

# PDE 96

PRODUCT DESIGN EDUCATION

*The* **3rd**  
National  
Conference  
Product  
**design**  
Education

**Conference Proceedings**

**The University of Central Lancashire**

Monday 15th and Tuesday 16th July 1996

*This conference is jointly organised by:*

The University of Central Lancashire,

The Institution of Engineering Designers,

The Independent Schools

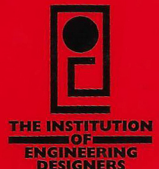
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ASSOCIATION



Q3/28

0-906694-94-9

Proceedings of the

## **3rd National Conference**

## **on Product Design Education**

15-16 July 1996

University of Central Lancashire

edited by

Martin Hodkinson

Department of Engineering and Product Design

University of Central Lancashire, Preston, PR1 2HE

ISBN No.: 0 906694 94 9

**3RD NATIONAL CONFERENCE ON PRODUCT DESIGN EDUCATION**

**UNIVERSITY OF CENTRAL LANCASHIRE 15 - 16 JULY 1996**

**THE VALUE OF A PRODUCT DESIGN CONSULTANCY WITHIN A DESIGN  
FACULTY AND HOW IT CAN BE MANAGED.**

Author  
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**Abstract**

There can be no doubt as to the value of 'real life' design experience for staff who are concerned with the education of Product and Industrial design orientated students.

Even if it were possible to secure a design position in a company by way of a working sabbatical, the logistical problems involved with managing that sabbatical would be significant.

An alternative to the sabbatical would be to undertake design activity within the academic environment itself thus developing 'real life' experience without losing touch with students and the academic context.

In November 1994, De Montfort University (School of Design and Manufacture) established a Product Design Unit in response to commercial interest. The venture has proven extremely successful.

The paper describes how the design unit was established and how it is managed. It describes how the venture has benefited both students and staff within the academic environment and is meeting the needs of clients within the commercial environment.

Case studies of a number of successful design exercises are used to demonstrate the units' procedures and methodologies.

The author is the Product design specialist on the BA (HONS) 3 Dimensional Design degree and Deputy Programme leader of the BSc (HONS) Industrial Design (Engineering) degree at De Montfort University, Leicester.

The author is also a practising Industrial design consultant and undertakes Industrial design consultancy for De Montfort University having previously practised with BIB Design Consultants Ltd. London and Jones Garrard Ltd. Leicester.

## INTRODUCTION

1995/96 represents the fifth year of the author's time spent in Higher Education. Prior to this he spent a number of years working in leading Industrial design consultancies on a wide range of projects both in the UK and in countries as far away as Japan.

Although finding teaching an enjoyable and rewarding experience the author always considered himself a design consultant who happened to be lecturing, not as a lecturer who could design.

Initially it made quite a refreshing change not to be involved in design activity that would ultimately lead to a manufactured item. This proved difficult to sustain, which in itself alludes to a rather interesting point.

**Industrial design when practiced well, becomes an all consuming passion and as such that passion has to be satisfied.** How many artists or composers could just stop being physically creative and merely talk about what they had achieved in the past?. Surely it must be better to continue to be creative and to talk about that creativity as well?.

It could be said that this should be the role of visiting lecturers and professors who spend some or most of their time working in the 'real world'. In the current times of economic hardship however this luxury cannot always be afforded; having to reduce part time teaching hours is familiar to us all no doubt.

A logical alternative is for staff on Industrial/Product design programmes to undertake a degree of consultancy work themselves but this in itself brings problems.

The Industrial design unit at De Montfort University has been fortunate in being able to attract a considerable amount of consultancy activity over the past year and a half. From November 1994 to November 1995 alone the 'turn over' approached £100,000-00.

## CONSULTANCY IN ACADEMIA

It would be difficult to argue against the value of imparting new knowledge to large groups of people. The role of research and research outcomes in the teaching environment has always been accepted and therefore welcomed.

The academic reasoning behind undertaking consultancy is seemingly less strong. Although determining a new way of doing something is always possible, (which may even lead to a patented outcome) the underlying reason for consultancy work is largely financial.

With the capping of student numbers, funding generated from student grants has always been seen as a finite pot. To increase income therefore, activities such as research have come very much to the fore, the phrase income generation now being very much a part of appraisals.

In this context the financial rewards inherent in consultancy could perhaps be argued as being justification enough for participating in it.

## A POLITICAL PROBLEM

In recent years however we have all become acutely aware of a change in the nature of student recruitment. Far fewer potential students are in the system to recruit.

Whereas teaching was perhaps adopting a lesser role, the current phenomenon has now completely reversed the situation. The finite pot is no longer finite, in some cases it has simply disappeared.

Competition between institutions for students is now fierce. In order to attract students there is a need for programmes to convince applicants that they are academically strong, that they are well structured and that they are adequately staffed.

This is best manifested in the quality of students graduating from that programme and their work.

We are now currently witnessing a situation where the educational experience cannot be sacrificed any further but where there is still a pressing need to generate income. If student numbers continue to drop the need to generate alternative income becomes more pressing.

If the quality of teaching cannot therefore drop, how can adequate time be found and be guaranteed to meet the demanding needs of consultancy?.

**Higher education has to quote a phrase found itself very much 'between a rock and a hard place'.**

Whether we like it or not, it would appear consultancy is here to stay.

## THE MANAGEMENT OF CONSULTANCY

The following comments are based on observations made during the establishment of the Product Design Consultancy capability at De Montfort University (DMU).

### Being Prepared

It would be rather idealistic to suggest that all systems and resources must be in place before commencing any consultancy activity. This could require a fairly substantial initial investment which may or may not be matched by the income generated.

The first inquiries to DMU quite typically happened purely by chance, being in the right place at the right time. Our success came about by not worrying about how a structure could be implemented to meet the needs of the activity. Quite simply we respond very positively to an enquiry, securing the contract on the basis of an effective and as far as the client was concerned, attractive proposal.

With a contract secured, meeting the needs of the contract are simplified, time scales can be negotiated and the fees and deadlines consolidated. A budget is also now available to invest in resource, replacement teaching hours and sub contract support.

## **Management**

All contracts are undertaken through De Montfort Expertise (DME), the commercial wing of the University whose role it is to promote the commercial efforts of staff and students within the University.

For a percentage of prophet, DME provides clients with a guaranteed, immediate and constant point of reference for communication. In addition two million pounds of product liability and industrial indemnity insurance are provided.

With regard to those staff and associates undertaking the project, DME (housed in the Universities' new Innovation centre), provides an elegant environment within which to entertain clients away from the main body of the University.

A project leader undertakes the majority of the day to day liaison with the client in consultation with De Montfort Expertise.

## **Finding and Sustaining Consultancy**

This particular aspect of consultancy has been rather revealing. A concern had been that companies would not take a design facility at a University seriously and indeed the first few contracts were extremely hard fought.

The important factor is as one would expect, to earn the clients respect not just by producing quality work but by responding to all aspects of the project in a thorough and professional manner.

Fire fighting a manufacturing problem (which is inevitable) is equally important to producing an elegant and effective concept proposal.

Undertaking projects in this manner has earned further contracts for DMU totally by way of referral, in addition to yearly retainer agreements with some clients.

It would appear that as with a conventional Product design agency success breeds success, the consultancy drives itself provided a willingness to respond quickly with quality output is maintained.

## **Staffing**

Once it can be proven that a reasonable consistency in consultancy activity can be maintained, a plan can be made for capital investment and investment in staffing to support both consultancy and teaching.

One of the major problems with consultancy is that it does not wait for the teaching. It has to intermesh with teaching and teaching with it. This requires a high degree of flexibility.

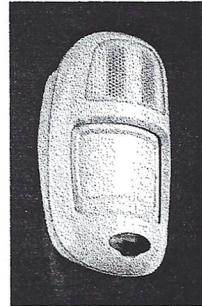
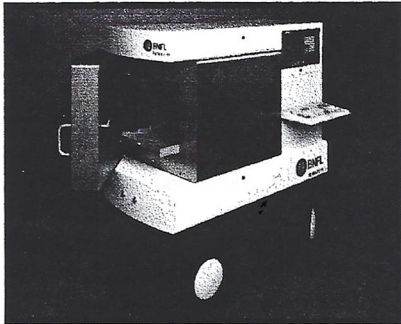
If a reasonably regular amount of consultancy can be predicted, staff loads can be adjusted accordingly. If this impacts upon teaching then the contract itself can be used to fund replacement part time hours rather than having to rely upon a Schools official part time budget.

With non planned consultancy projects again teaching loads have to be adjusted by purchasing time teaching support.

### Examples

The DMU Design Unit has been fortunate in attracting a wide range of clients and therefore design projects. Projects range from a Plutonium Monitor for British Nuclear Fuels, to a cardiovascular pump for Novamedix, to an Anti-Cat PIR detector for DA Systems.

The following two illustrations are of the Monitor and Anti-Cat detector.



### Network Associates

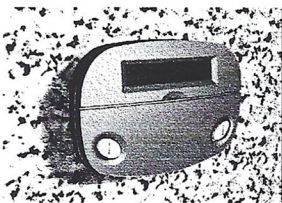
Working with a number of small companies in Leicester who possessing a flexible range of manufacturing facilities has been very beneficial.

The University does not intend to become involved itself with manufacturing but acknowledges that if Industrial design has to mature it must become more involved with production.

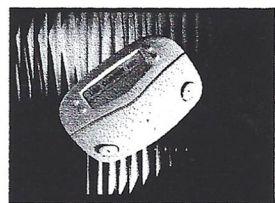
In association with these companies we have developed a manufacturing method that enables extremely rapid development of complex injection moulded assemblies.

This also serves to differentiate us from more conventional consultants.

The following illustrations describe this scenario with reference to a small burglar alarm control keypad for DA Systems.



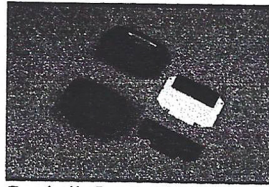
CAD Visual Appearance



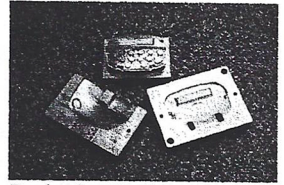
Visual Appearance Model



CAD Production Development



Facsimile Prototype



Production Tooling

### **Unfair Competition**

For a University with all its resources, to embark on consultancy projects could understandably cause concern within the established profession.

For the economic reasons previously described there is little choice for Universities to embark on income generation of some form or another. How can this issue be resolved?.

The DMU Design Unit does not pro actively seek work but responds to inquiries re actively.

All contracts are costed at a competitive commercial rate, so there is no financial benefit to clients using our services.

We are differentiating our services by providing a more manufacturing route rather than a pure design capability.

We do not use students on commercial contracts.

We do not use educationally priced computer software or hardware for commercial work (which licenses prohibit) but have to invest consultancy profit into fully licensed software. For example we have eight Silicon Graphics workstations running Alias software, but none are used for consultancy work, however we are looking to invest in one fully licensed commercial seat.

Even if DMU is competing to some degree with traditional design companies we are nevertheless creating jobs in Leicester. The injection moulding company who undertakes work for us has recently recruited two additional members of staff including a workshop manager directly, as a result of contracts from De Montfort University.

### **Benefits**

- Maintaining staff experience at the cutting edge of design
- Enabling computing and prototyping facilities to be kept up to date
- To provide income to purchase part time hours and therefore provide students with a greater variety of teaching input
- To provide extremely effective case study material for students
- For staff to be seen working on commercial projects by students earns respect
- Increasing the variety of staff experience and therefore improving job satisfaction
- To develop engineered products which can be used as contributions to research assessments

### **Disadvantages**

- If an excessive amount of part time teaching is being employed to support consultancy work then the student teaching can be inconsistent.