to register with CCS and achieve a minimum score of 40/50 (with no less than 7/10 in each category). BREEAM Meeting 21.01.20 - Rayner Rowen confirmed that a CCS score of 40/50 is unlikely to be achieved. GMI BREEAM meeting 04.02.21 - Project team confirmed that a CCS score of at least 35/50 (with no less than 7/10 in each section) will be achieved. It is uncertain whether a score of 40/50 will be achieved. Construction REF 81 provides the CCS MSR2 confirming a score of 43/45 with no less than 14 in each section. This credit is signed off at design stage only.	Construction stage GMI to provide the CCS certificate.	GMI
Exemplary Man05	Aftercare	6. There are, or will be, operational infrastructure and resources in place to coordinate the following activities at quarterly intervals for the first three years of building occupation: a. Collection of occupant satisfaction, energy consumption and (where available) water consumption data. b. Analysis of the data to check the building is performing as expected and make any necessary adjustments to systems controls or to inform building user behaviours. c. Setting targets and/or appropriate actions for reducing water and energy consumption and monitor progress towards these. d. Feedback any 'lessons learned' to the design team and developer for use in future projects. e. Provision of the actual annual building energy, water consumption (where available and accessible) and occupant satisfaction data to BRE for the purpose of future BREEAM performance benchmarking.	1	1.00	B	It is assumed that Malmaison will monitor relevant parameters for three years post-completion and provide data to BRE. BREEAM Meeting 21.02.20 - BHA confirmed that Greenlane as opposed to Malmaison will be responsible for meeting post-completion criteria. REF 85 provides a letter from Malmaison as hotel occupier confirming a commitment to meet the relevant criteria. This credit is signed off at design stage only.	Construction stage Malmaison to provide evidence that the relevant mechanism(s) and procedures are in place and there is a commitment to use them.	Malmaison
Exemplary Head01	Daylighting	The following outlines the exemplary level criteria to achieve an innovation credit for daylighting: 1. Daylighting criteria have been met using either of the following options: 2. a. Relevant building areas meet exemplary daylight factor(s) and the relevant criteria in Table 17. OR b. Relevant building areas meet exemplary average and minimum point daylight illuminance criteria in Table 18.	1	1.00	E	The project team confirmed that BREEAM exemplary daylighting performance will not be achieved. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
Exemplary Head02	VOC emission levels (products)	One credit 15. Criterion 6 has been achieved. 16. All seven remaining product categories listed in Table 20 meet the testing requirements and emission levels criteria for Volatile Organic Compound (VOC) emissions (listed in the table). 17. For products B – F listed in Table 20, the formaldehyde emission levels have been measured and found to be less than or equal to 0.06mg/m ³ air in accordance with the approved testing standards in Table 20.	1	1.00	E	The project team confirmed that it is uncertain whether exemplary VOC standards will be met. Two credits are not achieved.	No further design or construction stage actions or evidence required.	N/A
		Two credits 18. Criterion 6 has been achieved. 19. All seven remaining products categories listed in Table 20 meet the testing requirements and emission levels criteria for Volatile Organic Compound (VOC) emissions (listed in the table). 20. For products B to F listed in Table 20, the formaldehyde emission levels have been measured and found to be less than or equal to 0.01mg/m ³ air, in accordance with the approved testing standards in Table 20.	1	1.00	E			
Exemplary Env01	Reduction of energy use and carbon emissions	The following outlines the exemplary level criteria to achieve up to five innovation credits for this BREEAM issue: Two credits - Zero regulated carbon 8. The building achieves an $EPR_{NDR} \geq 0.9$ and zero net regulated CO ₂ emissions (see Relevant definitions).	1	1.00	E	The project team confirmed that the building will not achieve an $EPR_{NC} \geq 0.9$ and have zero net CO ₂ emissions. Five credits are not achieved.	No further design or construction stage actions or evidence required.	N/A
		Up to four credits - Zero regulated carbon and carbon neutral unregulated energy 9. Criterion 8 has been achieved. 10. An equivalent percentage of the building's modelled regulated operational delivered energy consumption, as stipulated in Table 29, is generated by carbon neutral on-site or near-site sources and used to meet energy demand from unregulated building systems or processes.	1	1.00	E			
		Five credits - Carbon negative 11. The building is carbon negative in terms of its total modelled operational delivered energy consumption, including regulated and unregulated energy (see Relevant definitions).	1	1.00	E			
			1	1.00	E			
			1	1.00	E			



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Credit Ref.	Credit Title	Outline Credit Criteria	Credits Available	% Worth	Scoring	Assessment Commentary	Design & Construction Stage Actions and Evidence Required	Responsibility	
		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT		
Exemplary Wat01	Water consumption	The water consumption (litres/person/day) for the assessed building is compared against a notional baseline performance and achieves a 65% improvement.	1	1.00	E	The project team confirmed that the exemplary credit will not be achieved. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A	
Exemplary Mat 01	Life cycle impacts	Criteria as Mat01 above for whole project LCA study.	1	1.00	C	A whole project LCA study will be carried out to maximise scoring. This credit is achieved subject to evidence.	Design stage SBL to undertake LCA study. LRW & ROC to provide project info as required. Construction stage GMI to provide written confirmation of any changes to design stage evidence.	LRW	ROC GMI
Exemplary Mat03	Responsible sourcing of materials	5. Where at least 70% of the available RSM points are achieved.	1	1.00	E	The project team confirmed that 70% responsible sourcing will not be achieved. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A	
Exemplary Wat01	Construction waste management	The following outlines the exemplary level criteria to achieve an innovation credit for this BREEAM issue: 8. Non-hazardous construction waste generated by the building's design and refurbishment or fit-out is no greater than the exemplary level resource efficiency benchmark (outlined in Table 62 and Table 61). 9. The percentage of non-hazardous construction and demolition (if relevant) waste diverted from landfill meets or exceeds the exemplary level percentage benchmark (outlined in Table 63). 10. Waste materials will be sorted into separate key waste groups (according to the waste streams generated by the scope of the works; the List of Wastes/European Waste Catalogue code should be referenced) either on-site or off-site through a licensed contractor for recovery. 11. 75% of difficult to manage wastes have been reused on or off-site rather than recycled, in accordance with Table 64.	1	1.00	E	The project team confirmed that exemplary resource efficiency performance will not be achieved. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A	
Exemplary Wat02	Recycled aggregates	The following outlines the exemplary level criteria to achieve an innovation credit for this BREEAM issue. 4. The percentage of high grade aggregate that is recycled or secondary aggregate, specified in each application (present) must meet the exemplary minimum levels (by weight or volume), as defined in Table 67. Where this minimum level is not met, all the aggregate in that application must be considered as primary aggregate when calculating the total high grade aggregate specified. 5. Where the total amount of recycled or secondary aggregate specified is greater than 35% (by weight or volume) of the total high grade aggregate specified for the project. Where the minimum level in criterion 1 is not met for an application, all the aggregate in that application must be considered as primary aggregate when calculating the total high grade aggregate specified. 6. The contributing recycled or secondary aggregate must not be transported more than 30 km by road transport.	1	1.00	E	The project team confirmed that exemplary levels of performance for recycled aggregates will not be met. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A	
Exemplary Wat05	Responding to climate change	A holistic approach to the design and refurbishment or fit-out of the current building's life cycle, to mitigate against the impacts of climate change, is represented by the achievement of these criteria. The following outlines the exemplary level criteria to achieve an innovation credit for this BREEAM issue: 2. Achievement of criterion 1, the structural and fabric resilience criterion in this issue, and the following criteria points or credits [in the manual].	1	1.00	E	The project team confirmed that exemplary criteria for adaptation to climate change will not be met. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A	



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		TIME CRITICAL RIBA STAGE 1 & 2 CRITERIA IN RED BOLD					TIME CRITICAL ITEMS IN RED BOLD TEXT	
Exemplary Pol03	Surface water run-off	The following outlines the exemplary level requirements to achieve an innovation credit for surface water run-off: 15. Where all run-off from the developed site is managed on-site using source control, the following must be achieved to confirm compliance: a. The peak rate of run-off as a result of the refurbishment for the 1 in 1 year event is reduced to zero. b. The peak rate of run-off as a result of the refurbishment for the 1 in 100 year event is reduced to zero. c. There is no volume of run-off discharged into the watercourses and sewers as a result of the refurbishment, for a 1 in 100 year event of 6 hour duration. d. An allowance for climate change must be included for all of the above calculations, in accordance with current best practice national planning guidance. e. Where an appropriately qualified professional has been employed to provide the above calculations and design an appropriate drainage strategy for the site, ensuring all above criteria are achieved.	1	1.00	E	The project team confirmed that exemplary levels of performance for surface water run-off will not be met. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
Innovations	Approved Innovations	One innovation credit can be awarded for each innovation application approved by BRE Global, where the building complies with the criteria defined within an Approved Innovation application form.	1	1.00	E	The project team confirmed that approved innovations will not be sought. This credit is not achieved.	No further design or construction stage actions or evidence required.	N/A
		Subtotals	18	18.0				