MOTT MACDONALD

Huddersfield Royal Infirmary Accident and Emergency (A&E) Department

Sustainability and Energy Statement

June 2021

Mott MacDonald
4th Floor
Derwent House
150 Arundel Gate
Sheffield S1 2JY
United Kingdom

T +44 (0)114 2761242
mottmac.com

Huddersfield Royal Infirmary Accident and Emergency (A&E) Department

Sustainability and Energy Statement

June 2021

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	01/04/21	M Hartridge	K Worthington	N Levy	Draft for client comment
B	16/06/21	M Hartridge	N Levy	K Worthington	Updated to include further design information

Document reference: 100102983

Information class: Standard

Contents

1 Introduction

1.1 Background

Calderdale and Huddersfield NHS Foundation Trust (CHFT) (hereafter, 'The Trust') is an integrated Trust that provides acute and community health services. Hospital services are provided at Calderdale Royal Hospital (CRH) and at Huddersfield Royal Infirmary (HRI). The distance between the two hospitals is just over five miles. The Trust also provides community services in the Calderdale area.

Between September 2019 and January 2020, The Trust commissioned a design brief to inform and support the development of future design and construction schemes across the CHFT estates. The Trust seeks to embody principles identified in this design brief into any future refurbishment, extension or new build project, reflecting its core objective of creating state-of-the-art facilities that will support delivery of 21st century healthcare services for the local community and beyond and enhance the immediate surroundings of its estates.

This Sustainability and Energy Statement has been prepared on behalf of Calderdale and Huddersfield Solutions Ltd ('the Applicant') in support of a full planning application for the erection of an clinical building to accommodate Accident and Emergency (A&E) Department (hereafter, 'the Proposed Scheme') at Huddersfield Royal Infirmary, Acre Street, Huddersfield HD3 3EA ('the Site'). The site totals 0.88 hectares.

1.2 Description of Proposed Scheme

HRI is situated on Acre Street in Huddersfield, in the county of Kirklees. It is approximately three kilometres northwest of Huddersfield town centre, set in a residential area.

The Proposed Scheme comprises erection of a clinical building to a new A&E Department, together with associated vehicular access, car and cycle parking spaces, plant and landscaping.

The proposed building will be located to the south of the existing HRI Ward Block hospital building, attached by a link corridor to the existing main hospital, in an area currently occupied by the Saville Court facility and a small car parking area. The A&E Department will consist of a single storey building with triage, x-ray and assessment spaces. Plant space will be located in the roof space of the building. To facilitate the Proposed Scheme, the demolition of a small number of buildings will take place.

The Proposed Scheme is currently at the Royal Institute of British Architects (RIBA) design Stage 4.

1.3 The Sustainability and Energy Statement

The Sustainability and Energy Statement provides a summary of how the Proposed Scheme will contribute to sustainable development, outlining design and site measures that have been or will be adopted, and how it complies with existing guidance.

Kirklees Council do not have specific guidance on Sustainability and Energy Statements. Therefore, the Statement is structured around the sustainable development principles set out in the Kirklees Local Plan (2019) and the Calderdale and Huddersfield NHS Foundation Trust Sustainability Design Brief, and mapped against the United Nations (UN) Sustainable Development Goals (SDGs).

The Sustainability and Energy Statement has been compiled based on the information gathered from the design team on the proposed design, specification and construction practices to be

adopted for the Proposed Scheme. The Sustainability and Energy Statement is structured as follows:

- Chapter 1: An introduction to the Proposed Scheme, purpose of the Sustainability and Energy Statement and location and context of the development.
- Chapter 2: A summary of the National, Regional and Local planning policy for sustainable development relevant to the Proposed Scheme and how the Proposed Scheme supports these policies.
- Chapter 3: A review of the Proposed Scheme against policies within Kirklees Local Plan and Calderdale and Huddersfield NHS Foundation Trust Sustainability Design Brief, statements of support outlining how the Proposed Scheme meets these policies and mapped against the UN SDGs.

A Statement of Support is included under each sub-heading in Chapters 2 and 3 to demonstrate how the Proposed Scheme meets the policies discussed.

1.4 BREEAM

A BREEAM assessment is being undertaken for the Proposed Scheme. The development is targeting a ‘very good’ rating and aspiring for an ‘excellent’ rating. A BREEAM assessor has been appointed to the project and will lead the BREEAM assessment.

Based on the pre-assessment undertaken for the scheme at this stage, the project is expected to be likely to achieve an Excellent rating.

2 Sustainability Policy and Plans Context

2.1 Introduction

The key national, regional and local policy and plan documents for sustainable development relevant to the Proposed Scheme have been reviewed and taken into account in the production of this Sustainability and Energy Statement. These documents include:

Figure 2.1: Review of Policies and Plans

2.2 National Planning Context

The National Planning Policy Framework (NPPF) and Agenda 2030 are key documents that provide an up-to-date view of sustainable development in the UK in comparison with the Planning Practice Guidance and UK Government Sustainable Development Strategy. Therefore, the NPPF and Agenda 2030 have been discussed in detail to ensure the most up-to-date policy is reviewed. The NHS documents, Adaptation to Climate Change (August 2014) and the Sustainable Development Strategy (January 2014) are considered key documents and have therefore been discussed below.

2.2.1 National Planning Policy Framework (February 2019)

The National Planning Policy Framework (NPPF) was revised for the first time since 2012 and an updated version was published in 2019. The NPPF sets out a framework within which locally prepared plans for developments can be produced. The NPPF must be taken into account when drawing up plans and when making planning decisions. Achieving sustainable development is a key part of the NPPF, which means that the planning system has economic, social and environmental objectives. At the heart of the framework is a presumption in favour of sustainable development which plans and decisions should apply. The framework is made up of the following principles, all with the aim of achieving sustainable development:

- Delivering a sufficient supply of homes;
- Building a strong, competitive economy;

- Ensuring the vitality of town centres;
- Promoting healthy and safe communities;
- Promoting sustainable transport;
- Supporting high quality communications;
- Making effective use of land;
- Achieving well-designed places;
- Protecting Green Belt land;
- Meeting the challenges of climate change, flooding and coastal change;
- Conserving and enhancing the natural environment;
- Conserving and enhancing the historic environment; and
- Facilitating the sustainable use of minerals[1].

Statement of support: The Proposed Scheme supports the NPPF promoting healthy and safe communities, promoting sustainable transport, making effective use of land, and achieving well-designed places. The Proposed Scheme is seeking a BREEAM rating, which includes provision of a travel plan to ensure sustainable transport and contributes to achieving well-designed places. The Proposed Scheme makes effective use of land through an expansion of the existing hospital. The Scheme will contribute to sustainable development by providing an expansion of health care facilities, delivering a larger range of clinical services and promoting a healthy community.

2.2.2 Agenda 2030 – The Global Goals for Sustainable Development (March 2017)

The Agenda 2030 report was written in March 2017 to help shape the UK's approach to growth and sustainable development using the 17 United Nations (UN) Global Sustainable Development Goals (SDGs) as a vehicle. The UK Government is firmly committed to delivering the SDGs both at home and around the world, with the underlying aims of the Goals reflected in the UK Government's programme of work. The Goals are as follows:

- Goal 1 No poverty;
- Goal 2 Zero hunger;
- Goal 3 Good health;
- Goal 4 Quality education;
- Goal 5 Gender equality;
- Goal 6 Clean water and sanitation;
- Goal 7 Affordable and clean energy;
- Goal 8 Decent work and economic growth;
- Goal 9 Industry, innovation, and infrastructure;
- Goal 10 Reduced inequalities;
- Goal 11 Sustainable cities and communities;
- Goal 12 Responsible consumption and production;
- Goal 13 Climate action;
- Goal 14 Life below water;
- Goal 15 Life on land;

[1] National Planning Policy Framework, 2019. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

- Goal 16 Peace and justice; and
- Goal 17 Partnerships for the goals[2].

Statement of support: The Scheme supports good health and well-being, industry, innovation and infrastructure, reduced inequalities, responsible consumption and production and climate action. Due to the relevance of this document, a detailed review of the Proposed Scheme using the SGDs is presented in Section 3 of this Sustainability and Energy Statement.

2.2.3 Adaptation to Climate Change for Health and Social Care organisation (NHS England's Sustainable Development Unit) (August 2014)

Climate change could have significant implications for the health and wellbeing of the UK population. These implications could arise for public health, the continuity and access to health and social care services, the resilience of emergency services and the impacts on the most socially vulnerable. It recognises that adaptation is key to ensuring the health and social care system is resilient for the future. The document sets out what climate change adaptation is and why it is important for the NHS and health and social care organisations, and what action they can take.

Statement of support: The Proposed Scheme will increase capacity at HRI and will be flexible to meet future demands.

2.2.4 Sustainable Development Strategy for the NHS, Public Health and Social Care System 2014-2020 (January 2014)

The strategy outlines the vision for a sustainable health and care system, which means reducing carbon emissions, minimising waste and pollution, building resilience to climate change and nurturing community strengths. The strategy sets targets for 2020 and currently there is no post 2020 guidance available. It includes a target to reduce carbon emissions by 34% by 2020, and also sets out the following three goals to be achieved by 2020:

- A healthier environment;
- Communities and services are ready and resilient for changing times and climates; and
- Every opportunity contributes to healthy lives, healthy communities and healthy environments[3].

Statement of support: The Proposed Scheme provides resilience of emergency services by providing a new A&E Department, therefore strengthening public health services in the region. The Proposed Scheme aims to minimise energy consumption and carbon emissions during construction and operation.

2.3 Regional and Local Planning Context

2.3.1 Kirklees Local Plan (February 2019)

The Local Plan sets out the vision for Kirklees by 2031:

"In 2031, Kirklees will be a great place to live, work and invest in, delivered through an integrated approach to housing and employment. Development will have taken place in a sustainable way (balancing economic, social and environmental priorities) and by making efficient and effective use of land and buildings supported by necessary infrastructure and with

[2] United Nations, 2017. Available at: https://sdgs.un.org/2030agenda

[3] 3 Sustainable, Resilient, Healthy People and Places: A Sustainable Development Strategy for the NHS, Public Health and Social Care system, 2014. Available at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwigneiyrZbvAhXnQkEAHZiyCqsQFjADegQICRAD&url=https%3A%2F%2Fwww.sduhealth.org.uk%2Fdocuments%2Fpublications%2F2014%2520strategy%2520and%2520modulesNewFolder%2FStrategy_FINAL_Jan2014.pdf&usg=AOvVaw1609spcFPttaHbo6OiPE_Q

minimal effect on the environment. Health inequalities will have been reduced, enabling higher standards of health and well-being resulting from improved access to training and job opportunities, a decent and affordable home, access to services and green spaces and opportunities for physical activity and a healthy lifestyle.

The diverse character of the district as a whole and within its different character areas will be retained and enhanced while creating opportunities to build thriving communities which respond to local needs".

The following policies are relevant to the Proposed Scheme:

- **Policy LP7 Efficient and effective use of land and buildings:** To ensure the best use of land and buildings, proposals (a) should encourage the efficient use of previously developed land in sustainable locations provided that it is not of high environmental value.
- **Policy LP20 Sustainable Travel:** New development will be located in accordance with the spatial development strategy to ensure the need to travel is reduced and that essential travel needs can be met by forms of sustainable transport other than the private car. The council will support development proposals that can be served by alternative modes of transport such as public transport, cycling and walking. Travel plans will normally be required for all major planning applications in accordance with current guidance and should set targets and monitoring arrangements to ensure sustainable travel patterns are maintained. Travel plans should include agreed and defined outcomes related to a package of specified measures to be implemented including an approach to lower carbon emissions where applicable.
- **Policy LP27 Flood risk:** Proposals must be supported by an appropriate site-specific Flood Risk Assessment in line with national planning policy. This must take account of all sources of flooding set out in the Strategic Flood Risk Assessment and demonstrate that the proposal will be safe throughout the lifetime of the development (taking account of climate change). The proposal must also not increase flood risk elsewhere and where possible should reduce flood risk. Mitigation measures, where necessary, should be proposed.
- **Policy LP30 Biodiversity and development:** Development proposals will be required to: (i) result in no significant loss or harm to biodiversity in Kirklees through avoidance, adequate mitigation or, as a last resort, compensatory measures secured through the establishment of a legally binding agreement; (ii) minimise impact on biodiversity and provide net biodiversity gains through good design by incorporating biodiversity enhancements and habitat creation where opportunities exist; (iii) safeguard and enhance the function and connectivity of the Kirklees Wildlife Habitat Network at a local and wider landscape-scale unless the loss of the site and its functional role within the network can be fully maintained or compensated for in the long term; (iv) establish additional ecological links to the Kirklees Wildlife Habitat Network where opportunities exist; and (v) incorporate biodiversity enhancement measures to reflect the priority habitats and species identified for the relevant Kirklees Biodiversity Opportunity Zone.
- **Policy LP33 Trees:** Proposals should normally retain any valuable or important trees where they make a contribution to public amenity, the distinctiveness of a specific location or contribute to the environment, including the Wildlife Habitat Network and green infrastructure networks. Proposals will need to comply with relevant national standards regarding the protection of trees in relation to design, demolition and construction. Where tree loss is deemed to be acceptable, developers will be required to submit a detailed mitigation scheme.
- **Policy LP34 Conserving and enhancing the water environment:** Proposals are encouraged to: (v) manage water demand and improve water efficiency through appropriate water conservation techniques including rainwater harvesting and grey-water recycling as well as considering water availability from surface water and groundwater sources and (vi) improve water quality through the incorporation of appropriately constructed and maintained

Sustainable Drainage Systems and surface water management techniques taking into account the sensitivity of groundwater.

- **Policy LP43 Waste management hierarchy:** The council will encourage and support the minimisation of waste production, and support the re-use and recovery of waste materials including, for example, recycling, composting and Energy from Waste recovery. Proposals for facilities to manage waste within the district will be considered based upon the following principles: (i) seeking to move the management of all waste streams up the waste hierarchy of prevention, re-use, recycling, recovery, disposal; (ii) promoting the opportunities for on-site management of waste where it arises; (iii) promoting the use of waste as a resource, particularly encouraging co-location of developments that can use each other's waste materials; (iv) working towards achieving the objectives and targets for recycling/recovery for waste as set out in the Waste Framework Directive; (v) supporting opportunities to locate complementary facilities, such as waste disposal points and treatment facilities, in close proximity to each other.
- **Policy LP49 Educational and health care needs:** Proposals for new or enhanced healthcare facilities will be permitted where: (i) the scale and location is appropriate for the catchment; (ii) there is a need for a new healthcare facility, particularly in relation to the spatial development strategy; (iii) they are well related to the catchment they will serve to minimise the need to travel or they can be made accessible by walking, cycling and public transport.

Policy LP52 Protection and improvement of environmental quality: Proposals which have the potential to increase pollution from noise, vibration, light, dust, odour, shadow flicker, chemicals and other forms of pollution or to increase pollution to soil or where environmentally sensitive development would be subject to significant levels of pollution, must be accompanied by evidence to show that the impacts have been evaluated and measures have been incorporated to prevent or reduce the pollution, so as to ensure it does not reduce the quality of life and well-being of people to an unacceptable level or have unacceptable impacts on the environment. Such developments which cannot incorporate suitable and sustainable mitigation measures which reduce pollution levels to an acceptable level to protect the quality of life and well-being of people or protect the environment will not be permitted. Where possible, all new development should improve the existing environment.

Statement of support: The Proposed Scheme supports the criteria contained within the Kirklees Local Plan. Due to the relevance of this document, a detailed review of the Proposed Scheme using the Kirklees Local Plan criteria is presented in Section 3 of this Sustainability and Energy Statement.

2.3.2 Calderdale and Huddersfield NHS Foundation Trust Design Brief (January 2020)

As discussed in Section 1.1, the CHFT Design Brief outlines principles to be adopted for future projects within the Calderdale and Huddersfield NHS Foundation Trust group. The Design Brief identified the following success factors/overarching design objectives in new developments:

- A Good Neighbour: developments must respond creatively to the constraints and opportunities presented by their sites and contribute positively to their local and wider environments;
- High Quality: developments must be inspiring, humane and attractive, providing high quality, functional and enduring environments reflecting a strong positive image of the NHS and the Trust and supportive of the delivery of excellent clinical services for the people of Calderdale and Huddersfield;
- Digital by Design: the design of buildings must enable and support the Trust's ambition to ensure the optimal use of digital technology and associated new ways of working in the delivery of healthcare;

- Efficiency: developments must make a positive contribution to the efficiency of the clinical services delivered by optimising departmental locations, taking account of desirable clinical adjacencies and ensuring efficient colleague, patient, visitor and Facility Management (FM) flows;
- Accessibility: developments will need to incorporate prominent and conveniently located main and departmental entrances and be organised around an intuitive and readily comprehensible circulation arrangement that aids wayfinding and orientation;
- Flexibility: developments must be capable of accommodating a wide range of changes throughout their lifespans (e.g. the reconfiguration of clinical services, the introduction of new technologies and adjustments to spatial requirements) with minimum disruption to ongoing service delivery;
- A Healing Environment: developments will be required to provide a therapeutic environment for patients, their families / carers and an exceptional working environment for colleagues, promote wellbeing, and avoid appearing excessively clinical or institutional;
- Sustainability: developments should incorporate optimised design solutions aimed at minimising energy consumption and carbon emissions during construction and operation whilst ensuring compliance with the NHS Long Term Plan, as well as the relevant clinical, financial and environmental legislations and standards;
- Innovation: developments are to be planned with appropriate flexibility to ensure “future readiness” in accommodating innovative developments in operation and equipment;
- Safety and Security: developments must provide a safe and secure environment for all patients, their families / carers and colleagues, ensuring that the safety, privacy and dignity of all individual users is maintained, and that the Trust’s Infection Control Strategy is fully implemented; and
- Natural Light and Ventilation: developments will be required to maximise the availability of natural light and ventilation where clinically or operationally appropriate, minimise glare and excessive solar gain and provide attractive views of visually stimulating areas.

Statement of support: The Proposed Scheme will be aligned to design objectives outlined in the CHFT Design Brief as closely as possible. These design objectives are discussed in more detail in relation to the local plan and sustainability design brief review in Section 3.

2.3.3 Calderdale and Huddersfield NHS Foundation Trust Sustainability Design Brief (September 2020)

The CHFT Sustainability Design Brief provides a basis on which future development in the region should be developed. It is based on the eight sustainable outcomes outlined by RIBA, which are:

- Net zero operational carbon;
- Net zero embodied carbon;
- Sustainable water use;
- Green transport planning;
- Land use and ecology;
- Good health and wellbeing;
- Communities and social value; and
- Sustainable lifecycle cost.

The Sustainability Design Brief details steps which The Trust have taken towards decarbonisation, including implementing LED lighting and efficient building management systems.

Statement of support: The Proposed Scheme supports the criteria contained within the CHFT Sustainability Design Brief. Due to the relevance of this document, a detailed review of the Proposed Scheme using the CHFT Sustainability Design Brief criteria is presented in Section 3 of this Sustainability and Energy Statement.

2.3.4 Kirklees Planning Application Validation Checklist

The Kirklees Planning Application Validation Checklist outlines information and documents which may need to be submitted along with a planning application.

Statement of support: Documents such as flood risk assessment, travel plan and arboricultural survey reports have been written for the Proposed Scheme. Additional assessments will be conducted for the Proposed Scheme, such as ecology reports, in line with BREEAM credits LE 02 and 04.

3 Local Plan and Sustainability Design Brief Review

3.1 Introduction

This section is structured around the topics and criteria within the Kirklees Local Plan and the Calderdale and Huddersfield NHS Foundation Trust Sustainability Design Brief ('the CHFT Design Brief'). The relevant policy aims of each document are stated and are followed by a statement of support to demonstrate the Proposed Scheme's compliance. Each statement of support is then mapped against the UN SDGs.

3.2 Sustainable Development

Guidance: Adopting principles from The International WELL Building Institute (IWBI) guidance which contribute to achieving sustainable development outcomes, including lighting design and exposure, water quality and disruption, air quality and ventilation and occupant comfort **(CHFT Sustainability Design Brief, 2020).**
Policy LP7 Efficient and effective use of land and buildings: To ensure the best use of land and buildings, proposals (a) should encourage the efficient use of previously developed land in sustainable locations provided that it is not of high environmental value **(Kirklees Local Plan, 2019).**
Policy LP49 Educational and health care needs: Proposals for new or enhanced healthcare facilities will be permitted where: (i) the scale and location is appropriate for the catchment; (ii) there is a need for a new healthcare facility, particularly in relation to the spatial development strategy; (iii) they are well related to the catchment they will serve to minimise the need to travel or they can be made accessible by walking, cycling and public transport **(Kirklees Local Plan, 2019).**

Statement of support: A BREEAM assessment is being undertaken which encompasses many sustainable development principles including energy and carbon; transport; stakeholder engagement; social value and wellbeing; green infrastructure; waste and water. These topics are discussed in more detail below. The Proposed Scheme contributes to sustainable development through tying into the existing HRI buildings, eliminating the need for further land uptake elsewhere in the region.

Supporting SDGs: Sustainable Development forms the basis of the SDGs. Specific SDGs relevant to the Proposed Scheme are outlined in relation to individual topics below.

3.3 Energy and carbon

3.3.1 Construction emissions

Guidance: Efforts should be made to reduce the embodied energy associated with the construction process and the manufacture of building materials. Cost effective actions should be adopted to reduce the quantity of materials used within design and to promote the use of low carbon alternatives (e.g. GGBS/PFA cement substitutions). Sustainably sourced materials should be purchased with supply chain certification provided (i.e. BES6001, ISO14001, CARES etc).

The procurement of FSC/PEFC timber should be made mandatory. Suppliers will also need to confirm the recycled content found within key building materials and where structurally feasible efforts should be made to procure components with higher recycled content. Locally sourced materials should be prioritised in an attempt to reduce the project's overall carbon footprint **(CHFT Sustainability Design Brief, 2020).**

Statement of support: A sustainable procurement plan has been produced for the Proposed Scheme, particularly focused on construction materials, along with demonstration of how this plan has been used to influence procurement decisions. In line with BREEAM credit Mat 02, all potential suppliers and manufactures associated with the Proposed Scheme will be reviewed for a recognised environment product declaration (EPD). An example of a procurement target that the Proposed Scheme has set is an aim to achieve high standards of Responsible Sourcing Certification, for example to BES 6001 'Very Good' or better.

It is expected that the suppliers, subcontractors and consultants used on the Proposed Scheme will manage their environmental impacts via an environmental management system (or equivalent) that is appropriate to the size of their business and their environmental impacts. Preference will be given to those suppliers, subcontractors and consultants who can demonstrate their environmental management scheme is certified externally (e.g. ISO14001, EMAS and BS8555) by a UKAS accredited body. Where this is not the case, the project team will work with its supply chain to support their achievement of external certification. This is in line with the CHFT Design Brief aspirations.

Where possible, the Proposed Scheme will look to reduce carbon emissions through transportation of materials to site which are required for construction. As an example, the stone facing which will form the façade of the new A&E Department will be locally sourced[4].

The selection process for materials for the new A&E Department focused on the key principles of structural efficiency, sustainability and maximising the adoption of Modern Methods of Construction. For the primary structure of the new A&E Department, six options were assessed using industry guidance (the IStructE guide "How to Calculate Embodied Carbon") to determine which required the least embodied carbon while remaining cost-effective. Options included; Volumetric Modular Construction, load bearing walls, insitu Concrete RC or PT Flat Slab, Steel Beams supporting composite concrete metal deck, Steel Beams supporting Precast Hollowcore Floor Units and Steel Beams supporting Timber Cross Laminated Timber (CLT) Floor. The carbon calculations for these options are currently ongoing.

An ISO14001 certificate and EMP/pollution control plan will be provided for the Proposed Scheme prior to works commencing on site. As per BREEAM credit Man 03, targets will be set for energy (CO_2 emissions) during construction, and records of this provided at completion. The Proposed Scheme will optimise the foundation design for embodied environmental impact and has a structural aim for embodied carbon to total less than 350 $kgCO_2/m^2$.

Transportation targets (CO_2 and distance travelled) for the delivery of materials to site and removal of waste from site will be set and recorded at completion, in line with BREEAM credit Man 03.

All timber and timber-based products for temporary uses will be fully compliant with the requirements of the current version of CPET (Central Point of Expertise for Timber procurement) by having a full chain of custody from Forest Stewardship Council (FSC) or a similar recognised scheme.

[4] For the purpose of the Proposed Scheme, project materials sources within a 30-mile radius of Huddersfield Royal Infirmary will be considered as local.

Supporting SDGs: Goal 7 Affordable and Clean Energy; Goal 9 Industry, Innovation and Infrastructure; Goal 12 Responsible Consumption and Production; Goal 13 Climate Action.

3.3.2 Operational emissions

Guidance:

To support national targets for net-zero carbon, efficient plant equipment should be selected within design and in order to reduce the operational energy demand across the Trust. Heating, ventilation and air conditioning (HVAC) systems typically account for 15-35% of total operational energy use within hospitals, therefore effective control mechanisms and low energy installations should be considered. Additionally, thermal heat loss modelling would not only support Part L of the Building Regulations, but calculations could also be used for Energy Performance Certificates and BREEAM. LED lighting, heat recovery systems and photovoltaics should be featured within the project's design **(CHFT Sustainability Design Brief, 2020).**

Statement of support: In line with BREEAM credit Ene 01, a compliant Building Regulations UK Part L (BRUKL) output report will be provided to provide energy efficiency analysis of the buildings under the Proposed Scheme.

Relevant drawings and specifications will be provided, demonstrating a TM39-compliant metering/sub-metering strategy identifiable by the various end energy uses as per BREEAM credit Ene 02.

Low carbon or carbon neutral primary energy sources, along with onsite generation through renewable technologies, will be considered in line with the relevant BREEAM credits. A low or zero carbon (LZC) study is currently in production, in line with BREEAM credit Ene 04. All space heating and cooling will be provided via all electric Air Source Heat Pump solutions. Additionally, heating will predominately be provided through the ventilation systems via heating coils in the Air Handling Units (AHU) and in the ductwork locally to each zone. Heating zones are provided based on building departmental function and building orientation. Therefore, heating can be controlled in different zones of the ED, increasing the energy efficiency of the building. This aligns with the CHFT Design Brief which details that all new buildings should be designed and built to be progressive in terms of energy demand and be highly energy efficient, in line with the core emission strategies for The Trust. This contributes to the target of becoming carbon neutral in operations, which the NHS has committed to achieve by 2040.

In line with BREEAM credit Man 05, energy and water use is to be monitored for the first 12 months to review actual and predicted performance. This facilitates more accurate monitoring of operational energy consumption levels, which may lead to a reduction of operational energy use by adjusting systems or user behaviours. The building management system (BMS) implemented for the Proposed Scheme will provide data which the Trust can use to monitor operational energy consumption improvements, further contributing to more efficient energy use.

The CHFT Design Brief also outlines the lighting design strategy should utilise low energy lighting, reliability and low maintenance. The lighting strategy for the Proposed Scheme outlines the use of Light Emitting Diodes (LED) lamp sources for internal lighting. Additionally, within Main Circulation Spaces, PIR Automatic Controls will be used and each circulation space will be classed as a separate zone and automatic lighting controls also designed for offices spaces and staff areas. This contributes to operational energy efficiency for the new A&E Department, as separate zones can be controlled independently, and lighting reduced when these areas are not occupied. Automatic controls are not to be used within clinical areas, due to safety restrictions and patient comfort, however clinical staff will be able to control luminaires in these areas.

The CHFT Design Brief outlines the need to achieve optimum comfort with minimum energy consumption. Provision should be considered for solar control measures to reduce heat gains and hence improve thermal comfort thereby minimising energy consumption. The requirements for patient privacy limit the opportunity to implement extensive areas of glazing on the Proposed Scheme. However, high level glazing will be used in Treatment and Assessment Bays which have designated waiting areas. The type of glass specified to provide a measure of solar control in these areas is *St Gobain Cool-Lite SKN176 II* and this will be used in conjunction with internal vertical blinds. In line with the CHFT Design Brief, these measures will be considered for the Proposed Scheme to ensure operational energy efficiency.

Supporting SDGs: Goal 3 Good Health and Wellbeing; Goal 7 Affordable and Clean Energy; Goal 9 Industry, Innovation and Infrastructure; Goal 12 Responsible Consumption and Production; Goal 13 Climate Action.

3.4 Transport

Guidance: The following provisions should be considered in design: priority spaces for car sharing; 6% of total spaces for disabled; additional EV charging infrastructure (even future proof areas with electricity and data supplies) for further expansion of EV charging; travel Plan notice boards / LCD at key reception points/hubs. Possibility of a shuttle bus / wider public transport 'interchange' to encourage public bus services on to site should be considered. Ensure the Trust internal Transport/Travel Working group feeds into current Travel Plans under development by Mott McDonald **(CHFT Sustainability Design Brief, 2020).**
Policy LP20 Sustainable Travel: New development will be located in accordance with the spatial development strategy to ensure the need to travel is reduced and that essential travel needs can be met by forms of sustainable transport other than the private car. The council will support development proposals that can be served by alternative modes of transport such as public transport, cycling and walking. Travel plans will normally be required for all major planning applications in accordance with current guidance and should set targets and monitoring arrangements to ensure sustainable travel patterns are maintained. Travel plans should include agreed and defined outcomes related to a package of specified measures to be implemented including an approach to lower carbon emissions where applicable **(Kirklees Local Plan, 2019).**
Policy LP49 Educational and health care needs: Proposals for new or enhanced healthcare facilities will be permitted where (iii) they are well related to the catchment they will serve to minimise the need to travel or they can be made accessible by walking, cycling and public transport **(Kirklees Local Plan, 2019).**

Statement of support: A travel plan for the Proposed Scheme was produced by Mott MacDonald (2021). The aim of the Travel Plan includes the reduction of CO_2 emissions associated with commuter journeys and accessibility to public transportation services. To this end, the Travel Plan sets out a number of measures to promote active travel, use of public transport and sustainable car use, such as car sharing. Marketing and communications strategies are also outlined to assist with implementation of these measures. A car share scheme is in place for the current site and will continue upon completion of the Proposed Scheme.

A detailed review justifying the need to retain the shuttle bus service connecting CRH and HRI, identifying many benefits for patients and staff, was conducted in line with BREEAM credit TRA 02. Additionally, during the next stage of design, benefits of having a public transport information system in a publicly accessible area will be considered, which many encourage use of sustainable transport methods.

The Trust is considering use of electric ambulances for the proposed A&E Department therefore provision for EV charging spaces will be considered as part of the masterplan for the site. There will be six additional EV charging spaces and a net loss of 96 car parking spaces (no net loss of disabled spaces) as part of the Proposed Scheme. Additionally, there will be a net gain of 10 long stay cycle parking spaces which will be covered and secure and a net gain of 10 short stay cycle parking spaces (Sheffield stands or similar). The reduction in car parking provision and increase in cycle parking may encourage a modal shift of how patients and staff get to and from the site, combined with the car share scheme and shuttle bus services, as outlined above. This aligns with the Trust's core emission strategy which includes facilities to support the uptake and rollout of electric vehicles and supporting infrastructure, where possible.

Supporting SDGs: Goal 10 Reduced Inequalities; Goal 11 Sustainable Cities and Communities; Goal 12 Climate Action.

3.5 Stakeholder engagement

Guidance:

Ongoing consultation with key stakeholders will need to be carried out at conceptualisation. As per BREEAM requirements, third party engagement will need to be carried out by an independent party **(CHFT Sustainability Design Brief, 2020).**

Statement of support: Hospital staff and public engagement sessions were undertaken in 2019 and used to inform the CHFT Design Brief document.

In line with BREEAM Man 01, a Statement of Community Involvement (SCI) has been produced which provides evidence of the stakeholder engagement programme for the Proposed Scheme. It highlights the significant efforts made by The Trust to conduct effective community engagement during Covid-19 via phone call, email, online survey and written responses. Methods of stakeholder engagement for the Proposed Scheme included:

- Feedback via digital consultation website;
- Letters sent to immediate neighbours of the Site;
- Press releases into local and regional news outlets (print and digitally);
- Discussions with local business and community groups;
- Promotion at hospital sites;
- Social media activity (Facebook and Twitter); and
- Discussions with hospital staff (as mentioned above).

The feedback from stakeholder engagement activities have helped inform the development of the planning application. Stakeholders were clear that a new A&E Development should be obvious and logically positioned and with adequate parking spaces nearby. Easy navigation, high quality facilities and privacy for visitors and patients are also important to Stakeholders. The building itself must consider sustainability, be of high quality and make a real positive contribution to the HRI estate. Stakeholder feedback has been considered ahead of finalising the planning application. The Trust commit to regularly updating key stakeholder groups and others on the status of the planning applications. This meets the requirement for consultation with key stakeholders as outlined in the CHFT Design Brief.

Supporting SDGs: Goal 17 Partnership for the goals.

3.6 Social value and wellbeing

Guidance: The importance of healthy building environments and occupant wellbeing will be achieved through principles such as: promote clean contact; improve air quality; maintain water quality; support movement and comfort; foster mental resilience; champion community resilience and recovery. Additionally, the BREEAM 'Technical Manual for Refurbishments and Fit-out[5]' states as a requirement that efforts should be made to increase the comfort, health and safety provided to all building occupants. High levels of visual & thermal comfort, indoor air quality, safety and acoustic performance will need to be maintained. Adopting principles from The International WELL Building Institute (IWBI)[6] guidance which contribute to achieving sustainable development outcomes, including lighting design and exposure, air quality and ventilation and occupant comfort **(CHFT Sustainability Design Brief, 2020).**
Policy LP7 Efficient and effective use of land and buildings: To ensure the best use of land and buildings, proposals (a) should encourage the efficient use of previously developed land in sustainable locations provided that it is not of high environmental value **(Kirklees Local Plan, 2019).**
Policy LP52 Protection and improvement of environmental quality: Proposals which have the potential to increase pollution from noise, vibration, light, dust, odour, shadow flicker, chemicals and other forms of pollution or to increase pollution to soil or where environmentally sensitive development would be subject to significant levels of pollution, must be accompanied by evidence to show that the impacts have been evaluated and measures have been incorporated to prevent or reduce the pollution, so as to ensure it does not reduce the quality of life and well-being of people to an unacceptable level or have unacceptable impacts on the environment. Such developments which cannot incorporate suitable and sustainable mitigation measures which reduce pollution levels to an acceptable level to protect the quality of life and well-being of people or protect the environment will not be permitted. Where possible, all new development should improve the existing environment **(Kirklees Local Plan, 2019).**

Statement of support: Expansion of current healthcare services will contribute to community health and wellbeing, making a positive contribution to the range and efficiency of clinical services provided at HRI. The Proposed Scheme contributes to addressing health inequalities through provision of a new A&E Department.

An Indoor Air Quality Plan has been produced (Mott MacDonald, 2021) for the Proposed Scheme, in line with BREEAM credit HEA 02. This details considerations such as:

- Removal of contaminant sources;
- Dilution and control of contaminant sources;
- Procedures for pre-occupancy flush out;
- Third party testing and analysis;
- Maintaining good indoor air quality in-use;
- Protection of heating ventilation and air conditioning (HVAC) systems from sources of pollution during refurbishment/fit-out works; and
- 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.

[5] 5 BREEAM Technical Manual for Refurbishments and Fit-out, 2015. Available at: https://www.breeam.com/discover/technical-standards/refurbishment-and-fit-out/

[6] 7 Achieving the United National Sustainable Development Goals through WELL v2, 2020. Available at: https://www.wellcertified.com/sdgs

These measures will contribute to achieving an indoor air environment which is healthy and productive, contributing to social well-being and comfort of the building occupants.

Heating will be able to be controlled independently for different heating zones, divided based upon building department function and building orientation. This will increase the comfort for building occupants by providing comfortable temperatures, ultimately contributing to the well-being of the occupants, as outlined in the CHFT Sustainability Design Brief and Policy LP52.

A Noise Impact Assessment was undertaken by Mott MacDonald (2021), including a noise survey, to assess potential impact of noise and vibration during the construction and operation of the Proposed Scheme. The Noise Impact Assessment had the following conclusions:

- There will be no adverse impacts associated with noise from the amended car parking provisions and vehicle access route, as these can be mitigated;
- An approach has been agreed with Kirklees Council to limit noise emissions from new building services plant;
- For existing buildings within the Site, noise emitted from proposed building services plant will be controlled so as to not exceed criteria outlined in HTM-08-01 (industry guidance); and
- The façade of the new A&E Department will be designed to ensure that the internal noise levels meet criteria outlined in HTM-08-01 (industry guidance).

This is evidence that the impacts of noise pollution have been evaluated against the need for the Proposed Scheme, meeting the requirements of Policy LP52. The conclusions of the Noise Impact Assessment will contribute to positive social wellbeing by increasing comfort for nearby receptors during construction and building occupants during operation.

The Proposed Scheme is targeting 70% of the total workforce on site being a resident and a 50% local spend within 30 miles of the Huddersfield Royal Infirmary. To achieve these targets, the project team will work with the supply chain to hire local contractors and suppliers and engage local employment agencies.

This further contributes to social value, particularly reflecting the aim of the CHFT Design Brief to champion local communities.

Supporting SDGs: Goal 3 Good Health and Wellbeing; Goal 9 Industry, Innovation and Infrastructure; Goal 10 Reduced Inequalities.

3.7 Green Infrastructure – ecology, arboriculture and landscape

Guidance: The impact of any future development should be closely monitored and surveys should be carried out by a Suitably Qualified Ecologist (SQE) in order to ensure that natural habitats and features are not only retained but also created. An ecology report should be sought, which details a range of appropriate recommendation **(CHFT Sustainability Design Brief, 2020).**
Policy LP30 Biodiversity and development: Development proposals will be required to: (i) result in no significant loss or harm to biodiversity in Kirklees through avoidance, adequate mitigation or, as a last resort, compensatory measures secured through the establishment of a legally binding agreement; (ii) minimise impact on biodiversity **(Kirklees Local Plan, 2019).**
Policy LP33 Trees: Proposals should normally retain any valuable or important trees where they make a contribution to public amenity, the distinctiveness of a specific location or contribute to the environment. Proposals will need to comply with relevant national standards regarding the protection of trees in relation to design, demolition and construction. Where tree

loss is deemed to be acceptable, developers will be required to submit a detailed mitigation scheme **(Kirklees Local Plan, 2019).**

Statement of support: The development will be located on land which is currently a mixture of building and hard landscaping, and therefore it is unlikely to have high ecological value. Nevertheless, ecology site surveys will be conducted and advice on relevant protection measures will be provided. The BREEAM Change in Ecological Value calculator will be completed, in line with BREEAM credits LE 02 and LE 04. Additionally, the lighting strategy for the Proposed Scheme outlines the intent to design lighting to be sensitive to the site's ecology and will identify areas of darkness in order to preserve the existing landscape and minimise environmental impact.

A Preliminary Ecological Appraisal (PEA) was conducted for the Proposed Scheme in 2020 which recommended the production of a Biodiversity Enhancement Plan, mitigation to avoid disturbance from construction lighting to any bat roosts and a pre-construction walkover if any vegetation is to be removed. Potential opportunities for green cover will be investigated. The PEA will be developed further in order to satisfy the relevant BREEAM requirements, and therefore minimise impact on biodiversity.

The Proposed Scheme is sensitive to the landscape character through the expansion of current medical facilities, which may eliminate the need for a similar development located in a different area. The development is within an existing operational hospital and will therefore be in keeping with the surrounding landscape character.

Arboriculture surveys were conducted (2020). These surveys confirmed that, whilst the removal of 15 individual trees and 2 groups consisting of 5 trees (20 trees in total) is required for the Proposed Scheme, the trees along the southern boundary of the site will be retained. Additionally, mitigation will be implemented to protect the trees to be retained, including protective fencing installed around such trees and biennial monitoring for any works which will encroach into Root Protection Area (RPA) of retained trees. Tree planting as part of the soft landscape plans will be implemented along the southern boundary of the site and upon areas of proposed grass seeding throughout the site.

Supporting SDGs: Goal 13 Climate Action; Goal 15 Life on Land.

3.8 Waste

3.8.1 Construction waste

Guidance:

As per BREEAM requirements a Pre-demolition audit must be completed at concept design. This applies to the demolition of any buildings, structures, hard surfaces etc. A forecast of demolition materials and quantities is required, alongside an outline of material recovery opportunities. Resilience investigations must also be carried out examining the building structure, fabric, building services and renewables. This requires a risk assessment to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. Where possible, development should be designed for disassembly and adaptability. This requires a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios. Zero waste to landfill targets should be set for construction waste material **(CHFT Sustainability Design Brief, 2020).**

Policy LP43 Waste management hierarchy: The council will encourage and support the minimisation of waste production, and support the re-use and recovery of waste materials including, for example, recycling, composting and Energy from Waste recovery. Proposals for facilities to manage waste within the district will be considered based upon the following

principles: (i) seeking to move the management of all waste streams up the waste hierarchy of prevention, re-use, recycling, recovery, disposal; (ii) promoting the opportunities for on-site management of waste where it arises; (iii) promoting the use of waste as a resource, particularly encouraging co-location of developments that can use each other's waste materials; (iv) working towards achieving the objectives and targets for recycling/recovery for waste as set out in the Waste Framework Directive; (v) supporting opportunities to locate complementary facilities, such as waste disposal points and treatment facilities, in close proximity to each other **(Kirklees Local Plan, 2019).**

Statement of support: In line with BREEAM credit Wst 01, a pre-demolition audit and Resource Management Plan have been produced. A Site Waste Management Plan (SWMP) has also been produced for the Proposed Scheme. These will set targets for waste management and identify the level of diversion of resources from landfill, and how this will be achieved.

There is a target for the amount of construction waste related to on-site construction and off-site manufacture (excluding demolition and excavation waste) generated per 100m^2 of gross internal floor area, to be $\leqslant$ 11.1 tonnes. The Proposed Scheme will also look to divert resources from landfill, working towards the following targets:

- $\geq$ 95% diversion of construction waste;
- $\geq$ 90% demolition waste; and
- $\geq$ 90% excavation waste.

The Proposed Scheme will maximise the recycled content of construction materials in the fabric of buildings and structures and maximise the use of construction materials that are themselves recyclable. A target for minimum recycled content > 30% of total volume/weight has been set. This will be achieved by design and material specification and by ensuring a review of recycle content and recyclability are part of the options appraisal criteria.

Additionally, in line with BREEAM credit Mat 06, the waste hierarchy has been adopted for the Proposed Scheme. This comprises the following principles: reduce, re-use, recycle, recover and dispose, with reduce being the most preferable option, to disposal only being implemented once all other options have been exhausted. Suppliers selected for the Proposed Scheme will also support the commitment to avoid the landfilling of construction waste wherever possible. At an earlier design stage, the WRAP Template and Checklist for Designing Out Waste were used to identify the most suitable opportunities to reduce waste.

The use of prefabricated elements will be implemented where appropriate to reduce material waste. For example, 100% of the tunnel walkway of the Proposed Scheme will be of SFS type offsite fabricated construction.

These targets and adoption of the waste hierarchy principles contribute to minimising the production of waste and encouraging sustainable re-use and recovery of materials, meeting requirements relating to waste as outlined in the CHFT Sustainability Design Brief and the Kirklees Local Plan.

It is anticipated that the Proposed Scheme will be downgraded from a full A&E Department to an Urgent Care Centre when the major clinical development at Calderdale Royal Hospital is completed. Therefore, in line with BREEAM credit Wst 06, the new A&E Department has been designed with deconstruction and flexibility as a priority and with the potential to adapt for future functional changes. Examples of this within the design include:

- The majority of the plant room has been redesigned to now be located on the roof, which creates the opportunity to easily replace mechanical and electrical items as required;

- The steel structure will be all bolted, therefore could easily be dismantled for future deconstruction;
- Extensive use being made of non-structural internal construction which can be readily configured with minimum disruption to clinical services;
- The structural system adopted including structural grid and flood to soffit height to facilitate re-use of accommodation for alternative health care use if needed in the future; and

Ensuring significant elements of the building will be capable of potential re-use, such as stone cladding, windows and doorsets. A climate change adaptation strategy appraisal will be conducted, as per BREEAM credit Wst 05. This will include a risk assessment to identify the impact of extreme weather events associated with climate change. Evidence will be provided to demonstrate how the recommendations from the risk assessment have been implemented.

Supporting SGDs: Goal 9 Industry, Innovation and Infrastructure; Goal 11 Sustainable Cities and Communities; Goal 12 Responsible Consumption and Production; Goal 13 Climate Action.

3.8.2 Operational waste

Guidance:
Opportunities to improve operational waste management should be sought out. These should support the Trusts ambition to increase recycling rates and meet zero waste to landfill targets. Design should ensure that logistical challenges are outlined, these relate to the safe storage and transportation of waste streams **(CHFT Sustainability Design Brief, 2020).**
Policy LP43 Waste management hierarchy: The council will encourage and support the minimisation of waste production, and support the re-use and recovery of waste materials including, for example, recycling, composting and Energy from Waste recovery. Proposals for facilities to manage waste within the district will be considered based upon the following principles: (i) seeking to move the management of all waste streams up the waste hierarchy of prevention, re-use, recycling, recovery, disposal; (ii) promoting the opportunities for on-site management of waste where it arises; (iii) promoting the use of waste as a resource, particularly encouraging co-location of developments that can use each other's waste materials; (iv) working towards achieving the objectives and targets for recycling/recovery for waste as set out in the Waste Framework Directive; (v) supporting opportunities to locate complementary facilities, such as waste disposal points and treatment facilities, in close proximity to each other **(Kirklees Local Plan, 2019).**

Statement of support: A review of potential waste streams and volumes will be conducted and confirmation that the design complies with HTM07-01 (the relevant NHS guideline for England), as per BREEAM credit Wst 03.

Separation of waste is currently managed at source, with waste streams being removed to the Waste Disposal Room in each clinical area. Waste Disposal Rooms will need to provide the capability for five cages/bins to allow waste segregation into laundry, domestic waste, clinical waste, recycling and other. Appropriate provision will be made for the movement of waste.

Supporting SDGs: Goal 11 Sustainable Cities and Communities; Goal 12 Responsible Consumption and Production; Goal 13 Climate Action.

3.9 Water

Guidance:
Policy LP27 Flood risk: Proposals must be supported by an appropriate site specific Flood Risk Assessment in line with national planning policy. This must take account of all sources of flooding set out in the Strategic Flood Risk Assessment and demonstrate that the proposal will be safe throughout the lifetime of the development (taking account of climate change). The proposal must also not increase flood risk elsewhere and where possible should reduce flood risk. Mitigation measures, where necessary, should be proposed **(Kirklees Local Plan, 2019).**
Policy LP34 Conserving and enhancing the water environment: Proposals are encouraged to: (v) manage water demand and improve water efficiency through appropriate water conservation techniques including rainwater harvesting and grey-water recycling as well as considering water availability from surface water and groundwater sources and (vi) improve water quality through the incorporation of appropriately constructed and maintained Sustainable Drainage Systems and surface water management techniques taking into account the sensitivity of groundwater **(Kirklees Local Plan, 2019).**

Statement of support: In line with BREEAM credits Wat 01 and Wat 02, the Wat 01 calculator will be completed. All water consuming plant and areas will be reviewed and sub-meters provided to any areas consuming >10% of the total water demand. Relevant evidence will be provided for sanitary fittings and other water consuming items.

In terms of water saving sanitary ware, clinical requirements largely override aspirations to implement water saving objectives. However, where possible, water saving equipment has been specified, including water saving thermostatic basin mixer taps, shampoo-type basin with a flexible hose and level operated ‘zip’ taps for certain locations.

Water use will be monitored for the first 12 months to review actual and predicted performance, in line with BREEAM credit Man 05. This facilitates more accurate monitoring of operational water consumption levels, which may lead to a reduction of water use by adjusting systems or user behaviours.

A Flood Risk Assessment (FRA), undertaken by Mott MacDonald (2020), identified that the Proposed Scheme is located in Flood Zone 1 and can be considered to be a site of very low fluvial flood risk. The use of Sustainable Drainage Systems (SuDS) will be considered as the primary means of collection, conveyance and control of runoff from the site. The runoff from the vehicle areas may be classified as Medium pollution risk and so will require treatment before discharge from the site. One appropriate SuDS system would be the use of permeable paving located in the parking area adjacent to the building development. This would provide the required level of treatment and attenuation required.

Supporting SDGs: Goal 6 Clean Water and Sanitation; Goal 12 Responsible Consumption and Production.

4 Conclusion

This Sustainability and Energy Statement has been prepared in support of a full planning application for the new A&E Department at Huddersfield Royal Infirmary. This Statement demonstrates how the Proposed Scheme is compliant with the relevant national and local sustainable development policy, given what is known at the current design stage, RIBA Stage 4.

A. BREEAM Pre-assessment

Ref:	100102983
Project:	New Accident and Emergecncy (A&E) Department
Client:	Calderdale & Huddersfield Solutions Ltd
Address:	Calderdale & Huddersfield NHS Foundation Trust Huddersfield Royal Infirmary Acre Street Huddersfield HD3 3EA
Report:	BREEAM Pre-Assessment
Scheme:	BREEAM NC 2018 v3.0
Scheme type:	Healthcare - Health Centres & Clinics
Registration:	BREEAM-0088-9188
Target Rating:	Excellent
Date:	15/06/2021
Produced by:	Darren Burrows (BREEAM Assessor & AP)

Description:

Erection of a clinical building to accommodate Accident and Emergency (A&E) Department together with associated vehicular access, car and cycle parking spaces, plant and landscaping.

Approximately 2534m^2 single-storey new emergency department attached by link corridor to the existing main hospital, providing triage and assessment spaces, 2 no. x-ray rooms and a hot lab, along with waiting areas, admin, offices and a meeting room and general ancillary spaces.
Highly serviced as most spaces are clinical, with all mech vent with air con. Initial plan is to use existing site steam main from the energy centre for heating and hot water with a chiller for cooling, however this all needs reviewing for the Trust's carbon reduction commitment and zero carbon ambitions, and for Part L (especially if Excellent is to be achieved).
Site area 0.8761 Ha with external works largely limited to the direct area surrounding the new building, with some works to the existing car park and access road.
The site is currently mostly built upon with some trees that will have to be removed. Limited opportunity for planting unless a green/brown roof is provided, although there is potential for off-site offsetting.

Notes:

This pre-assessment has been carried out on behalf of the client, the Calderdale & Huddersfield NHS Foundation Trust, during RIBA Stage 2 by BREEAM AP Darren Burrows, Mott MacDonald, using the BREEAM NC 2018 v3 Healthcare scheme.

The target rating to be achieved is Excellent, requiring a score of at least 70% and certain mandatory credits. It is recommended that a further 5% margin is allowed to cater for any subsequent changes affecting the score through the detailed design, construction and post construction stages. This pre-assessment identifies a base strategy that achieves a score of 75.95%, including all mandatory credits required for an Excellent rating, with up to a further 15.87% potentially available from credits that require further review. The project is therefore on target for an Excellent rating.

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
MANAGEMENT													
Man 01 Project brief and design													
A	**Project delivery planning**	**1**	**0.52**	**L**						**2**	**ACTION** **Provide the updated project programme showing revised dates for at least RIBA Stage 2 if not all stages** **Provide evidence demonstrating how the stakeholders have influenced the Project Brief, Execution Plan, Communication Strategy and Concept Design (either through input in the original or by changes made)**	**PM** **TEAM**	**Stage 2**
1 Prior to completion of the Concept Design, the project delivery stakeholders [client, building occupier (where known), design team and principal contractor] meet to identify and define for each key phase of project delivery: - 1a Roles - 1b Responsibilities - 1c Contributions. 2 Consider each one of the following items when defining roles, responsibilities and contributions for each key phase of the project: - 2a End user requirements - 2b Aims of the design and design strategy - 2c Particular installation and construction requirements or limitations - 2d Occupiers' budget and technical expertise in maintaining any proposed systems - 2e Maintainability and adaptability of the proposals - 2f Operational energy (see Assessment scope on page 121) - 2g Requirements for the production of project and end user documentation - 2h Requirements for commissioning, training and aftercare support Where the building occupants are not known, the list of considerations above still applies. The appropriate project delivery stakeholder considers each item, based on likely scenarios of building occupancy. 3 The project team demonstrates how the project delivery stakeholders' contributions and the consultation process outcomes influence the following: - 3a Initial Project Brief - 3b Project Execution Plan (see Definitions on page 37) - 3c Communication Strategy (see Definitions on page 37) - 3d Concept Design **Key phases** The key phases of project delivery are: – Concept Design – Developed Design – Construction – Commissioning and Handover – In-Use occupation											EVIDENCE 025 PEP Section 5.5 outlines the roles and responsibilities throughout the project generally covering all the requirements however Appendix C provides a more detailed breakdown (see #026) 026 PEP Appendix C Roles & Responsibilities Matrix provides a very detailed breakdown of the roles, responsibilities and deliverables of all project delivery partners involved across all phases of the project 031 Project Design Brief states this was developed between the PM, Client, engineering consultant Mott MacDonald and the Architect, and shows it went through several checks and iterations before final approval. It also states it draws upon feedback from engagement sessions with local healthcare stakeholders, voluntary organisations and members of the public, and builds upon significant public, stakeholder and clinical engagement undertaken by the Trust since 2012. Section 2 states designs will be evaluated throughout their development using AEDET. Section 2.2 states that new developments are expected to achieve a BREEAM rating of Excellent. The document mainly sets out the Trust's overarching design requirements and principles, with section 4.2 going into detail for the A&E department. 15/10/20 Steve Jenkins confirmed this will be picked up in the PEP 18/01/21 Chased Steve Jenkins for the PEP 08/03/21 Steve Jenkins provided the working draft PEP however this is for the expansion programme as a whole therefore does not provide any specific details of any project or stakeholders - response says there are also project specific ones for HRI & CRH which will be provided 06/04/21 John Knape spoke to Steve Jenkins who confirmed the PEP would be provided 'by early next week' 20/04/21 Confirmed the PEP has not been provided, although there is a Responsibility Matrix that might be of use (needs to be provided to check). Specific meeting arranged 30/04/21 to bottom this out [didn't happen] 06/05/21 Further PEP provided by Stephen Jenkins however this incorrect dates and is missing the appendices which includes the Roles & Responsibilities matrix		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
B	Stakeholder consultation (interested parties)	1	0.52	L						2 & 4	ACTION Social: - Confirm the consultation has been carried out by an 'independent party' - Provide meeting minutes, records, presentations etc demonstrating compliant consultation has been carried out and the 'minimum content' covered, up to Stage 4 - Provide the final version of the Statement of Community Involvement IBI/T&T: - Provide the AEDET reviews from each project stage - Provide an overview (notes, mark ups etc) showing how the consultation has influenced or been incorporated in the concept designs - Provide the revised project programme showing dates for each RIBA stage	CONSULTATION (Social) ARCHITECT PM	

REQUIRED EVIDENCE

4-6 Consultation plan setting out the process and scope of the consultation

4 Prior to completion of the Concept Design, the design team consult with all interested parties (see definitions below) on matters that cover the minimum consultation content (see Methodology).
5 Demonstrate how the stakeholder contributions and consultation exercise outcomes influence the Initial Project Brief and Concept Design.
6 Prior to completion of the detailed design (RIBA Stage 4, Technical Design or equivalent), all interested parties (see definitions below) give and receive consultation feedback.
7 **[Education, Healthcare, Law courts and Major transportation hub building types only]** An independent party (see definition below) carries out the consultation exercise. The Design Quality Indicator (DQI) and the Achieving Excellence Design Evaluation Toolkit (AEDET) could be used as methods to assess the design quality of buildings.

Minimum consultation content
The minimum consultation content of the consultation plan is dependent on the building, but typically includes:
1. Functionality, build quality and impact (including aesthetics).
2. Provision of appropriate internal and external facilities (for future building occupants and visitors or users).
3. Management and operational implications.
4. Maintenance resources implications.
5. Impacts on the local community, e.g. local traffic or transportation impact.
6. Opportunities for shared use of facilities and infrastructure with the community or appropriate stakeholders.
7. Compliance with statutory (national or local) consultation requirements.
8. Energy use and sustainability measures.
9. Implementing principles and processes that deliver an inclusive and accessible design.
~~10. **[Educational building types]** How the building or grounds could best be designed to facilitate learning and provide a range of social spaces appropriate to the needs of a diverse range of pupils, students and other users, including people of all abilities.~~
~~11. **[Building types containing technical areas or functions, e.g. laboratories, workshops etc.]** The end users' broad requirements for such facilities, including appropriate sizing, optimisation and integration of equipment and systems.~~ **CONFIRMED NOT RELEVANT**
~~12. **[Transportation hubs]** How to ensure a smooth, safe and secure transition between different modes of transport (air, rail, road, bike and pedestrian, recognising the diversity of user needs including people of all ages and abilities).~~

Interested parties
This includes but is not limited to:
1. Actual or intended building users (if known) including facilities management staff or those responsible for the day-to-day operation of the building and grounds
2. Representative consultation group from the existing community (if the building is a new development in an existing community) or for a community still under construction
3. Existing partnerships and networks that have knowledge of, and experience of working on, existing buildings of the same type
4. Potential users of any shared facilities, e.g. operators of clubs and community groups
AND the following where relevant:
5. In educational building types, representatives of local education authorities, board of governors etc
6. Local or national historic or heritage groups (over and above any requirements relating to statutory consultees)
7. Specialist service and maintenance contractors or representatives where the building function has particular technical requirements in complex environments, e.g. buildings containing laboratories
8. For stations, passenger focus groups, train and station operations groups

Independent party
A third party/person/body internal to a party involved (i.e. a supplier (1st party) or purchaser (2nd party)), who shall not be involved in the issue in question, and shall not have conflicts of interest resulting from their position. To comply the client or design team needs to demonstrate either:
1. They have used a party independent of the design process to conduct the necessary consultation exercise; OR
2. If the consultation is to be carried out by an organisation involved with the design of the building, e.g. the architect, then they must present evidence that robustly demonstrates the independence of the consultation process

EVIDENCE
025 PEP Section 16.4 Stakeholder Mapping identifies the various stakeholder groups and the communication methods to be used
031 Project Design Brief states this was developed between the PM, Client, engineering consultant Mott MacDonald and the Architect, and shows it went through several checks and iterations before final approval. It also confirms it draws upon feedback from engagement sessions with local healthcare stakeholders, voluntary organisations and members of the public, and builds upon significant public, stakeholder and clinical engagement undertaken by the Trust since 2012. Section 2 states designs will be evaluated throughout their development using AEDET. Section 2.2 states that new developments are expected to achieve a BREEAM rating of Excellent. The document mainly sets out the Trust's overarching design requirements and principles, with section 4.2 going into detail for the A&E department
032 Colleague Involvement Report shows that 21 workshops were held with colleagues throughout October and November 2019, with a further 4 public involvement workshops, one Older People's Fair and a Young People's event (see #034 for public involvement details), the feedback from which was used to develop the design brief. Section 2.5 provides a typical agenda, showing that generally the minimum consultation content was covered. Section 3 shows who was at each workshop, demonstrating this covered all relevant parties
033 Screen shot from the Calderdale & Huddersfield NHS Trust website shows that information and feedback on the transformation project, including the new A&E department, was made available to all
034 Public Involvement Report provides details of the four public engagement workshops and two separate Older People's and Young People's events, held in November and December 2019, which included general public and various community groups and organisations. These involved the design team and were used to develop the Design Brief
035 Communication & Involvement Strategy September 2020 - September 2021 provides an overview of the engagement undertaken to date and what's planned for the next stage, Section 4 identifying the different stakeholder groups, their considerations/expectations and the channels of communication to be used, and Section 7 provides the timeline for the key activities for the expansion projects
036 Statement of Community Involvement demonstrates that statutory and local consultation requirements are being met and provides an overview of the public and stakeholder engagement programme for the transformation project including the HRI new A&E department, and states that Social have been appointed as independent specialists to lead the community and stakeholder engagement **DRAFT MUST HAVE THE FINAL VERSION**
037 Communication and Involvement Update (December 2020) confirms that all stakeholders have received an update on progress and provides an overview on the further consultation to be undertaken as the project develops, including a change to the way community engagement will be carried out due to Covid-19
038 Final Engagement Summary, by Social, provides an overview of the responses received from the public engagement
039 Communication and Involvement Update (March 2021) shows that further consultation and public engagement took place with all interested parties, including feedback and update on progress, throughout February and March 2021,

25/09/20 Confirmed there are no technical labs or similar to make criterion 11 relevant
22/03/21 Alison Mackay, CBRE, mentioned there is consultation underway. Requirements sent asking if this is likely to comply
30/03/21 John Knape, IBI, thinks this is actually achievable and will speak to Nicola Bailey
20/04/21 DJB to follow up and get further info to see if this is achieved - John Knape to provide contact details

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
C-PR	**Performance targets - Pre-requisite for AP credits**	**1**	**0.00**	**L**							**ACTION** **Provide a contract/requirements doc/letter of appointment demonstrating the formal agreement of performance targets (relevant section of WIP?)**	**PM**	**Brief**
8 The project team, including the client, formally agree strategic performance targets (see Definitions on page 37) early in the design process, see Definitions on page 37, (with the support of the BREEAM AP where appointed). **KBCN1050 NOW NO PENALTY FOR FAILING THESE** **Minimum requirements** These must include the BREEAM rating and relevant mandatory requirements, but could also include specific credits and other targets											031 Project Design Brief Section 2.2 states that new developments are expected to achieve a BREEAM rating of Excellent. The document mainly sets out the Trust's overarching design requirements and principles, with section 4.2 going into detail for the new A&E department		
C1	**BREEAM AP (Concept Design)**	**1**	**0.52**	**L**						**1-2**	**MUST ACHIEVE C-PR ABOVE TO AWARD THIS CREDIT** **PCR ACTION** **Must achieve an Excellent rating for final award**	**ASSESSOR**	**Completion**
8 Achieve the pre-requisite requirement 9 Involve a BREEAM AP in the project at an appropriate time and level to: - 9a Work with the project team, including the client, to consider the links between BREEAM issues and assist them in maximising the project's overall performance against BREEAM, from their appointment and throughout Concept Design. - 9b Monitor progress against the performance targets (see Definitions on page 37) agreed under criterion 8 above throughout all stages after their appointment where decisions critically impact BREEAM performance. - 9c Proactively identify risks and opportunities related to the achievement of the targets agreed under criterion 8 on the previous page. - 9d Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets. - 9e Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team. **As a minimum performance targets must include the BREEAM rating and relevant mandatory requirements, but could also include specific credits and other targets**										EVIDENCE 003 E-mail from the Assessor to the project team at the start of RIBA Stage 2 providing the initial credit schedule (see #004), a list of the credits requiring action during Stage 2, and a link to the BREEAM manual 004 Initial credit schedule issued to the project team for review, following a desk-top study to identify which credits would be likely, possible or unlikely 005 Scan of the Assessor's notes from the initial Stage 2 kick-off meeting and BREEAM discussion 006 Further e-mail from the Assessor to the project team following the initial discussion, with updated comments and pre-empting the first full BREEAM workshop 007 Scan of the Assessor's notes from the first Stage 2 BREEAM workshop 013-018 Further e-mails to the project team with updated schedules providing advice and feedback throughout Stage 2 031 Project Design Brief Section 2.2 states that new developments are expected to achieve a BREEAM rating of Excellent. The document mainly sets out the Trust's overarching design requirements and principles, with section 4.2 going into detail for the new A&E department 045 Subconsulting Services Agreement shows that Mott MacDonald were appointed 29/04/20, at the very start of the project, for consultancy services including BREEAM (although not stated this only covered up to the end of Stage 2 Concept Design)		
C2	**BREEAM AP (Developed Design)**	**1**	**0.52**	**L**						**3-4**	**ACTION** **ASSESSOR Add further notes and updated schedules from Stage 3 & 4 workshops**	**ASSESSOR**	**Stages 3 & 4**
10 Criteria 8 and 9 on the previous page are achieved. 11 Involve the BREEAM AP in the project at an appropriate time and level to: - 11.a Work with the project team, including the client, to consider the links between BREEAM issues and to assist them in maximising the project's overall performance against BREEAM throughout Developed Design. - 11b Monitor progress against the performance targets agreed under criterion 8 on the previous page throughout all stages where decisions critically impact the specification and tendering process and the BREEAM performance. - 11c Proactively identify risks and opportunities related to the achievement of the targets agreed under criterion 8 on the previous page. - 11d Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets. - 11e Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team.										EVIDENCE 040-044 E-mails to the project team with updated schedules providing advice and feedback throughout Stages 3-4 **UP TO 14/05/21** 046 Huddersfield ED Fee Letter shows Mott MacDonald's appointment transferring from the principal designer IBI to the principal contractor Vinci for Stage 3 through to the end of the project **xxx ASSESSOR TO ADD FURTHER NOTES AND UPDATES THROUGHOUT PROJECT**		
Man 02 Life cycle cost and service life planning													
A	**Elemental life cycle cost (LCC)**	**2**	**1.05**	**P**						**2**	**ACTION** **QS - Provide elemental LCC plan and option appraisal** **TEAM - Provide evidence showing that the elemental LCC plan has influenced design/specification**	**QS** **TEAM**	
REQUIRED EVIDENCE **1-3 Elemental LCC plan** 1 A competent person (see Definitions on the facing page) carries out an outline, entire asset LCC plan at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) together with any design options appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865: 2008(6). 2 The elemental LCC plan: - 2a Provides an indication of future replacement costs over a period of analysis as required by the client (e.g. 20, 30, 50 or 60 years); - 2b Includes service life, maintenance and operation cost estimates. The study period should ideally be agreed by the client, in line with the design life expectancy of the building. However, where the life expectancy of the building is not yet formally agreed (due to being at very early design stages), the default design life of 60 years should be used for modelling purposes (in line with the UK default). 3 Demonstrate, using appropriate examples provided by the design team, how the elemental LCC plan has been used to influence building and systems design and specification to minimise life cycle costs and maximise 'critical value' **Critical value** KBCN1006 defines this as 'maximised whole life value' where impact on business operations from disruptive maintenance is included in the assessment										21/01/21 E-mail from Stephen Jenkins confirms this is not being pursued 27/04/21 **UPGRADED U TO L** Eddie Parker, IHP, stated that either T&T would carry this out or their own QS 01/06/21 E-mail from Eddie Parker provides a proposal from T&T to carry out a compliant Elemental LCC		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
B	Component level LCC option appraisal	1	0.52	P						4	ACTION QS: Provide component level LCC option appraisal TEAM: Provide evidence showing that the component level LCC appraisal has influenced design/specification	QS TEAM	Stage 4
REQUIRED EVIDENCE 4-5 Component level LCC options appraisal plan 4 A competent person develops a component level LCC options appraisal by the end of Process Stage 4 (equivalent to Technical Design – RIBA Stage 4) in line with PD 156865: 2008. The component level LCC includes (where present): - 4a Envelope, e.g. cladding, windows, or roofing - 4b Services, e.g. heat source, cooling source, or controls - 4c Finishes, e.g. walls, floors or ceilings - 4d External spaces, e.g. alternative hard landscaping, boundary protection. The Component level LCC option appraisal should review all of the above component types (where present). However, you do not need to consider every single example cited under each component; only a selection of those most likely to draw valued comparisons. This is to ensure that a wide range of options are considered and help focus the analysis on components which would benefit the most from appraisal. 5 Demonstrate, using appropriate examples provided by the design team, how the component level LCC options appraisal has been used to influence building and systems design and specification to minimise life cycle costs and maximise critical value.											21/01/21 E-mail from Stephen Jenkins, T&T, states Man 02 is not being pursued however unsure if this applies to just Stage 2 Elemental LCC or both parts 04/03/21 IHP confirmed that T&T will not be the QS and that this will need looking into by the new QS 27/04/21 UPGRADED P TO L Eddie Parker, IHP, stated that their QS will carry this out		
C	Capital cost reporting	1	0.52	L							ACTION Provide capital cost info	QS	Stage 4
REQUIRED EVIDENCE 6 Predicted capital costs via BREEAM Projects. (Capital costs via BREEAM Projects for final post-construction stage) 6 Report the capital cost for the building in pounds per square metre of gross internal floor area (£k/ m²) as part of the submission to BRE. See also Methodology below and Additional information on page 44. 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 Costs relating to land procurement, clearance, design, statutory approvals and post occupancy aftercare should not be included.											04/03/21 It was stated that T&T should be able to provide the current cost plan as interim evidence		
Man 03 Responsible construction practices								1	2				
PR	Legally harvested and traded timber - Pre-requisite for all parts	1	0.00	L							ACTION Provide a letter confirming that all timber and timber-based products for temporary uses will be fully compliant with the requirements of the current version of CPET (i.e. have a full chain of custody from FSC/PEFC or similar recognised scheme) Provide a list of all temporary timber uses and relevant delivery notes showing this was all fully compliant, and any instances where timber has been avoided (e.g. Heras fencing instead of hoarding)	CONTRACTOR	Pre-construction
1 All timber and timber-based products used during the construction process of the project are 'legally harvested and traded timber' (see Definitions on page 50). For other materials there are no prerequisite requirements at this stage. NOTE: Any temporary timber to be used in the infrastructure/enabling works that will be retained for the main construction phase must also comply, with the relevant certificates provided as evidence.											PRE-CONSTRUCTION ACTION Ensure all timber and timber-based products for temporary uses are ordered to be fully compliant with the requirements of the current version of CPET (i.e. have a full chain of custody from FSC or similar recognised scheme). Provide a list of all temporary uses (hoarding, formwork etc) and relevant delivery notes and certificates for each use 15/10/20 IHP (JV between Vinci and SRM) have been appointed as NHS Principal Supply Chain Partner. Robert Dadzie to discuss all relevant issues with them 04/03/21 IHP confirmed that Vinci's Footprint reporting system will capture all timber information		
PR	*HEALTHCARE NHS ONLY* Environmental Management System - Pre-requisite for all parts	1	0.00	L							ACTION Provide a current ISO 14001 certificate	CONTRACTOR	Pre-construction
2 To award any of the available credits for this issue, any party who at any stage manages the construction site (e.g. the principal contractor, the demolition contractor) operates an Environmental Management System (EMS) (see requirements of criterion 3 below).											15/10/20 IHP (JV between Vinci and SRM) have been appointed as NHS Principal Supply Chain Partner. Robert Dadzie to discuss all relevant issues with them		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
A	**Environmental management** *NOTE: #3 is Mandatory for Healthcare schemes only	**1**	**0.52**	**L**							**ACTION** **Provide a current ISO 14001 certificate and a completed PPG6 checklist and EMP/pollution control plan prior to works on site**	**CONTRACTOR**	**Pre-construction**
3 All parties who at any stage manage the construction site (e.g. the principal contractor, the demolition contractor) operate an EMS covering their main operations. The EMS must: - 3a Be third party certified, to ISO 14001: 2015(10), EMAS (EU Eco-Management and Audit Scheme) or equivalent standard; OR - 3b In compliance with BS 8555: 2016(11) have: - 3b.i Appropriate structure - 3b.ii Reached implementation stage phase four 'implementation and operation of the environmental management system' - 3b.iii Completed defined phase audits one to four. 4 All parties who at any point manage the construction site (e.g. the principal contractor, the demolition contractor) implement best practice pollution prevention policies and procedures on site in accordance with Working at construction and demolition sites: PPG6, Pollution Prevention Guidelines(12). **[Withdrawn but still used until a suitable replacement is published]**										15/10/20 IHP (JV between Vinci and SRM) have been appointed as NHS Principal Supply Chain Partner. Robert Dadzie to discuss all relevant issues with them		
B	**BREEAM AP (site)**	**1**	**0.52**	**P**							**ACTION** **MM to confirm If this is now included or still down as an extra** **Appoint a suitably qualified specialist (registered BRE Site Sustainability Manager or BREEAM AP) to carry out regular site visits and progress reviews against the BREEAM credits**	**CONTRACTOR**	**Pre-construction**
Prerequisite for the BREEAM AP credit: 5 The client and the contractor formally agree performance targets. One credit – BREEAM AP (site) 6 Involve a BREEAM AP in the project at an appropriate time and level to: - 6a Work with the project team, including the client, to consider the links between BREEAM issues and assist them in achieving and if possible going beyond the design intent, to maximise the project's performance against the agreed performance targets throughout the Construction, Handover and Close Out stages. - 6b Monitor construction progress against the performance targets agreed under criterion 5 above throughout all stages where decisions critically impact BREEAM performance. - 6c Proactively identify risks and opportunities related to the procurement and construction process and the achievement of the targets agreed under criterion 5 on the previous page. - 6d Provide feedback to the constructors and the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets. - 6e Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team and the provision to the assessor.										**NOTE: This could be carried out by the Assessor (where they are also a BREEAM AP) but there is no appointment that currently covers this** 15/10/20 IHP (JV between Vinci and SRM) have been appointed as NHS Principal Supply Chain Partner. Robert Dadzie to discuss all relevant issues with them 03/03/21 Vinci do have a couple of AP's/SSM's however unknown where they're located or if they could carry this out 04/03/21 IHP stated that it's unlikely their AP/SSM would be able to carry this out and that MM are to provide a fee proposal for this as an additional service 27/04/21 DJB to check if this is included in MM's fees or would be extra		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
C	Responsible construction management - Up to 2 credits plus an Exemplary level	1	0.52	L				1	1		ACTION Provide a letter confirming the following will be achieved at completion: - Registration of the project with the CCS and provide the monitor's site report and final certificate demonstrating a score of at least 35 is achieved (criteria a-f, h-o & r-s) - There will be clear and safe access in and around the buildings at the point of handover (criterion g) - Use of FORS for all fleet operators attending site (criteria p & q)	CONTRACTOR	Pre-construction
		1	0.52	L					1				
XP		1	1.00	L									

See also GN33: a CCS score of ≥35 needs one additional item to achieves 2 credits (g.), and a further two for Exemplary level (p. and q.)

Risk evaluation and implementation

The principal contractor evaluates the risks (on site and off site), plans and implements actions to minimise the identified risks, covering the following, where appropriate:

1 credit - achieve items a, d, f, g, h, j, n, o, & r (shown in red) of the following

2 credits - in addition, achieve six further items

XP - achieve all items

Vehicle movement

a. Manage the construction site entrance to minimise the impacts (e.g. safety, disruption) arising from vehicles approaching and leaving the development footprint.

b. Ensure the development footprint is accessible for delivery vehicles fitted with safety features (e.g. side under run protection) to remove or limit the need for on-street loading or unloading. Where on-street loading is unavoidable, this should be appropriately managed.

c. Identify access routes to the development footprint, including for heavy vehicles to minimise traffic disruption and safety risks to others.

Pollution management

d. Minimise the risks of air, land and water pollution.

e. Minimise the risks of nuisance from vibration, light and noise pollution.

Tidiness

f. Practices ensure the development footprint is safe, clean and organised at all times. This includes, but is not limited to, facilities, materials and waste storage.

g. Ensure clear and safe access in and around the buildings at the point of handover.

Health and wellbeing

h. Provide processes and equipment required to respond to medical emergencies.

i. The principal contractor identifies and implements initiatives to promote and maintain the health and wellbeing of all site operatives within the development footprint. This can be via site facilities, site management arrangements, staff policies etc.

j. Establish management practices and facilities encouraging equality, fair treatment and respect of all site operatives.

k. Provide secure, clean and organised facilities (e.g. changing and storage facilities) for site operatives within the development footprint.

Security processes

l. Minimise risks of the site becoming a focus for antisocial behaviour in the local community (e.g. robust perimeter fencing, CCTV, avoid creating dark corners etc.).

Training, awareness and feedback (see definitions on page 50)

The principal contractor is responsible for ensuring:

m. Aspects of the construction process that might impact the community are communicated regularly, ensuring that nuisance and intrusion are minimised.

n. Ensure ongoing training is provided, and up to date, for personnel and visitors (covering items a to l, as appropriate.)

o. The principal contractor ensures that site operatives are trained for the tasks they are undertaking (including any site-specific considerations).

p. The fleet operators (see Definitions on page 50), undertakes driver training and awareness to promote safety within the development footprint and off site.

Monitoring and reporting

The principal contractor ensures:

q. The fleet operators, captures and investigates any road accidents, incidents and near misses and reports them back to the principal contractor. The principal contractor analyses these items.

r. All visitor, workforce and community accidents, incidents and near misses are recorded and action is taken to reduce the likelihood of them reoccurring.

s. Processes are in place to facilitate collecting and recording feedback from the community and to address any concerns related to the development footprint.

15/10/20 IHP (JV between Vinci and SRM) have been appointed as NHS Principal Supply Chain Partner. Robert Dadzie to discuss all relevant issues with them

04/03/21 **XP UPGRADED P TO L** IHP confirmed a CCS score of at least 35 and ensuring safe access (g.) would not be a problem, and that FORS could be required for all 'fleet operators' (p. & q.)

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
D	**Monitoring of construction site impacts - Utility consumption**	1	0.52	L							**ACTION** **Provide a letter confirming that the following will be done:** **10. Someone will have responsibility for monitoring, recording and reporting energy use, water consumption and transportation data (where measured)** **11-18. Set targets for energy (CO2 emissions) and water usage (m3) pre-construction, and provide records of this at completion** **19-22. Set transportation targets (CO2 and distance) for the delivery of materials to site and removal of waste from site, and provide records at completion**	**CONTRACTOR**	**Pre-construction**
	Monitoring of construction site impacts - Transportation of construction materials and waste	1	0.52	L									

10 Assign responsibility to an individual for monitoring, recording and reporting energy use, water consumption and transportation data (where measured) resulting from all on-site construction processes (and dedicated off-site manufacturing) throughout the build programme. To ensure the robust collection of information, this individual must have the appropriate authority and responsibility to request and access the data required.
Where appointed, the BREEAM AP could perform this role.

First monitoring credit - Utility consumption
Energy consumption
11 Achieve criterion 10.
12 Set targets for the site 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.
13 Monitor and record data for the energy consumption described in criterion 12.
14 Report the total carbon dioxide emissions (total $kgCO_2$/project value) from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).

Water consumption
15 Achieve criterion 10.
16 Set targets for the potable water consumption (m^3) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation.
17 Monitor and record data for the potable water consumption described in criterion 16.
18 Use the collated data to report the total net water consumption (m^3), i.e. consumption minus any recycled water use from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).

Second monitoring credit - transportation of construction materials and waste
19 Achieve criterion 10.
20 Set targets for transportation movements and impacts resulting from delivery of the majority of construction materials to site and construction waste from site. As a minimum cover:
- 20a. transportation of materials from the point of supply to the building site, including any transport, intermediate storage and point of supply (see Definitions on page 50).
Monitor as a minimum:
  - 20a.i Materials used in major building elements (i.e. those defined in BREEAM issue Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA) on page 210).
  - 20a.ii Ground works and landscaping materials.
- 20.b transportation of construction waste from the construction gate to waste disposal processing or recovery centre gate. This monitoring must cover the construction waste groups outlined in the project's resource management plan.
21 Monitor and record data for the transportation movements as described in criterion 20 on the previous page.
22 Using the collated data, report separately for materials and waste, the total transport-related carbon dioxide emissions ($kgCO_2$-eq), plus total distance travelled (km) via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).

PRE-CONSTRUCTION ACTION
Constructor to confirm who has responsibility, and ensure environmental management plan includes procedures and documents for recording utility, transport and waste data

15/10/20 IHP (JV between Vinci and SRM) have been appointed as NHS Principal Supply Chain Partner. Robert Dadzie to discuss all relevant issues with them
04/03/21 **TRANSPORT UPGRADED P TO L** IHP confirmed that the utility information will be captured in Vinci's Footprint reporting system, and that there will be a gate person who could capture the required info

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
Man 04 Commissioning and handover													
PR	Criterion 11 ONLY - Building User Guides	1	0.00	L			0	0	0		MANDATORY - VERY GOOD	M&E	PRE-HANDOVER
A1	Commissioning and testing schedule and responsibilities	1	0.52	L			1	1	1		ACTION M&E: Provide a compliant testing and commissioning schedule, including requirements referring to CIBSE/BSRIA commissioning codes in specs and BREEAM specific requirements for BMS; CONTRACTOR: Provide the construction programme showing the commissioning and testing works are included	M&E	Construction
1 Prepare a schedule of commissioning and testing. The schedule identifies and includes a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and for testing and inspecting building fabric. 2 The schedule identifies the appropriate standards for all commissioning activities to be conducted, where applicable, in accordance with: - 2a Current Building Regulations - 2b BSRIA guidelines(16) - 2c CIBSE guidelines(17) - 2d Other appropriate standards (see Methodology on the next page). Exclude from the assessment any process or manufacture-related equipment specified as part of the project. However, include such equipment in cases where they form an integral part of the building HVAC services, such as some heat recovery systems. 3 Where a building management system (BMS) is specified: - 3a Carry out commissioning of air and water systems when all control devices are installed, wired and functional - 3b Include physical measurements of room temperatures, off-coil temperatures and other key parameters, as appropriate, in commissioning results - 3c The BMS or controls installation should be running in auto with satisfactory internal conditions prior to handover - 3d All BMS schematics and graphics (if BMS is present) are fully installed and functional to user interface prior to handover - 3e Fully train the occupier or facilities team in the operation of the system. 4 Appoint an appropriate project team member to monitor and programme pre-commissioning, commissioning and testing. Where necessary include re-commissioning activities on behalf of the client. 5 The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and the main programme of works. Allow the required time to complete all commissioning and testing activities prior to handover.												
A2	Commissioning - Design and preparation	1	0.52	L						3-4	ACTION Appoint a specialist commissioning manager during the design stage and provide evidence that they have carried out relevant reviews and had input to programming and commissioning management	M&E	Stage 3-4
6 Achieve criteria 1 to 5. 7 During the design stage, the client or the principal contractor appoints an appropriate project team member (see criterion 4), provided they are not involved in the general installation works for the building services systems, with responsibility for: - 7a Undertaking design reviews and giving advice on suitability for ease of commissioning. - 7b Providing commissioning management input to construction programming and during installation stages. - 7c Management of commissioning, performance testing and handover or post-handover stages. For buildings with complex building services and systems, this role needs to be carried out by a specialist commissioning manager (see Definitions on page 58).										27/04/21 Although shown as Likely Vinci stated that this was removed from the cost plan, however also that they would have it reinstated		
A3	Testing and inspecting building fabric	1	0.52	P							ACTION Provide evidence demonstrating that compliant air testing and thermographic surveys have been carried out along with any recommended remedial works	M&E	Pre-completion
REQUIRED EVIDENCE 9-10 Thermographic survey and Level 2 thermography certificate 8 Achieve criteria 1 to 5. 9 Complete post-construction testing and inspection to quality-assure the integrity of the building fabric, including continuity of insulation, avoidance of thermal bridging and air leakage paths (this is through airtightness testing and a thermographic survey). A suitably qualified professional (see Definitions on page 58) undertakes the survey and testing in accordance with the appropriate standard. 10 Rectify any defects identified during post-construction testing and inspection prior to building handover and close out. Any remedial work must meet the required performance characteristics for the building or element as defined at the design stage (see Methodology).										NOTE: In addition to the final testing it would be worth having reviews carried out during construction to ensure continuity of insulation as it goes in, as this is very difficult and costly to rectify once complete 15/10/20 UPGRADED U TO P This should not be ruled out 04/03/21 IHP stated that they would get a price for this from Vinci's Technology Centre		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
B	Handover	1	0.52	L			Criterion 11 only				ACTION Provide compliant Building User Guides prior to handover Provide training schedules identifying who and what will be included, and evidence that this was carried out prior to handover	M&E	Pre-completion
11 MANDATORY FOR VG Prior to handover, develop two building user guides (see Methodology) for the following users: - 11a A non-technical user guide for distribution to the building occupiers. - 11b A technical user guide for the premises facilities managers. A draft copy is developed and discussed with users first (where the building occupants are known) to ensure the guide is most appropriate and useful to potential users. 12 Prepare two training schedules timed appropriately around handover and proposed occupation plans for the following users: - 12a A non-technical training schedule for the building occupiers. - 12b A technical training schedule for the premises facilities managers.													
Man 05 Aftercare								1	1				
A	Aftercare support	1	0.52	L							ACTION 1. CONTRACTOR: Provide a letter confirming compliant aftercare will be provided including support and training. 2. CLIENT: Provide a letter confirming that energy and water use will be monitored for the first 12 months to review actual and predicted performance.	CONTRACTOR CLIENT	Pre-completion
REQUIRED EVIDENCE 1 Contract to provide compliant aftercare support and training 1 Provide aftercare support to the building occupiers through having in place operational infrastructure and resources. This includes as a minimum: - 1a A meeting between the aftercare support team or individual, and the building occupier or management team (prior to initial occupation, or as soon as possible thereafter) to: - 1a.i Introduce the aftercare support available, including the content of the building user guide (where it exists) and training schedule. - 1a.ii Present key information on the building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible. - 1b On-site facilities management training including: - 1b.i a walkabout of the building AND - 1b.ii introduction to and familiarisation with the building systems, their controls and how to operate them in accordance with the design intent and operational demands. - 1c Provide initial aftercare support for at least the first month of building occupation, e.g. weekly attendance on-site, to support building users and management (the level of frequency will depend on the complexity of the building and building operations). - 1d Provide longer term aftercare support for occupiers for at least the first 12 months from occupation, e.g. a helpline, nominated individual or other appropriate system to support building users and management. 2 Establish operational infrastructure and resources to coordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months, once the building is substantially occupied. This facilitates analysis of discrepancies between actual and predicted performance, with a view to adjusting systems and user behaviours accordingly.										NOTE: The second criterion could be a Contractor requirement if they have any FM/building management responsibility 04/03/21 Confirmed that #2 will be carried out by the Trust's Robert Dadzie		
B	Commissioning - Implementation	1	0.52	L				1	1		ACTION Provide a specification requiring this to be provided, which needs to state the specific requirements	M&E	Pre-completion
REQUIRED EVIDENCE 3 Commissioning records, reports and letter of appointment 3 Complete the following commissioning activities over a minimum 12-month period, once the building becomes substantially occupied: - 3a Complex systems: The specialist commissioning manager will: - 3a.i Identify changes made by the owner or operator that might have caused impaired or improved performance. - 3a.ii Test all building services under full load conditions, i.e. heating equipment in mid-winter, cooling and ventilation equipment in mid-summer and under part load conditions (spring and autumn). - 3a.iii Where applicable, carry out testing during periods of extreme (high or low) occupancy. - 3a.iv Interview building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems. - 3a.v Produce monthly reports comparing sub-metered energy performance to the predicted one (see Ene 01 Reduction of energy use and carbon emissions on page 121). - 3a.vi Identify inefficiencies and areas in need of improvement. - 3a.vii Re-commission systems (following any work needed to serve revised loads), and incorporate any revisions in operating procedures into the operations and maintenance (O&M) manuals. - 3b Simple systems (naturally ventilated): The external consultant, aftercare team or facilities manager will: - 3b.i Review thermal comfort, ventilation, and lighting, at three, six and nine month intervals after initial occupation, either by measurement or occupant feedback. - 3b.ii Identify deficiencies and areas in need of improvement. - 3b.iii Re-commission systems and incorporate any relevant revisions in operating procedures into the O&M manuals.										NOTE: Seasonal commissioning is mandatory for an Excellent rating		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
C	Post occupancy evaluation (POE)	1	0.52	L							ACTION Provide written confirmation that compliant Post Occupancy Evaluation will be carried out, and a formal appointment made prior to handover	CLIENT	Pre-completion
4 The client or building occupier commits to carry out a POE exercise (see Definitions on page 63) one year after the building is substantially occupied. This gains comprehensive in-use performance feedback (see criterion 5b.v on the next page) and identifies gaps between design intent and in-use performance. The aim is to highlight any improvements or interventions that need to be made and to inform operational processes. 5 An independent party (see Definitions on the facing page) carries out the POE covering: - 5a A review of the design intent and construction process (review of design, procurement, construction and handover processes). - 5b Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering: - 5b.i Internal environmental conditions (light, noise, temperature, air quality) - 5b.ii Control, operation and maintenance - 5b.iii Facilities and amenities - 5b.iv Access and layout - 5b.v Energy and water consumption (see criterion 2 and Methodology - 5b.vi Other relevant issues, where appropriate (see Definitions on the facing page) 6 The independent party provides a report with lessons learned to the client and building occupiers. 7 The client or building occupier commits funds to pay for the POE in advance. This requires an independent party to be appointed to carry out the POE as described in criterion 5. Evidence of the appointment of the independent party and schedule of responsibilities which fulfils the BREEAM criteria are acceptable to demonstrate compliance.											NOTE: Soft Landings also requires this, if this is being applied 15/10/20 John Knape stated he'd like this to be done, and it would feed into the Calderdale project 04/03/21 IHP confirmed that this is already required under ProCure22		
HEALTH & WELLBEING													
Hea 01 Visual comfort													
A	Control of glare from sunlight	1	0.78	L							ACTION Provide a review of potential glare areas on the façade (this should be achievable from modelling) Provide evidence demonstrating that glare has been designed out or appropriate measures incorporated	ARCHITECT	Stage 3-4
1 Identify areas at risk of glare using a glare control assessment. The glare control assessment also justifies any areas deemed not at risk of glare. 2 A glare control strategy designs out potential glare in all relevant building areas where risk has been identified. This should be achieved through building form and layout or building design measures. 3 The glare control strategy does not increase energy consumption used for lighting. This is achieved by: - 3a Maximising daylight levels in all weather, cloudy or sunny AND - 3b Ensuring the use or location of shading does not conflict with the operation of lighting control systems. **Blinds** Blinds can be used to control glare but these must have manual control and light transmittance <0.1 (<10%)											09/06/21 E-mail from John Knape, IBI, states that requirements for patient privacy limit glazing provision with just high level glazing to Treatment/Assessment bays with larger areas restricted to waiting areas, that St Gobain Coolite SKN176 II glass specified to provide a measure of solar control in conjunction with internal vertical blinds		
B	Daylighting Up to 2 credits available (only 1 for Courts, Industrial and Other building types)	1	0.78	U							Agreed this is unlikely		
		1	0.78	U									
XP	Enhanced Daylighting	1	1.00	U									
C	View out	1	0.78	U							Agreed this is unlikely		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
D	**Internal & external lighting levels, zoning and control**	1	0.78	L							ACTION **Provide specification and design demonstrating that all requirements are complied with**	ELEC	Stage 3-4
XP	**Enhanced controls**	1	1.00	U									
Internal lighting 7 Internal lighting in all relevant areas of the building is designed to provide illuminance (lux) levels and colouring rendering index in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. Internal lighting should be appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. 8 For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 2.4, 2.13 to 2.15, 2.20, and 6.10 to 6.20. This gives recommendations highlighting: - 8a Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this.) - 8b Any area where a surface is used to reflect light in to a space, such as 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. - 8c Recommendations for direct lighting, ceiling illuminance, and average wall illuminance. **External lighting** 9 All external lighting located within the construction zone is specified in accordance with BS 5489-1:2013 Code for the practice for the design of road lighting. 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. External lighting should provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately, especially during the night. 10 Where no external light fittings are specified (either separate from or mounted on the external building façade or roof), the criteria relating to external lighting do not apply and the credit can be awarded on the basis of compliance with criteria 7-8.c above. If no internal lighting is specified, the credit cannot be awarded. **Zoning and occupant control** 11 Internal lighting is zoned to allow for occupant control. Zoning is in accordance with the criteria below for relevant areas present within the building: - 11a In office areas, zones of no more than four workplaces - 11b Workstations adjacent to windows or atria and other building areas separately zoned and controlled - 11c Seminar and lecture rooms: zoned for presentation and audience areas - 11d Library spaces: separate zoning of stacks, reading and counter areas - 11e Teaching space or demonstration area - 11f Whiteboard or display screen - 11g Auditoria: zoning of seating areas, circulation space and lectern area - 11h Dining, restaurant, café areas: separate zoning of servery and seating or dining areas - 11i Retail: separate zoning of display and counter areas - 11j Bar areas: separate zoning of bar and seating areas - 11k Wards or bedded areas: zoned lighting control for individual bed spaces and control for staff over groups of bed spaces - 11l Treatment areas, dayrooms, waiting areas: zoning of seating and activity areas and circulation space with controls accessible to staff. 12 Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5. 13 In addition, the building type criteria in Table 5.7 on the next page (where relevant). **Exemplary level criteria** 15 Lighting in each zone can be manually dimmed by occupants down to 20% of the maximum light output using dimmer switches positioned in accessible locations. Dimming and control gear should avoid flicker and noise. **NOTE: This applies to all zones as identified under criterion #11 above, and would not apply to general circulation spaces**											15/10/20 **XP DOWNGRADED L TO P** Andy Munro needs to review the requirements with the Client before committing to this 04/03/21 **XP DOWNGRADED P TO U** Confirmed that dimming control would not be appropriate for this project		
Hea 02 Indoor air quality													
PR	**PREREQUISITE** **Indoor air quality (IAQ) plan**	1	0.00	L						3	ACTION **Provide a compliant Indoor Air Quality Plan (see detailed requirements for guidance, especially GN06)**	ARCHITECT / M&E	Stage 3
1 A site-specific indoor air quality plan has been produced and implemented in accordance with the guidance in Guidance Note GN06. The objective of the plan is to facilitate a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The indoor air quality plan must consider the following: - 1a Removal of contaminant sources - 1b Dilution and control of contaminant sources: - 1b.i Where present, consideration is given to the air quality requirements of specialist areas such as laboratories - 1c Procedures for pre-occupancy flush out - 1d Third party testing and analysis - 1e Maintaining good indoor air quality in-use.											EVIDENCE 021 Fully compliant IAQP provided by the M&E engineers during RIBA Stage 2 **NEEDS FINAL APPROVED AND DATED VERSION** 08/10/20 Template issued for completion, along with GN06 for guidance 15/10/20 The building will be sealed and utilise mech vent throughout 15/03/21 This is currently being undertaken by Sophie McGinley, MM 20/04/21 Confirmed AHU's are going on the roof. MM to finalise the IAQP [DJB asked Sophie McGinley to confirm what input is still required] 19/05/21 E-mail from Sophie McGinley, MM, provides the complete IAQP which just needs final review and approval and to be formally issued 11/06/21 Chased for the final approved IAQP		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
B	**Ventilation**	**1**	**0.78**	**L**							**ACTION** **Provide evidence as follows:** **- demonstration that adequate ventilation is provided** **- intakes/windows are away from exhausts and external sources of pollution (10m/20m or review against BS EN 13779)** **- mech vent incorporates filtration** **- areas with large unpredictable occupancy to have CO2 sensors**	**M&E**	**Stage 3**
2 The building has been designed to minimise the indoor concentration and recirculation of pollutants in the building as follows: - 2a Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation [BS ISO 17772-1:2017, CIBSE AM10, BB101, BS EN 13779, HTM03-01 as relevant to type] - 2b Ventilation pathways are designed to minimise the ingress and build-up of air pollutants inside the building (see Methodology on page 87) **NOTE This now offers more ways of complying and the external requirement is reduced to just 10m (see below)** - 2c Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 16798-3:2017. The specified filters should achieve supply air classification if at least SUP 2. - 2d Areas of the building subject to large and unpredictable or variable occupancy patterns have carbon dioxide (CO_2) or air quality sensors specified and: - 2d.i In mechanically ventilated buildings or spaces: sensors are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space - 2d.ii In naturally ventilated buildings or spaces: sensors either have the ability to alert the building owner or manager when CO_2 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 or roof vents - 2e For naturally ventilated or mixed mode buildings, the design demonstrates that the ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates in accordance with CIBSE AM10(47). **Appropriate methods for demonstrating compliance in mech vent/mixed mode buildings:** 1. Locating the building's air intakes and exhausts in accordance with the following: a. PD CEN/TR 16798-4:2017(63) b. BRE FB 30 Ventilation for healthy buildings: Reducing the impact of urban air pollution (2011)(64) c. BRE IP 9/14 Locating ventilation inlets to reduce ingress of external pollutants into buildings(65), as appropriate d. CIBSE TM21(66). 2. Pollutant dispersion modelling 3. Positioning the intakes and exhausts at least 10m of horizontal distance apart and from sources of external pollution **Appropriate methods for demonstrating compliance in nat vent buildings:** 1. Following guidance given in: – BRE FB 30 Ventilation for healthy buildings: Reducing the impact of urban air pollution (2011), – BRE IP 9/14 Locating ventilation inlets to reduce ingress of external pollutants into buildings (2014), and, – CIBSE TM21 Minimising pollutants at air intakes (1999), as appropriate. 2. Positioning openable windows/ and background ventilators over at least 10m of horizontal distance from sources of external pollution **Sources of external pollution:** This would include: highways and main access roads; car parks, delivery and vehicle waiting bays; and other building exhausts. Service and access roads with restricted and infrequent access can be excluded.										15/10/20 The building will be sealed and utilise mech vent throughout 04/03/21 Hope Lovelady, MM, is looking into this however the basement plantroom for the AHU's could be a problem 10/03/21 Discussion suggests plant could move to the roof, which would make this much more achievable		
C	**Emissions from construction products**	**1**	**0.78**	**L**							**ACTION** **1. Review all relevant products and materials against the requirements to ensure compliance** **2. Provide evidence as appropriate (specifications, drawings, manufacturer's certificates/literature/correspondence etc)**	**ARCHITECT**	**Stage 4**
		1	**0.78**	**P**									
XP	**Exemplary level**	**1**	**1.00**	**U**									
NOTE: It is much easier to demonstrate compliance by sourcing products certified to one of the recognised schemes for emissions listed in GN22 than using the guidance in the manual **One credit** 3 Three out of the five product types meet the emission limits, testing requirements and any additional requirements listed in Table 5.11 on the facing page. Where wood-based products are not one of three selected product types, all wood-based products used for internal fixtures and fittings must be tested and classified as formaldehyde E1 class as a minimum. **Two Credits** 4 All of the product types listed meet the emission limits, testing requirements and any additional requirements listed in Table 5.11 on the facing page. **Exemplary level criteria** 11 Three of the product types listed meet the emission limits, testing requirements and any additional requirements listed in Table 5.12 below [ENHANCED REQUIREMENTS]. Where wood-based products are not one of the three selected product types, all wood-based products used for internal fixtures and fittings must be tested and classified as formaldehyde E1 class as a minimum. **Relevant product categories:** - Interior paints and coatings **[Where used in wet areas must also be anti-mould or anti-fungal]** - Wood-based products (including wood flooring) - Flooring materials (including floor levelling compounds and resin flooring) - Ceiling, wall and acoustic and thermal insulation materials - Interior adhesives and sealants (including flooring adhesives)										**NOTE: The Contractor should be required to provide all relevant products certified to compliant schemes as shown in GN22, or better three to the Exemplary performance levels** 15/10/20 John Knape is already having some discussion on VOC's		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
D	Post-construction indoor air quality measurement	1	0.78	P							ACTION Review requirements to see if this is to be targeted. If so provide a letter of commitment confirming someone will be appointed to carry out compliant testing	CONTRACTOR	Pre-completion
5 The formaldehyde concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 100 µg/ m³ averaged over 30 minutes (World Health Organization guidelines for indoor air quality: Selected pollutants, 2010(58)). 6 The formaldehyde sampling and analysis is performed in accordance with ISO 16000-2(59) and ISO 16000-3(60). 7 The total volatile organic compound (TVOC) concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 500 µg/ m³over 8 hours. 8 The TVOC sampling and analysis is performed in accordance with ISO 16000-5(61) and ISO 16000-6(62) or ISO 16017-1(63). 9 Where levels are found to exceed these limits, the project team confirms the measures that have, or will be, undertaken in accordance with the IAQ plan, to reduce the TVOC and formaldehyde levels to within the above limits. 10 The measured concentration levels of formaldehyde (µg/ m³) and TVOC (µg/ m³) are reported, via the BREEAM Scoring and Reporting Tool.											15/10/20 Handover of the unit is on the critical path so it may be difficult to fit this in to the programme		
Hea 04 Thermal comfort													
A1	Thermal modelling	1	0.78	L							ACTION Provide a fully compliant thermal comfort study, for both summertime overheating and winter heating requirements, and including a review using future weather files for the second credit	MECH	Stage 2-3
1 Thermal modelling has been carried out using software in accordance with CIBSE AM11(78) Building Energy and Performance 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: - 3a 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 design(79), Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement or level for the building type); or the thermal environment in occupied spaces meet the Category B requirements for PPD, PMV and local discomfort set out in Table A.1 of Annex A of ISO 7730:2005. - 3b For naturally ventilated buildings: - 3b.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 or level for the building type) - 3b.ii The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in either of the following standards as appropriate; CIBSE TM52: The limits of thermal comfort: avoiding overheating in European buildings(80) or CIBSE TM59: Design methodology for the assessment of overheating risk in homes(81) 4 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. **Large buildings** For large buildings with a lot of similar spaces it would be acceptable to model a representative sample of all occupied spaces **Occupied spaces** Any space likely to be occupied for >30 minutes by a building user. The definition excludes the following: atria or concourses, entrance halls or reception areas, and ancillary spaces e.g. circulation areas, storerooms and plant rooms.											12/10/20 E-mail from Andy Munro says MM are not currently contracted to carry out energy modelling or a renewables study. This will need a change control to ensure these credits are achieved 04/03/21 Hope Lovelady, MM, is starting the modelling for this 20/04/21 Hope Lovelady confirmed the modelling will be complete by 23/04/21		
A2	Design for future thermal comfort	1	0.78	L							ACTION Provide a thermal comfort study demonstrating compliance using future weather files. If compliance is not achieved recommend what should be done in the future to improve performance	MECH	Stage 2-3
5 Criteria 1 to 4 are achieved. 6 The thermal modelling demonstrates that the relevant requirements set out in criterion 3 above are achieved for a projected climate change environment (see Definitions on the next page). 7 Where criterion 6 above is not met, the project team demonstrates how the building has been adapted, or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements under criterion 6 above 8 For air-conditioned buildings, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool. **Relevant weather files** For naturally ventilated buildings the relevant weather file is 2050s, Emissions scenario: Medium (A1B), 50th percentile DSY 2 and DSY 3 For mechanically ventilated buildings the relevant weather file is 2020s, Emissions scenario: High (A1F1), 50th percentile DSY 2 and DSY 3											15/10/20 **UPGRADED P TO L** The building will be fully mech vent with air con therefore this will be achievable 20/04/21 Hope Lovelady confirmed the modelling will be complete by 23/04/21		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
A3	**Thermal zoning and controls**	**1**	**0.78**	**L**							**ACTIONS** **Provide:** **- a compliant thermal comfort study as above** **- a review demonstrating that this has been used to inform the temperature control strategy and that the VAV with zoning provides a sufficient level of control** **- drawings/specs showing the proposed systems**	**MECH**	**Stage 2-3**
9 Criteria 1 above to 4 above are achieved. 10 The thermal modelling analysis (criteria1 on the previous page to 4 on the previous page) has informed the temperature control strategy for the building and its users. 11 The strategy for proposed heating or cooling systems demonstrates that it has addressed the following: - 11a 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. - 11b The degree of occupant control required for these zones. This is based on discussions with the end user (or alternatively building type or use specific design guidance, case studies, feedback) and considers: - 11b.i User knowledge of building services - 11b.ii Occupancy type, patterns and room functions (and therefore appropriate level of control required) - 11b.iii How the user is likely to operate or interact with the systems, e.g. are they likely to open windows, access thermostatic radiator valves (TRV) on radiators, change air-conditioning settings etc. - 11b.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) - 11c 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 - 11d The need or otherwise for an accessible building user actuated manual override for any automatic systems. **Simple systems** For buildings with less complex heating or cooling systems the thermal comfort strategy need only comply with criteria 11.a & 11.b above										**NOTE: Mechanical services will need to provide a review demonstrating a compliant zoning and control strategy has been developed**		
Hea 05 Acoustic performance													
A1	**Sound insulation**	**1**	**0.78**	**L**							**ACTION** **ACOUSTICIAN - Carry out site background noise survey and provide relevant reports and design advice** **ARCH+MECH - Provide evidence showing that the acoustician's advice has been incorporated/followed.**	**ACOUSTICIAN** **ARCHITECT** **MECH**	**Stage 3**
A2	**Internal indoor ambient noise levels**	**1**	**0.78**	**L**									
A3	**Room acoustics**	**1**	**0.78**	**L**									
1 The building meets the appropriate acoustic performance standards and testing requirements defined in the relevant table below. These tables define criteria for the acoustic principles of: Sound insulation; Indoor ambient noise level; and Room acoustics. OR 2 A suitably qualified acoustician (SQA) is appointed to define a bespoke set of performance requirements for all function areas in the building. The bespoke performance requirements use the three acoustic principles defined in criterion Hea 05 Acoustic performance - Criterion 1 above, setting out the performance requirements for each and the testing regime required. **A1 Sound insulation** Criteria: Achieve the airborne sound insulation performance standards set out in the relevant guidance (BB93, HTM08-01, BS8233, Court Service Design Guide - see manual). Testing: A programme of pre-completion acoustic testing is carried out by a compliant test body in accordance with the relevant requirements (BB93, ANC, HTM08-01, BS8233, BS EN ISO 16283, Court Service Design Guide - see manual). **A2 Internal indoor ambient noise levels** Criteria: Achieve the indoor ambient noise level standards set out within the relevant guidance for all room types (BB93, HTM08-01, BS8233, Court Service Design Guide see manual). Testing requirement: A programme of acoustic measurements is carried out by a compliant test body in accordance with relevant standards (ANC, HTM08-01, BS EN ISO 3382, Court Service Design Guide - see manual). **A3 Room acoustics** Criteria: Acoustic environment (Control of reverberation, sound absorption and speech transmission index (STI)) - Achieve the requirements relating to the space type as per the relevant standards (BB93, HTM08-01, BS8233, Court Service Design Guide - see manual). Testing requirement: A programme of acoustic measurements is carried out by a compliant test body in accordance with the relevant standards/requirements (BB93, ANC, HTM08-01, BS EN ISO 3382, BS8233, Court Service Design Guide - see manual).										15/10/20 John Knape is using HTM's for acoustic guidance as there is no Acoustician as yet appointed 04/03/21 No acoustician involved yet - MM asked to provide a fee proposal 27/04/21 IHP confirmed that MM have now been appointed 27/05/21 E-mail from Adrian Morgan, MM, states that the Client's preferred ceiling tile will prevent the requirements for room acoustics and possibly insulation being achieved 11/06/21 Further e-mail from Adrian Morgan states that all credits should be available as reverb control is being proposed, however may still be a risk		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
Hea 06 Security													
A	Security of site and building	1	0.78	L						2	ACTION Provide evidence that the recommendations from the SNA have been implemented through drawings, specifications or further conversations demonstrating compliance Provide the Secure by Design certification (if this is being targeted)	ARCHITECT / LANDSCAPE / ELECTRICAL + SECURITY SPECIALIST	Stage 3-4
XP	Exemplary level	1	1.00	U									
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). The purpose of the SNA will be to identify attributes of the proposal, site and surroundings which may influence the approach to security for the development . 2 The SQSS develops a set of security controls and recommendations for incorporation into the proposals. Those controls and recommendations shall directly relate to the threats and assets identified in the preceding SNA. 3 The controls and recommendations shall be incorporated into proposals and implemented in the as-built development. Any deviation from those controls and recommendations shall be justified and agreed with the SQSS. **Exemplary level criteria** 4 A compliant risk based security rating scheme has been used. The performance against the scheme has been confirmed by independent assessment and verification. **NOTE: Currently the only recognised scheme is BRE's own SABRE** **Timing** KBCN0339: Where carried out later than RIBA Stage 2 Concept Design the SQSS must confirm that the implementation of security measures has not been restricted due to the later stage at which their involvement was sought										**NOTE: While Secure by Design may help achieve this credit it is not necessary and in itself is not sufficient as it is not site-specific** EVIDENCE 022 E-mail from the DOCO Richard Thornton with attached SNA (see #023) 023 Compliant SNA, provided during RIBA Stage 2, demonstrates a site audit was carried out and the proposed designs reviewed, and provides a list of recommendations to enhance safety and security including: a secure space for patients in custody, a panic room, a security office, access control, CCTV, measures to prevent climbing, defensible external space, and security standards 15/10/20 John Knape has already had some discussion with the ALO and Counter Terrorism specialist, but needs to arrange a meeting with the Trust's security manager Ian Kilroy (who unfortunately has been off long-term ill) 04/03/21 Ian Kilroy is now back and this will have to go through him. IBI to arrange an SNA meeting with Ian and the ALO 25/03/21 Tamara Kenyon asked if SBD is required or would be of benefit. Confirmed not necessary however suggest discuss with Ian Kilroy and the ALO at the SNA meeting 07/04/21 E-mail received from West Yorkshire Police DOCO Richard Thornton requesting info on what's required in an SNA 20/04/21 John Knape confirmed security meetings are planned and that reports will be provided 23/04/21 DOCO Richard Thornton provided a draft SNA for comment		
Hea 07 Safe and healthy surrounding													
A	Safe access	1	0.78	U							Confirmed that this cannot be achieved on such a restricted site		
B	Outside space	1	0.78	P							ACTION Provide drawings/photos showing the outside amenity space	CLIENT	Stage 3-4
7 There is an outside space providing building users with an external amenity area. **Statutory requirements** This credit may be excluded where it can be demonstrated that there are statutory requirements, or other issues outside of the control of the project, that impact the ability to provide outdoor space **Outside space** The space is of an appropriate size to provide enough amenity for the predicted number of building users [primarily staff] during coffee or lunch breaks to gather, socialise, relax and connect with the natural environment. The space is predominantly intended for building staff, but can be used by other building users where relevant and beneficial to the building users. The outside space must: – be an outdoor landscaped area, for example a garden, balcony or terrace; the majority of the space should be open to the sky – have appropriate seating areas and be non-smoking – be located to ensure it is accessible to all building users and avoids areas that will have disturbances from sources of noise (e.g. building services, car parks, busy roads, delivery areas etc.)										15/10/20 There is unlikely to be room to provide this. To be reviewed further later 04/03/21 Proposed site plan shows there is little scope to provide this as the site is very tight. Existing space could be used, and the Trust are looking to add some 'green wellbeing' spaces around the site 27/04/21 Landscape Architect removed from Owner as there is nothing that can be done within this project, so it will rely on the Client providing outside space for across the wider site 29/04/21 E-mail from Robert Dadzie says the site-wide project for providing external space is currently on hold, mainly due to lack of funding		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement P	G	VG	E	O	RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
ENERGY													
Ene 01 Reduction of energy use and carbon													
A	**Energy performance** **Up to 9 credits**	0	0.00	PCR				4 or B	6 & B		**ACTION** **Provide a compliant BRUKL output report** **Note: The figures for heating & cooling energy demand are calculated from the basic building design (orientation, insulation, air tightness, glazing ratios etc) and have nothing to do with the actual services, therefore this aspect is the responsibility of the Architect**	**ARCHITECT + MECH**	**Stage 3-4**
		0	0.00	A									
		1	0.76	L									
		3	2.29	P									
		5	3.81	U									
NOTE: BER MUST BE < TER TO GET ANY CREDITS AT ALL **REQUIRED EVIDENCE** **1 A copy of the building regulations output document from the approved software. The output documents must be based on the design stage of analysis. A copy of the building regulations output document from the design stage SAP calculations (where relevant for multi-residential buildings).** 1. Calculate an Energy Performance Ratio for New Constructions (EPR NC). Compare the EPR NC achieved with the benchmarks in Table 6.1 and award the corresponding number of BREEAM credits. **EPR NC is calculated from:** 1. The building's heating and cooling energy demand 2. The building's primary energy consumption 3. The total resulting CO2 emissions. **The following information is required:** 1. Building floor area (m2) 2. Notional building heating and cooling energy demand (mJ/ m2) 3. Actual building heating and cooling energy demand (mJ/ m2) 4. Notional building primary energy consumption (kWh/ m2) 5. Actual building primary energy consumption (kWh/ m2) 6. Target Emission Rate (TER) (kg CO2 / m2) 7. Building Emission Rate (BER) (kg CO2 / m2).										As an approximation 1 / 2 / 3 credits are awarded for the following improvements under each metric against the Building Regs Part L notional figures for Healthcare building types: - Heating & cooling energy demand (basic building design): 9.0% / 30.7% / 64.6% - Primary energy (services efficiencies): 6.9% / 23.1% / 45.6% - Target emission rate (carbon conversion and offsetting from renewables): 6.4% / 21.4% / 42.7% 12/10/20 E-mail from Andy Munro says MM are not currently contracted to carry out energy modelling or a renewables study. This will need a change control to ensure these credits are achieved 15/10/20 Robert Dadzie confirmed the project should be working towards net zero in line with the NHS commitments 10/03/21 Confirmed that the project is targeting Very Good, and the affordability of the project is under review. If value engineering is required this will likely result in measures that reduce the score 08/04/21 E-mail from Karel Bos estimates around 500m2 of PV would be required to achieve 4 credits 11/06/21 The current BRUKL, although still in development, shows a Heating & Cooling Demand 30.4% better than the Notional therefore should achieve at least 1 credit, however the Total Emissions exceed the Notional therefore, as this does not comply with Part L, the credits cannot be awarded until this is sorted		
B	*****REQUIRED FOR EX2***** **Prediction of operational energy consumption** **4 credits, all or nothing**	4	3.05	L				4 or Ene 01	4 & Ene 01	2 - 4	**ACTION** **Stage 3-4: Provide the modelling results and report**	**M&E**	**Stage 3-4**
Refer to GN32 for 'Energy Prediction and Post-occupancy' guidance and CIBSE TM54 'Evaluating operational energy performance of buildings at the design stage' **REQUIRED EVIDENCE** **2 Workshop minutes, agreed outcomes.** **3-5 Predicted energy consumption values, design assumptions, input data and risk assessments reported as detailed in the Energy Prediction and Post-occupancy guidance available from the BREEAM website. Confirmation of suitably qualified energy modeller's qualifications and experience.** **Prerequisite** 2 Involve relevant members of the design team in an energy design workshop focusing on operational energy performance (see Methodology). **Energy modelling and reporting** 3 Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures (see Prediction of operational energy consumption on page 134). 4 Report predicted energy consumption targets by end use, design assumptions and input data (with justifications). 5 Carry out a risk assessment to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process. The suitably qualified energy modeller must model several scenarios creating a range of predicted consumptions, informed by a risk assessment of the building energy uses. These scenarios will consider: – Weather – Operating hours for systems – Occupancy hours – Management factors.										EVIDENCE 2. 019-020 E-mail from Mike Saxby, the energy specialist who led the initial workshop at Stage 2, with the workshop meeting minutes and agreed outcomes to be reviewed in the design stage operational energy modelling **3-5. STAGE 3-4 Operational energy modelling will be required** 10/03/21 In order to keep an Excellent rating available an Operational Energy workshop needs to be carried out asap, which would be led by MM's Mike Saxby with input from M&E, Architect and Trust's FM 09/04/21 E-mail from Ahmed Dhorat confirms this is not currently included in MM's fees and quotes £15k to carry this out 20/04/21 Eddie Parker stated the target is still Very Good until confirmed otherwise		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
EX1	EPRnc > 0.9 + Zero Carbon + 10%	1	1.00	U							The project is not aiming to be zero carbon		
	EPRnc > 0.9 + Zero Carbon + 50%	1	1.00	U									
	EPRnc > 0.9 + Zero Carbon + 100%	1	1.00	U									
EX2	Post-occupancy energy monitoring	2	2.00	L							ACTION CLIENT: Provide a letter confirming all requirements will be complied with M&E: Ensure Ene 02 B & Wat 02 energy and water sub-metering credits are achieved	CLIENT M&E (Ene 02 + Wat 02)	Stage 3
REQUIRED EVIDENCE 10-12 The client's commitment to proceed to the post occupancy stage and report the energy consumption. **Two credits – Post-occupancy stage** SEE GN32 10 **Achieve both credits in Ene 02 Energy monitoring** on page 133, or where only one is available achieve the first credit and criterion 4 for separately monitoring relevant function areas or departments 11 The client or building occupier commits funds to pay for the post occupancy stage. This requires an assessor to be appointed and to report on the actual energy consumption compared with the targets set in criterion 4 above. 12 The energy model (criterion 3 above) is: - 12a Submitted to BRE and - 12b Retained by the building owner. **Post-occupancy stage** Where the exemplary credits are achieved and the post occupancy stage will be followed, the building owner will need to: – Report energy consumption for the first 12 months of normal occupancy for all relevant end uses – Report energy consumption for the first 12 months, broken down into monthly intervals, for all relevant end uses (see Assessment scope on page 66) – Compare reported energy consumption figures with targets set in criterion 4 on page 131 – Identify causes of discrepancies and the remediation actions required.											15/10/20 UPGRADED P TO L Robert Dadzie confirmed this will be done		
Ene 02 Energy monitoring													
A	***REQUIRED FOR POST OCCUPANCY CREDITS*** **Sub-metering of end use categories**	1	0.76	L			1	1	1		ACTION Provide relevant drawings and specifications demonstrating a TM39-compliant metering/sub-metering strategy identifiable by the various end energy uses	M&E	Stage 3
1 Install energy metering systems so that at least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories (see Methodology below). 2 Meter the energy consumption in buildings according to the total useful floor area: - 2a If the area is greater than 1,000 m², by end-use category with an appropriate energy monitoring and management system. - 2b If the area is less than 1,000 m², use either: - 2b.i an energy monitoring and management system or - 2b.ii separate accessible energy sub-meters with pulsed or other open protocol communication outputs, for future connection to an energy monitoring and management system (see Definitions on page 137). 3 Building users can identify the energy consuming end uses, for example through labelling or data outputs. **Relevant end-use categories (where present)** a. Space heating b. Domestic hot water heating c. Humidification* d. Cooling* e. Ventilation, i.e. fans (major)* f. Pumps g. Lighting h. Small power i. Renewable or low carbon systems (separately) j. Controls k. Other major energy consuming systems/plant *These systems must not be present for a Simple Buildings assessment													

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
B	***REQUIRED FOR POST OCCUPANCY CREDITS*** **Sub-metering of high energy load and tenancy areas**	**1**	**0.76**	**L**							**ACTION** **Provide relevant drawings and specs demonstrating compliant sub-metering of various energy uses (heating, hot water, cooling, ventilation, lighting+small power, major equipment etc.) for relevant function areas/floor plates**	**M&E**	**Stage 3**
4 Monitor a significant majority of the energy supply with: - 4a An accessible energy monitoring and management system for: - 4a.i tenanted areas or - 4a.ii relevant function areas or departments in single occupancy buildings. OR - 4b Separate accessible energy sub-meters with pulsed or other open protocol communication outputs for future connection to an energy monitoring and management system for: - 4b.i tenanted areas or - 4b.ii relevant function areas or departments in single occupancy buildings. 5 Sub-meter per floor plate in large single occupancy or single-tenancy buildings with one homogeneous function, for example hotel bedrooms, offices. NOTE: It may be possible to reduce this to just heating, hot water and combined electricity energy uses where the building consists of a number of small function areas or departments **Healthcare relevant areas (where present):** 1. Operating departments 2. Imaging departments 3. Radiotherapy departments 4. Pathology departments 5. Dialysis departments 6. Medical physics facilities 7. Mortuary and post mortem departments 8. Rehabilitation when including hydrotherapy pools 9. Central sterile supplies departments (or equivalent) 10. Process areas, e.g. commercial-scale kitchens and laundries 11. IT rooms 12. Pharmacy departments 13. Laboratories 14. Tenancy areas (e.g. catering, retail, laundry) In small healthcare buildings (< 999 m²) with no high energy load areas (as defined above), a single meter per floor plate is sufficient to achieve this credit. Individual areas within each floor plate do not need to be sub-metered.											15/01/20 **UPGRADED P TO L** Ene 01 XP2 credit is being targeted. Andy Munro confirmed separate DB's will be provided for each dept, of which there won't be many. Sub-metering of mechanical services will be more complicated		
Ene 03 External lighting													
A	**External Lighting**	**1**	**0.76**	**L**							**ACTION** **Provide evidence (spec, dwgs, luminaire schedule, manufacturer's info etc) demonstrating compliant lighting including a review of the potential for presence detection**	**ELEC**	**Stage 4**
1 No external lighting (which includes lighting on the building, at entrances and signs). OR 2 External light fittings within the construction zone **[including any existing retained]** with: - 2a Average initial luminous efficacy of not less than 70 luminaire lumens per circuit Watt - 2b Automatic control to prevent operation during daylight hours - 2c Presence detection in areas of intermittent pedestrian traffic.													
Ene 04 Low carbon design													
A1	**Passive design analysis**	**1**	**0.76**	**U**						**2**	This was not done		
A2	**Free Cooling**	**1**	**0.76**	**U**						**2**	This cannot be achieved as all spaces will have mechanical ventilation with comfort cooling		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
B	**Low and zero carbon technologies**	**1**	**0.76**	**L**						**2**	**ACTION** **Provide:** **- a detailed LZC feasibility study carried out in Stage 2, or if later this must contain a statement that being later than Stage 2 has had no impact on the opportunities or options available** **- report the reduced total energy demand and carbon dioxide emissions resulting from the passive design measures in line with the BREEAM methodology (see manual)** **- drawings/specs showing the LZC to be used in the building**	**M&E**	**Stage 2**
REQUIRED EVIDENCE 12 Results from a dynamic simulation model demonstrating reductions in CO_2 -eq emissions from the specified low and zero carbon technology. 9 An energy specialist (see Definitions on page 156) completes a feasibility study (see Low and zero carbon feasibility study on page 153) by the end of Concept Design. 10 Establish the most appropriate recognised local (on-site or near-site) low or zero carbon (LZC) energy sources for the building or development (see Scope of LZC systems and how they are assessed on page 154), based on the feasibility study. 11 Specify local LZC technologies for the building or development in line with the feasibility study recommendations. 12 Quantify the reduced regulated carbon dioxide (CO_2) emissions resulting from the feasibility study. The low zero carbon feasibility study should cover as a minimum: 1. Energy generated from LZC energy source per year 2. Carbon dioxide savings from LZC energy source per year 3. Life cycle cost of the potential specification, accounting for payback 4. Local planning criteria, including land use and noise 5. Feasibility of exporting heat or electricity from the system 6. Any available grants 7. All technologies appropriate to the site and energy demand of the development 8. Reasons for excluding other technologies 9. If appropriate: - a. The building is connected to an existing local community CHP system or - b. the building is connected to an existing source of waste heat or power OR - c. a building or site CHP system is specified with the potential to export excess heat or power via a local community energy scheme or - d. a source of waste heat or power is specified with the potential to export excess heat or power via a local community energy scheme 10. Energy storage. Timing KBCN1052: If undertaken later than RIBA Stage 2 Concept Design this must include an explanation for any LZC technologies ruled out because of constraints arising from the late consideration. Compliance may still be achieved if other LZCs are feasible and the criteria are met										EVIDENCE 12/10/20 E-mail from Andy Munro says MM are not currently contracted to carry out energy modelling or a renewables study. This will need a change control to ensure these credits are achieved 04/03/21 Robert Dadzie stated that Inenco Energy have been appointed to look into a site-wide decarbonisation strategy, and he will arrange contact with MM M&E 20/04/21 Hope Lovelady confirmed the modelling will be complete by 23/04/21		
Ene 08 Energy efficient equipment													
A	**2 credits available**	**2**	**1.52**	**U**							Unlikely as the data centre requirements are too onerous		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement P	G	VG	E	O	RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
TRANSPORT													
Tra 01 Transport assessment and travel plan													
A	Travel Plan	2	1.82	L						1-2	ACTION Provide a compliant Transport Statement (due mid/late June)	TRANSPORTATION	Stage 1-2
Two credits – Transport assessment and Travel plan 1 No later than Concept Design stage, undertake a site-specific transport assessment (or develop a travel statement) and draft travel plan, which can demonstrably be used to influence the site layout and built form; see Methodology on the facing page. 2 The site-specific travel assessment (or statement) shall cover as a minimum: 2.a If relevant, travel patterns and attitudes of existing building or site users towards cycling, walking and public transport, to identify relevant constraints and opportunities. 2.b Predicted travel patterns and transport impact of future building or site users. 2.c Current local environment for pedestrians and cyclists, accounting for any age-related requirements of occupants and visitors. 2.d Reporting of the number and type of existing accessible amenities, see Table 7.1 below, within 500m of the site. 2.e Disabled access accounting for varying levels and types of disability, including visual impairment. 2.f Calculation of the existing public transport Accessibility Index (AI), see Methodology on the facing page. 2.g Current facilities for cyclists. 3 Following a transport assessment (in accordance with the requirements set out in criteria 2), develop a site-specific travel plan that provides a long term management strategy which encourages more sustainable travel. The travel plan includes measures to increase or improve more sustainable modes of transport and movement of people and goods during the building's operation see Methodology on the facing page. 4 If the occupier is known, involve them in the development of the travel plan. 5 Demonstrate that the travel plan will be implemented and supported by the building's management in operation. **Relevant transport nodes** In calculating the AI the following can be used, measured via a safe walking distance and in one direction: - Bus stops within 650m - Train stations within 1000m - Tram stops within 1000m (treat as trains)											**NOTE: A compliant Travel Plan must be provided if any credits are to be achieved under Tra 02** EVIDENCE 027 Travel Plan, provided during RIBA Stage 2, confirms it has been produced in accordance with the requirements of BREEAM UK NC 2018 credits Tra 01 & 02, providing: Section 2 information on site characteristics; Sections 3 & 4 the results of a travel survey; Sections 5-8 information and recommendations; Sections 9-11 discusses administration, monitoring, targets and actions; and Section 12 specifically demonstrates BREEAM compliance 15/10/20 This is already being undertaken by Rachel Cockman 18/05/21 E-mail from Rachel Cockman, MM, says the traffic data for the Transport Statement has only just been received so this won't be ready until mid/late June		
Tra 02 Sustainable transport measures													
A	Up to 10 credits available	0	0.00	PCR						1-2	ACTION Provide evidence as appropriate for the options targeted	TRANSPORT + CLIENT + ARCHITECT + ELEC	Stage 3-4
		4	3.64	A									
		3	2.73	L									
		2	1.82	P									
		0	0.00	U									
Prerequisite 1 Achieve criteria 3-5 of the Tra 01 Transport assessment and travel plan credit **Ten credits – Transport options implementation** 2 Identify the sustainable transport measures, see Table 7.4 below. 3 Award credits according to the existing Accessible Index (AI) of the project, and the total number of points achieved for the options implemented, see Table 7.3 below. **Points:** **AI <25: 1 2 3 4 5 6 7 8 9 10** **AI 25-40: 1 - 2 - 3 4 5 6 7 8** **AI >40: - 1 - 2 - 3 - 4 5 6** **Credits: 1 2 3 4 5 6 7 8 9 10**											**NOTE: AI is 7.33, therefore <25 and 1 point = 1 credit** LOCATION: AI = 7.33 **Credits awarded for:** 2. Dedicated bus service (3 points) 9. Existing amenities (1 point)		
Public transport measures		**Points**											
1	Existing AI	1		U							The AI has been confirmed as only 7.33		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
2	**Increase in AI or Dedicated bus service**	2-3		A							**ACTION** **Provide evidence and justification for the reason for this service in connecting the two hospitals plus any benefits it provides for patients and staff**	**TRANSPORT**	
2. Demonstrate an increase over the existing Accessibility Index through negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development (2 points); OR 3. Demonstrate an increase over the existing Accessibility Index. This could be through provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions (3 points); OR 4. Provide a dedicated service, such as a bus route or service (See Methodology on page 180) (3 points)											EVIDENCE 001 E-mail from the Transport Planner provides details of the inter-site shuttle bus service 002 Chat transcript of discussion with BRE confirms the shuttle bus service can be counted as a 'dedicated bus service' 008 E-mail from Rachel Cockman, Transport Planner, provides a detailed review justifying the reason for the shuttle bus service connecting the two hospitals and identifying many benefits it provides for patients and staff 027 Travel Plan, Section 2.2.2 Shuttle Bus provides a description of the shuttle bus service between the Calderdale and Huddersfield sites, demonstrating compliance as a dedicated bus service		
3	**Information system**	1		L							**ACTION** **Provide drawings showing the location of the information screens and details of what will be included**	**CLIENT / ARCHITECT**	
5. Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities.											04/03/21 Robert Dadzie stated this is more Likely, but needs to be confirmed 27/04/21 **UPGRADED P TO L** E-mail from Robert Dadzie confirms this is likely and funding has been approved (expected to be to main entrances across the Trust)		
Private transport measures													
4	**EV charging points**	1		L							**ACTION** **If car parking is being provided for the department review the potential for EV charging**	**ELECTRICAL / LANDSCAPE**	
6. Provide electric recharging stations of a minimum of 3kw for at least 10% of the total car parking capacity for the development.											15/10/20 There will be some parking for visitors and staff but unlikely to include sufficient EV charging points 04/03/21 **UPGRADED U TO L** Planning requires 10% provision so 2 charging stations are being provided for the 20 spaces at the front of the building. The site plans show these as 1 to one of three disabled spaces and 1 to one of 17 general spaces. The BREEAM requirements are that where the charging points have restricted access, i.e. to a disabled space, there should be 10% provision to each group of spaces, so an additional point to a general space is required 09/06/21 E-mail from John Knape, IBI, confirms 6 additional EV spaces are being provided		
5	**Car share**	1		P							**ACTION** **Provide details of a car share scheme if there is one**	**CLIENT**	
7. Set up a car sharing group or facility to facilitate and encourage building users to car share. 8. Raise awareness of the sharing scheme with marketing and communication materials. 9. Provide priority spaces for car sharers for at least 5% of the total car parking capacity for the development. 10. Locate priority parking spaces nearest the development entrance used by the sharing scheme participants.											15/10/20 Robert Dadzie confirmed there is already a car share scheme in place 04/03/21 Robert Dadzie clarified that although this is planned it is not actually in place yet. The proposed site plan does not show any specific spaces prioritised for car sharing		
Active travel measures													
6	**Consult with LA**	2		U						1	Not within the scope of work		
7	**Cycle storage**	1		L							**ACTION** **Provide evidence that compliant cycle racks will be provided, either for this building or for the site overall, including confirmation of staff numbers**	**LANDSCAPE**	
13. Install compliant cycle storage spaces to meet the minimum levels set out in Table 7.5 **[Must be covered/sheltered and adequately lit]** **Building type requirements** For **Healthcare** building types this requires 1 cycle space per 10 building users in total **AS THIS IS AN EMERGENCY DEPT THIS APPLIES TO STAFF ONLY** **Reduction for high Accessibility Index or large number of occupants** Either a 50% reduction for high AI (see #1 above) or use of the sliding scale where occupants number >200 can be used to reduce the number of spaces required, but not both. The 50% reduction requires less spaces for up to 1600 building users, then the sliding scale becomes the better option **Rural locations** Sites in rural locations can reduce the requirement by 50%/70%/90% where the distance to the nearest urban location is greater than 10/20/30 miles **Minimum cycle storage provision** Where the calculated number of required cycle storage spaces is less than four, total provision should be based on the lower of the following: 1. A minimum of four compliant storage spaces must be provided OR 2. One space per user (staff and where appropriate other user groups).											04/03/21 The proposed site plans show cycle storage at the building's main entrance. It was stated that there would be 30 staff on duty at any time, therefore spaces for 60 staff will be required accounting for extra numbers at shift change-over = 6 cycle spaces, or 3 stands that could be used both sides 27/04/21 **UPGRADED P TO L** John Knape confirmed staff cycle spaces will be provided 09/06/21 E-mail from John Knape, IBI, confirms there will be a net increase of 10 long stay and 10 short stay spaces		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
8	**Cyclist facilities**	**1**		**P**							**ACTION** **Provide evidence that compliant facilities will be or are already provided for staff**	**CLIENT**	
14. Option 7 has been achieved. 15. Provide at least two compliant cyclists' facilities for the building users, (including pupils where appropriate to the building type) – see Definitions for the scope of each compliant facility: – Showers – Changing facilities – Lockers – Drying spaces. **Campus-type developments** Where facilities are being assessed on a site-wide basis the total distance travelled between cycle racks, facilities and the assessed building must be no greater than 500m											04/03/21 Current plans do not show any staff changing facilities, so assume these are elsewhere. To comply they would need to be adequately sized to cater for the total number of staff that would use them		
9	**Existing amenities**	**1**		**A**							**ACTION** **Assessor's site visit report to evidence all amenities are present, within distance and compliant**	**ASSESSOR**	
Existing amenities: 16. At least three existing accessible amenities are present within 500m, see Table 7.6 on page 179, where relevant for a Building Group: **BG4 Healthcare:** - Food outlet **Yes** - Access to cash **Yes** - Outdoor open space **Possible** - Fitness/sport leisure facilities **Possible** - Public postal facility **Possible** - ~~Community facility~~ **NOT HEALTHCARE** - Pharmacy **Yes** ~~- GP/medical centre~~ **ONLY HE, FE, MULTI-RESI AND 'OTHER'** ~~- Child care/school~~ **NOT PRE-SCHOOLS, SCHOOLS, 6th FORM OR HEALTHCARE**											EVIDENCE 5 amenities are confirmed: 009 Google Maps shows an ATM, a Costa coffee shop and pharmacy in the adjacent main hospital building 010 Google Maps showing a sports field on New Hey Rd within a walking distance of 350m 011 Photo from Google Maps shows a post box on Acre St outside Hugo's Barbers 012 Google Maps shows the post box as 170m away walking distance Amenities: 1. Food outlet: Costa coffee in the main building 2. Access to cash: ATM in the main building 3. Pharmacy: Live Well pharmacy in the main building 4. Outdoor open space: Sports field on New Hey Rd 5. Postal facility: Post box on Acre St X. Fitness/sport leisure facilities: Nothing found within distance		
10	**Enhanced amenities**	**2-3**		**U**							Not within the scope of work		
Alternative transport measures													
11	**Bespoke measures**	**1-3**		**U**							Not within the scope of work		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
WATER													
Wat 01 Water consumption						1	1	1	2				
A	12.5% Improvement	1	0.88	L							ACTION Provide: - relevant evidence (drawings, specs, manufacturers' literature etc) for sanitary fittings and other water consuming items (e.g. WCs, urinals, wash hand basin taps, kitchen taps, waste disposal, showers, baths, dishwashers and washing machines where present) - completed Wat01 calculator	ARCHITECT	Stage 4
	25% Improvement	1	0.88	L									
	40% Improvement	1	0.88	L									
	50% Improvement	1	0.88	P									
	55% Improvement	1	0.88	U									
XP	65% Improvement	1	1.00	U									

REQUIRED EVIDENCE
1 A completed copy of the BREEAM Wat 01 calculator.
1 Documentary evidence supporting the data used to complete the calculator tool.

1 Use the BREEAM Wat 01 calculator to assess the efficiency of the domestic water-consuming components.
2 Use the standard Wat 01 method (see Methodology on the facing page) to compare the water consumption (litres/person/day) for the assessed building against a baseline performance. Award BREEAM credits based upon Table 8.1 below. Where it is not possible to use the standard method, complete the assessment using the alternative Wat 01 method (see Methodology on the facing page).
3 If a greywater or rainwater system (see Definitions on page 197) is specified, use its yield in L/person/day to offset potable water demand from components.
4 If a greywater or rainwater system is specified and installed:
- 4a Greywater systems in compliance with BS 8525-1:2010 Greywater systems - Part 1 Code of Practice(157).
- 4b Rainwater systems in compliance with BS 8515:2009+A1:2013 Rainwater harvesting systems - Code of practice(158).
5 **[Healthcare building types only]** If applicable, the flushing control for each WC or urinal must be suitable for operation by patients with frail or infirm hands or activated by electronic sensors (see 2.0 above). **Note that components in clinical areas are exempt from this credit**
6 **[Prison building types only]** ~~Sanitary components specified within a prison cell have a volume controller specified on the individual fittings or water supply to each cell (see Definitions on page 197).~~

Additionally for those pursuing a Post Occupancy Stage certification:
Wat 02 Criterion 6: The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (litres/person/day), if a post occupancy stage certification is sought.

Components to be included (where specified):
- WCs
- Wash-hand basin taps
- Showers
- Urinals
- Kitchen (pre-rinse) and kitchenette taps
- Baths
- Dishwashers (domestic and commercial)
- Washing machines (domestic and commercial/industrial)
- Waste disposal (commercial kitchens)

Healthcare
Components in clinical areas may be omitted, e.g. areas with a scrub-up trough, clinical sink or clinical basin (guidance should be sought from an infection control specialist to ascertain areas of exemption specific to infection control and other considerations).

NOTE: The number of credits achieved is determined by a calculation based on the numbers and different types of fittings and appliances present, therefore the exact score won't be known until detailed information is available

To achieve 3 / 4 credits (without rain/grey water harvesting) the following performances would typically be required (where present):
- WC's: 3.75 / 3 litre effective flush volume
- WHB's: 5 / 3 litres per minute
- Showers: 6 / 3.5 litres per minute
- Kitchenette taps: 6 / 5 litres per minute
- Dishwashers (domestic): 12 / 10 litres per cycle
- Dishwashers (commercial): 5 / 3 litres per rack
- Washing machines (domestic): 40 / 30 litres per use
- Washing machines (commercial): 7.5 / 4.5 litres per kg

15/10/20 John Knape confirmed that he will get an infection control review carried out to identify any clinical components for exclusion
04/03/21 ~~The preferred WC uses a flush valve (details of flush volume to be provided), and~~ it's likely that all WHB's will be classed as clinical (needs to be confirmed by an infection control specialist)
17/03/21 Wat 01 calculator sent to Robin Ainley, IBI

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
Wat 02 Water monitoring						0	0	0	0				
PR	Criterion 1 Only - Mains meter	1	0.00	L							ACTION Provide: - meter specification demonstrating compliance with all criteria including #6 - drawing showing the meter location - review all water consuming plant and areas, and provide sub-meters to any consuming >10% of the total water demand	MECH	Stage 3
A	***REQUIRED FOR POST OCCUPANCY CREDITS*** Remaining Criteria	1	0.88	L									
1 Specify 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 For water-consuming plant or building areas consuming 10% or more of the building's total water demand: - 2a Fit easily accessible sub-meters OR - 2b Install water monitoring equipment integral to the plant or area. 3 For each meter (main and sub): - 3a Install a pulsed or other open protocol communication output AND - 3b Connect it to an appropriate utility monitoring and management system, e.g. a building management system (BMS), for the monitoring of water consumption. If there is no BMS system in operation at Post-Construction stage, award credits provided that the system used enables connection when the BMS becomes operational. 4 In buildings with swimming pools, or large water tanks and aquariums, fit separate sub-meters on the water supply of the above and any associated changing facilities (toilets, showers etc.) irrespective of their water consumption levels. 5 In buildings containing laboratories, fit a separate water meter on the water supply to any process or cooling loop for 'plumbed-in' laboratory process equipment, irrespective of their water consumption levels. **Additionally for those pursuing a post occupancy stage certification:** 6 The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (litres/person/day), if a post occupancy stage certification is sought.										15/10/20 Robert Dadzie confirmed the Ene 01 EX2 post-occupancy credits are targeted therefore criterion 6 applies		
Wat 03 Water leak detection													
A	Leak detection system	1	0.88	L							ACTION Provide specification demonstrating that a compliant leak detection system is to be provided. Note this can be stand alone or part of the BMS.	MECH	Stage 3-4
1 Install a leak detection system capable of detecting a major water leak: - 1a On the utilities water supply within the buildings, to detect any major leaks within the buildings AND - 1b Between the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment. 2 The leak detection system is: - 2a A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks - 2b Activated when the flow of water passing through the water meter or data logger is at a flow rate above a pre-set maximum for a pre-set period of time. This usually involves installing a system which detects higher than normal flow rates at meters or sub-meters. It does not necessarily require a system that directly detects water leakage along part or the whole length of the water supply system - 2c Able to identify different flow and therefore leakage rates, e.g. continuous, high or low level, over set time periods. Although high and low level leakage rates are not specified, the leak detection equipment installed must have the flexibility to distinguish between different flow rates to enable it to be programmed to suit the building type and owner's or occupier's usage patterns. - 2d Programmable to suit the owner's or occupier's water consumption criteria - 2e Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers. Where there is physically no space for a leak detection system between the utilities water meter and the building, alternative solutions can be used, provided that a major leak can still be detected.										15/10/20 It was confirmed that only internal leak detection will be required as the water supply will come straight from the main 04/03/21 There is a site-wide auto-metering system that already monitors for leaks - details to be provided		
B	Flow control devices	1	0.88	L							ACTION Provide evidence (drawings and spec) showing compliant devices will be installed to toilet areas	MECH	Stage 3-4
3 Install flow control devices that regulate the water supply to each WC area or sanitary facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework **En-suite facilities** This issue is not applicable to en-suite facilities in long-term residential buildings, such as halls of residence, care homes etc. In short-term residential buildings, such as hotels, training centres or hospital rooms, control devices can be provided to a group of up to 10 rooms. **Healthcare** This does not apply to toilets in clinical areas, defined as areas of the building in which medical functions are carried out that require specific restricted environmental conditions such as humidity, daylighting, temperature etc. (e.g. X-ray, operating department, delivery room etc.). Also see the definition under Wat 01.										15/10/20 John Knape confirmed that he will get an infection control review carried out to identify any clinical components for exclusion		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement P	G	VG	E	O	RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
MATERIALS													
Mat 01 Environmental impacts from construction products - Building LCA													
A1	Superstructure Up to 6 credits	0	0.00	PCR						2 & 4	**ACTION** **Carry out compliant LCA option appraisal of 4 options before the end of Concept Design and full planning application** **Provide an options appraisal summary document, showing how this has been integrated within the wider design decision-making process, the differences between the design options, the design option selected by the client to be progressed beyond Concept Design, the reasons for selecting it and the reasons for not selecting the other design options etc**	ARCHITECT / STRUCTURES / LCA SPECIALIST	Stage 2 & 4
		0	0.00	A									
		6	6.43	L									
		0	0.00	P									
		0	0.00	U									

REQUIRED EVIDENCE
1-2 The Mat 01/02 Results Submission Tool
3-4 As criteria 1 to 2 – The options appraisal summary document – Evidence that the LCA options appraisal summary document has been received by the design team and client (meeting minutes, letter of acknowledgement) – Evidence of how the LCA design options have informed the design decision-making process (e.g. meeting minutes, documented design development showing how the LCA options have affected the design).

Comparison with the BREEAM benchmark during Concept Design (offices, industrial and retail buildings only) **NOT HEALTHCARE**
~~Superstructure (offices, industrial and retail buildings (except for Simple Buildings and where Notes 1.1 and 1.2 above apply))~~
~~1 During the Concept Design, demonstrate the environmental performance of the building as follows:~~
~~- 1a Carry out a building LCA on of the superstructure design using either the BREEAM Simplified Building LCA tool or an IMPACT Compliant LCA tool according to the methodology (see Methodology on page 213).~~
~~- 1b Submit the Mat 01/02 Results Submission Tool to BRE at the end of Concept Design, and before planning permission is applied for (that includes external material or product specifications).~~

Comparison with the BREEAM benchmark during Technical Design (offices, industrial and retail buildings only) **NOT HEALTHCARE**
~~2 During Technical Design, demonstrate the environmental performance of the building as follows:~~
~~- 2a As criterion 1.a~~
~~- 2b Submit the Mat 01/02 Results Submission Tool to BRE at the end of Technical Design.~~
~~Where a project has not achieved criterion 1, criterion 2 may still be achieved.~~

Option appraisal during Concept Design (all building types) **Up to 2 credits using the Simplified LCAT, 4 using OneClick etc**
~~3 For offices, industrial and retail building types, achieve criterion 1 (except where Notes 1.0, 1.1 and 1.2 above apply).~~
4 During Concept Design, identify opportunities for reducing environmental impacts as follows:
- 4a Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options (applicable to the Concept Design stage, see Methodology on page 213).
- 4b Use a building LCA tool that is recognised by BREEAM (as suitable for assessing superstructure during Concept Design) according to the methodology (see Methodology on page 213).
- 4c For each design option, fulfil the same functional requirements specified by the client and all statutory requirements (to ensure functional equivalency).
- 4d Integrate the LCA options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document.

QN-37116-V0G4P8 BRE confirmed (05/07/18) that the appraisal is not required for 'Outline Planning' where there is insufficient detail and it does not include external materials or product specification, and can be done at a later more appropriate stage

NOTE: 2 credits should be achievable for carrying out an option appraisal using the BREEAM Simplified LCA tool at Concept stage (this uses a simplistic 'drop down' selection for material options but can only be used at Concept stage for superstructure) however, to achieve more credits, review using a recognised modelling tool such as OneClick LCA, eTool or the Sturgess Carbon Calculator will be required - if done at Concept stage all credits including the XPs are possible, but if left for Detailed Design a maximum of only 4 could be achieved

18/11/20 MM provided a fee for having this carried out by an LCA specialist for the extra credits inc Technical Stage, A2, XP1 & XP3
11/03/21 Robert Dadzie stated that he would like the full LCA study to be done - MM's fee proposal forwarded to Marc Heaps for review
17/03/21 Mat 01 spreadsheets and info sent to Robin Ainley, IBI
30/03/21 LCA Specialist stated that just carrying out the Technical Design appraisal will cost £12-15k
19/04/21 Assessor stated at DTM that, as this takes 6 weeks to complete, it needs to be commissioned within the next week otherwise it will not be done in time to submit to BRE before the planning application
23/04/21 E-mail from Eddie Parker, IHP, confirms the target rating is Excellent and gives instruction for MM to carry out the detailed LCA work

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
- 4e Record the following in the Mat 01/02 Results Submission Tool: The differences between the design options; the design option selected by the client to be progressed beyond Concept Design; the reasons for selecting it and the reasons for not selecting the other design options. **- 4f Submit the Mat 01/02 Results Submission Tool to BRE at the end of Concept Design, and before planning permission is applied for (that includes external material or product specifications).** If the building LCA tool recognised by BREEAM and used for criteria 3 to 5 (and 6 to 9, if pursued) is not an IMPACT Compliant LCA tool and criteria 1 to 2 are applicable, then the BREEAM Simplified Building LCA tool (or an IMPACT Compliant LCA tool) shall be used for criteria 1 to 2. **Options appraisal during Technical Design (all building types)** **Simplified LCATool NOT SUITABLE, Other tools up to 2 credits** 5 During Technical Design identify opportunities for reducing environmental impacts as follows: - 5a Carry out building LCA options appraisal of 2 to 3 significantly different superstructure design options (based on the selected Concept Design option and as applicable to the Technical Design stage, see Methodology on the next page). - 5b Use a building LCA tool that is recognised by BREEAM (as suitable for assessing superstructure during Technical Design) according to the methodology (see Methodology on the next page). - 5c As criteria 4.c to 4.e above. Where an options appraisal summary document was produced during Concept Design, update it to include the Technical Design options. **- 5d Submit the Mat 01/02 Results Submission Tool to BRE at the end of Technical Design.** Where a project has not achieved criteria 3 and 4, criterion 5 may still be achieved. **SUPERSTRUCTURE Relevant elements:** - Frame - Upper floors - Roof - Stairs and ramps - External walls - Windows and external doors - Internal walls and partitions **[Education building types only]**												
A2	**Substructure and hard landscaping options appraisal during Concept Design (all building types)**	**1**	**1.07**	**L**						**2**	**ACTION** **Provide LCA option appraisals for substructure and hard landscaping**	**ARCHITECT / STRUCTURES / LANDSCAPE**	**Stage 2**
REQUIRED EVIDENCE **6-7 As criteria 3 to 4. – The LCA options appraisal summary document includes substructure and hard landscaping according to the criteria.** 6 Criteria 3 and 4 are achieved. 7 During Concept Design identify opportunities for reducing environmental impacts as follows: - 7a Carry out building LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options (at least two shall be substructure and at least two shall be hard landscaping). - 7b Using a building LCA tool that is recognised by BREEAM (as suitable for assessing substructure and hard landscaping during Concept Design) according to the methodology (see Methodology on the next page). - 7c **As criteria 4.c to 4.f above.** **SUBSTRUCTURE & HARD LANDSCAPING Relevant elements:** - Foundations - Lowest floor - Basement - Roads, paths and pavings - Special surfacings											**NOTE: Only achievable if a detailed analysis is undertaken at Concept stage as the BREEAM Simplified LCA tool does not cover substructure and hard landscaping** 18/11/20 MM provided a fee for having this carried out by an LCA specialist for the extra credits 11/03/21 Robert Dadzie stated that he would like the full LCA study to be done - MM's fee proposal forwarded to Marc Heaps for review 23/04/21 E-mail from Eddie Parker, IHP, confirms the target rating is Excellent and gives instruction for MM to carry out the detailed LCA work		
XP1	**Core building services options appraisal during Concept Design (all building types)**	**1**	**1.00**	**L**						**2**	**ACTION** **Provide LCA option appraisals for services**	**M&E**	**Stage 2**
REQUIRED EVIDENCE **8-9 as criteria 3 to 4 – The LCA options appraisal summary document includes core building services according to the criteria.** 8 Criteria 3 to 4 are achieved. 9 During Concept Design identify opportunities for reducing environmental impacts as follows: - 9a Carry out building LCA options appraisal of at least 3 significantly different core building services design options. - 9b Use a building LCA tool that is recognised by BREEAM (as suitable for assessing core building services during Concept Design) according to the methodology (see Methodology on the next page). - 9c **As criteria 4.c to 4.f above.** **BUILDING SERVICES Relevant elements:** - Heat source - Space heating & air conditioning - Ventilation & smoke extract - Fuel storage and distribution											**NOTE: Only achievable if a detailed analysis is undertaken at Concept stage as the BREEAM Simplified LCA tool does not cover services. Assumed unlikely but can be reviewed again before the end of Stage and prior to full planning application** 18/11/20 MM provided a fee for having this carried out by an LCA specialist for the extra credits 11/03/21 Robert Dadzie stated that he would like the full LCA study to be done - MM's fee proposal forwarded to Marc Heaps for review 23/04/21 E-mail from Eddie Parker, IHP, confirms the target rating is Excellent and gives instruction for MM to carry out the detailed LCA work		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
XP2	LCA and LCC alignment (all building types)	1	1.00	P						2	The LCC plan is not being done therefore this cannot be achieved		
XP3	Third party verification (all building types)	1	1.00	L						2 & 4	ACTION As 1-7 above, carried out or reviewed by an LCA Specialist	LCA SPECIALIST	Stage 2
REQUIRED EVIDENCE 15-18 The third party's report: – Verifying that building LCAs accurately represent the designs under consideration. – Itemising the findings of their verification checks. – Evidence that the requirements of a Suitably qualified third party are fulfilled. 15 Criteria 1 to 7 (as applicable to the building type) are achieved. 16 A suitably qualified third party (see Definitions on page 228) either carries out the building LCA work or verifies the building LCA work (if by others) and produces a report describing how they have checked the building LCA work accurately represent the designs under consideration during Concept Design and Technical Design with reference to the requirements of criteria 1 to 7 (and 8 to 14 if pursued). 17 For each LCA option, itemise the findings of the verification checks made by the suitably qualified third party in the report including, as a minimum, the quality requirements show in Table 9.4 on page 231. 18 Include details of the suitably qualified third party's relevant skills and experience and a declaration of their third party independence from the project client and design team in the report.											18/11/20 MM provided a fee for having this carried out by an LCA specialist for the extra credits 11/03/21 Robert Dadzie stated that he would like the full LCA study to be done - MM's fee proposal forwarded to Marc Heaps for review 23/04/21 E-mail from Eddie Parker, IHP, confirms the target rating is Excellent and gives instruction for MM to carry out the detailed LCA work		
Mat 02 Environmental impacts from construction products - EPDs													
A	Specification of products with a recognised environmental product declaration (EPD)	1	1.07	L							ACTION Review all potential suppliers/manufacturers for EPDs	ARCHITECT / LANDSCAPE / STRUCTURES	Stage 3-4
REQUIRED EVIDENCE All - The Mat 01/02 Results Submission tool All - Copies of EPD certificates 1 Specify construction products with EPD that achieve a total EPD points score of at least 20, according to the Methodology below. 2 Enter the details of each EPD into the Mat 01/02 Results Submission Tool, including the material category classification. The Mat 01/02 Results Submission Tool will verify the EPD points score and credit award. **The material categories are:** - Timber / timber-based - Concrete / cementitious - Metal - Stone / aggregate - Clay-based - Gypsum - Glass - Plastic, polymer, resin, paint, chemicals and bituminous - Animal fibre / skin, cellulose fibre - Other **Relevant materials are as per Mat 01:** - Superstructure (frame, upper floors, roof, stairs, ramps, external walls, windows, external doors, internal walls) - Substructure (foundations, lower floor, basement) - Externals (roads, paths, pavings, surfacing) - Services (heating, cooling, ventilation, fuel storage) **Points calculation:** A minimum 14 products must comply, across at least 5 categories This does not require any estimation of amounts or listing of all materials present, simply reporting those elements/materials that have appropriate EPDs. A total score of 20 is required, where a maximum score of 4 can be achieved in any one material category with up to 1.5 points per product depending on the level of EPD: - 0.5 for multi-product and multi-manufacturers - 0.75 for multi-product and single manufacturer - 1.5 for product and manufacturer specific													

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
Mat 03 Responsible sourcing of materials													
PR	Criterion 1 Only - Timber Procurement	1	0.00	L	1	1	1	1	1		ACTION Provide a letter confirming that the following information will be provided by completion: - a list of all permanent timber and timber-based products used throughout the construction - evidence (manufacturer/supplier certificates, delivery notes etc) demonstrating that all timber and timber-based products are fully compliant with the requirements of the current version of CPET (i.e. have a full chain of custody from FSC/PEFC or similar recognised scheme)	CONTRACTOR	Pre-construction
Prerequisite 100% of timber and timber-based products used on the project are 'Legal' and 'Sustainable' as per the UK Government's Timber Procurement Policy (TPP) (see Definitions). **Compliance with criterion 1 is a minimum requirement for achieving any BREEAM rating. There are no prerequisite requirements for other materials.**													
A	Enabling sustainable procurement	1	1.07	A						1	ACTION Demonstrate that the plan has been used to influence procurement decisions	CONTRACTOR	
2 A sustainable procurement plan must be used by the design team to guide specification towards sustainable construction products. The plan must: - 2a Be in place before Concept Design. - 2b Include sustainability aims, objectives and strategic targets to guide procurement activities. Note: targets do not need to be achieved for the credit to be awarded but justification must be provided for targets that are not achieved. - 2c Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. - 2d Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan. In addition, if the plan is applied to several sites or adopted at an organisational level it must: - 2e Identify the risks and opportunities of procurement against a broad range of social, environmental and economic issues following the process set out in BS ISO 20400:2017(170).										**NOTE: This must be in place before Concept design (RIBA Stage2)** EVIDENCE 029 Sustainable Procurement Plan (Draft 003 23/04/21), this version provided during RIBA Stage 2 but which was started at the beginning of the project and updated several times before being finalised (see #047). Note the plan itself is compliant however is still shown as draft (v3) as the targets were still being agreed with the contractor 047 Sustainable Procurement Plan (Final 001 12/05/21) shows that a fully compliant plan was developed for the project 09/11/20 Robert Dadzie provided a draft Procurement Policy however this is aimed more at Trusts and not really construction-related. Suggest a project-specific plan be created focussing on construction materials, and issued a template for completion 13/11/20 Feedback given on the Policy with suggestions for improvement including things required for BREEAM plus a template Procurement Plan that could be used Note Marie Whitaker is the Trust's procurement lead for reconfiguration 25/01/21 Marc Heaps, IHP, provided their own template for this which could be used 04/02/21 E-mail from Robert Dadzie confirms he is currently drafting the Sustainable Procurement Plan 20/04/21 Robert Dadzie stated this is continuously being updated and developed so still in Draft. DJB to use these and correspondence to demonstrate it has been started 23/04/21 E-mails from Eddie Parker and Robert Dadzie appear to finalise this. Need the final non-draft version issuing		
B	Measuring responsible sourcing Up to 3 credits	1	1.07	L							ACTION Provide: - a letter confirming commitment to achieve one/two/three credits - a completed Mat 03 calculator based on estimations - drawings/specs showing the elements/materials/systems as identified - manufacturers'/suppliers' supporting information where known	CONTRACTOR	Pre-construction
		1	1.07	P									
		1	1.07	U									
XP	Exemplary level	1	1.00	U									
REQUIRED EVIDENCE **Evidence of level of responsible sourcing achieved for each construction product. For example, certificates.** **Completed copy of the Mat 03 Calculator tool.** **Evidence to show how the Mat 03 calculator tool has been completed.** 3 Use the Mat 03 calculator tool and methodology to determine the number of credits achieved for the construction products specified or procured. Credits are awarded in proportion to the scope of the assessment and the number of points achieved, as set out in Table 9.10. **Relevant elements:** 1 credit: Superstructure (frame, envelope, upper floors, stairs, internal walls) >10% points achieved 2 credits: As above plus Internal finishes, Substructure (foundations, lowest floor, basements) & Hard landscaping >20% points achieved 3 credits: As above >30% points achieved **Exemplary:** As above plus Core building services (heating, air conditioning, ventilation, fuel store/distribution) >50%												

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
Mat 05 Designing for durability & resilience													
A	**Protecting vulnerable parts of the building from damage and material degradation**	**1**	**1.07**	**L**							**ACTION** **Stage 2: Provide a review of the building and vulnerable areas and recommended protection measures, and marked up drawings showing the measures already provided** **Stage 3-4: Provide a material degradation review/risk assessment**	**ARCHITECT / STRUCTURES / LANDSCAPE ARCHITECT**	**Stage 2**
Protecting vulnerable parts of the building from damage 1 Protection measures are incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: - 1a Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.). - 1b Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. - 1c External building fabric damage by a vehicle. Protection where parking or manoeuvring areas are within 1 metre of the building façade and where delivery areas or routes are within 2 metres of the façade, i.e. specifying bollards or protection rails. - 1d Potential malicious damage to building materials and finishes, in public and common areas where appropriate. **Protecting exposed parts of the building from material degradation** 2 Key exposed building elements have been designed and specified to limit long and short term degradation due to environmental factors. This can be demonstrated through one of the following: - 2a The element or product achieving an appropriate quality or durability standard or design guide, see Table 9.14 on the next page. If none are available, use BS 7543:2015(172) as the default appropriate standard OR - 2b A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors. 3 Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design. 4 Design the roof and façade to prevent water damage, ingress and detrimental ponding. See Table 9.14 on the next page for an example list of relevant industry durability and quality standards. **Applicable building elements for material degradation:** 1. Foundation/substructure/lowest floor/retaining walls 2. External walls 3. Roof/balconies 4. Glazing: windows, skylight 5. External doors 6. Railings/balusters (where exposed to external environment) 7. Cladding (where exposed to external environment) 8. Staircase/ramps (where exposed to external environment) 9. Hard landscaping											20/04/21 Although no timing requirement DJB recommended the vulnerability aspect should be carried out now as this may influence design decisions. Material degradation won't be possible until more detail is known on material selections		
Mat 06 Material efficiency													
A	**Material efficiency**	**1**	**1.07**	**L**						**1-5**	**ACTION** **Stages 3, 4 & 5: Provide further more detailed reviews showing the implementation of material efficiencies and quantification of savings achieved** **Stage 5: Report the actual material efficiencies achieved against the targets set out in the Stage 2 Material Efficiency report**	**ARCHITECT** **CONTRACTOR**	**Stages 3 - 5**
1 At the Preparation and Brief and Concept Design stages, set targets and report on opportunities and methods to optimise the use of materials. These must be done for each of the following stages. See Table 9.15 below: - 1a Preparation and Brief - 1b Concept Design - 1c Developed Design - 1d Technical Design - 1e Construction 2 Develop and record the implementation of material efficiency, see Table 9.15 below, during: - 2a Developed Design - 2b Technical Design - 2c Construction 3 Report the targets and actual material efficiencies achieved.											**NOTE: See BS8895 for guidance** **NOTE: This must be started no later than Stage 2 Concept Design and developed as the project progresses, but may be easier with a modular approach** EVIDENCE 050 BREEAM Mat 06 Material Efficiency Report (Final 2021-05-15) by IBI provides a fully compliant review of both Stages 1 & 2 including opportunities, commentary on what has already been done, recommendations, and targets linking with the Mat 03 Sustainable Procurement Plan and Wst 01 Construction Waste Management credit requirements 08/10/20 Template issued for completion 15/10/20 It was confirmed that Robin Ainley, IBI, will carry out the first part of this 20/04/21 John Knape stated there are still bits to be completed 26/04/21 E-mail from Eddie Parker appears to be the last round of comments. Need final version issuing		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement P	G	VG	E	O	RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
WASTE													
Wst 01 Construction waste management									1				
A	**Pre-demolition audit**	1	0.60	A						2	**ACTION** **Compare the actual waste arisings and waste management routes used with those forecast and investigate any significant deviations from planned targets**	**CONTRACTOR**	**POST-DEMOLITION**
REQUIRED EVIDENCE **A copy of the Resource Management Plan and, where relevant, pre-demolition audit.** 1 Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the content of Pre-demolition audit scope on the facing page and: - 1a Be carried out at Concept Design stage (RIBA Stage 2) by a competent person (see Definitions on page 247) prior to strip-out or demolition works - 1b Guide the design, consider materials for reuse and set targets for waste management - 1c Engage all contractors in the process of maximising high grade reuse and recycling opportunities 2 Make reference to the audit in the resource management plan (RMP) (see Definitions) 3 Compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets. **The pre-demolition audit must cover:** 1. Identification and quantification of the key materials where present on the project (see Table 10.3 on page 265) 2. Potential applications and any related issues for the reuse and recycling of the key materials in accordance with the waste hierarchy 3. Opportunities for reuse and recycling within the same development 4. Identification of local reprocessors or recyclers for recycling of materials 5. Identification of overall recycling targets where appropriate 6. Identification of reuse targets where appropriate 7. Identification of overall landfill diversion rate for all key materials. **Timing:** KBCN0537: Where the audit is done after RIBA Stage 2 Concept Design robust evidence must be provided confirming that the timing has not compromised its ability to influence the design, consideration of materials re-use and the setting of targets for waste management. Evidence must demonstrate that this allowed decisions to be made before the start of strip-out/demolition works										**NOTE: Also applies to enabling works** **NOTE: The site has an existing building and hard landscaping that will be removed** EVIDENCE 028 Pre-Demolition Audit, carried out during RIBA Stage 2 by the main contractor with input with demolition specialists Jennings Demolition, provides a review of the demolition aspects of the project and outlines the target demolition recovery quantities for the materials which will be recycled or reclaimed and will be carried out in line with the BREEAM NC 2018 guidelines. Table 2.1 Key Materials breaks these down into the European Waste categories, provides an estimate of the amount of each, the potential for recycle/reuse and in which applications, the expected percentage diversion from landfill, and reviews local reprocessors/recyclers 15/10/20 IHP (JV between Vinci and SRM) have been appointed as NHS Principal Supply Chain Partner. Robert Dadzie to discuss all relevant issues with them 09/11/20 Robert Dadzie confirmed IHP are being asked to carry this out 13/11/20 Advice given on the requirements of a pre-demolition audit 06/03/21 E-mail from Eddie Parker, IHP, provides an example pre-demolition audit, which appears to be from the previous version of BREEAM as it does not cover points 3. reuse within the project or 4. review of local facilities		
B	**Construction resource efficiency (per 100m^2 GIFA)** **- 1 credit: <13.3m^3 / <11.1 tonnes** **- 2 credits: <7.5m3 / <6.5 tonnes** **- 3 credits: <3.4m3 / <3.2 tonnes** **- Exemplary: <1.6m3 / <1.9 tonnes**	1 1 1	0.60 0.60 0.60	L P U							**ACTION** **Provide a compliant RMP identifying the waste level targeted, including the forecast from the pre-demolition audit**	**CONTRACTOR**	**Pre-construction**
REQUIRED EVIDENCE **A copy of the Resource Management Plan and, where relevant, pre-demolition audit.** **Up to three credits - Construction resource efficiency** 4 Prepare a compliant Resource Management Plan (RMP) covering: - 4a Non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication, see Definitions on page 247), including demolition and excavation waste - 4b Accurate data records on waste arisings and waste management routes. 5 Meet or improve upon the benchmarks in Table 10.1 for non-hazardous construction waste, excluding demolition and excavation waste **[See above for reward levels]**										**NOTE: Also applies to enabling works and demolition even where done separately** 15/10/20 IHP (JV between Vinci and SRM) have been appointed as NHS Principal Supply Chain Partner. Robert Dadzie to discuss all relevant issues with them 04/03/21 Eddie Parker, IHP, to provide the SWMP		
C	**Diversion of resources from landfill**	1	0.60	L							**ACTION** **Provide a compliant RMP identifying the level of diversion anticipated and how this will be achieved**	**CONTRACTOR**	**Pre-construction**
REQUIRED EVIDENCE **A copy of the Resource Management Plan and, where relevant, pre-demolition audit.** 6 Meet, where applicable, the diversion from landfill benchmarks in Table 10.2 for non-hazardous construction waste and demolition and excavation waste generated. 7 Sort waste materials into separate key waste groups as per Table 10.3 on page 249, either on-site or through a licensed contractor for recovery. **Target levels** - Non demolition: 70% (vol.) / 80% (ton.) **Exemplary: 85% / 90%** - Demolition: 80% (vol.) / 90% (ton.) **Exemplary: 85% / 95%** Excavation: N/A **Exemplary: 95% / 95%** **Scope** This includes demolition, site clearance and enabling works where being undertaken by or for the same Client even if by a different Constructor.										**NOTE: Also applies to enabling works and demolition even where done separately** 15/10/20 IHP (JV between Vinci and SRM) have been appointed as NHS Principal Supply Chain Partner. Robert Dadzie to discuss all relevant issues with them 04/03/21 Eddie Parker, IHP, to provide the SWMP		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
XP	Exemplary credit - Volumes and diversion	1	1.00	U							Waste and diversion levels are not expected to meet Exemplary requirements however this can be revisited later		
Wst 02 Use of recycled and sustainably sourced aggregates													
A	General requirements	1	0.60	P							ACTION Consider if recycled aggregates could be used	C&S / LANDSCAPE / HIGHWAYS / STRUCTURES	Pre-construction
XP	Exemplary credit	1	1.00	U									
REQUIRED EVIDENCE A completed copy of the Wst 02 calculator. Documentary evidence supporting the data used to complete the Calculator tool. **Prerequisite** 1 If demolition occurs on site, to encourage the reuse of site-won material on site, complete a pre-demolition audit of any existing buildings, structures or hard surfaces in accordance with credit Wst 01 criteria 1 & 2 on page 245. **Project Sustainable Aggregate Points** 2 Identify all aggregate uses and types on the project Table 10.5 and Table 10.6 on the next page 3 Determine the quantity in tonnes for each identified use and aggregate type. 4 Identify the region in which the aggregate source is located. 5 Calculate the distance in kilometres travelled by all aggregates by transport type. 6 Enter the information into the BREEAM Wst 02 calculator to calculate the Project Sustainable Aggregate points. The corresponding number of BREEAM credits will be awarded as shown in Table 10.4 **Credits awarded:** - 1 credit: 3.5-6 points - **Exemplary level:** >6 points **Aggregate uses:** - Engineered fill - Concrete coarse aggregate - Concrete fine aggregate - Asphalt aggregate - Granular bedding for pipes - Granular bedding for hard landscape products - Hydraulically bound materials **Aggregate types:** - Hard rock (including limestone and granite) - Land-based sand or gravel - Marine-dredged sand or gravel - Recycled - Secondary											NOTE: The methodology allows for the use of locally sourced virgin material where this proves to have a lower environmental impact compared to recycled aggregates transported from further afield		
Wst 03 Operational waste													
A	Operational waste	1	0.60	L				1	1		ACTION Provide: - a review of potential waste streams and volumes (paper/cardboard, glass, compostable, electronic, metals, general waste etc), including discussion with client re their needs - drawing demonstrating adequate compliant facilities will be provided - confirmation that the design complies with HTM07-01 and that there is no food preparation in the building	ARCHITECT + LANDSCAPE ARCHITECT	Stage 2
1 Provide a dedicated space for the segregation and storage of operational recyclable waste generated. The space is: - 1a Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams - 1b Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors - 1c Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily or weekly operational activities and occupancy rates. 2 For consistent and large amounts of operational waste generated, provide: - 2a Static waste compactors or balers; situated in a service area or dedicated waste management space - 2b Vessels for composting suitable organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection and delivery to an alternative composting facility - 2c A water outlet provided adjacent to or within the facility for cleaning and hygiene purposes where organic waste is to be stored or composted on site.											NOTE: Need to get the end users input for amounts and types of waste to determine space required.		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
Wst 05 Adaptation to climate change													
A	**Resilience of structure, fabric, building services and renewables installation**	**1**	**0.60**	**L**						**2-4**	**ACTION** **Stage 2: Provide a compliant appraisal with recommendations (see relevant Methodology section of the BREEAM manual)** **Stage 4: Provide evidence demonstrating the recommendations have been implemented**	**STRUCTURES / ARCHITECT / M&E**	**Stage 2 + 4**
1 Conduct a climate change adaptation strategy appraisal using: - 1a A systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. The assessment covers the installation of building services and renewable systems, as well as structural and fabric resilience aspects and includes (see Methodology below): - 1a.i Hazard identification - 1a.ii Hazard assessment - 1a.iii Risk estimation - 1a.iv Risk evaluation - 1a.v Risk management. 2 Develop recommendations or solutions based on the climate change adaptation strategy appraisal, before or during Concept Design, that aim to mitigate the identified impact. 3 Provide an update during Technical Design demonstrating how the recommendations or solutions proposed at Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing by the assessor. **Timing** KBCN0533: The credit can be achieved later than RIBA Stage 2 so long as there is clear justification for the strategy being developed at a slightly later stage (i.e. early RIBA stage 3) AND there is clear evidence that the strategy has achieved the intended outcomes (i.e. the later consideration has been in no way detrimental to the outcomes of the strategy study/appraisal and the benefits can still be realised on the project)										EVIDENCE 08/10/20 Template issued for completion 20/04/21 Report provided however this has a lot of blank sections, assume these are for others to complete. Also refers to the basement plantroom so really should be updated 14/05/21 E-mail sent to Robin Ainley, IBI, requesting the Wst 05 Adaptation report be updated and completed 17/05/21 E-mail sent to MEP and Structures with link to the Wst 05 Adaptation report requesting they complete their relevant sections		
XP	**Exemplary credit - Responding to climate change**	**1**	**1.00**	**U**						**2**	Ene 04 Passive Design Analysis has not been carried out		
Wst 06 Design for disassembly and adaptability													
A1	**Recommendations**	**1**	**0.60**	**PCR**						**2**	COMPLETE		
REQUIRED EVIDENCE **Disassembly and functional adaptability study, implementation plan report, building adaptability and disassembly guide** 1 Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios (see Methodology below) **by the end of Concept Design.** 2 Develop recommendations or solutions (see Methodology below) based on the study (criterion 1 above), during or prior to Concept Design, that aim to enable and facilitate disassembly and functional adaptation. **Timing** KBCN0730: The credit can be achieved later than RIBA Stage 2 so long as there is clear justification for the study being developed at a slightly later stage (i.e. early RIBA stage 3) AND there is clear evidence that the strategy has achieved the intended outcomes (i.e. the later consideration has been in no way detrimental to the outcomes of the strategy study/appraisal and the benefits can still be realised on the project)										EVIDENCE 030 Design for Disassembly & Adaptability report, provided at RIBA Stage 2 by the Architect IBI with input from M&E and structural engineers Mott MacDonald, provides a compliant review demonstrating disassembly and adaptability have been considered and includes recommendations and further review to be carried out at detailed design stage 08/10/20 Template issued for completion 20/04/21 Report provided however may need minor update to remove reference to the basement plantroom		
A2	**Implementation**	**1**	**0.60**	**L**						**4**	**ACTION** **Stage 4: Provide an updated study, evidence the recommendations have been incorporated and an adaptability & disassembly guide for the building tenants**	**ARCHITECT / M&E / STRUCTURES**	**Stage 4**
REQUIRED EVIDENCE **Building adaptability and disassembly guide** 3 Achieve criteria 1 and 2 4 Provide an update, during Technical Design, on: - 4a How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing to the assessor. - 4b Changes to the recommendations and solutions during the development of the Technical Design. 5 Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.													

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
LAND USE & ECOLOGY													
LE 01 Site selection													
A	**Previously occupied land**	**1**	**1.00**	**A**							**ACTION** **Provide As Built site plans demonstrating no change to the development affecting the area on 'previously occupied land'**	**LANDSCAPE ARCHITECT**	
1 At least 75% of the proposed development (building, hard landscaping, car park and access roads) is on previously occupied land [i.e. by a permanent structure including any associated fixed surface infrastructure]											**NOTE: The location is on a site that currently is mostly occupied by a building and hard landscaping** EVIDENCE 024 Proposed Site Plan overlain with the existing developed and undeveloped areas demonstrates that 96.6% of the development is on 'previously occupied land'		
B	**Contaminated land**	**1**	**1.00**	**U**							Currently unknown however given the location is heavily developed the site is not expected to be significantly contaminated		
LE 02 Identifying and understanding the risks and opportunities for the project													
A	**Up to 2 credits depending on route**	**1**	**1.00**	**L**						**1-2**	**ACTION** **Carry out a site survey and provide appropriate advice** **Complete the BREEAM Change in Ecological Value calculator and GN40 reporting template**	**ECOLOGIST**	**Stage 1**
		1	**1.00**	**L**						**1-2**			
REQUIRED EVIDENCE **Foundation route - Completed Guidance Note 34: BREEAM, CEEQUAL and HQM Ecology Risk Evaluation Checklist.** **Comprehensive route – Criteria 3 to 5 - A copy of the Ecological Survey and Evaluation document. Note: A phase 1 habitat assessment or other equivalent type of assessment can act as acceptable evidence as long as it can be shown that they cover the content of the assessment criteria.** Foundation route (Route 1) Project team member (where ecological opportunities and risks are limited in nature): 1 credit - both parts required Comprehensive route (Route 2) Ecologist (where complex ecological systems are likely to be present): 1 or 2 credits - first or both parts NOTE: Mandatory requirement actually applies to linked LE 03 **Prerequisite - Assessment route selection** 1 The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site **Survey and evaluation** Foundation (Route 1): 2 The site is evaluated using the BREEAM Ecological Risk Evaluation Checklist (Guidance Note 34) confirming that the Foundation route can be used (see Methodology and Definitions) Comprehensive (Route 2): 3 A Suitably Qualified Ecologist (SQE) carries out a survey and evaluation (see Methodology) for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions (typically Preparation and brief stage) (see Definitions). 4 The SQE's survey and evaluation determines the site's ecological baseline (see Definitions), including: 4.a Current and potential ecological value and condition of the site and related areas within the Zone of Influence. 4.b Direct and indirect risks to current ecological value from the project. 4.c Capacity and feasibility for enhancement of the site's ecological value and, where relevant, areas within the Zone of Influence. 5 Recommendations and data collected from the survey and evaluation are shared with appropriate project team members to influence decisions made for activities during site preparation, design and construction works, which can support ecological features (see Methodology and Definitions). **Determining the ecological outcomes for the site (Routes 1 and 2)** 6 Survey and evaluation criteria (criterion 2 or criteria 3-5 above dependent on chosen route) have been achieved. 7 The project team liaise and collaborate with representative stakeholders (see Methodology) early enough to influence key planning decisions (typically Concept Design stage), to: 7.a Identify the optimal ecological outcomes for the site. 7.b Identify, appraise and select measures to meet the optimal ecological outcomes for the site (criterion 7.a), in line with the mitigation hierarchy of action, according to the route being used (see Definitions): Route 1: 1. Avoidance 2. Protection Route 2: 1. Avoidance 2. Protection 3. Reduction or limitation of negative impacts 4. On site compensation and, 5. Enhancement, considering the capacity and feasibility within the site, or where viable, off-site.											**NOTE: The preferred location is a mix of building, hard landscaping and mature trees** 28/09/20 PEA by JCA provided which goes some way towards this but is not sufficient to award the credit. The Ecologist's scope needs to be extended so that all the requirements can be met 04/03/21 JCA are now carrying out further work to meet BREEAM requirements 20/04/21 John Knape confirmed that JCA's work has not been completed. Robert Dadzie stated the WSP are undertaking a strategic biodiversity review, and JCA's work should co-ordinate with this 05/05/21 E-mail from Eddie Parker, IHP, confirms that JCA have now been instructed to carry this out however they are struggling with resource so it may take a couple of weeks 07/06/21 E-mail from Michael Eltringham, JCA, says they are trying to retain the boundary trees in line with the tree officer's comments		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
Optimal ecological outcome: a solution that both provides maximum benefit to the ecology whilst accounting for other priorities for the development. This may result in several options/iterations and the most favourable option selected and justified, taking account of all site-specific considerations (for example scale, scope, size and any other priorities)													
XP	**Exemplary level**	**1**	**1.00**	**U**						**2**	**ACTION** **See requirements**	**ECOLOGIST / DRAINAGE / LANDSCAPE / ACOUSTICIAN**	**Stage 2 + 4**
Exemplary level criteria - Wider site sustainability 8 Achieve criterion 7 above. 9 Wider sustainability related activities and potential ecosystem service benefits (see Definitions) are considered as part of determining the optimal ecological outcomes for the site (criterion 7), including the areas outlined in the Methodology below. **[e.g. flood and surface water management, carbon sequestration etc]** 10 Achieve the credits of the assessment issues outlined below: 10.a Hea 07 Safe and healthy surroundings - Both credits 10.b Pol 03 Flood and surface water management - Achieve credits for 'Surface water run-off' and 'Minimising watercourse pollution' 10.c Pol 05 Reduction of noise pollution **Opportunities & benefits** - Landscape: Design, Heritage and local character, Green Infrastructure - Health and wellbeing: Recreational space, Water quality measures, Noise mitigation measures, Air quality control measures, Light pollution control measures - Resilience: Climate change mitigation b. Management of surface water run-off c. Flood risk management d. Climate-sensitive urban design (heat island effect, thermal mass, shading, biotic cooling etc.) 4. Infrastructure: a. Maximising the benefits of green infrastructure and optimising alignment with existing infrastructure on the site and the Zone of Influence. 5. Community and end user involvement: a. Life cycle costing and service life planning (where targeted under Man 02 Life cycle cost and service life planning).										**NOTE: This is currently outside the scope of the project but could be looked into later** Hea 07 Safe and healthy surroundings: Safety Likely; Outside space Possible due to limited free space on site Pol 03 Flood and surface water management - 'Surface water run-off' and 'Minimising watercourse pollution': Likely Pol 05 Reduction of noise pollution: Likely		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
LE 03 Managing impacts on ecology							1	1	1				
A	**Planning and measures on site**	1	1.00	L						1-2	**ACTION** **ECOLOGIST: Provide evidence of the presence/absence of relevant features pre-clearance and advise on relevant protection measures** **CONTRACTOR: Ensure protection measures are included**	**ECOLOGIST** **CONTRACTOR**	**Stage 1 + Pre-construction**
	Managing negative impacts **- Route 1: 1 credit** **- Route 2: 2 credits**	1	1.00	L									
		1	1.00	L									

REQUIRED EVIDENCE
3 Records of site visits confirming measures have been carried out in-practice

Route 1 Project team member (where ecological opportunities and risks are limited in nature): up to 2 credits
Route 2 Ecologist (where complex ecological systems are likely to be present): up to 3 credits

Prerequisite – Ecological risks and opportunities
1 LE 02's 'Survey and evaluation and Determining ecological outcomes' criteria have been achieved using the Foundation route (Route 1) or the Comprehensive route (Route 2).

Planning and measures on site
Routes 1 & 2 (one credit)
2 Further planning to avoid and manage negative ecological impacts on-site is carried out (see Methodology) early enough to influence the concept design and design brief as well as site preparation planning (typically Concept Design stage).
3 On-site measures for managing negative ecological impacts during site preparation and construction are implemented in-practice (e.g. mitigation measures to protect existing ecological features) (see Methodology).
4 Criteria 2-3 are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 Ecological risks and opportunities (see Methodology).

Managing negative impacts
Route 1 (one credit)
5 Criteria 2 and 3 have been achieved.
6 Negative impacts from site preparation and construction works are managed according to the mitigation hierarchy (see Methodology) and no overall loss (see Definitions) of ecological value has occurred.

Route 2 (up to two credits)
7 Criteria 2-4 have been achieved.
8 Negative impacts from site preparation and construction works have been managed according to the mitigation hierarchy, in line with the SQE's recommendations (see Methodology) and either:
- 8a No overall loss of ecological value has occurred (see Definitions): Percentage score 95-104% = 2 credits
OR where criterion 8a is not possible
- 8b The loss of ecological value has been minimised: Percentage score 75-94% = 1 credit

NOTE: See GN35
NOTE: The preferred location is on a mown greenfield area so current value is expected to be minimal. Currently unknown how much landscaping will be included or the potential for improvement

28/09/20 PEA by JCA provided which notes the site generally has low value and includes a small area of cotoneaster to be removed requiring careful management.
The Ecologist's scope needs to be extended so that all the requirements can be met
04/03/21 JCA are now carrying out further work to meet BREEAM requirements
07/06/21 E-mail from Michael Eltringham, JCA, says they are trying to retain the boundary trees in line with the tree officer's comments

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
LE 04 Change and enhancement of ecological value													
B1	**Ecological enhancement** **Route 2 only**	**1**	**1.00**	**L**						**1-2**	**ACTION** **ECOLOGIST - Provide an ecology report based on a site visit or pre-clearance report, completed BREEAM Change in Ecological Value calculator and GN40 reporting template showing the change in ecological value and advice on enhancement** **LANDSCAPE - Provide the soft and hard landscape plans from which the post-development ecological value is calculated, and any other evidence showing the general recommendations have been incorporated (bird and bat boxes, planting types, invertebrate houses etc)**	**ECOLOGIST / LANDSCAPE**	**Stage 1**
A / B2	**Change and enhancement of ecology** **Route 1 - 1 credit** **Route 2 - Up to 3 credits**	**1**	**1.00**	**L**						**1-2**	**ACTION** **Review if an overall positive change in value can be achieved. If so confirm the improvement level, that the planting has the best possible chance of establishment and long term survival, and that it links to and supports the local ecosystem beyond the site boundary.**	**ECOLOGIST**	**Stage 1**
		1	**1.00**	**P**									
		1	**1.00**	**P**									
XP	**Exemplary credit**	**1**	**1.00**	**U**									

REQUIRED EVIDENCE
6 Completed version of BREEAM Change in Ecological Value Calculator.

Prerequisite - Managing negative impacts on ecology
1 Criterion 6 (for Foundation route 1) or 8 (for Comprehensive route 2) in LE 03 has been achieved.
2 The client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site.

A. One credit - Change and enhancement of ecology
Foundation route (Route 1) only
3 Locally relevant ecological measures have been implemented that enhance the site's ecological value. The measures adopted are based on (see Methodology).
- 3.a Recommendations from recognised 'local' ecological expertise and specialist input and guidance.
- 3.b Input from the project team in collaboration with representative stakeholders and data collated as part of 'Determining ecological outcomes' in LE 02.

B1. One credit - Ecological enhancement
Comprehensive route (Route 2) only
4 Measures have been implemented that enhance ecological value, which are based on input from the project team and SQE i n collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 (see Methodology). Measures are implemented i n the following order:
4.a On site, and where this is not feasible,
4.b Off site within the Zone of Influence.
5 Data collated are analysed and where potentially valuable, provided to the local environmental records centres nearest to, or relevant for, the site.

B2. Up to three credits - Change and enhancement of ecology
Comprehensive route (Route 2) only
6 Up to three credits are awarded based on the change in ecological value occurring as a result of the project. This must be calculated in accordance with the process set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2 [accounting for habitat distinctiveness, condition and risk factors]. Credits are awarded in line with the Reward Scale table in GN36 where there are no residual impacts on protected sites or irreplaceable habitats.

Exemplary Level criteria
To achieve one exemplary performance credit:
7 The change in ecological value calculated under criterion 6 above confirms significant net gain has been achieved as set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2.

Reward scale & Additional requirements
1 credit: 75-94% Minimising loss + SQE confirms impractical to achieve no net loss
2 credits: 95-104% No net loss + habitat created >2.5% of the development area
3 credits: 105-109% Net gain + habitat created >5% of the development area
3 credits + **Exemplary**: 110%+ Significant net gain

NOTE: The preferred location is on a mown greenfield area so current value is expected to be minimal. Currently unknown how much landscaping will be included or the potential for improvement but assumed no loss with some planting
NOTE: It's important the Ecologist is aware that this is using BREEAM 2018 which is considerably different to the old version - See GN35

28/09/20 PEA by JCA provided which notes the site generally has low value and that the project should be targeting a biodiversity net gain. The Ecologist's scope needs to be extended so that all the requirements can be met
04/03/21 JCA are now carrying out further work to meet BREEAM requirements

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
LE 05 Long term ecology management and maintenance													
A	**Management and maintenance throughout the project– Foundation and Comprehensive routes** **Route 1 and Route 2**	1	1.00	L						1-2	**ACTIONS** **CLIENT Appoint an Ecologist, ensure stakeholders are involved and confirm all relevant EU, UK and International standards will be complied with** **ECOLOGIST Ensure all criteria are complied with and provide a compliant management plan**	**ECOLOGIST + CLIENT**	**Stage 1-5**
B	**Landscape and ecology management plan**	1	1.00	L									

REQUIRED EVIDENCE
3 As-built evidence showing measures have been carried out in practice

Route 1 Project team member (where ecological opportunities and risks are limited in nature): 1 credit - both parts required
Route 2 Ecologist (where complex ecological systems are likely to be present): 2 separate credits

Prerequisite - Statutory obligations, planning and site implementation
1 The client or contractor has confirmed that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site.
2 The following must be achieved, according to the route being assessed:
2.a Foundation route (Route 1) - Criterion 6 in LE 03 has been achieved.
2.b Comprehensive route (Route 2) - Criterion 8 in LE 03 has been achieved, and at least one credit under LE 04 for 'Change and Enhancement of Ecology' has been awarded.

A. One credit - Management and maintenance throughout the project– Foundation and Comprehensive routes (Route 1 and Route 2)
3 Measures have been implemented to manage and maintain ecology throughout the project. These measures are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 (see Methodology). To ensure the optimal ecological outcomes agreed in LE 02 are met in-practice, these measures must monitor and review the effectiveness of the mitigation and enhancement measures in place for LE 03 & LE 04 to ensure they are implemented.
4 A section on Ecology and Biodiversity has been included as part of the tenant or building owner information supplied, to inform the owner or occupant of local ecological features, value and biodiversity on or near the site (see Methodology). This should include detailed management and maintenance plans as required by landscape and asset managers as well as relevant parts of the handover information for occupiers written in a format that encourages understanding and supportive behaviours.

B. One credit - Landscape and ecology management plan
5 A Landscape and Ecology Management Plan, or equivalent, has been developed in accordance with BS 42020:2013 Section 11.1(205) covering at least the first five years after project completion as a minimum and including:
5.a Actions and responsibilities of relevant individuals prior to handover
5.b The ecological value and condition of the site at handover and how this is expected to develop and change over time
5.c Identification of opportunities for ongoing alignment with activities beyond the development project, which support the aims of BREEAM's Strategic Ecology Framework
5.d Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impacts
5.e Clearly defined and allocated roles and responsibilities for delivering the plan
6 The landscape and management plan or similar will be updated to support maintenance of the ecological value of the site (see sections relating to Maintenance and Monitoring in CIEEM, CIRIA, IEMA, for helpful guidance).

28/09/20 PEA by JCA provided which notes the site generally has low value and includes a small area of cotoneaster to be removed requiring careful management. The Ecologist's scope needs to be extended so that all the requirements can be met

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
POLLUTION													
Pol 01 Impact of refrigerants													
A	Up to 3 credits	1	0.67	L							**ACTION** **Provide:** **- specification and drawings showing all refrigerant-based systems** **- specification/manufacturers' info for all systems with compressors demonstrating compliance with BS EN 378 and that they are hermetically sealed** **- completed Pol01 calculator**	**MECH**	**Stage 3-4**
		1	0.67	P									
		1	0.67	U									

REQUIRED EVIDENCE
3, 5 Completed copy of the Pol 01 Calculator tool and documentary evidence supporting the data used to complete the calculator tool

NOTE: This applies to air conditioning, comfort cooling/heating and cold storage including commercial food/drink display cabinets (but excluding small scale white goods)

Three credits - No refrigerant use
1 No refrigerant use within the installed plant or systems.
OR alternatively, where the building does use refrigerants, the three credits can be awarded as follows:

Prerequisite
2 All systems with electric compressors comply with the requirements of BS EN 378:2016(211) (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice(212).

Impact of refrigerant
Two credits
3 The direct effect life cycle CO_2 equivalent emissions (DELC) of ≤ 100 CO_2-eq/kW. For systems which provide cooling and heating, the worst performing output based on the lower of kW cooling output and kW heating output is used to complete the calculation. To calculate the DELC, refer to the relevant definitions in Methodology below and Additional information on page 305.
OR
4 All refrigerants used have a global warming potential (GWP) ≤ 10.
OR
One credit
5 Systems using refrigerants have a DELC of ≤ 1000 kgCO_2-eq/kW cooling and heating capacity.

Leak detection
One credit
6 All systems are hermetically sealed or only use environmentally benign refrigerants (see Leak detection and Hermetically sealed systems on page 303).
OR
7 Where the systems are not hermetically sealed:
- 7a Systems have:
  - 7a.i A permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks.

OR
  - 7a.ii An inbuilt automated diagnostic procedure for detecting leakage is enabled.

- 7b In the event of a leak, the system must be capable of automatically responding and managing the remaining refrigerant charge to limit loss of refrigerant (see Automatic isolation and containment of refrigerant on page 305).

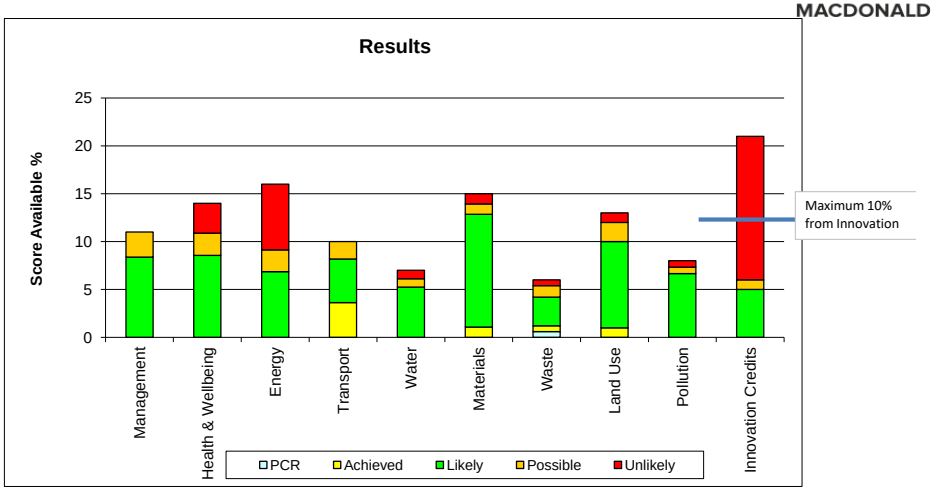
Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement P	G	VG	E	O	RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
Pol 02 Local air quality													
A	**Up to 2 credits**	**1**	**0.67**	**L**							**ACTION** **Provide relevant specs and drawings showing all heating and hot water is electric**	**MECH**	**Stage 3-4**
		1	**0.67**	**L**									
1 All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity. OR alternatively; 2 Emissions [NOx for all types, and particulate matter PM10 and VOC for biomass/solid fuels] from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set in Table 12.4 and Table 12.5 in the manual. The measurements must be provided by manufacturers, following the labelling requirements of the European directive 2009/125/EC. Note the level is dependent on the site location being classed as high or low pollution - high areas have stricter requirements **Electric** The credits are automatically achieved where all heating and hot water is supplied by non-combustion systems, i.e. powered by electricity **Gas** Gas boilers need a NOx emission of no greater than 27mg/kWh (1 credit) or 24mg/kWh (2 credits)										01/03/21 Andy Munro, MM, confirmed that ASHP's are proposed		
Pol 03 Flood and surface water management													
PR	**Pre-requisite: Appropriate consultant**	**1**	**0.00**	**PCR**							Complete		
Prerequisite 1 An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria.											EVIDENCE 048 Flood Risk and Runoff Assessment (30/07/20) by Mott MacDonald, produced by Andrew Precious, demonstrates that an appropriate consultant was appointed 049 CV for Andrew Precious shows they have over 20 years relevant experience		
A	**Flood resilience**	**1**	**0.67**	**L**							**ACTION** **Provide evidence that the design includes mitigation measures for the residual risks from overland flow and the runoff generated by the development itself, as identified in the FRA**	**DRAINAGE**	**Stage 3-4**
		1	**0.67**	**L**									
Two credits - Low flood risk 2 A site-specific flood risk assessment (FRA) confirms the development is in a flood zone that is defined as having a low annual probability of flooding. The FRA takes all current and future sources of flooding into consideration (see Sources of flooding on page 314). **One credit - Medium or high flood risk** 3 A site-specific FRA confirms the development is in a flood zone that is defined as having a medium or high annual probability of flooding and is not in a functional floodplain. The FRA must take all current and future sources of flooding into consideration (see Sources of flooding on page 314). For smaller sites refer to Level of detail required in the FRA for smaller sites on page 314, which overrides criterion 2 above. 4 To increase the resilience and resistance of the development to flooding, one of the following must be achieved: - 4a The ground level of the building and access to both the building and the site, are designed (or zoned) so they are at least 600 mm above the design flood level of the site's flood zone (see 600 mm threshold on page 314). - 4b The final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy approach outlined in section 5 of BS 8533:2017 (218). **Small sites** For smaller sites (<10,000m^2) the level of detail in the FRA could be reduced, or even be quite a simple review (<2000m2). See CN3.6 in the manual										EVIDENCE 048 Flood Risk and Runoff Assessment (30/07/20) provides a detailed flood risk assessment showing the site is in zone 1 therefore at low risk from watercourses, with section 3 reviewing other sources of flooding showing no risk from most sources but medium risk from private drainage and new development. The Executive Summary states that the site will need to mitigate residual risks from overland flow and the runoff generated by the development itself however these can be controlled for the life-time of the development and are considered to be low-residual risks 15/10/20 Preliminary FRA notes the site is in zone 1 therefore at low risk from watercourses, but has medium risks from private drainage and new development		

Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
B	Surface water run-off - Rate	1	0.67	L							ACTION Provide evidence (drawings/plans, calculations, reports etc) demonstrating compliance with the relevant criteria, along with a completed GN15 pro-forma	DRAINAGE	Stage 3
	Surface water run-off - Volume	1	0.67	L									
REQUIRED EVIDENCE 6-7 Calculation results for the pre-and post development peak rate of run-off 8, 15 Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS 10 Information showing the proposed drainage solution, system failure flood flow routes, potential flood ponding levels and ground floor levels 11-14 Calculation results for the pre- and post development volume of run-off 14 Calculation results for the limiting discharge **Prerequisite** 5 Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the site. **One credit - Surface Water Run-Off - Rate** 6 For brownfield site, drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) shows a 30% improvement for the developed site compared with the pre-developed site. This should comply at the 1-year and 100-year return period events. 7 For Greenfield sites, drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply at the 1-year and 100-year return period events. 8 Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place. 9 Calculations include an allowance for climate change. This should be made in accordance with current best practice planning guidance (see Definitions on page 337). **One credit - Surface Water Run-Off - Volume** 9 Flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); AND EITHER 10 Drainage design measures are specified so that the post-development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development. This must be for the 100-year 6-hour event, including an allowance for climate change (see criterion 14). 11 Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other SuDS techniques. OR (only where criteria 10 and 11 cannot be achieved): 12 Justification from the appropriate consultant indicating why the above criteria cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. 13 Drainage design measures are specified so that the post-development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: - 13a The pre-development one-year peak flow rate - 13b The mean annual flow rate (Qbar) - 13c 2L/s/ha. For the one-year peak flow rate, the one-year return period event criterion applies. 14 Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. 15 For either option, above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance.										NOTE: The preferred location is mostly building or hardstanding although some planting is present, therefore both credits should be achievable with appropriate design and Client buy-in 08/10/20 E-mail from Andy Precious states the project will require a lot of attenuation 15/10/20 Preliminary FRA targets a 30% reduction in run-off		
C	Minimising watercourse pollution	1	0.67	L							ACTION Provide evidence (drawings/plans, calculations, reports etc) demonstrating compliance with the relevant criteria, along with a completed GN15 pro-forma CONTRACTOR: 21 Ensure a comprehensive and up to date drainage plan of the site is made available for the building or site occupiers prior to handover	DRAINAGE	Stage 3
REQUIRED EVIDENCE 23 Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS. 16 There is no discharge from the developed site for rainfall up to 5 mm (confirmed by the appropriate consultant). 17 Areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques. 18 Areas with a high risk of contamination or spillage of substances, such as petrol and oil, have separators (or an equivalent system) are installed in surface water drainage systems. 19 Chemical or liquid gas storage areas have a means of containment fitted to the site drainage system (i.e. shut-off valves). This is to prevent the escape of chemicals to natural watercourses in the event of a spillage or bunding failure. 20 All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as the SuDS manual(219) and other relevant industry best practice. They must be bespoke solutions taking account of the specific site requirements and natural or man-made environment of and surrounding the site. 21 A comprehensive and up to date drainage plan of the site will be made available for the building or site occupiers. 22 Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place. 23 All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance.										NOTE: Requirement for "no discharge from the developed site for rainfall up to 5mm" can be ignored if the Appropriate Consultant demonstrates this cannot be achieved NOTE: The preferred location is mostly building and hard landscaping with some planting, and the site will have a low risk of pollution. The credit should be achievable with appropriate design and Client buy-in		

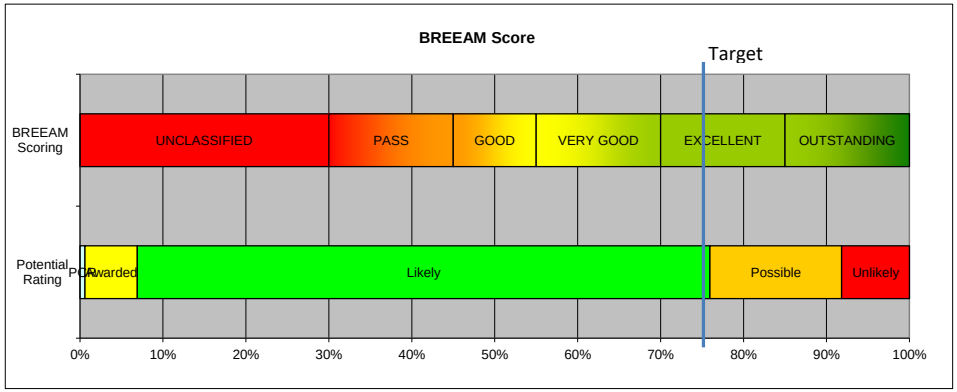
Ref.	Title	Credits Available	Credit Value %	Status PCR/A/L/P/U	Mandatory Requirement					RIBA Criteria	Design Stage Comments/Actions	Owner	Delivery Date
					P	G	VG	E	O				
Pol 04 Reduction of night time light pollution													
A	**Night time light pollution**	**1**	**0.67**	**L**							**ACTION** **Provide:** **- external lighting dwgs and spec** **- review against the ILP guidance Table 2 demonstrating compliance**	**ELEC**	**Stage 3-4**
1 External lighting pollution has been eliminated through effective design that removes the need for external lighting. This does not adversely affect 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 Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011(225). 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 guidance notes. 5 Illuminated advertisements are designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements.(226). **Scope of assessment** Where the assessment is of an individual building on an existing site then only those areas within the construction zone need to be assessed. Where the assessment is of a building that forms part of an entire new development, the criteria apply site-wide. **Security lighting** Lighting provided to meet specific security standards could be excluded if these conflict with the BREEAM requirements										**NOTE: Lighting provided to meet specific security standards could be excluded if these conflict with the BREEAM requirements**		
Pol 05 Reduction of noise pollution													
A	**Reduction of noise pollution**	**1**	**0.67**	**L**							**ACTION** **ACOUSTICIAN: MM or Delta Simons? Review need for full impact assessment, and if required provide an assessment either demonstrating compliance or advising what needs to be done** **MECH / ARCH: Confirm that any advice will be incorporated**	**ACOUSTICIAN / ARCHITECT / MECH**	**Stage 3-4**
1 There are no noise-sensitive areas within the assessed building or within 800 m radius of the assessed site. OR 2 Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800 m radius of the assessed site, a noise impact assessment compliant with BS 4142:2014(227) is commissioned. Noise levels must be measured or determined for: - 2a Existing background noise levels: - 2a.i at the nearest or most exposed noise-sensitive development to the proposed assessed site - 2a.ii including existing plant on a building, where the assessed development is an extension to the building - 2b Noise rating level from the assessed building. 3 The noise impact assessment must be carried out by a suitably qualified acoustic consultant. 4 The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise-sensitive development, must be at least 5dB lower than the background noise throughout the day and night. 5 If the noise sources from the assessed building are 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 the criterion.										**NOTE: This needs to be done at design stage with site measurement as existing and the resultant new noise level modelled/calculated** 27/04/21 Seems to be some confusion as to who is carrying this out. IHP stated that CBRE have appointed Delta Simons to carryout a noise impact assessment for planning, but this work is also included in MM's fee scope		

Credits Available	Section Value %	Score Achieved %				
		PCR	Achieved	Likely	Possible	Unlikely
Management	11	0.00	0.00	8.38	2.62	0.00
Health & Wellbeing	14	0.00	0.00	8.56	2.33	3.11
Energy	16	0.00	0.00	6.86	2.29	6.86
Transport	10	0.00	3.64	4.55	1.82	0.00
Water	7	0.00	0.00	5.25	0.88	0.88
Materials	15	0.00	1.07	11.79	1.07	1.07
Waste	6	0.60	0.60	3.00	1.20	0.60
Land Use	13	0.00	1.00	9.00	2.00	1.00
Pollution	8	0.00	0.00	6.67	0.67	0.67
Innovation Credits	10	0.00	0.00	5.00	1.00	15.00
TOTAL	**110**	**0.60**	**6.91**	**75.95**	**91.82**	**121.00**
		Does not pass	**Does not pass**	**EXCELLENT**	**OUTSTANDING**	**OUTSTANDING**

% SCORE ACHIEVED	BREEAM RATING
<30	UNCLASSIFIED
30	PASS
45	GOOD
55	VERY GOOD
70	EXCELLENT
85	OUTSTANDING



Minimum Standards:	Pass	Good	Very Good	Excellent	Outstanding
Man 03 Responsible construction management				LIKELY	LIKELY
Man 04 BUG			LIKELY		
Man 04 Commissioning			LIKELY		
Man 05 Seasonal commissioning				LIKELY	
Ene 01 A. Energy performance	EXCELLENT: EITHER A OR B OUSTANDING: BOTH A AND B			POSSIBLE	UNLIKELY
Ene 01 B. Energy prediction				LIKELY	
Ene 02 Sub-metering			LIKELY		
Wat 01 Water consumption		LIKELY			LIKELY
Wat 02 Water metering		LIKELY			
Mat 03 Timber	LIKELY				
Wst 01 Construction waste					LIKELY
Wst 03 Operational waste				LIKELY	



mottmac.com