

Embedding sustainability in engineering:

Underpinned by (and embedded in) UKSPEC:

ET4p/m: "Understanding of the *requirement* for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate"

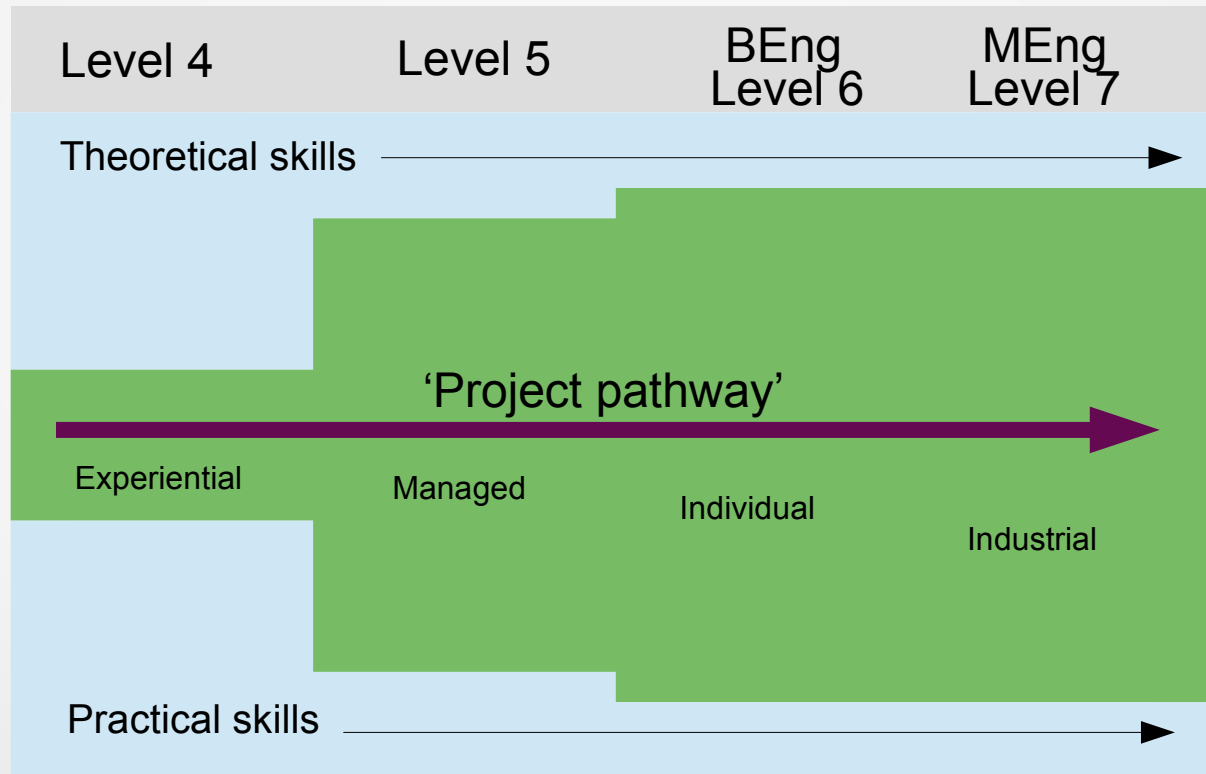
ET6p/m: "Knowledge and understanding of risk issues, including health and safety, *environmental* and commercial risk, risk assessments....."

D2p/m: "Investigate and define the problem, identifying any constraints including environmental and *sustainability* limitations....."



Embedding.

- Practically focussed provision



Early degree levels

- Level 4
 - All modules have a practical content
 - Smaller projects: collaborative. Limited resources
- Level 5
 - Partnership with Engineers Without Borders:
 - Group engineering projects with a sustainability focus
 - National competition
 - Runners-up in 2020



ENGINEERS

WITHOUT BORDERS UK

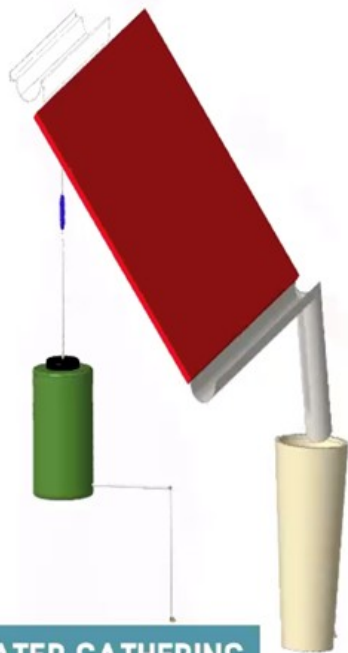
'Qualifying' levels

- Level 6
 - An individual project.
 - Ethical, global, environmental considerations
- Level 7
 - A group industrial project
 - Run in conjunction with industry where possible
 - Ethical, global, environmental considerations

THE RUNNERS UP PRIZE

Team UK2020-158 from De Montfort University

- ▶ This idea is to harvest rainwater for greywater use.
- ▶ The system is designed to provide treatment and storage.
- ▶ Enable tap water use to be reduced by 40 litres per day and savings of 25% on bills.



WATER GATHERING
SYSTEM

1,025 TEAMS PARTICIPATED
87 TEAMS SELECTED FOR SUBMISSION
250 REVIEWERS, FROM 33 COUNTRIES
37 TEAMS PITCHED IN FINALS
24 EXPERT JUDGES
6 FINAL TEAMS
1x RUNNER UP PRIZE
1x GRAND PRIZE

Down to the modular level

- Standards
 - EMC standards (the ‘forgotten pollution’)
 - WEEE directive (and how to recycle the unrecyclable)
- ‘Future-proof’ design
 - Designing in upgradeability in place of obsolescence
- Energy harvesting, conversion, deployment
 - How much energy is used worldwide by the ‘whirling disk’ on your computer screen.....

Institute of Energy and Sustainable Development

- Specialist MSc programmes:
 - Energy and Sustainable Development
 - Energy and Sustainable Building Design
 - Engineering Management.

References

- Engineers Without Borders
 - <https://www.ewb-uk.org/>