

RAE VP SCHEME
Engineering Design for
Sustainable Development

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Performance Against Goals

- Delivery of material based on case studies for the teaching of design for Sustainable Development
- Preparation and delivery of material in year 4
- Preparation and delivery of material in year 3
- Preparation and delivery of material in year 1
- Design and supervision of research in Year 4

Performance Against Schedule

- Case studies to form the base of material to be handed on
- Case studies cannot be de-personalised
- Some case based material can be shared
- Need for sharing of definitions
- Need for sharing of methodologies

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- Visiting Professor to be no longer required after 5 years – the exit strategy
 - Need for staff input to meet the generated need for this expertise
 - Partial embedment of Sustainable Development in other disciplines

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- Visiting Professor to be no longer required after 5 years – the exit strategy

- Development of a Centre for Sustainable Development requires the *continuation* of a dedicated teaching role
- The VP funding has been the seedcorn for a long term position

Performance Against Budget

- Budget: £20,000 per year for five years
- Actual expenditure: £40,000 per year for the first four years; year five is 2003/4
- The appointment of an RA has been instrumental in producing the material necessary for third and fourth year modules

Teaching and delivery

- What worked well?
- What did not work?

What worked well?

- Definitions of Sustainable Development
- Evaluative techniques for Sustainable Development
- Case studies from the lecturer's experience
- Coursework based on well doctored case histories
- Some external speakers

What did not work?

- Opinion-based statements
- Any indication of dogma or cant
- Classes of more than 40
- Some external speakers

Mechanics of delivery

- 2000/1, 2001/2: separate modules available to third and fourth year students (F14, G13)
- 2002/3: shared third and fourth year modules (4M14)
- 2001/2, 2002/3: first year lectures

Modules years 3 & 4

- 16 hours delivered as eight two-hour sessions
- Coursework: three pieces each designed to take eight hours of work

Modules

- Three themes covered taking three from
 - Water
 - Waste
 - Energy
 - Environmental Impact Assessment
 - Organisational Change

Coursework

- Three topics taken from
 - Super quarry development
 - Energy strategy design
 - Airport development design
 - Construction waste strategy
 - Organisational Change exercise

All case study based

Coursework

- Most popular with students
 - Coursework with calculations
 - Readily defined problems
 - Projects of modest scale
 - Evidently real projects/case studies

Coursework

- Least popular with students
 - Being asked to produce written material where prose was assessed
 - Problems where there was no right answer
 - Mega projects where the issues were seen as too big to cope with

Fourth Year Research Project

- Year on year increase in take up
- Wide range of topics
- Students compete for places
- Quality of output very high

Fourth Year Research Project

- Roof tile design for West Bengal (waste only)
- Energy policy for Nepal
- Energy performance of high tech buildings
- Design strategy for community swimming pool, Norfolk

Fourth Year Research Project

- Iron removal from drinking water
Uganda
- Design of virtual quarries for aggregate
- Contractor's guidance for recycling vs
landfill
- Water supply strategy for slums in Lima,
Peru

Fourth Year Research Project

- Sustainability indicators for building design
- Cold shelter design for refugees
- Arsenic removal from drinking water

The wider picture

Assessment of delivery of Sustainable Development at Cambridge reveals

- There is a great deal of activity
- There is only a little scepticism
- It has taken three years to become respectable
- Time for more radical approaches



Questions & Comments