1. Overview

This document sets out the University's criteria for sustainable construction and will ensure that sustainable design principles are incorporated into all projects from conception through to construction and operation. Tender documents and contracts will embed these standards through unambiguously worded requirements. Project management will ensure the designs are delivered through all stages of projects, and commissioning will demonstrate compliance against performance targets.

The criteria will form a fundamental part of each project and will be reported against at all project meetings. Everything delivered must be measurable and evidenced at the end of the project.

In order to take an holistic approach to design, constraints and opportunities must be identified sufficiently early to act on them and improve the performance of the space in both energy and comfort terms, as well as reducing the environmental impact of the project as a whole.

These criteria apply as follows:

- **New Build Projects above £1 million use Category A**

- **For all Refurbishment Projects and for New Builds below £1 million use Category B**

2. Sustainable Construction Objectives

The University's overall objectives for sustainable buildings are to:

- Improve and enhance existing buildings and design for long life, low maintenance and future adaptability/change of use
- Use re-used, recycled, low environmental impact, non-toxic and local materials, designing out waste
- Increase energy efficiency and reduce carbon emissions
- Reduce mains water usage
- Provide adequate space for re-use, recycling and composting
- Measure, integrate and enhance biodiversity
- Require considerate and efficient construction site practices

3. Sustainability Targets

The targets below must be addressed by the Design Team unless otherwise stated. The targets require drafting as a working document at RIBA Stage 0 and then will go through an iterative process to Stage 4 when they must be finalised. The targets are to be reported in the project documentation and must form part of an output report including lessons learnt. A 'design approach workshop' is to be held at the beginning of the design process. Records must be kept evidencing the decision processes behind customisation of any of the targets below.

REF	ELEMENT	CATEGORY A	CATEGORY B	GUIDANCE	EVIDENCE	FACTORS FOR CONSIDERATION
ST1	Life Cycle Cost Analysis	Life Cycle Cost Analysis to be completed by qualified third party to inform design decisions.	Life Cycle Cost Analysis to be carried out in-house e.g. using Resource Efficient Scotland's Whole Life Costing tool.	Category A: See BREEAM criteria Category B: See Resource Efficient Scotland Whole Life Costing tool.	Analysis and project board decisions	Consultant to follow formal methodology for Category A.
ST2	Building Standards	Mandatory: BREEAM Excellent Ene 01: Achieve minimum standard for Outstanding rating in this issue (e.g. EPR_{NC} > 0.6 for NC 2018 version) Optional: Zero carbon where practical Passivhaus	SKA, EnerPhit, BREEAM	Cat. A: Agree all targeted credits for BREEAM at RIBA Stage 0. Cat B: Agree which standard is the best fit for the project at RIBA Stage 0	Certificate	
ST3	Air-tightness	$2m^3/50pa/hr$	$5m^3/50pa/hr$	A plan of how this will be achieved must be submitted for approval by the client prior to tender.	Plans for managing the construction process to meet targets, Air Tightness Test results	Windows, doorways, servicing penetrations etc
ST4	Thermal fabric	Minimum U Values (W/m^2K): Windows – 0.71 External doors – 1.2 Walls – 0.11 Floors – 0.13 Roof – 0.13		Minimum U values must inform the Concept Design. Evidence of this is to be presented to the client for approval at Concept Design stage.	Concept Design report/presentation	U value for walls will create greater wall depths and affect internal floor area.
ST5	Low and Zero Carbon (LZC) Technologies	LZC feasibility study to be carried out by qualified third party. Recommendations to inform concept design decisions.	LZC feasibility study to be carried out in-house. Recommendations to inform concept design decisions.	See BREEAM for methodology to be used.	Design and site audit	Renewables – Solar heat or electricity, biomass, heat pumps
ST6	Biodiversity	Qualified ecologist to advise on biodiversity protection and enhancement measures. Implement recommendations.	Seek advice, e.g. from the Yorkshire Wildlife Trust, on measures needed to protect existing biodiversity and opportunities for enhancement. Implement recommendations.	See publications 'York Biodiversity Action Plan' and BCT's 'Designing for biodiversity: A technical guide for new and existing buildings'	Planting plans and site checks	Roof gardens, window boxes, vertical growing, beehives, indoor planting, integrated bird and bat boxes, green roofs

REF	ELEMENT	CATEGORY A	CATEGORY B	GUIDANCE	EVIDENCE	FACTORS FOR CONSIDERATION
ST7	Materials	BREEAM Mat 01 Life Cycle Impacts: Minimum of 3 credits to be achieved BREEAM Mat 03 Responsible Sourcing: 'Enabling sustainable procurement' credit achieved. Minimum of 2 credits to be achieved for 'measuring responsible sourcing'.	>50% of the materials by cost shall be: - A/A* rated in BRE Green Guide - responsibly sourced		Consultants specification and contractor spreadsheet or delivery notes	Consult BRE Green Guide
ST8	Project Delivery and Evaluation	Carry out pre-project occupancy satisfaction survey, and 12 months POE using independent third party. Show an improvement against pre-project satisfaction levels. Produce EPC at Stage 5 Construction and compare with DEC one year later. One year after occupation review actual energy spend versus design prediction. Contractual requirement for the contractor to carry out seasonal commissioning and validate operational performance.		POE shall be a recognised methodology such Building User Survey (BUS) Energy usage measured through strategic sub-metering.	POE Results + DEC/EPC	Consider additional option of implementing BSRIA's Soft Landings
ST9	Construction Waste	Site Waste Management Plan to be developed. BREEAM Wst 01 Construction Waste Management: Minimum of 3 credits	Site Waste Management Plan to be developed. Minimum 90% diversion from landfill & total construction waste* of less than 1.2 tonnes per 100m^2 GIA *Total excludes strip out waste	Cat. B: Use NetWaste Tool to develop SWMP and demonstrate targets are met.	Waste Tickets and Final SWMP	Design out waste, no over ordering of materials, early implementation of SWMP, non toxic materials reducing hazardous waste
ST10	Water	Minimum requirements for water fittings: WC – 4/2.6 litres dual flush Wash hand basin taps – 4.5litres/min Showers – 6litres/min Urinals (2 or more urinals) – 0.75 litres/bowl/hour Urinals (1 urinal only) – 1 litre/bowl/hour Kitchen tap – 5litres/min			Water Metering / Monitoring Data	Water saving taps, cisterns, shower heads, waterless urinals, flushing requirements, rainwater reuse
ST11	Visual and Thermal Comfort	Hea 01 Visual Comfort: Achieve minimum of 1 credit for 'daylighting' Hea 04 Thermal Comfort: Achieve 'thermal modelling' and 'design for future thermal comfort' credits.	Daylight factor to be between 2 – 5% Solar gain and glare shall be minimised and natural ventilation maximised	Cat B: A target DF value between the identified tolerances to be chosen to suit the project.	Measure Daylight Factor in occupancy	Show improvement in wellbeing section of POE