

UNIVERSITY OF BRIGHTON

RAEng VISITING PROFESSOR WORKSHOP

**“Recognition of ten years of achievement of the  
Visiting Professors in the Principles of  
Engineering Design scheme”**

**1 Background**

Design a central theme within engineering courses at the Brighton Polytechnic from mid 1970s

Early BEng post Finniston

National recognition for Engineering Applications scheme

Early Visiting Professors in Engineering Design at University of Brighton

- 2 **Strategy** Collaborative between Civil, Electrical and Mechanical to maximise benefits by sharing good practise

demonstrate a common approach to design inter-disciplinary working

*Now School of Engineering and School of the Environment*

Faculty-wide MEng programme enabled interdisciplinary design in realistic settings.

*VPs **would not** be used primarily to deliver lectures to undergraduates; VPs **would be** used to work with academic staff to develop a more design-oriented curriculum and introduce innovations to enhance the students' experience of design.*

- 3 **The VPs** 3 full-time equivalent VP posts awarded – one per discipline –covering 5 VPs. Senior industrialists with substantial experience of 'real' design with enthusiasm to work with students (and relatively local)

#### 4 **Implementation**

All VPs joined the appropriate Industrial Advisory Boards

Design Forum established with Dean, Heads, colleagues from Faculty of Art, industrialists in addition to the VPs to share best practice

## 5 Outcome

**The Design Process** Early challenge to articulate a model of 'The Design Process' acceptable for all three disciplines

Low bureaucracy design approach introduced successfully for undergraduate design teams

**Curriculum changes** All courses now have more design-related activities, the syllabus content enhanced via VPs.

*Eg practical constraints of designing IC engines in thermodynamics  
materials modules with more material selection for design purposes  
Identification of user needs, cost constraints, design process management*

**Student activity** Students involved in more realistic, open-ended design All courses now include group design work concentrated in 'Design Weeks'

Many final year undergraduate projects contain a significant design element and use of CAD is routine

**Portfolio approach** Students maintain a record of design activity in a 'portfolio'  
Display periods -'crits'- enables objective and professional criticism by VPs in formative assessments

**Specialist lectures** Formal presentations to students based on case studies drawn from VP's personal experience. E.g. design of motorway bridges, design of of lightweight IC Engines

**Graduate employment** The University of Brighton has always enjoyed a very high graduate employment rate and design related engineering jobs are increasing

**New Courses** as a direct result of the growth in design interest, include:

BSc Product Design  
BSc Design and Technology  
BSc Sports Technology  
and MSc Product Innovation and Development

Growth in recruitment to these has countered the decline in applications to BEng Civil, Electrical and Mechanical Engineering degrees.

**TCS Activity** Faculty houses very successful TCS (Teaching Company Scheme) Centre for the South East with significant growth in design-related TCS schemes

**University Design Centre** Proposal to establish a University Design Centre as a component of the Sussex Academic Corridor (a joint initiative involving the University of Brighton, University of Sussex, City College Brighton and Hove and the Local Authority)

A Design Suite has been established in the School of Engineering for the growing design course portfolio

- 6 **Present situation** Some VPs have retained their involvement with the University after their formal contracts had ended but relentless increase in pressure on staff time has meant that some momentum has been lost. However new sustainability VP is very successful in School of the Environment

Product Design course review may re-energise the Design Forum

7 **The future** The Engineering Design VPs initiative has led to a wealth of benefits to the students, staff, University, local and regional industry

Has created an awareness of the importance of design through the Faculty. 'Permanent embedment' is the ultimate target, but is yet to be achieved.

The Sustainability VP will formally extend his brief beyond the School of the Environment to the School of Engineering and thus maintain the cross-faculty inter-disciplinary cooperation which, with the Design Weeks, form the most significant achievements to date of the Engineering Design VP initiative at Brighton