Programme Specification
September 2012

Programme Title
MSc Sustainable Architecture and Healthy Buildings

Programme valid from September 2012 for an Indefinite Period
JACS code K100

Valid for delivery at:
University of Derby (Markeaton Street Campus)
<table>
<thead>
<tr>
<th>Contents</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section One: General Information</strong></td>
<td>3</td>
</tr>
<tr>
<td>Programme Title and Interim Awards</td>
<td>3</td>
</tr>
<tr>
<td>Mode of Study</td>
<td>3</td>
</tr>
<tr>
<td>Programme Start/Review Date</td>
<td>3</td>
</tr>
<tr>
<td>Awarding Institution</td>
<td>3</td>
</tr>
<tr>
<td>Faculty Managing the Programme</td>
<td>3</td>
</tr>
<tr>
<td>Institution(s) Delivering the Programme/JHS</td>
<td>3</td>
</tr>
<tr>
<td>External Benchmarks and Accreditation</td>
<td>3</td>
</tr>
<tr>
<td>JACS Code</td>
<td>3</td>
</tr>
<tr>
<td>Programme Specification Last Updated</td>
<td>3</td>
</tr>
<tr>
<td><strong>Section Two: Rationale and Programme Aims</strong></td>
<td>4</td>
</tr>
<tr>
<td>Rationale</td>
<td>4</td>
</tr>
<tr>
<td>Programme Aims</td>
<td>5</td>
</tr>
<tr>
<td><strong>Section Three: Programme Learning Outcomes</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Section Four: Programme Structure</strong></td>
<td>9</td>
</tr>
<tr>
<td>Structure and Curriculum</td>
<td>9</td>
</tr>
<tr>
<td>Personal Development Planning (PDP)</td>
<td>15</td>
</tr>
<tr>
<td><strong>Section Five: Programme Delivery</strong></td>
<td>16</td>
</tr>
<tr>
<td>Learning and Teaching Methods</td>
<td>16</td>
</tr>
<tr>
<td>Assessment</td>
<td>20</td>
</tr>
<tr>
<td><strong>Section Six: Admissions</strong></td>
<td>22</td>
</tr>
<tr>
<td>Entry Criteria</td>
<td>22</td>
</tr>
<tr>
<td><strong>Section Seven: Student Support and Guidance</strong></td>
<td>24</td>
</tr>
<tr>
<td><strong>Section Eight: Post Programme Opportunities</strong></td>
<td>25</td>
</tr>
<tr>
<td><strong>Section Nine: Employer Links</strong></td>
<td>25</td>
</tr>
<tr>
<td><strong>Appendix 1: Programme Learning Outcomes Mapping</strong></td>
<td>27</td>
</tr>
</tbody>
</table>
SECTION ONE: GENERAL INFORMATION

PROGRAMME TITLE/JOINT HONOURS SUBJECT TITLE
Master of Science in Sustainable Architecture and Healthy Buildings

AWARD TITLE AND INTERIM AWARDS

Final Award
MSc Sustainable Architecture and Healthy Buildings

Interim Awards
Post Graduate Diploma in Sustainable Architecture and Healthy Buildings
Post graduate Certificate in Sustainable Architecture and Healthy Buildings

MODE OF STUDY
Full Time / Part Time

PROGRAMME START DATE AND PERIOD OF VALIDATION
Start Date: September 2012
Period of Validation: Indefinite

AWARDING INSTITUTION
University of Derby.

FACULTY MANAGING THE PROGRAMME
Engineering and Technology

INSTITUTION(S) DELIVERING THE PROGRAMME
University of Derby

RELEVANT EXTERNAL SUBJECT BENCHMARK STATEMENT(S)
The MSc Sustainable Architecture and Healthy Buildings programme has used the following in curriculum design:

• QAA Subject Benchmarks for Architecture 2010 – Part 2
• QAA Master’s degree characteristics 2010
• CIOB Education Framework 2007: Student Learning Outcomes for a Masters Level
• The UOD Regulatory Framework for Postgraduate Taught Programmes 2008

EXTERNAL ACCREDITATION/RECOGNITION
Following PSBs will be approached for the recognition/approval:

• Chartered Institute of Architectural Technologists (CIAT)
• Chartered Institute of Building (CIOB)
• Chartered Society of Designers (CSD)

JACS CODE(S)
K100

PROGRAMME SPECIFICATION LAST UPDATED
24th February 2016

Status: Approved
Page 3 of 34
Minor Modification for Sept 2016
SECTION TWO: RATIONALE AND PROGRAMME AIMS

Rationale

The programme has been designed as a contemporary sustainable architectural course with an innovative blend of established scientific theories and design principles in relation to the healthy buildings and environments. It aims to raise awareness, philosophical and practising principles within the broader context of the ‘whole human response’ to the built environment. Forming a part of the Technology Postgraduate Taught Framework in the School, it has been initiated to encourage practitioners and graduates from a range of cognate disciplines to develop approaches for the incorporation of sustainability into innovative solutions to the built environment and construction problems.

“Climate change is a risk-multiplier. It has the potential to take all the other critical issues we face as a global community and transform their severity into a cataclysm. Reducing poverty, increasing food production, combating terrorism and sustaining economic development are all vital priorities, but it is increasingly clear how rapid climate change will make them even more difficult to address. Furthermore, because climate change is intimately connected with our systemic, unsustainable consumption of natural resources, any decline in the ecological resilience of one resource base or ecosystem increases the fragility of the whole.”

HRH The Prince of Wales - UN Climate Conference COP15, Copenhagen (Dec 2009)

This programme intends to build on undergraduate knowledge and skills, considering the environmental impact of design decisions from the “masterplan to detailed design”. It researches a holistic approach to sustainable design analysis and its integration with the building information modelling (BIM), in relation to coordinated project information production. The programme intends to critically analyse current sustainable architecture and low energy design principles and technologies, government legislation, codes for sustainable design and other professional, industrial and commerce drivers. It also aims to raise awareness and encourage research in any issues that could adversely affect the health of the building users, in a more people-centred, proactive and preventive way.

Finally, as sustainability is not just about the environment, the research of a broader contextual framework will be strongly encouraged, such as the relevant aspects of socio-cultural and economic context, including good governance and scientific and technological research.

In the wider context, the construction industry faces a rapid change in its organisation, culture and practices, in particular following the Latham (1994), Egan (1998) reviews of the construction industry and Leitch Report (2006) on rebalancing of the priorities for HE institutions to make available relevant, flexible and responsive provision that meets the high skill needs of employers and their staff. There is also Cox Report (2005) on Creative Industry, both in terms of reference to architecture and strengthening the collaborative links across University/Faculty departments and with industry. Finally, and in many aspects most importantly, there is Stern Review (2006) The Economics of Climate Change, the most comprehensive review ever carried out on the economics of climate change, fully contextualising all of the above.

The issues in sustainable design are particularly pressing now that climate change is challenging us to improve our buildings’ thermal efficiency and create air tight boxes at the expense of natural ventilation. In essence, we will soon be living and working in almost sealed thermal environments. Far-sighted built environment professionals
are already warning of the potential health problems arising from poor built environment with increased thermal efficiency of buildings. An article in Building Design magazine, on March 27, 2009, Architects are creating toxic ‘killing machines’ reports on a speech to the industry given by influential author and architect William McDonough. McDonough warned an audience of built environment professionals that concentrating purely on reducing carbon emissions will cause buildings to become ‘toxic killing machines’.

“….Education of architects, designers and engineers in sustainable design has accelerated exponentially because our clients are demanding it. Whether from the private or public sector, our clients are generally very clear about what they value in a project. Healthy buildings are at the top of their list….”

Bert Gregory, President & CEO of Mithun

There is therefore a need to ensure that all aspects of human well-being are given full consideration (e.g. the quality of air and water, volatile organic compounds, multiple chemical sensitivity, fungi, bacteria, dust, allergens and other contaminants), when designing buildings and specifying any materials, finishes, services, and appliances of or in a building. It is important to consider buildings and their users as a holistic and dynamically interlinked system that covers all of the aspects of sustainability, and that is why healthy buildings and environments must be taught within the broader context of sustainable architecture.

PROGRAMME AIMS

The aims of the programme are designed to:

1. Provide an academically rigorous, intellectually stimulating, research orientated and challenging programme of study, nurturing sense of enthusiasm and passion for sustainable architecture;
2. Develop a vocationally focused course of study that meets externally prescribed requirements and enables engagement with continuing professional development and further study in the discipline;
3. Enhance an ability to generate complex design proposals showing awareness of current sustainable issues and insights, and originality in the application of subject knowledge and, where appropriate, proposing new hypotheses and speculations;
4. Enable a critical understanding of how the boundaries of knowledge are advanced through research in production of clear, logically argued and original written work relating to architectural context, its theories and facets of sustainable design;
5. Enhance abilities to evaluate the appropriate materials, processes and techniques, planning, construction and health and safety legislation that apply to sustainable architectural design and building construction, and integrate these into design proposals;
6. Provide flexible learning opportunities making it accessible to part-time and full-time students, whether local, EU or international and enable ethos of independent and lifelong learning;
7. Ensure that opportunity is equally available to all who have the potential to benefit from it, regardless of race, nationality, gender or disability.
SECTION THREE: PROGRAMME LEARNING OUTCOMES

In order to qualify for a postgraduate award, you are required to satisfy the credit requirements of the award for which you have registered. It is expected that, in satisfying the credit requirements of each stage, you will coincidentally satisfy the generic learning outcomes set out below, contextualised at Level 7.

Generic Learning Outcomes of the Technology Postgraduate Taught Framework:

When you have completed your named programme within the Postgraduate Technology Framework you should have gained:

1. Systematic understanding of the knowledge base, and a critical awareness of current problems and developments at the forefront of design and in particular the development of sustainable practice.

2. A comprehensive understanding of research techniques and enquiry methods and be able to apply advanced knowledge and practice in an original manner to the solution of complex situations within the design discipline in particular within the area of sustainability.

3. Conceptual understanding that enables you:
   - to evaluate critically current research and advanced scholarship in the discipline;
   - to evaluate methodologies and develop critiques of them and, where appropriate
   - to propose new hypotheses.

4. Deal with complex technical issues systematically and creatively, make sound judgements in the absence of complete data, and communicate your conclusions clearly to specialist and non-specialist audiences.

5. Demonstrate self-direction and originality in tackling and solving design problems, and be able to act autonomously in planning and implementing tasks at a professional level.

6. To have the commitment and enthusiasm to continue to advance your knowledge and understanding of the design discipline, and to develop new skills to a high level for continuing professional development.

7. The qualities and transferable skills necessary for employment with the design profession requiring:
   - the exercise of initiative and personal responsibility.
   - decision-making in complex and unpredictable situations.
Specific Programme Learning Outcomes for the MSc Sustainable Architecture and Healthy Buildings

The Specific Programme Learning Outcomes are articulated in terms of:

- Knowledge and understanding;
- Intellectual skills;
- Practical/subject specific skills;
- Transferable skills

**Knowledge and understanding** relates to acquisition of interrelated concepts, methodologies and theories related to sustainable architecture and health in buildings.

**Intellectual skills** relates to the ability to process advanced knowledge and information, being able to make deductions, and forming conclusions in which you have confidence.

**Practical skills** cover a whole range of skills including ability to generate complex sustainable design proposals, evaluate the appropriate materials, processes and techniques, advanced computer simulation as well as ability to apply range of visual, oral and written communication methods.

**Transferable skills** are those which may be taken into other fields of activity. They are diverse, but include the ability to define objectives and methodology pertinent to the chosen research problem, work autonomously, work in a team, problem solving skills, professional judgment, ability to take initiative in complex and unpredictable circumstances, and to manage other people, processes or organisations.

**Knowledge and Understanding**

**Stage 1 – The Postgraduate Certificate**

- Demonstrate the ability to make critically informed choices about the issues and constituencies which influence the process and delivery of sustainable design and the ways of showing and exposing innovation in design to wider social and ethical concerns.
- Research, analyse and critically appraise low energy design methodologies and identify relationships and influences on a healthy and comfortable building environment.

**Stage 2 – The Postgraduate Diploma**

- Acquire a critical awareness of the complexities and interdependences of sustainable design and the constraints involved in applying the theories of sustainability into practice at a variety of development scales.
- Critically examine relationship of environmental design, construction methods and technology to the climate and the impact that design decisions may have upon the natural world and its resources.

**Stage 3 – The Master’s Degree**

- Articulate in a critically informed manner development of more complex building technologies, construction, materials and services related to sustainability and in relation to advancements in built environment and wider community rapport.
Intellectual Skills

Stage 1 – The Postgraduate Certificate

- Demonstrate a critical awareness of sustainable design principles and emergent technologies and concepts using a wide range of information sources.
- Demonstrate original and complex thought on how sustainability philosophy, theory and principles can be applied to a practical design problem.

Stage 2 – The Postgraduate Diploma

- Critically reflect, evaluate and realise your practice and professional development through active research.
- Engage in intellectual and critical debate related to the health in buildings and impact of different legislative approaches on the building user, built and natural environment.

Stage 3 – The Master’s Degree

- Critically evaluate the theoretical approaches and form considered judgements about spatial, aesthetic and contextual, technical and social qualities of a sustainable design within the scope and scale of a wider environment.
- Critically evaluate and apply advanced computer based modelling systems to the analysis of complex sustainable design problems.

Practical and Subject Specific Skills

Stage 1 – The Postgraduate Certificate

- Critically evaluate the processes of procurement, planning, construction and health and safety legislation that apply to sustainable building production.

Stage 2 – The Postgraduate Diploma

- Demonstrate an ability to evaluate the appropriate materials, processes and techniques that apply to architectural design and building construction, and integrate these into design proposals.
- Demonstrate an ability to evaluate and apply a comprehensive range of visual, oral and written communication methods to test, analyse and critically appraise sustainable design proposals.

Stage 3 – The Master’s Degree

- Generate complex sustainable design proposals showing awareness of current issues and insights, and originality in the application of subject knowledge and, where appropriate, proposing new hypotheses and speculations.
- Demonstrate an ability to plan, realise and exhibit high quality architectural material produced through advanced communication techniques of ideas and designs to a variety of audiences.
Transferable Skills

Stage 1 – The Postgraduate Certificate

- Define objectives pertinent to the chosen research problem, critically evaluate and apply established techniques of research and enquiry in pursuing those research objectives.
- Work autonomously in a self-directed manner, thereby developing the practices of reflection and lifelong learning.

Stage 2 – The Postgraduate Diploma

- Demonstrate strong understanding of the problem solving skills, professional judgment, and ability to take initiative in complex and unpredictable circumstances.

Stage 3 – The Master’s Degree

- Critically evaluate overall strategy and present the outcomes from work in a professional way, including reflecting on further improvement in personal development and skills required to work within contemporary interdisciplinary environments.
- Systematically apply professional and research skills to remain at the forefront of practice in the field.

Please refer to Appendix 1 for full mapping of learning outcomes versus individual modules.
SECTION FOUR: PROGRAMME STRUCTURE

STRUCTURE AND CURRICULUM

The programme can be studied on either a full-time or part-time basis (Refer to Figures on pages 11 to 14), and is structured in three stages. In order to achieve MSc in Sustainable Architecture and Healthy Buildings you need to gain 180 credits at Level 7. Students who do not progress to the final stage may receive a Postgraduate Certificate in Sustainable Architecture and Healthy Buildings (with 60 credits) or a Postgraduate Diploma in Sustainable Architecture and Healthy Buildings (with 120 credits).

The relationship between the programme outcomes and the modules is mapped on the ‘Curriculum Map’ which is appended to this Programme Specification, so you can see how the programme and modules learning outcomes interrelate.

If you are joining the Programme without formal undergraduate qualifications but with relevant industrial experience, you will be interviewed on application and the Programme Leader will assess, taking into account your experience and expectations, the relevance of your previous study to the programme. In such a situation it may be required that you enrol on the preparatory study Level 6 module. This would run during the semester prior to commencement of the programme and is designed to equip you with the relevant background skills to support your study as you progress through the Level 7 modules. If you are an international student you can combine this with an appropriate English programme to reach the international entry requirements (see Entry Requirements section).

As all MSc modules are credited at Level 7, there is considerable flexibility in configuring an individual programme of study. Nevertheless, not all optional modules will necessarily be offered within an academic year, so you should consult regarding module selection with your Programme Leader.
### MSc Sustainable Architecture and Healthy Buildings - September Start Full Time

<table>
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<tr>
<th>Level</th>
<th>Course</th>
<th>Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PGCert</td>
<td>Sustainable Architecture &amp; Low Energy Design</td>
<td>Autumn</td>
<td>20 Credits</td>
</tr>
<tr>
<td></td>
<td>Health in Buildings: Comparative Approaches</td>
<td>Autumn</td>
<td>20 Credits</td>
</tr>
<tr>
<td></td>
<td>Research Methods, Application and Evaluation</td>
<td>Autumn</td>
<td>10 Credits</td>
</tr>
<tr>
<td></td>
<td>Environmental Risk and Responsibility</td>
<td>Autumn</td>
<td>10 Credits</td>
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<th>Level</th>
<th>Course</th>
<th>Semester</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>PGDip</td>
<td>Sustainable Design Simulation and Analysis</td>
<td>Spring</td>
<td>20 Credits</td>
</tr>
<tr>
<td></td>
<td>CPD and Strategic Management</td>
<td>Spring</td>
<td>20 Credits</td>
</tr>
<tr>
<td></td>
<td>Sustainable Construction Methods and Materials</td>
<td>Spring</td>
<td>Optional 20 Credits</td>
</tr>
<tr>
<td></td>
<td>Negotiated Module</td>
<td>Spring</td>
<td>Optional 20 Credits</td>
</tr>
<tr>
<td></td>
<td>Designing Environments</td>
<td>Spring</td>
<td>Optional 20 Credits</td>
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<tr>
<th>Level</th>
<th>Course</th>
<th>Semester</th>
<th>Credits</th>
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<tr>
<td>MSc</td>
<td>Independent Scholarship (Technology)</td>
<td>Summer</td>
<td>60 Credits</td>
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Status: Approved  Page 11 of 34  06/03/2018  Minor Modification for Sept 2016
## MSc Sustainable Architecture and Healthy Buildings - September Start Part Time

### Year 1 Autumn = One Core + Two Options
- **PGCert**
  - Sustainable Architecture and Low Energy Design
    - Autumn Core
    - 20 Credits
  - Research Methods, Application and Evaluation
    - Autumn Core
    - 10 Credits
  - Environmental Risk and Responsibility
    - Autumn Core
    - 10 Credits

### Year 2 Autumn = Two Core
- **CPD and Strategic Management**
  - Autumn Core PGDip
  - 20 Credits
- **Health in Buildings: Comparative Approaches**
  - Autumn Core
  - 20 Credits

### Year 1 Spring = One Core + One Option
- **PGDip**
  - Sustainable Design Simulation and Analysis
    - Spring Core
    - 20 Credits
  - Designing Environments
    - Spring Optional
    - 20 Credits
  - Sustainable Construction Methods and Materials
    - Spring Optional
    - 20 Credits
  - Negotiated Module
  - Spring Optional
  - 20 Credits

### Year 2 Spring = One Core
- **MSc**
  - Independent Scholarship (Technology)
    - Spring Core
    - 60 Credits

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Status: Approved  
Page 12 of 34  
06/03/2018  
Minor Modification for Sept 2016

Sensitivity: Internal
MSc Sustainable Architecture and Healthy Buildings - January Start Full Time

PGCert
- Sustainable Design Simulation and Analysis
  - Spring Core
    - 20 Credits
- Research Methods, Application and Evaluation
  - Spring Core
    - 10 Credits
- Environmental Risk and Responsibility
  - E-Learning Core
    - 10 Credits
- Sustainable Construction Methods and Materials
  - Spring Optional
    - 20 Credits

PGDip
- CPD and Strategic Management
  - Autumn Core
    - 20 credits
- Sustainable Architecture & Low Energy Design
  - Autumn Core
    - 20 Credits
- Health in Buildings: Comparative Approaches
  - Autumn Core
    - 20 Credits

MSc
- Independent Scholarship (Technology)
  - Spring Core
    - 60 Credits
- Designing Environments
  - Spring Optional
    - 20 Credits
- Negotiated Module
  - Spring Optional
    - 20 Credits
## MSc Sustainable Architecture and Healthy Buildings - January Start Part Time

### YEAR 1 SPRING = ONE CORE + TWO OPTIONS

<table>
<thead>
<tr>
<th>Sustainable Design Simulation and Analysis</th>
<th>Research Methods, Application and Evaluation</th>
<th>Environmental Risk and Responsibility</th>
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<tbody>
<tr>
<td>Spring Core</td>
<td>Autumn Core</td>
<td>E-Learning Core 10 Credits</td>
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### YEAR 2 AUTUMN = TWO CORE

<table>
<thead>
<tr>
<th>Health in Buildings: Comparative Approaches</th>
<th>Sustainable Architecture &amp; Low Energy Design</th>
<th>CPD and Strategic Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn Core</td>
<td>Autumn Core</td>
<td>Autumn Core PGDip 20 Credits</td>
</tr>
<tr>
<td>20 credits</td>
<td>20 Credits</td>
<td>20 Credits</td>
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### YEAR 2 SPRING = ONE CORE + ONE OPTION

<table>
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<tr>
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<th>Sustainable Construction Methods and Materials</th>
<th>Environmental Performance Management for Sustainable Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring Optional 20 Credits</td>
<td>Spring Optional 20 Credits</td>
<td>Spring Optional 20 Credits</td>
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</table>

### YEAR 2 SUMMER = ONE CORE

<table>
<thead>
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<th>Independent Scholarship (Technology)</th>
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<tr>
<td>Summer Core 60 Credits</td>
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</table>
Definition of Module Types

Core Modules
A core module serves a fundamental role in your programme and thus the Programme Award cannot be conferred unless the credits attached to all the core modules identified as leading to the Award have been achieved.

Prescribed Modules
A prescribed module is one which is designed to develop a significant area of the curriculum in your Programme. You will be directed to take all the modules designated as prescribed, but failure to achieve the credits in a prescribed module does not, in itself, prevent you from qualifying for an Award.

Optional Modules
An optional module is one which is designed to give you a choice to develop command of a particular area of the curriculum that relates directly to the title of the award.

Co-requisite Modules
Co-requisite modules are modules which should be taken together, i.e. normally in the same phase/ stage of the Programme.

Pre-requisite Modules
Pre-requisite designation is the means by which you are guided through the themes or lines of progression within a Programme. A pre-requisite module is a module that provides background information or some other form of specific preparation for the study of another named module. All students are expected to take the pre-requisite prior to engaging with the module that has named it as a requirement.

Recognition Of Prior Learning (RPL)
Students entering postgraduate programmes are eligible to apply for advanced standing in recognition of prior learning achievements providing that this learning has not already contributed to an awarded higher degree. In this case, Accreditation of Prior Experiential Learning (RPEL) or Accreditation of Prior Certified Learning (APCL) may be possible. Whilst the University guidelines on prior learning will be followed (see http://www.derby.ac.uk/ssis/forms), RPEL/APCL will only be recommended where applicants can present a portfolio of professional work, deemed to be of an appropriate level. Some constraints on the applicability of RPL are necessary.

- Advanced standing is only available for the taught modules.
- RPL is not available in respect of work based professional practice or for MSc project.

As a Postgraduate student you must normally study for and obtain at least 50% [one-half] of the credits required for the award. The normal maximum credit limit is 30 level 7 credits if the student is registered for a PgCert, 60 level 7 credits if registered for a PgDip and 90 level 7 credits if registered for a Master’s degree. Students who are admitted with a certificated PgDip from another University are required to take the final master’s stage at Derby (60 level 7 credits). All credit earned through RPL must be formally approved by the Programme Assessment Board.
PERSONAL DEVELOPMENT PLANNING (PDP)

As you are studying on a postgraduate programme of a vocational nature it is expected that you will have already reflected and fully considered the effect that your studies will have on your personal development. The onus of responsibility is placed upon you. At each stage of your programme you will be individually counselled as to your module choices and programme progression options. This counselling will take the form of a one-to-one discussion between you and your Programme Leader to best evaluate the most appropriate module choices based on both your perceived academic strengths and interests and career aspirations.

You will be encouraged to identify how aspects of the programme will both benefit your development and future practice. The programme has professional development directly delivered through individual module components, such as CPD and Strategic Management, but there are also other learning and assessment methods that embed PDP within; exhibition, live projects, industry links and case studies, study visits, conferences, regional professional bodies CPD courses, short placements, proposals, presentations and student seminars.

The programme actively encourages you to fully participate in a developmental and reflective attitude towards an understanding of transferable skills and their potential for employment opportunities as part of your on-going CPD development.

SECTION FIVE: PROGRAMME DELIVERY

LEARNING AND TEACHING METHODS

The learning, teaching and assessment methods on this programme reflect the wide range of topics and methodologies associated with sustainable design, its contextual issues and human health in a low carbon built environment. Staff-led lectures will set the scene and provide the background and knowledge base, but you will be encouraged to actively participate and engage into intellectual debate and enquiry based on the prior reading and reviews of the topics under scrutiny. Analysis, evaluation, synthesis and application of material discussed in the lectures will be achieved through live projects, industry links and live case studies, conferences, exhibitions, regional professional bodies CPD courses, short placements, proposals, presentations, student delivery of seminar topics, professional workshops, group and one-to-one tutorials, and practical work in preparation for the Independent Scholarship (Technology). The programme also includes site visits which will provide you with the opportunity to experience real world sustainable buildings and low carbon developments. The synoptic MSc research based design project or dissertation towards the end of the programme provides you with the opportunity to utilise and enhance the knowledge and intellectual skills gained during your programme. For project, it will be by means of a comprehensive and research based integrated design exercise and for dissertation by means of independent research, exhibiting original contribution related to the field of your study that advances arguments or presents different interpretations.

When you undertake postgraduate studies you are normally already an experienced learner and should be able to engage fully in all the types of learning. Whilst it is recognised that there is a significant number of modules to be studied (all modules being 20 credits except for the postgraduate independent scholarship module), we feel that this will allow more flexibility, clarity and shorter, more manageable assessment tasks. In addition, modules would lead into another in terms of the assessment wherever academically appropriate, for example in the case of Sustainable Architecture and Low Energy Design and Sustainable Design Analysis modules. These modules, by their nature, provide for continuation both in
terms of their indicative content and assessment and could for example be based on similar case studies. For postgraduate study you will normally be expected prepare in advance of teaching sessions by independent reading or set preparatory work. All specialist modules you study will be related to current industrial or research developments and some will involve the relevant industry or research collaboration, either directly working with a representative from industry or through appropriate involvement with a live project. The development of both subject based and transferable skills will be a continuous process during your study and forms part of both curricula and the assessment process. The different teaching, learning and assessment methods discussed in this section are carefully chosen at each stage to enable you to achieve programme aims and learning outcomes. Throughout the programme you will notice the emphasis on student-centred learning rather than on tutor-led input so that you become a true independent learner. Encouraging and maintaining this independence forms the main components of your learning experience on this programme. In light of this, the learning and teaching is centred on you developing your own research interests and working independently whilst being supported with a mixture of taught and structured independent learning modules. In the classroom based modules you will be provided with a framework for study through the taught sessions and the recommended reading (e.g. Sustainable Architecture and Low Energy Design, Sustainable Construction Methods and Materials, Health in Buildings: Comparative Approaches, Designing Environments, Sustainable Design Simulation and Analysis). As appropriate, you are encouraged to link the content of these sessions to your own areas of interest which may be developed further through the assignments. The on-line independent-learning modules (e.g. Research Methods, Application and Evaluation) allow you to develop the skills and knowledge to support the classroom based modules. This enables you to pursue issues of theory and/or research methodology which may relate to a specific sustainable architecture topic or to an interdisciplinary avenue of enquiry in relation to the human health in buildings. The move towards fully autonomous learning is highlighted in the Independent Scholarship (Technology) module.

The proposed programme is flexible in its delivery, utilising existing on-line learning modules with a set of proposed traditionally taught modules which offer great flexibility in delivery modes. Thus, you may be taught as a part of a cohort which attends a short course, or a number of day or weekend sessions delivered at the University or at a suitable venue elsewhere. This will enable you to engage with academic members of staff in lectures, tutorials and workshops. The modules will also be supported with appropriate on-line materials through the University website to support the face-to-face sessions and your own independent learning. As well as the face-to-face activity tutors will support you in your learning via email and other communication opportunities, as appropriate, in your study. Where applicable, you will be applying and reflecting on your knowledge in your workplace and will be encouraged to elicit value and use feedback from others in the workplace.

The key learning and teaching methods are described below:

**Lectures**
Although typically you will be listening to the lecturer, you will also be expected to actively engage in discussion, show an ability to distinguish the major themes and research given topics for a personalised approach to your studies.

**Tutorials**
You will also work in tutorials groups with an emphasis on active participation and intellectual enquiry with the group and academic staff. This will also allow you to exercise independent judgement concerning your own learning; reflecting, evaluating and critically assessing the contribution of others within a group situation. Individual tutorials are also an important element of the teaching and learning strategy.
Negotiated Modules
In this module you will develop your ideas and apply your learning in the workplace. It is primarily applicable to part-time students who will be able to negotiate an individual piece of work that relates to their employment. Remember that these modules normally need the commitment of your line manager.

Seminars
During the programme you will attend and take part in both academic and student led seminars; you will have the opportunity to both set and lead a seminar in a subject pertinent to module content but determined by your personal practice or research interest. It is an expectation that you will actively engage in discussion and debate on all levels.

Visits and Field Trips
Alongside the main academic content of the programme a series of field trips, exhibition and site visits will be available. It is important that you fully engage with as wide a circle of subject specific activities as possible.

Laboratory or Computing Workshops
Computing workshops are used to gain experience in using specialist software and applying it to solve real or simulated problems. In laboratory or computer assisted work you will be undertaking experimental or practical work at a complex level, usually individually or in a group working in one of the specialist spaces or computer suites.

Group Work
Group work is designed so that the organisation and structure of collective or co-operative work processes can be learnt. Group work provides a forum for addressing questions of roles and authority within the group, and may also be used to simulate relationships in organisations related to particular work situations.

Self-directed Learning
This is regarded as a vital extension of formal teaching and learning methods. It is expected that learning will be underpinned by private study, and that all available resources will be utilised to good effect. As a postgraduate student it is expected that self-directed study will comprise a significant part of your overall study.

Workshops
These are used for practically-orientated modules and seek to develop creativity and practical awareness, and the ability to make proposals and evaluate them against predetermined criteria.

Reading
You will be expected to read extensively. Reading may be used to explore specific topics in depth, to explore a range of points of view, to develop questions and identify possible answers, and to begin to understand how different kinds of written material can be used in professional work.

Online Learning
Various electronic resources are available to Technology students. You will also be expected to further develop ICT skills, using either personal hardware and software or the extensive facilities provided by the University.
Independent Scholarship

Through a process of learning-by-doing Independent Scholarship (Technology) forms an essential, integral and substantial part of programmes leading to the master’s degree. It contributes 60 credits towards the Master’s degree and it is not restricted to traditional academic studies. Students may carry out project in collaboration with local employers, industry, commerce, the professions or the voluntary or statutory sectors. These studies will require careful liaison between the University and employers to ensure that employment and industrially based projects have appropriate academic rigour.

The programme leader assigns a member of staff to have responsibility for the coordination of supervision and monitoring of progress. Students taking independent scholarship as part of a standard Master’s programme are assigned a supervisor. It is the responsibility of the supervisors to provide academic guidance in the conduct of the research work. The supervisors are also responsible for monitoring the progress of the student and providing proactive academic and pastoral support. Part time students will also have the opportunity to be assigned an industrial mentor who will support them with regards to the day to day queries that they might have. He/She will also support them in terms of providing them with adequate time and resources in order for them to be able to carry out the work successfully and efficiently. The industrial mentor will have no input into the summative assessment but may provide formative feedback with regards to student's overall performance at the company in relation to carrying out the relevant work.

As a reflection of its five core organisational values the University is concerned to protect the rights, dignity, safety and privacy of research subjects, the welfare of animals and the integrity of the environment. The University is also concerned to protect the health, safety and academic freedom of researchers and the reputation of the University as a centre for appropriately conducted high quality research. Underpinning the standards are the ethical imperatives of Do No Harm (non-maleficience) and Do Good (beneficence). Therefore, you are required to submit your Independent Scholarship (Technology) proposal to the School’s Ethics Committee for approval.

Sharing, Developing and Reflecting

Sharing, developing and reflecting on your learning with other students and staff is an important part of achieving your potential in postgraduate study. In order to be able to facilitate this you will be part of an online postgraduate learning forum, where you can share ideas and experiences and reflect on a module or programme. You will also have several opportunities during the year for face-to-face discussion.

Research Governance and Ethics

All students are required to comply with research governance and ethics principles whilst undertaking their programme of study. The School Ethics Committee will review all of the postgraduate independent study proposals. This is of particular importance when conducting research involving other people e.g. for module assessments or Independent Scholarship (Technology). Information on these principles can be found on the University web site at http://www.derby.ac.uk/research/ethics-and-governance

Plagiarism

Plagiarism is a serious academic offence and in an attempt to deal with it, you may be required to submit your work to ‘Turnitin’ - an electronic plagiarism detection system. Your module tutor will advise you if this is required. The University guide to referencing can be found at: www.derby.ac.uk
Staff Development, E-learning and Students’ engagement

The staff will be expected to engage in staff development for continuing professional development, both individual and team based, striving to build upon the very good record in providing both the quality of student learning experience and teaching as well as delivering an employable working force to the industry. In this context, both the internal and external professional staff development will be encouraged by Management. Regular team meetings with Management are proposed to engage in discussion on learning and teaching and to constantly devise procedures for dissemination of good practice. Furthermore, the staff will be expected to engage in School and University wide discussions on developing and evaluating the quality and appropriateness of learning and teaching. Further research activities in the BERG (Built Environment Research Group) are expected, in particular where there is a clear and explicit underpinning link between the research and curriculum development.

Use will be made of the University's computer facilities, for the teaching of computer aided architectural design and other related IT work in a wide selection of modules. The facilities available for these modules include dedicated computer studios with the appropriate software required to teach these modules.

Furthermore, use will be made of other e-learning and e-support resources such as Construction Information Services, Luton Site Cam Project, ConstructionSite Online Resources, CIAT / CSD / CIOT Student Members Resources Intranet, VTC software tutorials online, Learning and Information Services extensive digital journal libraries, RIBA Construction Index, NBS Building Online, Building Regulations and British Standards on line (see Architectural resources at UOD website) https://ulib.derby.ac.uk/library/hero/melange2subject_resource_guide.php?subject=Architecture.

The University is committed to ensuring that all students engaged on a programme have equal opportunity to succeed in it. If you have a need which makes it difficult for you to engage with one of the activities on offer (whether teaching, learning or assessment), then we will make every effort to make adjustments to make it accessible to you. Liaison with student services ensures that systems for the early notification of student disabilities are fully utilised, so that appropriate account can be taken, from the outset, of particular learning needs. Regular team meetings and the arrangements for counselling students enable staff to build up a picture of individual student needs, and to ensure that colleagues are equally aware of these requirements.

The programme team ensures that class discussions are managed so that students with hearing or sight impairments are not disadvantaged. All rooms used for teaching have adequate disabled access, as do the on-campus learning facilities used by students. Where staff make use of videos they check, for example, that there are transcripts available for hearing impaired students. Care is taken to ensure that any students with disabilities are not disadvantaged by potential barriers to access when undertaking visits. If insurmountable problems are encountered (e.g. access to a narrow staircase in a listed building), photographs are taken of the subject matter in question.

University admissions policy requires competence in the English language. It is not envisaged that students from different cultural backgrounds will be disadvantaged in any way by the learning, teaching and assessment strategy outlined, provided the language requirement is satisfied.
ASSESSMENT

A mixture of assessment methods will be used on the programme, with a strong commitment to deep learning and aimed at continuously developing you as an independent learner throughout your studies.

For every module learning outcome, there is some form of assessment. This is to allow you to demonstrate that you have achieved that learning outcome. They are accordingly as diverse as the learning outcomes themselves. Assessments can be formative or summative. Formative assessments are used to give you feedback to inform your learning and do not count towards your award. Summative assessment is used to assess your performance in a learning outcome, however most summative assessments normally contain feedback and so contribute towards your learning.

The main assessment methods to be used are as follows:

- Studio based portfolio design work based on “live projects” with design crits, project reviews, student exhibition and design competitions whenever possible (e.g. Independent Scholarship - Technology).
- In-course assessments, case studies and presentations, which provide a method of assessing your understanding and progression within any given module (e.g. Sustainable Architecture and Low Energy Design, Health in Buildings: Comparative Approaches).
- Work-based learning ranging from professional practice related simulations in vocational aspects of taught modules to collaborative and interdisciplinary team work projects (e.g. Negotiated Module).
- Personal Progress Files, which are a critical element in the formative assessment of the Programme, as they provide you with the means to record and evaluate both personal and continual professional development (e.g. CPD and Strategic Management, Independent Scholarship - Technology, Designing Environments).
- Presentations and seminars, which will be used across the range of modules to encourage peer group knowledge sharing and to improve your confidence and skills in preparation, understanding, capacity to structure information and communication of either design ideas or independent research. Wherever possible (studio based work, design competitions, exhibitions, work based projects), the presentations will be organised to reflect and simulate professional practice scenarios (e.g. Independent Scholarship - Technology, Sustainable Architecture and Low Energy Design, Designing Environments, Sustainable Design Simulation and Analysis).
- Other forms of assessment methods, such as critiques and case studies, practical investigations, visual recognition tests, controlled peer group assessment, etc.

This comprehensive set of assessment methods means that all the learning outcomes are covered and that you will receive adequate feedback on performance as you are progressing through the different stages of the Programme.

The programme will fully support the University of Derby Equal Opportunities policies with regard to teaching and learning activities.

This programme operates within the University’s Regulatory Framework and conforms with its regulations on assessment.

Deadlines are set for the submission of assessments, which you must observe carefully. There is also a procedure for submitting assessed work, which will be explained to you. The work will be returned to you, normally within three working weeks, with a grade, and feedback on your performance. The timing of its return to you is set out by University guidelines. There are certain other academic offences which relate to assessments. You can read up on these in:

http://www.derby.ac.uk/files/part_k_-_assessment_regulations_for_postgraduate_programmes2.pdf
SECTION SIX: ADMISSIONS

ENTRY REQUIREMENTS

Although this programme is academically demanding it is important that you have an enthusiastic attitude to this programme of study and a passion for sustainable architecture. A wide variety of potential applicants, from a variety of cognate backgrounds, are invited to apply. We are seeking to attract well-motivated students who wish to pursue their studies and further professional development in a stimulating and vocationally orientated learning environment.

You will normally be expected to have an architectural or other built environment first degree appropriate to apply for the MSc (Minimum 2:2 or above), a professional qualification of equal standing, or significant practical or professional experience gained following your initial qualification that would support your application. You should bring your portfolio to the interview normally arranged at the University.

Alternatively, you may be able to gain entry based on the evidence of other qualifications or learning. In this case, Accreditation of Prior Experiential Learning (RPEL) or Accreditation of Prior Certified Learning (APCL) may be possible. The University guidelines on prior learning will then be applied (http://www.derby.ac.uk/ssis/forms), RPEL will only be recommended where you can present a portfolio of professional work, deemed to be of an appropriate level.

If you are joining the Programme without formal undergraduate qualifications but relevant experience, the Programme Leader will assess, taking into account your experience and expectations, the relevance of your previous study to the programme and advise you of possible routes into the Programme accordingly. The interview should, where possible, take place at the University and the interviewer will take into account any appropriate evidence such as a portfolio of your work.

For a full list of accepted qualifications, please follow the link http://www.derby.ac.uk/postgraduate-study/general-entry-requirements/taught-degrees

International Entry Requirements

For postgraduate courses we usually require any student whose first language is not English to attain a minimum of one of the following qualifications:

IELTS 6.5
TOEFL 580 (237 computer based/92 Internet Based)
Cambridge Advanced Certificate pass
London Tests of English: We accept level 4 for undergraduates and level 5 for postgraduates.
International GCE O-Level English Language grade C
International GCSE English/English as a second Language grade C
AES Proficiency pass

*We may be able to waive the language requirement if you can provide other evidence of your competence, such as having lived in an English-speaking country for a significant length of time. Decisions in such cases will be made on an individual basis according to the specific circumstances.

Specific information of interest and relevance to International students is contained in the International Student Guide http://www.derby.ac.uk/international/student-guide
For international applications, where appropriate, interviews can be conducted by telephone and your portfolio should be submitted electronically. If at interview it is agreed that you need to prepare for postgraduate studies you will need to enrol on the Level 6 module: Preparing for Postgraduate study in Arts, Design and Technology (Built Environment). If you are an international student you can combine this with an appropriate English language module to reach the international entry requirements.

Making Applications
Applications for full time students are made directly to the University using the online application system available at https://applyonline.derby.ac.uk/oas/page.php?n=0

Students with Additional Needs
The University and Programme Team welcome applications from students with disabilities. Student Advisors, Support Workers and Specialist Tutors are available to help with individual needs when appropriate. The programme is primarily based at Markeaton Street, which incorporates the latest standards for accessibility, including full access for wheelchair users and appropriate facilities for other disabilities. Some modules are based at other sites, which have also been recently refurbished to meet current standards.

During enrolment you will be advised on how to set up a Student Support Plan and the management and programme teams will endeavour to provide the required support. Learning Enhancement and Innovation (LEI) offers support for students with disabilities when accessing network and using computers. Please see http://www.derby.ac.uk/files/disability_general_guide.pdf for further information.

You can expect from us:
- confidentiality
- to receive advice, including pre-admission advice, on support and facilities available
- to be informed of the facilities that exist which are relevant to your specific needs, and consideration of any specific arrangements necessary for assessment or examinations
- to receive support services designed for formal taught sessions and additional tutorial support where appropriate
- to receive advice on external agencies’ allowances for which you may be eligible to apply

We expect you to:
- Satisfy yourself that the support and facilities available meet your requirements
- Declare your disability in full on application
- Supply documented evidence of your disability if requested and supply evidence to your LEA in relation to your DSA
- Make yourself known to student advisors and support workers
- Manage your own support needs in partnership with the support team
- Attend support reviews as appropriate
- Advise Student Support and Information Services (SSIS) if you are unable to keep an appointment

For a full list of accepted qualifications from your country, please follow the link http://www.derby.ac.uk/international/applying/international-qualifications-we-accept-for-entry-onto-a-postgraduate-course
SECTION SEVEN: STUDENT SUPPORT AND GUIDANCE

There are a lot of places to get help and guidance at Derby. Because we offer so much, we like to tell you about it when it’s happening, rather than all at once. To do this we send you emails to your unimail account. It’s really important to check this account regularly as you’ll get messages from your lecturers and essential information from the Uni. Sometimes those messages may not seem relevant, but keep checking as you never know when you’ll get something that’s really important to you.

There is a full induction programme at the beginning of the academic year (including IT and Learning Centre use) and you will receive a programme handbook that provides all the essential information about the programme and the support we provide for your learning.

You’ll find a whole host of useful information in your Programme Handbook and a handy A to Z online at: http://www.derby.ac.uk/StudentatozHE

The Programme Leader, assisted by year tutors, oversees all students enrolled on the programme. In addition you will be allocated a personal tutor who will monitor your progress on an individual basis.

The University central Student Support Services offers a range of general, specialist and professional support services for students as detailed in your programme handbook.

Each site has a Student Information Centre offering a ‘one stop shop’ for your queries covering:

- General advice and guidance
- Assignment receipt and collection
- Programme and module changes
- Queries about extenuating circumstances and accreditation of prior learning
- Enrolment support out of the main enrolment periods (Kedleston Road)
- Access to Learning Fund (ALF) Applications
- Assessment and issue of student car parking permits (Kedleston Road).

Enquiries concerning the general administration of the programme should in the first instance be directed to the Programme Leader. Specific points relating to a particular module should be directed to the appropriate Module Leader.

Your opinion and feedback is considered essential for our endeavour to constantly improve programmes, so please feel free to voice your concerns as well as compliment good practice. You will be able to do so through variety of channels, including Programme Committees, Module Evaluation forms and Student Consultation groups.

Occasionally, individual students or even classes have cause for concern that needs to be acted upon immediately. Your first port of call should be the lecturer concerned. If you feel the need to take your problem further, then you should consult the Programme Leader. The Programme Committee is also an appropriate forum for discussion and student representatives on the Committee can be asked to raise issues.

The University and Programme Team has an excellent record in supporting students with disabilities and employs Student Advisors, some support workers and specialist tutors who will offer help with individual needs when appropriate. The University building at Markeaton
Street has full access for wheelchair users and appropriate facilities for other disabilities. Upon enrolment you will be advised on how to setup your Student Support Plan and Management and Programme Team will endeavour their best to provide support required by your plan. Learning Enhancement and Innovation services (LEI) offers support for disabled students when accessing network and using computers.
SECTION EIGHT: POST PROGRAMME OPPORTUNITIES

POST-PROGRAMME OPPORTUNITIES

The MSc Sustainable Architecture and Healthy Buildings will provide you, on successful completion, an ideal platform to undertake specialist sustainable design role within the architectural/built environment sector and/or further your professional development.

Upon completion of the Programme, you could seek employment as a designer specialised in the application of low carbon technologies in architecture, building design and construction. You will be an integral part of an architectural design service, working alongside fellow architects, architectural technologists, engineers, surveyors and other design professionals within the construction industry.

Alternatively, there are other employment opportunities for you in architectural and general consultancy practices, working in central or local government, with property developers, building contractors, housing associations, banks, and with retail and manufacturing companies.

In terms of the recognition/approval by professional bodies, subject to your undergraduate qualifications and relevant work experience you will be able to apply for the membership with either Chartered Institute of Architectural Technologists (CIAT), Chartered Society of Designers (CSD) or Chartered Institute of Buildings (CIOB). The level of membership will be decided upon your application. For more information please visit CIAT web site at www.ciat.org.uk, CIOB web site at http://www.ciob.org.uk/home or CSD website at http://www.csd.org.uk/. Alternatively, you might try to apply for registration with Architects Registration Board (ARB). To find how follow the link below http://www.arb.org.uk/registration/

If you wish to pursue further academic opportunities, you could opt for postgraduate studies on MPhil/PhD level to gain Doctorate. In our team we have experienced supervisors of MPhil/PhD studies by research, so if that sounds exciting and challenging to you, please contact us. We are always on the lookout for high performance students to undertake further research studies. If you wish to consider Knowledge Transfer Partnership schemes (KTPs) or get involved with externally funded research projects, seek advice of your Programme Leader.
SECTION NINE: EMPLOYER LINKS

EMPLOYER LINKS

The MSc, alongside established accredited University of Derby architectural undergraduate courses, have developed a number of strong links within the industry who have provided valuable input into the programme structure and design during the consultation process. The University of Derby architectural courses are renowned for the strength of their contacts with employers and placements success. They were designed in close collaboration with architects, interior designers, architectural technologists, construction specialists and professional bodies to offer rigorous professional and practical training backed with sound academic theory and thus meet both the student and employer aspirations.

The programmes have developed a number of strong links within the industry who have and continue to provide valuable input through the employer consultation group into the programme structure, design and its delivery. Examples of local contacts include Derby City Council Planning Department, Jacobs Ltd., Vinci Plc, Lathams Architects, Cullen Carter and Hill Architects, Capita Architecture, Hall Grey Architects, Bakewell and Partners, Westfield, Benoy Architects, Roger Bullivant, Skanska UK, Staffordshire County Architects, Maber Architects and Balfour Beatty, to name a few.

The strong philosophical thread of our programmes is inspired by its locality, being relevant to the City we belong to, its local communities and people. We closely collaborate with local authorities and industry on a wide range of challenging and relevant choices of live projects. These are related to real sites and buildings in Derby, often in significant need of regeneration and requiring not only urban fabric and public realm strategy improvements, but dealing with challenging socio-economic, environmental, cultural and heritage context too.
APPENDIX 1: CURRICULUM MAPPING
### Knowledge and understanding

On successful completion of the programme you will be able to:

| Module Title | Critical examination of environmental design, construction methods and technology in relation to the climate and the impact that design decisions may have upon the natural world and its resources. | Acquire a critical awareness of the complexities and interdependencies of sustainable design and the constraints involved in applying the theories of sustainability into practice at a variety of development scales. | Demonstrate the ability to make critically informed choices about the issues and constituencies which influence the process and delivery of sustainable design and the ways of showing and exposing innovation in design to wider social and ethical concerns. | Research, analyse and critically appraise low energy design methodologies and identify relationships and influences on a healthy and comfortable building environment. | Articulate in a critically informed manner development of more complex building technologies, materials and services related to sustainability in built environment and wider community contexts. |

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### Intellectual skills
On successful completion of the programme you will be able to:

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Critical evaluation of the theoretical approaches and form considered judgement about spatial, aesthetic and social qualities of a sustainable design within the scope and scale of a wider environment.

Demonstrate a critical awareness of sustainable design principles and concepts using a wide range of information sources.

Critically reflect, evaluate and realise your practice and professional development through active research.

Demonstrate original and complex thought on how sustainability philosophy, theory and principles can be applied to a practical design problem.

Engage in intellectual and critical debate related to the health in buildings and impact of different legislative approaches on the building user, built and natural environment.

Critically evaluate and apply advanced computer based modelling systems to the analysis of complex sustainable design problems.
### Practical/Subject Specific Skills

On successful completion of the programme you will be able to:

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<th>Generate complex sustainable design proposals showing awareness of current issues and insights, and originality in the application of subject knowledge and where appropriate, proposing new hypotheses and speculations.</th>
<th>Demonstrate an ability to evaluate the appropriate materials, processes and techniques that apply to architectural design and building construction, and integrate these into design proposals.</th>
<th>Demonstrate an ability to evaluate and apply a comprehensive range of visual, oral and written communication methods to test, analyse and critically appraise sustainable design proposals.</th>
<th>Critically evaluate the processes of procurement, planning, construction and health and safety legislation that apply to sustainable building production.</th>
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Transferable skills
On successful completion of the programme you will be able to:

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<tr>
<th>Module Title</th>
<th>Define objectives pertinent to the chosen research problem, critically evaluate and apply established techniques of research and enquiry in pursuit of research objectives.</th>
<th>Critically evaluate overall strategy and present the outcomes from work in a professional way, including reflecting on further improvement in personal development and skills required to work within contemporary interdisciplinary environments.</th>
<th>Work autonomously in a self-directed manner, thereby developing the practices of reflection and lifelong learning.</th>
<th>Demonstrate strong understanding of the problem solving skills, professional judgment, and ability to take initiative in complex and unpredictable circumstances.</th>
<th>Systematically apply professional and research skills to remain at the forefront of practice in the field.</th>
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