The Global Challenge of Green Buildings

IEEL009  5 credit module (equivalent to 2.5 ECTS)

1. Module Leader

Adam Mannis

Biography

Adam Mannis teaches interdisciplinary urban sustainable development, and has been involved in research and development on the topic since graduating in 1992. He has specific expertise in aspects of green buildings and eco-cities, linked to urban regeneration, enhancements of the built environment and community planning. Adam has developed such knowledge and understanding through relevant experiences in universities, local government and private industry, involving collaborations across multiple disciplines and between cityscapes (nationally and internationally). He is keen to share all of this with students on the International Summer School at the University of Liverpool, and by showcasing examples of green buildings in the city.

2. Module Description

The Global Challenge of Green Buildings can be defined as ensuring that shelter (e.g. housing, offices, etc.) makes efficient use of energy, water and other resources to minimise their impact on the environment, as well as engages local communities in the planning and use of such buildings. This module focuses on that 21st century issue, which has been explicitly recognised in the United Nation's Sustainable Development Goals 2030. Drawing on academic, informal and popular literature, we will work together on three tasks: i) to frame the challenge, ii) to develop and test possible solutions, and iii) to synthesise a solution into a coherent proposal and “pitch” this to a panel of “stakeholders”. Throughout the module we will interact with members of the broader University, its neighbourhood Knowledge Quarter area, and Liverpool City Region community, including leaders of businesses, societies/communities, educators and other practitioners.

As well as acting as a standalone module, this module provides a good foundation for the work covered in Module IEEL010, Local Solutions to Global Challenges - The Focus on 'Green Buildings' (Working in Liverpool's Living Lab).

3. Module Aims

This module aims to:

- Extract and evaluate the tangible societal/environmental/financial impacts of the global challenge of green buildings form a range of other resources.
- Develop and evaluate a potential solution to improve (or to contribute to the improvement of) green buildings on a local, regional, national or global scale.
- Communicate clearly the project, including its background, aims, necessity and timeliness in an engaging and well-informed manner.
- Develop confidence in understanding and communicating complex ideas.
- Improve skills in research and collaborative learning.
4. Content

The following topics will be considered on the module:
- The contribution of green buildings to urban resilience
- Examples of local green buildings within a city environment
- Community-led shelter and energy initiatives
- Features of a successful green buildings project
- Creating an infographic
- Producing a SWOT analysis
- Putting together an impact statement
- Developing a video pitch

5. Module Structure

The module will be delivered over a three-week period in two weekly sessions, of a seminar (two hours) and an interactive workshop (four to six hours) – this giving a total of 18 to 24 hours of contact time on the module.

The first session in each week will be a seminar in the form of a masterclass given by the Module Leader. The second session in each week will be an interactive workshop where students engage in more practical elements of the course and work on, and gain formative feedback for, the assessment tasks. For these weekly workshops, the Module Leader will act as facilitator, drawing on input from a number of research students and external practitioners (industry and community), all of whom are involved in the topic of the specific global challenge: that of green buildings.

In addition, it is expected that students will spend up to 26 study hours outside of classroom contact hours on activities including assigned reading, optional reading of areas of personal interest, homework tasks, web research and preparation for assessment and upcoming seminars.

6. Teaching Methods

The teaching approach will include the following:
- Seminars
- Workshops
- Outside study visits

7. Assessment

Assessment will be by:
- Infographic (worth 30% of the overall mark)
- Group SWOT analysis and impact statement (worth 30% of overall mark)
- Group video pitch (worth 40% of the overall mark)

Standard University policies apply with regard to late submission of assessments. There is no re-assessment opportunity.

8. Course Structure

The indicative schedule is as follows:
Session One (in Week 1):
Seminar
Urban resilience, the contribution of green buildings, framing the problem and creating infographics as well as other devices.

Session Two (also in Week 1):
Workshop
Visits to on-campus examples of green buildings, such as Crown Place student residences, the Energy Centre, and the Virtual Engineering Centre. We will work together to develop an infographic articulating the green buildings “grand challenge”. The infographic will be “examined” and feedback provided.

Session Three (in Week 2):
Seminar
Community-led shelter and energy initiatives, along with other successful green buildings projects.

Session Four (also in Week 2):
Workshop
We will examine the issue of green buildings certification and rating tools, by assessing Liverpool-based examples of good practice in design and construction. We will produce a SWOT analysis and impact statement illustrating possible solutions to Green Building challenges.

Session Five (in Week 3):
Seminar
Green buildings in an urban setting, analysis of example video pitches and exploration of basic video structures.

Session Six (also in Week 3):
Workshop
Groups will develop video pitches based on their work over the course of the three weeks of the module.

9. Learning Outcomes

On completion of this module, students will be able to:

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<thead>
<tr>
<th>Learning Outcome</th>
<th>Assessment component which assesses this learning outcome</th>
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<tbody>
<tr>
<td>Demonstrate the ability to extract, summarise and evaluate information from a range of other resources</td>
<td>Individual infographic (task one) Group SWOT analysis and impact statement (task two) Group video pitch (task three)</td>
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<tr>
<td>Demonstrate the ability to develop and evaluate a research project</td>
<td>Group SWOT analysis and impact statement (task two)</td>
</tr>
<tr>
<td>Demonstrate the ability to communicate scientific information to a mixed/varied audience</td>
<td>Individual infographic (task one) Group video pitch (task three)</td>
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<tr>
<td>Work individually to complete a piece of work (infographic - articulating the nature of the Green Buildings challenge)</td>
<td>Individual infographic (task one)</td>
</tr>
<tr>
<td>Work collaboratively to produce a piece of work based on research.</td>
<td>Group SWOT analysis and impact statement (task two) Group video pitch (task three)</td>
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10. Skills

Key skills that will be developed:

<table>
<thead>
<tr>
<th>Skill</th>
<th>How this skill is developed</th>
<th>Mode of assessment</th>
</tr>
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<tbody>
<tr>
<td>Teamwork</td>
<td>Group work (for tasks two and three)</td>
<td>Group video pitch</td>
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<tr>
<td>Communication</td>
<td>Workshop and team interaction, then presentation of tasks one (infographic) and three (video pitch)</td>
<td>Group SWOT analysis and impact statement (task two) Group video pitch (task three)</td>
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<tr>
<td>Synthesising of complex information</td>
<td>Workshop and team interaction, then presentation of tasks one (infographic) and three (video pitch)</td>
<td>Group SWOT analysis and impact statement (task two) Group video pitch (task three)</td>
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The University Website at www.liv.ac.uk/library provides access to many relevant books and electronic books, as well as academic journals and databases.

Recommended Pre-Course Reading

- Liverpool City Council (2015) *Mayor of Liverpool’s Commission on Environmental Sustainability*
  

- University of Liverpool (2016) *Environmental Sustainability Report 2015/16*
  
  https://www.liverpool.ac.uk/media/livacuk/sustainabilitynew/documents/Annual_Report,v2.pdf

Core Texts

  
  http://library.uniteddiversity.coop/Ecological_Building/Green_Building-Guidebook_for_Sustainable_Architecture.pdf

  

Useful Websites

- United Nations – *UN Sustainable Development Goals 2030*
  
  http://www.un.org/sustainabledevelopmentdevelopment/agenda/
Wikipedia – *Sustainable Development Goals*