Sustainable Construction & Refurbishment Policy and Guidelines

Brief Description & Purpose:	This policy outlines Northumbria University's commitment to embedding sustainability in construction and refurbishment projects. Focusing on six Key Themes of: Zero Carbon Buildings, Smart Buildings, Living Labs, Greening the Campus, Reducing Waste and Climate Change Adaptation, it ensures projects minimise environmental impact and support the University's long-term sustainability goals. The policy is overseen by the University Sustainability Management Group. Progress is reported via the Annual Sustainability Report.		
Applicable to (list cohorts):	**Staff:** All	**Students:**	**Third Parties:** Contractors
Date Created:	16 June 2019	**Last Review Date:**	01 June 2026
Approval Authority:	University Sustainability Management Group	**Approved:**	15 June 2026
Executive Owner:	Prof John Woodward	**Business Owner:**	Dr Paul Steadman
Next Review Date:	15 June 2028	**Publication External Y/N**	Yes

1. Introduction

Northumbria University is committed to delivering significant enhancements in environmental sustainability across our campus and operations, including reductions in carbon emissions, waste and plastic use.

Our Estate plays a key role in achieving these sustainability goals. All construction and refurbishment projects must therefore work towards reducing negative environmental impacts and where possible enhancing the environment.

To support these improvements, six Key Themes have been established. Each theme includes specific targets and requirements that must be embedded in all stages of any refurbishment or new construction project from inception through to completion.

The Key Themes are:

- Towards Zero Carbon Buildings
- Smart Buildings
- Living Labs
- Greening the Campus
- Reducing Waste
- Climate Change Adaptation

It is recognised that on occasion certain targets within these guidelines may not be achievable due to factors outside of the University's control (e.g. location or transport links). Where targets cannot be fully met or specific measures are impracticable, minimum standards for energy, water and materials must be agreed at the start of the project. These should follow the principles outlined in this policy and it must be demonstrated throughout the project that every effort is made to achieve the targets as closely as possible.

2. Policy Detail

2.1 Towards Zero Carbon Buildings

2.1.1 New Buildings and Extensions

- Achieve an A-rated DEC after one year covering all emissions (regulated and unregulated).
    - Total energy use to be calculated at design stage using TM54 methodology.
    - Implement seasonal commissioning and monitor energy use for the first twelve months to ensure targets are met.
- Conduct embodied carbon and lifecycle assessments at design stage.
- Design HVAC plant and lighting systems to respond to occupancy levels with appropriate zoning to minimise energy use during low occupancy.
- Design heating systems for low-temperature heat.
- Specify heat sources with alternatives to fossil fuels for heating and hot water generation.

2.1.2 Refurbishments

- Upgrade lighting to LED with occupancy and daylight controls.
- Bring building fabric elements up to current Part L standards where feasible.
- HVAC systems must respond to occupancy using appropriate sensors.
- Design heating systems for low-temperature heat where changes occur.
- Assess projects under SKA ratings:
    - £100,000–£500,000: minimum Silver SKA rating
    - Over £500,000: Gold SKA rating
- Major refurbishments (>50% of building) to achieve minimum B-rated DEC after one year.
- Consider replacing fossil fuel heating with low-carbon alternatives in major refurbishment projects involving HVAC works.

2.2 Smart Buildings

Smart Buildings automatically adapt to changing conditions and occupancy, optimising comfort and energy use. As University buildings experience varying occupancy, systems should adjust accordingly to achieve near-zero energy use in unoccupied spaces.

2.2.1 Targets

- HVAC equipment must have occupancy controls and respond to usage.
    - Specialist HVAC (e.g. labs) should utilise real-time sensing to reduce fan speeds where possible.
- HVAC systems must link to the University's BMS.
- Lighting to be zoned appropriately incorporating occupancy and daylight sensors.
- Monitor, manage and minimise electricity and water use.

2.3 Living Labs

Living Labs use campus buildings as real-life environments for teaching and research, fostering collaboration and engagement.

2.3.1 Targets

- Consider Living Lab opportunities at the earliest project stage.
- Engage stakeholders during concept design to identify enhancements for research and teaching.
- Ensure building data is available through the University's existing monitoring systems via Smart Building integration.

2.4 Greening the Campus

Green spaces enhance wellbeing, support biodiversity and improve air quality.

2.4.1 Targets

- All projects must enhance and increase green spaces and biodiversity.
    - Use plant species identified in the Biodiversity Action Plan.
    - Include habitat enhancements (e.g. bird boxes, insect hotels).
- Achieve a minimum 10% increase in Biodiversity Net Gain as required by the Biodiversity Net Gain Regulations 2024.

2.5 Reducing Waste

The construction industry is a major consumer of resources and waste generator. Projects must prioritise waste reduction and recycling.

2.5.1 Targets

- Achieve zero waste to landfill of non-hazardous waste.
- Design out waste following WRAP's *Designing out Waste: A Design Team Guide for Buildings*.
- Identify all elements suitable for reuse, recovery or recycling on-site.
- Prioritise suppliers offering take-back schemes.
- For new builds, allocate compound space for bin storage.

2.6 Climate Change Adaptation

Predicted climate models for Newcastle upon Tyne suggest increased temperatures, altered rainfall patterns and more extreme weather events by 2050. Projects must therefore consider resilience and future climate impacts.

2.6.1 Targets

- Incorporate passive cooling and design out mechanical cooling.
    - Increase thermal mass and reduce solar gain.
    - Use green walls/roofs, high insulation and airtightness.
- Base thermal comfort calculations on 2050 temperature predictions.
- Design Sustainable Drainage Systems (SuDS) that enhance biodiversity (e.g. urban swales).
- Contribute to a campus-wide water management strategy.
- Reduce water demand by:
    - Installing WTL-listed or EU Water Efficiency-labelled equipment.
    - Installing water leak detection systems or BMS sub-meters with alarms.

3. Key Roles and Responsibilities

Role	Responsibility
University Sustainability Management Group	Oversight of the policy, periodic review and ensuring alignment with University sustainability objectives.
Estates and Facilities Team	Implement policy requirements within all new build and refurbishment projects; ensure contractors comply with sustainability targets.
Project Managers / Design Teams	Integrate Key Themes into project planning, design and delivery; document compliance and report performance outcomes.
Contractors / Suppliers	Adhere to specified sustainability standards; provide data and evidence to support compliance with targets.
Academic and Research Staff	Engage in Living Lab opportunities and contribute to the use of campus buildings as teaching and research tools.

4. Definitions

Term	Definition
DEC (Display Energy Certificate)	A certificate showing the operational energy performance of a building.
SKA Rating	An environmental assessment method for fit-out projects measuring environmental good practice.
Biodiversity Net Gain	A measurable improvement in biodiversity after development compared to the pre-development baseline.

SuDS	Sustainable Drainage Systems designed to manage rainfall and surface water sustainably.

5. Related Policies, Procedures and Other Resources

- University Environmental Sustainability Policy
- University Biodiversity Action Plan
- WRAP: *Designing out Waste – A Design Team Guide for Buildings*
- Relevant UK Regulations (e.g. Biodiversity Net Gain Regulations 2024, Building Regulations Part L)

6. Version

Version No.	Reviewer	Date	Changes
1.0		Pre-2022	Guidance version
1.1	USMG	June 2024	Minor design changes updating links/names
2.0	USMG	June 2025	Policy Format
2.1	USMG	June 2026	Target Update