ESTATES SUPPORT SERVICE

Design and Construction policy for sustainable buildings and Campus environments

1.0 INTRODUCTION

The Higher Education Funding Council for England, responding to Governmental direction, has espoused the need to reduce Universities’ carbon footprint by 80% by 2050 and 20% by 2020 (from a 1990 base level). Given that 80% of an institution’s carbon footprint comes from the operation of its buildings, we need to ensure that our building refurbishment and new build schemes contribute significantly to these targets.

Newcastle University is committed to making sustainable development an integral part of its curriculum, research, operations and outreach.

It is the Estate Support Service (ESS) commitment to minimize the environmental impact of Newcastle University’s activities, functions, and processes, as far as reasonably practicable and to aid the organization in its long term objective of becoming a low carbon institution. ESS will also seek to conserve natural resources, minimize pollution in all its forms and seek opportunities to increase the diversity of our flora and fauna.

This document provides information on our philosophy and intent concerning sustainable development and environment and describes the processes, approaches and design measures that our suppliers, manufacturers, designers and contractors must adopt when involved in projects at Newcastle University.
2.0 DEVELOPMENT PHILOSOPHY

2.1 ESS approach

The construction, fit-out, operational life, demolition and site rectification of buildings creates a serious impact on the earth’s environment; the design and construction of buildings also has a major consequence on the physical and psychological health of individuals and communities and the economic health of organisations. The philosophy for ESS is that the design of buildings and spaces should lead to healthy environments whilst minimizing resource throughputs, waste and pollution and protecting other species and environments.

Designers should satisfy a number of criteria:

- Enhance Biodiversity; not use materials from threatened species or environments and improve habitats where possible through appropriate planting, water use and other measures.
- Support Communities; identify, with the ESS Project Manager, the real needs and requirements of communities and stakeholders and involve them in key decisions
- Use resources effectively; not consume a disproportionate amount of resources, including money and land during material sourcing, construction, use or disposal; not cause unnecessary waste of energy, water or materials due to short life, poor design, inefficiency, or less than ideal construction and manufacturing procedures. Buildings need to be considered from a life-cycle perspective
- Minimize pollution; create minimum dependencies on polluting products and materials, management practices, energy, power and forms of transport
- Create healthy environments; enhance living, leisure and work environments; they must not endanger the health of the contractors, occupants, servicing and
Maintenance staff, etc., through exposure to pollutants, the use of toxic materials or providing host environments to harmful organisms.

- Manage the process; stewardship of projects is a vital and overarching aspect in delivering sustainable projects and enhancing the environment, both in the project and throughout the life cycle
- Design for the efficient use of space; good space management not only benefits the environment, it also frees up resources that can be used for teaching and learning. Designers need to demonstrate clearly life cycle benefits, value for money and environmental excellence in their spatial realisation of briefs

### 2.2 The Higher Education Funding Council for England (HEFCE): 2008 Strategic Statement

HEFCE have produced an updated Strategic Statement on sustainable development in Higher Education; they intend to make sustainable development a central part of their strategy for the future development of the HE sector. The vision is that “Within the next 10 years, the HE sector will be recognised as a major contributor to society’s efforts to achieve sustainability.”

HEFCE continue to provide Estates Management Statistics (EMS) containing information on environmental sustainability and produce benchmarking data and have also produced an action plan related to development. Together with the Association of University Directors of Estates (AUDE), HEFCE are funding the development of a Building Research Establishment Environmental Assessment Method (BREEAM) template specifically for higher education; they are also encouraging energy-efficient laboratories (this recognises the resource intensity of laboratory buildings and their wide variation in environmental performance).

HEFCE now directly link capital investment funding to environmental performance and sustainable development.
3.0 DEVELOPMENT POLICY

Designing buildings for sustainability is an approach that is fast evolving and multi-faceted. It requires lateral thinking to provide solutions that move towards full sustainability. Accordingly, this design and construction policy will look at guiding principles to ensure best practice on all new buildings, refurbishment and major maintenance projects.

3.1 Objectives

To ensure that the vision for a project includes a sustainable approach from the outset

To adopt best practice for sustainable design and construction

To ensure all environmental risks are assessed, managed and controlled throughout the design and construction of a project to minimize their impact.

To ensure that a life cycle assessment or ‘cradle to grave’ approach is taken on all projects to reduce whole life costs and the carbon footprint.

To ensure that the design team include the ESS suite of documents on standard specification and guidelines within their design

To ensure that the Design team adhere to the University’s Coherent Campus and Estates Strategy

3.2 University and Estate Support Service (ESS) responsibilities (with designers’ guidance, as appropriate)

The University will agree the vision for the project taking into consideration strategic needs, community and stakeholder requirements, economic and social issues, environmental and sustainable viability (Project Champion, Head of Capital Development, Pro-Vice Chancellor for resources). For non-capital projects the size and complexity of the project will be assessed by ESS (Heads of Capital Development, Maintenance and Improvement).

The University will confirm the alignment to the Estates Strategy (Director of Estates).

The University will set an environmental performance target for the project, normally a BREEAM ‘excellent’ rating, unless there are fundamental reasons why the rating cannot be achieved (a very good rating is the minimum requirement).

The University will set an environmental performance target for residential projects, normally an Eco-Homes ‘excellent’ rating unless there are fundamental reasons why
the rating cannot be achieved (a very good rating is the minimum requirement) for refurbishments; for new build residential, an energy performance rating A, or the Code for Sustainable Homes level 3 star rating is expected as a minimum standard, although designers should seek to achieve a level 4 star where economically feasible.

The University will agree the most sustainable energy source for the building (Energy Manager/Head of Maintenance)

The University will agree the IT, AV and Telecoms strategy for the building (Director of ISS)

The University will agree the procurement strategy for all loose furniture and non-fixed equipment (Head of Procurement)

The university will set performance targets for the project including spatial (ESS Planning Manager), Energy (Energy Manager), water and drainage (Energy Manager), waste production (Waste Manager)

The University will confirm the life cycle assessment approach (Head of FM, Head of Maintenance, Head of Improvements and Head of Capital Development) with the design team.

The University Project Manager will ensure stewardship of the project and will oversee the ESS gateway approval process throughout the design phase of the project

The University will provide all up to date reference materials (with latest revisions), including Transport travel plan, coherent campus and standard specification reference documents (project Manager).

The Project Manager will ensure the co-ordination of university stakeholders and the external team (consultants/contractors).

The Project Manager will ensure that all projects have an environmental impact assessment indicating risks and methods of mitigation.

The Project Manager will ensure that a Post Occupancy Evaluation (POE) is carried out, including the actual environmental performance of the building as set against the theoretical design.

### 3.3 Designers’ Responsibilities

The designers will work together from the inception of the project to provide a fully integrative best practice sustainable approach (e.g. orientation, passive design, natural ventilation, glazing, insulation, materials, etc.) to the brief.

The Designers and Quantity Surveyor will ensure that a life cycle assessment or ‘cradle to grave’ approach is taken on the project to reduce whole life costs and to provide a more sustainable solution for the project.
The design team will assess the ESS standard suite of specifications/guidelines within their design; ESS would generally expect compliance unless an alternative and more sustainable/innovative/cost effective solution is agreed in writing.

The Design team will adhere to the University’s Coherent Campus and Estates Strategy unless an alternative and more sustainable/innovative/cost effective solution is agreed in writing.

The Design Team will assess the potential for renewable energy for a given project and comment on the University’s suggested energy source.

The Design Team will ensure that at least 7% of materials for the project are derived from recycled materials (although a target of 10% should be sought) and that materials and products selected in the design of a building are assessed in terms of sustainable, environmental and waste preventative strategies. Adequate facilities should be provided for the storage and collection of segregated recyclable wastes (e.g. paper, cardboard, glass and aluminium cans).

For scientific and specialist facilities, additional consideration must be given to the provision of adequate facilities for the storage and collection of other wastes (e.g. chemical, clinical, radioactive and other hazardous wastes such as waste oils).

The Design Team will ensure that all tenderers are environmentally aware and that contractors seek ‘Good Constructors’ awards.

The Design team will ensure the protection of existing flora and fauna habitats on and adjacent the project site and seek to enhance bio diversity, where possible.

The Design Team will work to the performance targets for the project including spatial (ESS Planning Manager), Energy (Energy Manager), water and drainage (Energy Manager), waste production (Waste Manager). Any agreed divergence will be in writing.

The Design Team will incorporate Travel Plan requirements into their design (shower facilities, cycle racks, accessible routes, disabled parking, etc.).

The Design team should demonstrate clearly how the building will cope (or be adapted to cope) in so far as it is practicable with the effects of climate change (UKCIP 'medium-high emission scenario' average UK temperature will rise by up to 3.5°C by 2080). The design of drainage systems and below-ground works should take into account the possibility of increased maximum run-off rates, increased risk of flooding and rising groundwater levels.