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# Securing Innovation and Creativity in Design Education

*“One must still have chaos in oneself to give birth to a dancing star”*

Friedrich Nietzsche

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August 1999



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## **Aim of the Project.**

To illustrate through case studies how factors in the selection, education and professional formation of design graduates have influenced the exceptional success of two particular institutions in delivering graduates with competences in innovation and creativity.

## **Project Objectives**

1. To define, with an expert group drawn from leading UK companies, design consultancies and design educators, criteria by which innovation and creativity in design can be recognised and judged;
2. To conduct in-depth, structured interviews, based on best practice in psychometric assessment, with a cohort of 20 young employed designers, from two contrasting design disciplines, who fully meet these criteria, in order to establish key factors and features in their selection, design education and work experience that have been of significance to their development as successful designers;
3. To analyse and compare data in order to establish significant features in the design education curriculum and related work experience that have contributed to the development of skills in innovation and creativity, that are generalisable, and from which valid lessons can be learned;
4. With participating employers, consultants and teaching institutions to review the research findings and the analysis and make recommendations relevant to the future development of designers;
5. To evaluate resource, curriculum and other implications of implementing recommendations on a wider scale;
6. To publish and disseminate the findings and recommendations using illustrative examples from the research in the form of case studies.



# 1 General Introduction

## Background to the study

This project was commissioned from TOPIC, the Training Organisation for Professionals in Construction, by the Higher Education and Employment Division of the Department for Education and Employment (DfEE) as part of their 1997/98 research programme. The project started in the Spring of 1998 and concluded at the end of that year. Skillset, the National Training Organisation, which covers a range of design occupations including Broadcasting, collaborated in the Study and the Design Council maintained a watching brief throughout.

'Design' is a very popular subject discipline in Higher Education in the UK. It has many subsets; all of which are believed to embody innovative and creative processes.

In many design disciplines, Britain has a world class reputation. However, The Design Council estimates that less than 20% of those completing courses in art and design in the UK obtain employment in this field. Success in placing design graduates in employment (or lack of it) varies significantly between institutions. This study set out to examine why this should be so.

The approach taken was to select two institutions in contrasting design areas, each with a commendable record of success (as measured both by high levels of student placement *and* by career success of their graduates) and examine why this may be so. Ravensbourne College of Design and Communications and the Architectural Association School of Architecture fulfilled these criteria.

The object of the study has been to examine what might be learned from these institutions that might have wider relevance to design education and professional formation in the UK.

TOPIC, which initiated and led the project, is the national organisation responsible for professional occupations in the built environment sector and, as such, embraces several design occupations of which Architecture is the best known. In this study it has collaborated with Skillset, the NTO for communications and broadcasting, and also with the Design Council.

## Methodology

The basis for the research was to identify a cohort of high achieving graduates from each institution and examine those factors which had contributed to their success. We were specifically interested in graduates who have been able to demonstrate their innovative and creative skills in practice – with tangible

products of excellence to show: graduates who have managed the follow through from analysis, to concept, to design *and to* implementation. We therefore targeted our study on graduates with between 2 and 5 years experience of practice – those who have had the opportunity, holistically, to demonstrate the actuality of their innovative and creative ability.

The Steering Group, who monitored the project; the Expert Group, who helped frame the definitions of innovation and creativity and provided a constructive critique of the findings; and the graduates who were the subjects of the study all entered fully into the project and gave constructive and enthusiastic assistance throughout. The ideas certainly engaged with current concerns about the nature of the education process, in its broadest sense, and what could be done to enliven its future development.

### **Issues influencing the research process**

- ***Is innovation and creativity 'measurable'?***

Innovation and creativity as capabilities are not discipline confined, they have relevance to most human activities. We tend though to attribute them as 'essential' characteristics in the design field. This raises the interesting issue as to whether such capabilities lie within the analysis of the problem, the synthesis of ideas or in the articulation of the solution. This was an extremely important issue in student selection.

Unlike many other areas of capability, such as literacy or numeracy, where there are widely accepted measures that can be applied that allow comparison between individuals, there are no such widely agreed measures that apply to innovation and creativity. However, many claim to be able to recognise it when they see it - or recognise its absence.

As innovation and creativity are not conveniently measurable attainments, it is quite obvious that it is very difficult to compare (and therefore rationalise) strategies for developing such capability. However, even though we know little about how capability in innovation and creativity is acquired as a 'systematic' process, we do recognise that there are 'hot spots' where at particular points in time, particular institutions and groups have become the focus of outstandingly creative and innovative activities.

- ***Can innovation and creativity be learned?***

Innovation and creativity is often perceived as an 'innate' capability rather than a learned process. If such is the case, then the emphasis will clearly be

on the way in which such capabilities are identified through the selection process and nurtured through the teaching/learning process. Conversely, innovation and creativity in design is often perceived as the ability to synthesise and communicate ideas through a visual medium - in which case the learned skills of manipulating different visual media - and the facility and confidence that comes with the acquisition of such skills may be of most significance. Another perspective on innovation and creativity is that it is the designer's facility in reading and analysing the design context and solving problems through thinking laterally and making connections - in which case it may be experiential learning environment that is the most forceful factor in development. It may of course be all of these!

- ***Can we influence its development?***

It may be a grave error to assume that there is a 'teaching' solution.

It could be that through serendipity or the grapevine that particular groups of individuals with a high potential to be innovative and creative come together and spark off each other to produce work of excellence. A 'gravitational' process that cannot be manufactured.

It could be that particular learning environments, characterised by their lack of structure and richness of opportunities provide fertile ground for development. 'Structure' in the curriculum may actually confine rather than release capability.

It could be that the essential traits relate predominantly to cultural and social factors and that particular institutions are favoured for what they represent in the minds of students with special aptitude, opportunity and ability - rather than anything they actually do in terms of teaching and support. The institution's role being to provide the playing field - not the game plan and the referee.

## **Caveat**

It was never the intention of this small scale study to 'prove' anything. Its main purpose has been to look for patterns and indicators which appear to be of significance and may form a useful basis for future research.



## 2 Executive Summary

### The research process

Twenty highly successful graduates of the Architectural Association School of Architecture and Ravensbourne College of Design and Communication were interviewed between September 1998 and January 1999. All were currently employed in significant architectural or broadcasting roles and had been identified by their HE tutors as bringing an innovative and creative style to their work.

Interviews focused on five themes, all potentially related to occupational 'success': pathway to HE, pathway through HE, work experience/placement, post HE work experience and continuing professional development. Participants also completed a short questionnaire designed to elicit information on the "Learning Organisation" (pp 34).

The findings indicated that all the architects and the broadcasters involved in the study were attracted by the notions of: choosing what to learn; cross-disciplinary training; team working; benchmarking and learning as a continuous process. It was evident that they actively endorsed the underlying principles of the 'learning organisation'. Strategically, this gives weight to the idea that the creative development of individuals and institutions can usefully be illustrated using a five factor model – the "Olympic Model" (pp 35)

The model relates important personality characteristics such as openness to experience and risk-taking to style of learning and individual motivation. In particular the concepts of 'double-loop' learning and 'critical challenge' are introduced as these link the activities of the individual to knowledge, the raw material of creativity, and the learning environment itself.

### Institutional issues

There were many factors in common in the background and motivation of the graduates and in the characteristics and teaching style of Ravensbourne College and the AA.

The institutions are very different in their history and institutional status but both have achieved an equivalent 'elite' status in their respective fields.

Size may be very important. Both colleges are small by contemporary standards, which may be an important factor in enabling them to create an intimate, collegiate atmosphere

Both institutions project a distinctive 'corporate' image where the 'brand' is directly associated with their product (communications / architecture)

Both institutions are also well resourced to provide the technical backup that students require. However, access to people (the movers and shakers) appears to be a much more significant asset.

## **Issues in student selection**

Course tutors, current students and administrative staff are involved in selection interviews

Students selected are highly focused both in their choice of career and choice of institution.

Students choice of institution is frequently informed by a professional parent or friend or someone 'in the business'. A robust alumni is important to both institutions as they can act as informal ambassadors and advisors.

Both institutions give emphasis in initial selection to breadth of perspective, education and experience, rather than to grades of performance in specific disciplines.

Students with significant pre-entry work experience and those with pre-entry exposure to other disciplines were found consistently to perform at a higher level than those entering directly from secondary education.

Neither college relies exclusively on written applications for the selection decision and both put a great deal of emphasis on performance at interview

The selection methodology used by both institutions to draw out student aptitude has been described as more of a 'critical dialogue' than an interview.

It is very clear that both institutions use the selection interview process overtly to explore four key areas:

- commitment to, curiosity, enthusiasm and passion for the discipline
- the quality of 'ideas' (and skills in expressing them)
- how both of these are reflected through their experience and 'portfolio' of examples of work.
- their 'soft' skills - relating to people, negotiating, team working

## Issues of significance in the curriculum

Both the AA and Ravensbourne use 'work group learning' as the core strategy, placing the tutor as resource and learning facilitator rather than instructor and giving emphasis to work group collaboration rather than individual competition.

Interaction between work groups and the wider college and professional community are also strong - exposing ideas to wider criticism on a regular basis

Playing with ideas and making things is also an essential feature of both institutions.

Students are encouraged to take personal risks and test ideas until they break. There are no "safe" intellectual pathways and there is "no roof on expectations".

The role of tutors is one of collaborating, steering and supporting rather than directing and judging.

Neither college sets out overtly to develop innovation and creativity. The concern is with the pragmatics of architecture and broadcasting respectively and not necessarily with the pursuit of creativity.

Creativity in broadcasting, is an adaptive behaviour, rewiring the system to produce a result not achieved before – *'to take an idea and make it better'*. In architecture, it is an innovative process - about *'taking the givens and the practical concerns and making something wonderful out of them'*.

## The relevance of work experience

The early and continuing exposure of students to the industries in which they seek careers is regarded by both institutions as a positive force in learning development

The expectation is that all students will interact with the world of employment as a natural and continuing part of their learning development. Both colleges provide a variety of links with employers, but do not provide an orchestrated service. The college opens up the opportunities, but essentially the student makes the running.

Both the AA and Ravensbourne embed periods of work experience during the course of studies. When students are placed in a new and unfamiliar environment they change their frame of reference. It is this 'unsticking' or 'unfreezing' which

work placements help to facilitate and which makes a key structural contribution to students' learning development.

It is also, practically about students learning and practicing skills, essential to work, but not exhaustively covered within the course.

The line between education and practice is quite blurred: Formal breaks for work experience; work experience interspersed with study to cope with financial pressures; ad hoc involvement with tutors on national and international competitions and presentations - are all part of the typical student's progress through both courses.

Most tutors are also practitioners and bring into their courses ideas and challenges that are very much lodged in real time and with real clients.

Both the AA and Ravensbourne are multi-cultural and international in outlook and, through their alumni, have created a diverse range of opportunities for undergraduates to exploit. A multi-cultural student body aids the creation of new ways of thinking and different and quite profound modes of thought become available because of differing cultural perspectives and values.

### **The “Learning” Vs the “Teaching” Organisation**

Both Ravensbourne College and the AA recognise that they are primarily 'learning' rather than 'teaching' organisations.

Potentially creative students respond to and grow if they are supported by an organisation which gives people the psychological freedom to experiment. one in which the mindset, especially of those who facilitate the educational process, is low on formality and high on example.

Tutors / lecturers must be seen to be learning themselves and be actively engaged with the learning of others.

## **Key recommendations**

### ***Dissemination***

#### ***Recommendation 1***

*To provide opportunities for staff and students at Ravensbourne and the AA to respond to the research report, findings and conclusions.*

#### ***Recommendation 2***

*To publish the findings and make them widely available to other UK institutions involved in architecture and communications as the basis for initiating a critical debate within the respective professional and educational networks.*

#### ***Recommendation 3***

*To convene a discussion, hosted by DfEE, and involving DTI, the Design Council and interested NTOs to review the findings and recommendations in this study and to advise on wider dissemination.*

### ***Further Development***

#### ***Recommendation 4***

*The opportunities for developing equivalent, specialised institutions in other strategically important disciplines in which innovation and creativity are key components should be explored.*

#### ***Recommendation 5***

*To develop and test criteria for identifying learning organisations as a basis for promoting good practice and establishing a 'benchmarking' system.*

#### ***Recommendation 6***

*To review the employment issues involved in developing and promoting greater mobility between practitioner and teaching roles for those in Higher Education*



### 3 Establishing Criteria for Innovation & Creativity

#### Definitions

Dictionary definitions:

*Innovate:* to make something new, make changes

*Create:* to bring into being, to give rise to.

There are few definitions - but many interpretations. One could distinguish between the two by suggesting that if innovation is about designing a better mousetrap, then creativity is about devising an entirely new approach to rodent control.

'Innovation' carries with it the implication of 'managed evolution' and of 'added value' but also of 'derivation from' or 'adaptation of' an earlier idea; whereas, 'creativity' implies novelty, producing something that did not exist before - it does not necessarily imply that what is created is 'better'.

These general constructs were acceptable to the project team and found broad favour with the Expert Group. The Expert group also accepted one the important premises on which the study was based – that the test for innovation and creativity is lodged in successful 'delivery' of ideas, not just in their origination.

#### The Expert Group

The first stage of the project was to define criteria by which innovative and creative graduates could be selected for interview.

To assist in this task an 'Expert' group of seven people was formed from senior practitioners from the fields of Broadcasting and Architecture, all of whom were employers and had personally achieved national and international recognition in their field . Also, they were familiar with the education and professional formation process. A leading artist was included in the group, to establish what parallels, if any, might apply to highly creative people in the fine arts The group met on two occasions in the early stages of the project.

The contribution of the Expert group was considerable, not only in steering the project team towards the appropriate criteria for selecting individuals for interview, but also in helping to shape the ideas which led to the derivation of the 'Olympic Model' illustrated in Section 6

## **Criteria for identifying innovative and creative individuals**

**Background and contextual factors** which the expert group considered relevant for exploration for their formative influence on the individual learner, included:

### ***Personal factors***

- Biographical details – origins, family links etc
- The individual's sense of identity

### ***Factors relating to the learning process***

- Teaching style
- Industry links
- Reputation of the institution
- Institution size
- Facilities
- Location

### ***Factors related to the economic context***

- Economic opportunity
- Timing
- Luck
- Type of business
- Reward

## Recognition Criteria

The following characteristics of the 'creative' and innovative' individual were identified by the expert group as *probably* of significance as criteria for identifying the cohort of graduates on which the study would be based:

<p><b>Personal traits</b></p> <ul style="list-style-type: none"> <li>• Proactive</li> <li>• Energetic</li> <li>• Committed</li> <li>• Persistent</li> <li>• Determined</li> <li>• Persuasive</li> <li>• Reliable</li> <li>• Goal oriented</li> <li>• Problem centred</li> <li>• Conceptual</li> <li>• Business oriented</li> <li>• Competitive</li> <li>• Need to achieve</li> <li>• Internal locus of control</li> <li>• Risk accepting</li> <li>• Belief in self</li> <li>• Team mindedness</li> <li>• Independence seeking</li> <li>• Learns from mistakes</li> <li>• Seeks opportunities</li> <li>• Accepts change</li> <li>• Future orientation</li> </ul>	
<p><b>Characteristics of personal performance</b></p> <ul style="list-style-type: none"> <li>• Take initiative</li> <li>• Influence others</li> <li>• Create "products"</li> <li>• Assume responsibility</li> <li>• Monitor own performance</li> <li>• Tolerate ambiguity</li> <li>• Seek feedback</li> <li>• Seek acclaim</li> </ul>	<p><b>Personal goals</b></p> <ul style="list-style-type: none"> <li>• To innovate/improve</li> <li>• To create</li> <li>• To achieve excellence in design</li> <li>• To 'grow' the business</li> </ul>
<p><b>Outcomes of performance</b></p> <ul style="list-style-type: none"> <li>• Seek success of projects and activities in a "real world" context.</li> </ul>	<p><i>This issue is complex. The Expert Group agreed that this must be judged in terms both of the individual's ability to derive creative and innovative solution to problems but also in terms of the solution's 'fitness for purpose' and compliance with specified parameters of functionality, time and cost.</i></p>

## **Selecting the cohort of graduates for interview**

Armed with these criteria for recognition, Mike Weinstock from the AA and Jeremy Barr from Ravensbourne College carried out a sift of graduates from their respective institutions over the past 4 years and provided Mark Parkinson with a long-list of potential interviewees.

Mark Parkinson devised an interview framework (Appendix 1) and selected a shortlist of graduates for interview (Appendix 5).

## 4 The Study

### Participants

Participants were drawn from the graduate bodies of the Architectural Association School of Architecture and Ravensbourne College of Design and Communication. Specifically a list of ten names was provided by the AA from which eight architects agreed to be interviewed, with a 'booster' sample of a further two participants being recruited towards the end of the interview cycle. Ravensbourne provided twenty names from which fifteen were contacted and ten subsequently interviewed. These two groups provided the complete interview sample.

All the participants were at least two to three years post graduation and were employed in design or broadcasting posts. Four of the architects were female and six male, with a range of graduation years from 1992 to 1996. Seven were employed by the architectural practices: Terry Farrell, Richard Rogers, Sophie Hicks, Allies & Morrison, Roger Meers, John Pawson and Arthur Collins; two were in partnership with AA colleagues, and one practiced and also taught at the AA. Some of the participants had entered the AA in the first year, others had completed studies at other institutions and joined the 'intermediate' school.

The Ravensbourne sample comprised of five female and five male broadcasting graduates. Graduation years ranged from 1993 to 1996, with nine of the graduates having completed HND courses in TV operations, and one an HND in Engineering (TV systems). Employers included production and broadcasting companies such as Carlton, Disney, LNN, Granada and MTV; with two pairs of participants working for the same company. Three were self-employed or freelance.

### Method

The participants were contacted by telephone and asked if they would like to take part in a project concerned with identifying important features in the development of innovative and creative people. Specifically those which related to 'success' in design or communication disciplines, and the effects of studying at the AA or Ravensbourne respectively. Participants, for purely pragmatic reasons, were given the option of being interviewed face-to-face or over the telephone. Whatever their decision the same interview technique was used and information gathered against five main themes:

- *Pathway to HE*
- *Pathway through HE*
- *Work experience/placement*
- *Post HE work experience*
- *Continuing development*

A copy of the interview schedule, the starting point for all the interviews, is provided in Appendix-1.

All interviews lasted at least one hour and took place between September 1998 and January 1999. Additional information on the 'learning organisation' was gathered using a brief questionnaire. See Appendix 2.

## 5 Findings

### Pathway to HE

Participants were asked about their motivations for choosing architecture or broadcasting and if they had ever considered any other occupations. They were also asked about how they became aware of the AA or Ravensbourne, what attracted them to either institution, and how they perceived the process of selection.

### Inspiration & selection

What was striking was the number of participants who came from families, or had backgrounds, related to their chosen discipline. This was most marked for architects with many coming from families with a tradition of building, engineering, design or indeed architecture itself. A point reinforced by the fact that they had never really considered any other occupation seriously, or those which they had thought about were also related, such as product design, furniture making, graphic and interior design. Those who had pursued careers prior to joining the AA had also been drawn to creative or technical activities such as painting, photography and technical drawing.

Some typical quotes:

“I was interested in design and structures because my father had a business involved in engineering and blacksmithing.”

“My father was an architect and when I was young I attended a Rudolf Steiner school - both made me interested in a more holistic view of education, learning and creating.”

“I was always making models, painting and creating.”

“I was always obsessed with architecture (but didn't think I was clever enough) and before I went to the AA I spent a number of years involved in restoration and conservation work.”

“Before architecture I studied Fine Art and spent a number of years being a painter.”

In a similar way those that made their way in to broadcasting often had connections with the film or TV industry. For example, one had a father who

worked for the BBC, another a cousin who was a lighting director, yet another a sister who worked for Reuters. It's also fair to say that there were some who had no connections at all, with parents or siblings who were civil aviation pilots, nurses, social workers and so forth. However, like the architects, other career options (when they were voiced) usually included things like design, performing arts and such like. Early interests in broadcasting were also evident:

"I started a TV station when I was at school. This was during the first Comic Relief when I realised that there was a TV socket in each of the classrooms. We got together a little team of people and had a video camera and some editing equipment and put on a number of shows.."

"When I was at primary school I made a TV camera out of a tin-can and a cardboard box and interviewed my class mates."

Turning to the question of how the participants became aware of the AA or Ravensbourne, almost without exception this was on the basis of recommendation. Recommendations from other professionals, other colleges and institutions or family contacts. It was unusual for participants to have assessed the relative merits of a range of different courses, or to have consulted reference books. Although one architect claimed to have discovered the AA because it was the first entry in an index of architectural schools ! There were no question that both institutions were considered to be the only places at which to study. On the whole participants were attracted to the AA because of its "formidable" reputation, and for example, because it was:

"Unconventional, independent, experimental, ambitious and individual."

Teaching style, in particular the unit based system, and location were also mentioned as being important influences. With regard to Ravensbourne, links with the broadcasting industry and the facilities for students tended to be remarked upon most often. Many commented on the fact that it seemed to be in a "different league" to other broadcasting schools.

From a selection point of view both institutions set minimum entrance requirements and prefer prospective students to present some original work - whether this be a film, video or collection of photographs, a series of drawings or visual ideas. The portfolio then forms the basis for discussion with the interviewer or interview panel. In addition applicants have usually attended an open-day or taken part in some form of tour.

Ravensbourne graduates reported the selection procedure as being searching and rigorous and as involving a detailed interview. Some also recalled completing

written exercises or tests. Interestingly when asked what they thought the interviewer(s) were looking for, few mentioned attributes such as academic or intellectual ability, but rather emphasised motivation, drive and team mindedness. Indeed on reflection many commented that they believed that the interview process was designed to select prospective 'employees' (of the broadcasting industry) rather than students. Also that the process was deliberately designed to create a mixed student body, composed of those of different ages, backgrounds, work experience and so forth. To quote one broadcaster:

"The college goes out of its way to select a range of students. This appears to be more important than qualifications."

AA graduates again mentioned "tough" and "searching" interviews, and as with those who attended Ravensbourne, mentioned the involvement of students on interview panels. A number also said that the interview process was like a "critical dialogue" in which their thoughts or ideas were tested. The feeling was that panels genuinely appreciated the validity of applicants' ideas, which perhaps explains statements such as:

"They were interested in my ability to make my own choices."

"(For once) I was treated as a serious and legitimate individual."

On the whole interviewers seemed to be more concerned with an applicant's willingness to investigate and discuss the subject, and to explore the extent of their curiosity and aspiration. Informed opinion and honesty of thought certainly seemed to be more important than paper qualifications.

Three key motivations emerge from this data. Firstly that most of the participants had long-standing and often intense interest in their field of study. That in many ways this had tended to blind them to other possibilities and had often sustained them during protracted periods of disassociated study or employment. Secondly that the two institutions have powerful and well-formed 'corporate' images, often communicated by ex-students or other professionals, and that these act in a positive and reinforcing manner. Finally that the selection process is geared to detecting those with enthusiasm and passion, and is not merely a process of ticking off qualifications on a list. [It may also be important to note that both institutions encourage students to sit on interview panels.]

## Pathway through HE

In this part of the interview participants were asked how they would describe what they learnt, which aspects were important for their personal development, and if they felt that there had been anything missing from their course. The questions then moved on to a discussion of how the learning took place and specifically whether they were expected to 'challenge' projects and assignments. Finally they were asked to comment on the structure of the AA or Ravensbourne and to describe their career path.

## The learning environment

Ravensbourne graduates described the learning process as one which involved becoming familiar with an industry. Information and technical education was important but the accent was on "learning how to make things happen", "understanding lines of communication and roles", "having the confidence to know what to do", "dealing with pressure", "getting along with other people (TV often attracts misfits)", "sharing work" - in fact aspects of what is called 'tacit knowledge.' These also happen to be the soft-skills which are in demand by many employers. Furthermore these outcomes of the educational process were seen by participants as being the key to their own personal development. As one broadcaster put it:

"Different people, learning to work with other people, it was the people stuff that was important."

When it came to saying what was missing from the course comments usually concerned practical considerations such as knowledge of the taxation system (important for potential freelancers), keeping pace with technology, and if anything a desire for more practical work. More positively it was the practical team orientated parts of the course which participants said were the most useful. More so than lectures, personal study or the influence of a particular member of staff. A typical comment was:

"The whole business is team orientated anyway.. Role rotation through things like camera work, editing, sound, directing.. these are the things which teach you the most."

Also, with regard to teams, the effects of peer pressure:

"You can't not just turn up. When you're in a team you have to go in each day to get the work done. Other people expect you to be there."

Many participants mentioned the annual 'Station on Air' project in which students set-up and run a TV station, with microwave links to remote sites, as an extremely formative experience which brought together much of what they had learnt. This perhaps underlines the importance of contextualising learning and again makes the point that team working is an important skill.

Participants described Ravensbourne as being a relatively informal yet disciplined institution, with a recognisable structure. They also commented that the impetus for personal development had to come from within and that the college facilitated: what an individual gained from the experience was entirely up to him or her. This attitude was perhaps easier for more mature students to accept, and indeed a number of the participants had split-careers. For example, one had been a professional dancer, another a soldier.

The AA participants recounted similar experiences, but if anything suggested that they felt more exposed. They described a process of exploration or evolution of thinking which helped to build confidence, yet was tinged with anxiety. Many said that they had had a "hard time", or those who were younger, that it was a bit like "a slap in the face." What was learnt? Maybe, as one architect said:

"It was way of working, a way of thinking.. All to do with finding a way through to being creative, to trusting your own judgement."

Again it was the action of learning with other people, especially with those from other cultures or disciplines (barrier breaking), which was most valued. And with regard to performance, that there was "no roof on expectations - you produced the best you could which was then tested by the school." When it came to talking about what was missing from the course the attitude seemed to be that it was not a question of what was missing, rather that if a participant felt that he had a weakness in a particular area it was that he had not sought help and that:

"..the assumption is that you will have been interested enough to learn the basics yourself."

In terms of organisational structure most said that the AA operated as a matrix of working groups, supplemented with a great deal of individual work. In contrast to Ravensbourne there was also a far more diverse student body with many having split-careers. The last two features were commented on as being important influences on the institutions character.

Both the AA and Ravensbourne appeared to foster what can be termed 'double-loop' learning. This is a form of inquiry which gives credit to those who challenge problems and solutions. To take a simple example a 'single loop' approach to an

essay question would be one in which the respondent accepted the premises of the question completely, and returned an answer based on the usual methods of research and essay writing. A 'double-loop' approach actually questions the question itself, often explores its validity in the context of the questioner, and moves to a number of possible solutions or answers, which may or may not be expressed in verbal terms. An example would be a standard video project set by Ravensbourne, using college equipment, which ended up covering a riot ! The exercise strayed a long way off what was expected, but (eventually) the crew were praised for their pictures. This is a far more flexible approach to learning, but one that has its dangers. Obviously it does require a structure in which to operate, otherwise energy is endlessly dissipated on arguing. A similar process, that of opening the whole problem solving process to external scrutiny, is reflected in the 'jury' system used by the AA. Here ideas are subject to particularly wide ranging debate - see the comments in the Discussion section.

On the whole the trend in both institutions seems to be one of a semi-structured approach in which the emphasis is on developing individual methods of inquiry within the context of the relevant technology. Team work and collaborative exercises were reported as being important for personal development and were often rated more highly, than for example, lectures. Virtually all the participants recognised the process of double-loop learning and of being encouraged to 'think about the way you think' - a process that is sometimes termed meta-cognition. Thought and experiences were also enlivened by having mixed student bodies and recruiting those with split-careers. In addition an element of anxiety, or moving individuals out of their comfort zone, seemed to be characteristic. As one participant, quoting a tutor at the AA, said: "Nobody gets through this place without bouncing off the walls a few times." To which can be neatly added something said about Ravensbourne, which highlights the fact that the institution still provides a degree of protection to the individual: "This is a rubber-walled learning environment - at least you can make mistakes and get away with it."

## **Work experience/placement**

Participants were asked to describe any significant periods of work experience during HE and what they thought they had learnt or developed. They also commented on how much value they attached to work experience.

## **Work experiences**

Both AA and Ravensbourne students undertake periods of work experience during the course of their studies. At Ravensbourne this generally involves a placement with a TV company, participants being placed with the likes of MTV, LNN, WTN, BBC and Carlton. Depending on the interests of the student, and

nature of the company, time is spent rotating through departments, operating cameras, cabling, editing tape, vision and sound mixing, shadowing a news crew and so forth.

The Ravensbourne participants reported that work experience had been essential to their development but had not always been an easy option. Some complained that their placements had been disorganised or that they had been taken for granted. However more typically most said that it gave them wide-ranging and up-to-date experience and provided valuable job intelligence, or in a nutshell:

“..Learning who does what in a company, who pays who, who is the client, how to deal with people, how to deal with each other, how systems work and how to cope with time pressure.”

The emphasis appeared to be on learning about the industry whilst also learning about the self. So, for example, a number made comments to the effect that it was their “biggest growing-up period”, and that they often felt “alone” and “vulnerable” - or that it was painful but something that they needed to go through.

Taken as a whole it is interesting to note that while participants did mention that they learnt about the technical aspects of the job, it was (again) the softer skills which were more important. Thus learning how the world worked, about “local politics” and how to get things done, provided the most valuable experience.

At the AA students usually work for architectural practices, either in the UK or abroad. Indeed many secure placements with firms headed by high profile architects such as Richard Rogers or Norman Foster. These were often described as “glamorous sweatshops” but as giving a grounding in basic business skills such as administration, organisation and planning. Also the opportunity to work on a diverse range of real life projects and to learn “how buildings are actually put together.” People would typically say that it gave them:

“..contact with actual structures and the building process.”

In many ways this is not what the casual observer would expect. Most lay people imagine that architects are engaged in a daily struggle with the forces of creativity, not that they are concerned with such mundane things as planning regulations, site visits and the building process itself. But these are the sorts of activities rated as being useful and as adding to the process of professional formation. So with the AA and Ravensbourne the concern is with the pragmatics of architecture and broadcasting respectively and not necessarily with the pursuit of creativity. Note this is not to say that individuals were not engaged in

creative lines of thought, rather than this was operating in a secondary (possibly unconscious) capacity to production.

Work experience would appear to be an important factor for understanding the true nature of the profession and the true nature of the self. While students may find it to be an uncomfortable experience this is probably an indication that it is challenging pre-conceptions or idealised views of work. It should also be recognised, if creativity is the concern, that under 'normal' conditions creativity is not stimulated. We tend to stick with what we know and avoid experimenting. It is often only when we are placed in a new and unfamiliar environment that we change our frame of reference. It is this 'unsticking' or 'unfreezing' which work placements help to facilitate. Needless to say the experience of working in a busy and potentially creative environment in itself helps to foster new approaches and insights.

### **Post HE work experience**

In the penultimate part of the interview participants were asked to talk about their post-HE work experience and the sort of factors which had helped them to settle in to the world of work. Also the sort of assets they thought they brought to their employer, or business, and what they were seeking from employment.

### **Transitions**

For architects the single most important factor in preparation for employment was previous work experience. This overshadowed all other factors including technical skills. Indeed commenting on the latter a few said that the AA was too "self-referential" and that this in fact tended to restrict the technical base. However that being said many again mentioned the usefulness of the jury system in preparing for presentations and the 'defence' of ideas.

The sort of assets that architects brought to the work place were skills such as computer modelling, draughting, an understanding of how people work, an appreciation of how to pace projects, an instinct for what works, energy and commitment. In short the elements of professional competence or:

*"A cognitive toolkit that can be applied to a given set of problems."*

On the subject of creativity most were rather more coy, but some expressed the view that what they brought to their work was "a way of looking" or of "bringing something extra to a problem." Others claimed that it was a question of "gut instinct" and of "knowing where to put the weight, in practicality or flamboyance."

But maybe the most elegant definition of creativity was by a female architect who said:

*“Creativity is about taken the givens and the practical concerns and making something wonderful out of them.”*

This captures the essence of moving from the fixed and functional to the (potentially) novel and emotionally pleasing.

When in employment architects sought comradeship, responsibility, opportunity, a critical environment, a chance to create and to see things through, to make a mark, to test themselves against a problem and to learn. Indeed everyone said that they wanted to learn and to continue learning. To summarise:

*“I am looking for new people, new environments, learning opportunities, challenge, unpredictability and fun.”*

Similar sentiments were expressed by those who were running their own businesses - usually in collaboration with other AA graduates. Interestingly this form of partnership was not explained in terms of propinquity, but as a result of sharing similar mind-sets and a technique based on critical dialogue. The credit for this convergence of approach being given to the methods actively promoted by the AA.

With broadcasters previous work experience and technical know-how appeared to be the main assets. Most said that they had had a thorough technical grounding and that this smoothed their path in to employment. It also meant that employers “could not blind you with science.” Other positive attributes that were mentioned included being efficient, time conscious (used to deadlines), effective team workers, having stamina (TV is a 24-hour a day activity) and a ‘can-do’ attitude. A number also said that they were quick learners and only needed to be shown how to do something once.

Creativity, when mentioned, seemed to be more adaptive than innovatory in form. Thus people would say that “the point is to take an idea and make it better”, or that creativity came in juggling times and schedules. Both of these accept that there is a definable starting point and that it is the timely and fluid manipulation of resources which is important.

When in the employment arena broadcasters sought variety, opportunities for personal development (growth), a chance to produce a ‘finished’ product, responsibility, respect and trust. Like architects they were also interested in self-development and learning. The differences seemed to concern the approach

taken to work projects - architects appeared to be more concerned with a process of idea generation through dialogue, whereas the broadcasters (maybe as a result of time constraints) had to work within far more restrictive parameters.

For those running their own businesses it was the technology which had allowed them to do it. For instance, one was offering a digital satellite news-gathering service. This provided a fully integrated digital video recording, editing and transmission system on location. The unique features being its portability and the fact that the entire process always remained digital (rather than analogue), resulting in superior quality pictures.

Work experience seems to be a most important factor. It adds to the knowledge base of the individual and also directly influences confidence and self-esteem. The technical skills which graduates bring to the work place are tempered by a way of articulating problems, which is in itself continuously refreshed by the on-going process of learning. At a creative level the two groups seem to operate in slightly different modes with architects functioning in an innovative manner and broadcasters adaptively. But this may just be a reflection of the nature of the business involved and the raw material available. Of all these considerations the predominance of the word 'learning' is the most important as it takes precedence over all of the other influences which could have been mentioned, not least money and status.

## **Continuing development**

Participants were asked how they viewed continuing professional development and how much they thought was desirable. Discussion also centred on the form that any additional learning should take, for example forums or discussion groups, academic conferences and seminars, or individual initiatives.

## **Future learning**

Both architects and broadcasters were quite ambivalent about the idea of a formal programme of continuing professional development (CPD). However both groups mentioned mechanisms by which learning could take place. Apart from the two architects who said that CPD was "abhorrent" or that it was a "crutch for the unimaginative", most suggested that a degree of formal learning was important if only to fulfill the requirements of their Part-3 examinations. Likewise another commented that "litigation drives the need to keep on top of the latest developments". These are somewhat defensive reasons for needing to learn and a fairer view is probably provided by those who said that learning is integral to the practice of architecture because, for example, "architects are always researching to achieve the requirements of particular projects". Also that if they

don't do this they tend to get "stuck" or "fixated" on particular ideas or techniques. At an ad hoc level they all said that they actively "browsed" and kept up-to-date via the professional press, or that they took the opportunity to enter design competitions. Indeed the latter was singled out as a particularly effective way of "re-charging the creative batteries". In addition, if they had the time, most would be interested in discussion groups or returning to the AA to take part in particular units or seminars.

The broadcasters were also interested in returning to college to share their experiences, and that "experience = learning". It was suggested that short periods of 'CPD' were absolutely essential:

"..because the rate of technological change is such that you are forced to learn new things continuously".

However this activity often took place on-the-job and it was only specific skills, that were often job requirements, which were organized on a formal basis. For instance, it was said that the BBC insisted on news freelancers attending an SAS sponsored course on 'news risk assessment in hostile environments'. Other skills mentioned were battlefield first aid and four-wheel drive driver training. These are obviously quite distinct practical skills which are independent of the technical activity involved. In saying that the prevailing view was that "any learning opportunities should be available but not scheduled".

There are similarities between the architects and the broadcasters in that both report learning as being an on-going process driven in part by the needs of the job. Also that much activity was unscheduled and took place in an entirely informal way. However one of the most encouraging results was that many, if not the majority, would be interested in returning to their respective institutions to take part in the educational process. This is important because it would add a valuable extra dimension to the experience and knowledge available to those pre-employment.

## **Postscript**

After the formal questioning participants were presented with a short questionnaire - see Appendix-2. This was designed to explore whether they subscribed to the notion of the 'learning organisation'. As such participants were presented with ten pairs of statements and asked which statement within each pair appealed to them more. For example, which appeals to you more, choosing what to learn or following a prescribed course ? Participants were asked to be as honest as possible and to give their immediate reaction to each pair. In those

situations where individuals found it impossible to make up their minds they were allowed to opt for a middle (?) response.

**Figure 1** *Characteristics of the Learning Organisation*<sup>1</sup>



The results showed that both architects and broadcasters were drawn to activities such as choosing what to learn, learning as a developmental objective, being free to choose a personal mentor, multi-disciplinary training, personal learning plans with a focus on growth, cooperative or team work, benchmarking, learning as a continuous process and so forth. Of the ten pairs of statements presented the modal response for architects was seven out of ten 'learning organisation' statements endorsed, and for the broadcasters eight out of ten. Both groups also reported that their respective institutions fulfilled at least some of the requirements, maybe with the AA cast more in the learning organisation mould than Ravensbourne. However the two participants who worked for the Disney Corporation, both from Ravensbourne, recognised the learning organisation 'description' as being true of their employer. Perhaps these two had been lucky enough to pass from one potentially creative learning environment to another.

<sup>1</sup> Ref: "Designing organisations" Philip Sadler. Kogan Page 1998.  
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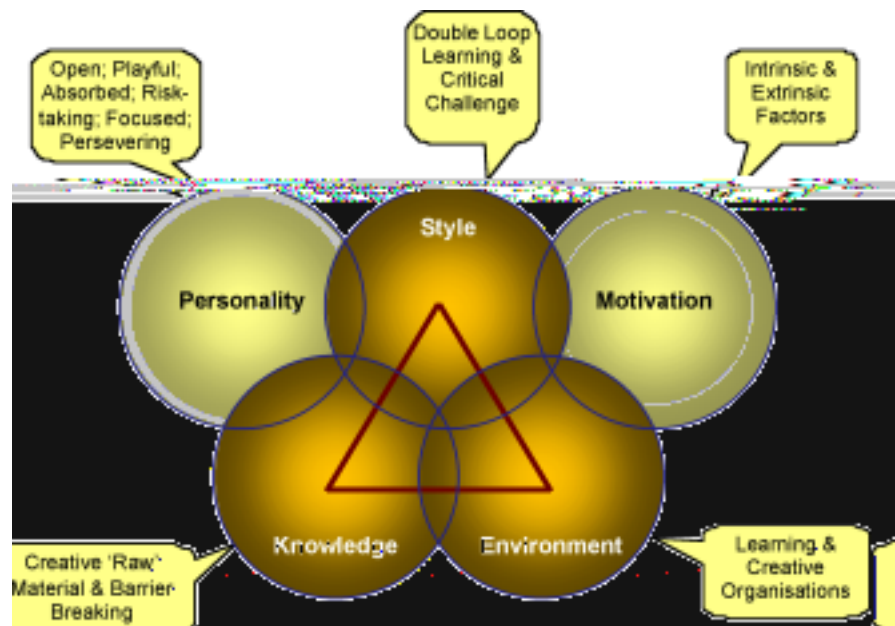
## 6 Discussion

*“One who studies a successfully practicing architect will soon be impressed by his juggler-like ability to combine, reconcile and exercise the diverse skills of businessman, lawyer, artist, engineer and advertising man, to say nothing of author-journalist, psychiatrist, educator and psychologist. In what other profession could one better observe the multifarious expressions of creativity ?”*

D. W. MacKinnon (1962)

At a general level it is possible to identify five inter-related fields of influence. These in some ways mirror the work of psychologists in isolating the important features of creative behaviour; such as motivation (especially an interest in producing something new), adequate resources (the knowledge or skills required to produce the desired outcome), facilitation (in particular the right sort of environment) and the enigmatic qualities of the creative process itself. However it is possible to push these ideas further and to develop, for example, creative resources to include ‘creative style’. Likewise motivation, and possibly aspiration, can be differentiated from the personality attributes often found in creative individuals. This is of interest for more than purely academic reasons as it gives clues to the way in which organisations can both recruit and encourage creative participants.

**Figure 2** *Olympic model*



Accepting the exploratory and qualitative nature of this study the five aspects of creativity that are supported can be identified as personality, style, motivation, knowledge and environment. A visual representation, the ‘Olympic’ model, is provided above.

The position of the five 'rings' is deliberate as it seems that personality, style and motivation are almost entirely the province of the individual, although style and motivation can in some part be influenced by educators and the learning process; whereas many of the sources of knowledge, and certainly the environment, can be directly manipulated by institutions - the 'triangle' represents those facets of the creative process which are most amenable to external influence.

Starting with personality, those interviewed showed virtually the full set of 'creative' personality characteristics (see, for example, MacKinnon's work with famous American architects - [1]). Namely an open and 'playful' attitude to their chosen profession, and a belief that they could make a lasting difference - in psychological terms an 'internal locus of control'. All this generally backed with an independent and sometimes contrary point of view. The latter frequently being linked to a restless and impatient state of mind. An aspect if you like of those who are mentally energetic, but paradoxically not necessarily resulting in an ostentatious or showy person. Indeed many of those interviewed were quiet and measured, only really coming alive when they started to talk about their passion. And perhaps passion is the right word to use, as these were people fully engaged with their subject at an emotional rather than an ego level. However, returning to openness, this has been identified in many studies as the key personality factor for creative individuals [2]. Those who are open to experience are motivated to seek out and recognise what is new, to challenge what they find, and to try different ways of achieving their goals. It is obvious that this way of being is associated with taking risks and that to reach new and challenging goals often requires great perseverance. Interestingly academic intelligence, or analytic reasoning behaviour, is not closely correlated with creativity, i.e.: the smartest people can be profoundly uncreative. What is more important is a flexibility of mind, a quality amply demonstrated by many in the study.

From an organisational point of view selectors would be well advised to look for those who are open to new experiences, are 'immersed' in their subject matter, who are prepared to challenge accepted wisdom and thus willing to take personal risks. The ability to channel or focus personal energy, yet retain flexibility of thought, is also a significant requirement. Additionally all of these factors are probably of greater importance than previous academic attainments, although clearly a minimum level of ability is important as effective learning has to take place, information be accessed and processed, and ideas articulated.

An overlapping field is that of creative style which incorporates two important factors, 'double-loop' learning and critical challenge. Some of the characteristics of double-loop learning have been mentioned previously but basically it concerns perspicacity, or being able to see the right question to answer [3]. This is in

marked contrast to accepting a set of premises and attempting to construct an answer from an obviously fixed starting point, which is itself heavily influenced by the processes of educational socialisation. That is not to say that people should be encouraged to disagree for the sake of disagreeing, rather that they should act as co-researchers. A situation where everyone's point of view is just as valid as everyone else's. This form of problem solving, which can be seen as being cooperative and confrontational in turn, appears to be encouraged both at the AA and Ravensbourne. It should be noted that this is something which is not necessarily promoted in other institutions as it tends to challenge the accepted academic rubric.

In a similar vein critical challenge involves presenting ideas in an open forum. A good example is the 'jury' system used by the AA in which a student or group of students present (and defend) their work to an assembly of fellow students, staff members, visiting architects and other interested parties. This requires a lucidity and agility of thought which operates over and above that which is required for the production of a straight-forward essay or practical project. It is also true to say that such an approach is a useful preparation for any profession which relies on formal presentations. As such parallels can be seen with the 'moot' court system which operates in many law schools.

Style can be facilitated but it does require the correct form of encouragement. Namely a process of learning which allows considerable freedom in defining what it is within a subject which is worthy of examination. One that favours open questions over those which are closed. It also requires a mechanism for the critical appraisal (and development) of ideas, such as the jury approach mentioned. This sort of atmosphere is probably easier to create in small institutions, with relatively flat organisational structures, than in those which are large and hierarchical.

The third part of the model concerns motivation. This is one of the most complex areas and includes both intrinsic and extrinsic factors. Both the architects and the broadcasting professionals did not enter the AA or Ravensbourne on a whim. Indeed extrinsic factors such as the fees, especially with regard to the AA, might be viewed as a positive disincentive. So what were the main motivators? Without any doubt the main intrinsic motivation was the desire to be an architect or to be part of the broadcasting industry - to the almost complete exclusion of any other occupation. Indeed very few when asked could ever think of having seriously considered anything else, and even those who had had other careers reported that they had always felt drawn to either design or communication. The motivation then was deep rooted, not superficial, and merely reinforced by the image of the AA or Ravensbourne. Both establishments benefiting from the view that they were the only places at which to study. For this, of course, they have to thank a

network of graduates, many in powerful positions, who act as unpaid ambassadors. It can also be seen that this source of motivation fuels aspiration and helps to create a particular and exclusive set of values revolving around the concept of the 'chosen few'- we are the best and expect to be the best. Add to this a genuine need to achieve and you have a powerful mixture of personal belief, aspiration and an acceptance (through reputation) that a superior form of training is available.

Reputation breeds reputation and it is not something which can be easily created. However the AA and Ravensbourne benefit from extremely close links with their respective parent 'industries', with the line between education and practice being quite blurred, and perhaps this is something which can be replicated. As such organisations may need to reconsider their role and to embrace the view that their mission is to select and train for employment or self-employment, not just to educate. This requires a strategic view of personal development which places education and employment on the same continuum.

So far the raw material of creativity has been missing from the model, but this is supplied by the 'knowledge' ring. This is knowledge in its broadest sense and includes personal experience and the important contribution of 'barrier breaking'. One of the most useful forms of experience comes from having a split career and it is instructive to note that many of the participants in the study did not automatically move from school to college but had jobs or indeed studied completely different subjects first. In this way many had a maturity which would not be present in the archetypal student. Likewise many highlighted the importance of barrier breaking or being able to view their subject through a different discipline. For example, architects can gain an insight into structure through the work of biologists or sculptors; and form views on the nature of space through discussions with poets or sociologists. Those in the broadcasting business may well be able to learn from the same sorts of people.

Another point which was made by participants was that a multi-cultural student body aided the creation of new ways of thinking. Different and quite profound modes of thought become available because of differing cultural perspectives and values. This perhaps helps to explain why the AA, which has a student body comprised of individuals from an extraordinary range of different countries, engenders such diverse thinking. A similar, though less dramatic effect, can be achieved by deliberately mixing students from divergent disciplines, e.g.: broadcasting students and those studying fashion design.

It is obviously important to provide access to a wide range of information sources, but also to allow a fluidity between disciplines. In creative terms it may

also be valuable to search for those who have split their careers and sampled the world of work and possibly other forms of education. Both an interest in other disciplines and a broader view of the world help the individual to recognise and act on a possibility ('serendipitous' creativity).

Finally the fifth ring concerns the environment. This is the major field of organisational influence, interacting in a cumulative way with both knowledge and style. As with style there are probably two key factors, this time 'theories-in-use' and the 'learning organisation'. Theories-in-use concern the beliefs and assumptions people draw on to make decisions, which in turn are often different from those which they claim they are using - 'espoused' values [3]. It is important in a truly creative environment to cut through espoused values and to expose the theories which govern peoples thinking. This can be done by deconstructing subjects, for example by discussing what it is useful to know about a topic, and by attempting to understand the motives and values of the creators of a particular body of knowledge. Practically this can be achieved through open, free and critical discussions between students, tutors, experts, and indeed anyone who has a point of view to contribute. One can argue that the unit approach operated by the AA is an attempt to work on, and understand, espoused value systems. Any true form of team can also be the vehicle through which this form of exploration can take place

The ideas described form part of what is understood to be important in a learning organisation [4]. However the use of the word 'organisation' is something of a misnomer, as it implies some form of structure, whereas it is actually more of a concept. It encompasses many of the attributes described elsewhere, but critically:

- Giving and receiving feedback is standard practice, irrespective of position
- Individuals work on creating their own learning programme
- The way in which things are done is constantly questioned
- Errors are managed and learning takes place from 'mistakes'
- Learning opportunities are more important than status
- Spontaneous networking of learners is encouraged
- Individuals test themselves against best practice, where-ever that may be found
- Learning is a continuous process, not sporadic or time-bound

This framework needs to be supported by an organisation which gives people the psychological freedom to experiment. Also the tools and resources, including a diversity of other talented people, with which to interact. But most importantly one in which the mindset, especially of those who facilitate the educational

process, is low on formality and high on example. The latter implies that 'tutors', 'lecturers', or anyone filling such a role, must be seen to be learning themselves and be actively engaged with the learning of others.

Creative learning environments depend on organisations questioning the content and structure of courses. They work by allowing individuals to uncover the meaning of the subject matter in collaborative groups, and by supporting the tenets of the learning organisation. This requires that everyone is open to learning and creation and that role of institutions is to capitalise on its mass effect. This will not automatically make everyone creative but it will encourage and develop those which have the potential to be so.

## 7 Conclusions

The background thesis to this study is that there are potentially effective measures that can be taken to enhance the performance of HE institutions in the development of innovative and creative people. To explore what these measures might be, two, high performing institutions in contrasting design disciplines were selected and a cohort of recent graduates from each, all with an established record of success, were interviewed in depth to see what common features (if any) characterised their background, motivation, selection, higher education and work experience.

As a starting point, an expert group of leading senior practitioners from each discipline was formed to help define the criteria for recognising innovation and creativity in practice; it was important aspect of the study to differentiate between graduates who are simply very clever and those capable of putting their innovative and creative ideas into practice.

Arising from the interviews and allied research by Dr Mark Parkinson, a general hypothesis the “Olympic Model” was derived to illustrate the key features and interactions evidently influencing the development of innovative and creative behaviour.

The central question arising from the results of this study is whether anything has been learned that may have relevance to the generality of design education in the UK and how it is managed.

The study has focused on a relatively small cohort of 20+ high performing graduates from two institutions that are acknowledged leaders in their respective fields of communications and architecture.

The study did establish that there were many factors in common in the background and motivation of the graduates and in the characteristics and teaching style of Ravensbourne College and the AA.

It was also evident that a number of factors relating both to the institutions and the interviewees which appear not to be significant.

Interviewees were from diverse cultures and of both sexes, not identifiably of any significance, but most came from technical and professional backgrounds which did appear important as a frame for ambition and as a model (or a precedent) to be followed.

The institutions are very different in their history and institutional status - Ravensbourne lies four square within the state further and higher education system and the AA is a private institution; the former is essentially a post-war foundation, the AA, an old, anachronistic, but very British institution. Both have achieved an equivalent 'elite' status in their respective fields in spite of these very significant differences. However, size may be important. Both colleges are small by contemporary standards, and this may be an important factor in enabling them to create an intimate, collegiate atmosphere in which everyone is 'known' and where both staff and students feel part of a large, extended family, sharing a number of common values and goals.

Size may also be a virtue in helping both institutions project a distinctive 'corporate' image where the 'brand' is directly associated with their product (communications / architecture) rather than with the generality of higher education. This may not be a coincidence: in secondary education, most of the top performing schools are of a similar size. There may be an important balance between achieving a desirable diversity in the curriculum; gaining the significant economies of scale that higher student numbers make possible; and retaining the sense of shared identity and community.

It may also be that smaller institutions can be more responsive to the demands of the market place as they are less likely to be constrained by internal procedures and bureaucracy or have continually to be fighting for resources from the internal market within the institution.

Both institutions are also reasonably well resourced to provide the technical backup that students require. This is probably a more significant advantage for Ravensbourne than for the AA but the extent to which this gives either institution any major advantage over competitor institutions is not proven. However, it is evidently people not tools that are believed to make the difference. Access to people (the movers and shakers) appears to be a much more significant asset - and both score very highly in this. Access to an alumni is probably part of the answer - but success also attracts the successful.

### **Issues in student selection**

A significantly high proportion of those interviewed admitted to being very focused in their choice of career and choice of institution. A choice that had frequently been informed by the strong recommendation of a professional parent or friend or someone 'in the business'. Neither the formal channels of careers advice nor serendipity appeared to play much of a part.

This perhaps reveals the importance to both institutions of a robust alumni who have remained in touch with the colleges and act as informal ambassadors and advisors from their base in the industry. They may also however act as filters - only steering those towards the courses who they think have the right attributes and will cope well.

Neither institution is free to accept students without prescribed minimum academic requirements for entry. However, neither institution uses GCSE and 'A' Level grades as the primary filter to sift those selected for interview. Evidence from internal research some years ago at the AA in fact suggests that students with the maximum 'A' level points do not generally fare very well within the course, nor in subsequent career progress. Conversely, students with significant pre-entry work experience and those with pre-entry exposure to other disciplines were found consistently to perform at a higher level than those entering directly from secondary education.

Both institutions give emphasis in initial selection to breadth of perspective, education and experience, rather than to grades of performance in specific subjects (It has been noted previously that many of those selected for interview for this research project in fact had split careers). But, neither college relies exclusively on written applications for the selection decision and both put a great deal of emphasis on performance at interview

On the surface, the interview process appears not to be a particularly stage-managed event, nor to be rigorously orchestrated by a recruitment professional. It is generally perceived as a relatively informal and unstructured process. However, the processes used are far from ad hoc and are clearly designed to recruit those most likely to succeed. The methodology used by both institutions to draw these issues out has been described as more of a 'critical dialogue' than an interview.

It is very clear that both institutions use the selection interview process overtly to explore four key areas:

- commitment to, curiosity, enthusiasm and passion for the discipline
- the quality of 'ideas' (and skills in expressing them)
- how both of these are reflected through their experience and 'portfolio' of examples of work.
- their 'soft' skills - relating to people, negotiating, team working

Covertly, those on the selection panel will also be making judgements about a range of necessary academic, personal and technical skills - but these are rarely the subject of the dialogue.

The majority of course tutors get drawn into the interview process, but both colleges use current students and also administrative staff in selection interviews as well as academic staff. Such broad participation in recruitment ensures that prospective students are judged from a variety of perspectives, not just their potential academic performance. It is also another manifestation of the 'extended family' taking a stake in who becomes a new member and who doesn't. If this process is not the same as the negotiation of the marriage contract, it has some distinct similarities: from the outset it sets a 'transactional' basis to the student's progress within the institution; from the outset, there are expectations and responsibilities on both sides - driven on the one hand by the student's passion for the subject and personal commitment to learning and on the other, by the institution's desire to maintain their reputation as the best in their field.

What can be inferred from the selection process is that both institutions see their role as the managers of a learning environment rather than the providers of a teaching service (In reality, they may not actually be very good at the latter). Given this perception of their role, they quite naturally are attracted by the focused individual who places many demands on the system, but also gives a lot back.

### **Issues of significance in the curriculum**

While courses in communications and in architecture follow very different pathways, both the AA and Ravensbourne use 'work group learning' as the core strategy, placing the tutor as resource and learning facilitator rather than instructor and giving emphasis to work group collaboration rather than individual competition. Work Groups tend to be 'project' focused with most connected to real world scenarios. Work groups in both institutions also have a strong influence both on the design of the project activity and also on the appraisal of the outcomes.

Interaction between work groups and the wider college and professional community are also strong. Exposing ideas to wider criticism on a regular basis serves on the one hand to enrich the debate, but also has the advantage of developing a wide range of practical communication and presentational skills essential to later work roles. With competence in these comes confidence.

Playing with ideas and making things is also an essential feature of both institutions. Students are encouraged to take personal risks and test ideas until they break. There are no 'safe' intellectual pathways through either college and many interviewed during the research said that they experienced difficult times

during their course. Pressure, however, is as likely to come from peers as from tutors and as there is “no roof on expectations” it can be a relentless experience.

What emerges from this aspect of the study is that, by involving students in setting the agenda for learning and in making critical judgements about the outcomes, students assume a large part of the responsibility for their own success - and through team activities, for the success of their peers. The role of tutors is often therefore one of collaborating, steering and supporting rather than directing and judging. By involving those outside the college, both in defining the context for problem solving and in contributing to the critique of the solution - this avoids it becoming an incestuous process.

On-going lecture and seminar series, not necessarily directly linked with project activities, are woven into the course programmes and deal thematically with aspects of theory, technology and practice. In the breadth of subject matter covered and in the selection of speakers both colleges programmes set out as much to inspire as to instruct. However, in electing to mount lecture programmes that go well beyond the utilitarian, it does mean that some of the more mundane (yet nevertheless important) areas of knowledge and skill get little exposure.

The extent to which gaps in subject “teaching” actually matters is an ongoing debate, certainly at the AA. That students have sufficient common sense to know what they don’t know is expected, that they also take the trouble to fill the gaps through personal study or through lobbying for more formal tuition is also expected. Viewed from the position of those with formal responsibility for assessing educational provision, this could be regarded as a very casual and laissez faire attitude by the institution. Viewed from the position of those that believe they are managing a learning rather than a teaching environment, the opinion may well be otherwise. The real concern would arise if legitimate student demands - when they arise - were not being adequately facilitated. i.e. if there was serious challenge to the equity of the learning contract. How ‘equity’ is maintained is an interesting issue, probably worthy of further exploration. It would be wrong to say that the balance is maintained in the institutions studied entirely through a climate of mutual respect and trust. Both have a tradition of adversarial debate on matters affecting the curriculum, but in the context of healthy respect, underlying trust and mutual interdependence rather than of any class divide.

Neither college sets out overtly to develop innovation and creativity. The concern is with the pragmatics of architecture and broadcasting respectively and not necessarily with the pursuit of creativity. What both institutions recognise however, is that academic intelligence, or analytic reasoning behaviour, is not closely correlated with creativity, i.e.: the smartest people can be profoundly uncreative. What is more important is a flexibility of mind, a quality amply

demonstrated by many in the study. Creativity also manifests itself in different ways in both disciplines. In broadcasting, it is an adaptive behaviour, rewiring the system to produce a result not achieved before – *‘to take an idea and make it better’*. In architecture, it is an innovative process - about *‘taking the givens and the practical concerns and making something wonderful out of them’*.

It is evident from their selection processes that both colleges see the essential raw material as those individuals who are open to new experiences, are ‘immersed’ in their subject matter, who are prepared to challenge accepted wisdom and thus willing to take personal risks. The ability to channel or focus personal energy, yet retain flexibility of thought, is also a significant requirement.

As has been noted earlier, it is important in a truly creative environment to cut through espoused values and to expose the theories which govern people’s thinking. This can be done by deconstructing subjects, for example by discussing what it is useful to know about a topic, and by attempting to understand the motives and values of the creators of a particular body of knowledge

### **The relevance of work experience**

Both the AA and Ravensbourne embed periods of work experience during the course of studies. This has the practical benefit of placing their college work in context, but it is about much more than this: It is about learning how the world works, about “local politics” and how to get things done. It is often only when students are placed in a new and unfamiliar environment that they change their frame of reference. It is this ‘unsticking’ or ‘unfreezing’ which work placements help to facilitate and which makes a structural contribution to students’ learning development. It is also, practically about students learning and practicing skills, essential to work, but not exhaustively covered within the course.

In both institutions, the line between education and practice is quite blurred. Formal breaks for work experience; work experience interspersed with study to cope with financial pressures; ad hoc involvement with tutors on national and international competitions and presentations are all part of the typical student’s progress through both courses. Most tutors are also practitioners and bring into their courses ideas and challenges that are very much lodged in real time and with real clients. Most tutors also are good learners, the payback from part time teaching is not generous financially – but is rewarding as context for testing new ideas and for continuing professional development.

The early and continuing exposure of students to the industries in which they seek careers is regarded by both institutions as a positive force in learning

development and HE institutions may need to reconsider their role and to embrace the view that their mission is to select and train for employment or self-employment, not just to educate. This requires a strategic view of personal and learning development which places education and employment on the same continuum.

The extent to which work experience is a managed and systematic process within the two institutions varies. In common, both share the expectation that all students will interact with the world of employment as a natural and continuing part of their learning development. Both facilitate a variety of links with employers, but do not provide an orchestrated service. The college opens up the opportunities, but essentially the student makes the running.

If there is a caveat to this observation it is in the breadth of experiential opportunities that can be offered. Both the AA and Ravensbourne are multi-cultural and international in outlook and, through their alumni, have created a diverse range of opportunities for undergraduates to exploit. Whether creating equivalent diversity is a realistic prospect for other HE institutions is an open question. As a general observation, interviewees were unanimous in the belief that a multi-cultural student body aids the creation of new ways of thinking. Different and quite profound modes of thought become available because of differing cultural perspectives and values.

### **The 'Learning' Vs the 'Teaching' Organisation**

Potentially creative students will respond to and grow if they are supported by an organisation which gives people the psychological freedom to experiment. Also if they have access to the tools and resources, including a diversity of other talented people, with which to interact. But most importantly one in which the mindset, especially of those who facilitate the educational process, is low on formality and high on example. The latter implies that 'tutors', 'lecturers', or anyone filling such a role, must be seen to be learning themselves and be actively engaged with the learning of others.

Both Ravensbourne College and the AA recognise that they are primarily 'learning' rather than 'teaching' organisations. Both have devised systems and the procedures that are effective in maintaining this status. While both colleges, in recent years, have had the benefit of very influential individuals who have helped shape and form the institutions as they are now, their curriculum strategies have largely evolved over time – and are still evolving. How they now operate is not consciously the result of a pre-planned process. This does not mean that good practice was arrived at through happy coincidence, nor that, within the corporate consciousness of the institutions, there is no understanding

about why their strategies for learning are effective. Understanding, within the institutions, of what processes are in play lies largely below the surface and is not masqueraded as a 'systematic and planned approach'. One consequence of this is that neither institution feels hidebound by the need to conform to a particular curriculum 'model', nor are they constrained by explicit 'criteria' for determining all their day to day decisions. However, it could be argued that if a substantial number of key players within the institutions are largely unaware of the reasons for their success, there is a danger that they could, inadvertently, drag the systems off course.

### **Some general issues for further exploration**

The applicability of the AA and the Ravensbourne model to institutions which do not focus on specific vocational outcomes; where the subject of the course is the vehicle for intellectual development rather than the purpose of the endeavour, is a challenging question. Clearly there are factors which may be of common significance and value, such as institutional size, the use work group learning strategies and other teaching/learning devices. However, in a context where students lack a specific focus and commitment: on what basis is a learning contract founded? In what ways can experiential learning be integrated as a meaningful part of the curriculum? On what basis, other than pure academic attainment, are students to be recruited? Again, these are issues for further exploration.

Specifically, there are a number of questions which are worthy of further exploration e.g:

#### ***Selection***

- What are the lessons to be learned from the criteria that the AA and Ravensbourne use for student selection ?
- How important to the selection process is the 'critical dialogue' ?
- What beneficial influence to the selection process is the involvement of student peers and administrative staff as well as academics?

#### ***Education***

- How is it possible to change the mindset of an institution from being a 'teaching' to being a 'learning' organisation?
- Is creativity 'an attitude of mind'? If so, what strategies are most effective in fostering such 'an attitude of mind'?
- Should we actively exploit the value of 'cultural diversity' or seek to contain it by imposing a conformity of approach?

- Is 'work group' learning a viable strategy within the constraints of mainstream higher education?
- What is the actual nature of the 'learning contract'? Is it generally possible to create a culture in which students take a much greater responsibility for their own success and where the relationship with the institution is more openly 'transactional'?

### ***Experience***

- What should be the attitude of institutions to work experience in the curriculum? Should it be seen as a natural and continuing part of a students' learning development or simply a desirable 'bolt-on' to their academic studies?
- What is the preferred relationship between colleges and the industry they purport to 'serve'? Should there be a much more substantial blurring of boundaries between academe and the workplace?
- How can employers actively be 'engaged' in the learning contract? How can their commitment be secured in the context of the competitive environment in which they operate?



## 8 Recommendations

The next stage of this project must be informed by what is feasible, realistic and relevant to the directions in which those involved and in charge wish to take design education. What do we want to change and what can we change in the context of our educational institutions?

The recommendations are therefore divided between those that relate to wider dissemination and those that relate to possible areas of further research and development.

### **Dissemination.**

There are specific issues that are worthy of further exploration within the participating institutions. Both Ravensbourne and the AA will wish to reflect on the findings and may wish to criticise and qualify the analysis which has been carried out within their institutions and with their graduates. If the institutions are to be widely promoted as examples of good practice, then they must have an early opportunity to respond.

### **Recommendation 1**

*To provide opportunities for staff and students at Ravensbourne and the AA to respond to the research report, findings and conclusions.*

In terms of this particular study, we only have evidence about the way in which successful, small, design / communications orientated institutions work. Irrespective of any wider applicability, the findings will certainly be of interest to other institutions in these specific disciplines.

### **Recommendation 2**

*To publish the findings and make them widely available to other UK institutions involved in architecture and communications as the basis for initiating a critical debate within the respective professional and educational networks.*

The remit of the Design Council in this project has been, from the outset, to hold a watching brief. Their remit is broad, they have strong links with industry and their concerns about design education in the UK are well known. In similar context, there are a number of National Training Organisations which embrace design occupations within their remit. While Skillset is prominent among these, there are several others including METO and EMTA who also have a direct interest. Further exploration of the issues raised in this report demands their involvement. It is

therefore appropriate to set up a forum of these organisations to discuss the findings and the recommendations with DfEE.

### **Recommendation 3**

*To convene a discussion, hosted by DfEE, and involving DTI, the Design Council and interested NTOs to review the findings and recommendations in this study and to advise on wider dissemination.*

The extent to which wider dissemination is carried out will depend on the outcome of Recommendation 3 above. It was originally envisaged that, as a possible second phase of the project, a national seminar be held for those involved at senior level in design education. It is the project teams' view that this would be inappropriate without establishing through DTI, DfEE, the Design Council and the relevant NTOs what directions future development work should take.

### **Further Development**

The narrow scope of the study might suggest that the findings, holistically, may only have real relevance to institutions of similar type and size and with a 'brand image' attractive to high-flying, highly motivated students.

If this is all the study has revealed, then we still have a valid model that may be relevant to other 'elite' organisations, perhaps in a wider range of disciplines, but not a 'general model' which could dramatically improve the generality of design education in the UK.

We should not be disappointed by this. The creation in the 1960's of the Manchester and London Business Schools are examples and a precedent of how successful models of 'elite' higher education have been captured (from the USA) and adapted to meet the needs of the British economy. Unquestionably they have both had direct success - and the trickle down effect has also brought major benefits to business education in the UK generally.

If the model is more widely applicable, does it throw light on the defining features of work-based creativity as well? This is important because it is difficult to compare 'like with like' in the absence of a common framework. It is also something which has bugged research in similar areas, e.g.; work with entrepreneurs – what, for example, is an innovative business / business idea ? Is there a valid connection between developing innovation and creativity and developing entrepreneurship?

## **Recommendation 4**

*The opportunities for developing equivalent, specialised institutions in other strategically important disciplines in which innovation and creativity are key components should be explored.*

*Examples of areas where this might be explored are:*

- *Engineering design*
- *Electronics and Information technology*
- *Business services and systems design*

We believe the study has revealed much more, though any further studies should of course be on larger samples (and it would be useful to include a control group).

Elementally, a great deal has been learned that may have relevance to the wider field of design education. For example, the 'learning organisation' model may be more widely applicable. Could there, for example, be a case for giving special recognition to HE institutions that meet the central criteria ? It is also entirely relevant to the Quality Assurance Authority (QAA) and their criteria for judging excellence in further and higher education.

## **Recommendation 5**

*To develop and test criteria for identifying learning organisations as a basis for promoting good practice and establishing a 'benchmarking' system.*

There is also much to be learned from the AA and Ravensbourne about how the interface between study and employment is managed and how practitioner / tutors form the core of their teaching force. This is particularly relevant to current DfEE thinking on the development of Learning Partnerships. It is also an issue which HEFCE should explore in the context of staff contracts.

## **Recommendation 6**

*To review the employment issues involved in developing and promoting greater mobility between practitioner and teaching roles for those in Higher Education*

## **Next Steps**

It was also envisaged that one outcome of the project would be a series of case studies of individuals who were the subject of the study. Material for individual case studies has been gathered as part of the research exercise but has not incorporated in the report. Depending on what strategies are selected for dissemination of the findings, the material may be useful but, in our view, adds nothing at this stage.

This will initially include:

- Setting up discussions within the two institutions and also within the wider academic communities covered by the study
- Producing a programme of action – if sufficient interest is expressed
- tracking process to evaluate the changes that are introduced.
- Setting up broader discussions as indicated in Recommendation 3 above.

# Appendix 1 Interview Schedule

Name:
Date:
Institution: AA Ravensbourne

## A: Pathway to HE

### Motivation

- 1. Why did you choose architecture/media discipline ?  
1:.....  
2:.....  
3:.....
  
- 2. What other occupations did you consider ?  
1:.....  
2:.....  
3:.....

### Recruitment

- 3. How did you become aware of AA/Ravensbourne ?  
Promo. literature    Reference books    Careers adviser  
Friends/contacts  
Family  
Other:
  
- 4. Why were you attracted to AA/Ravensbourne ?  
Reputation    Location    Teaching style    Curriculum    Facilities  
Industry/professional links  
Other:

### Selection

- 5. What were the entrance requirements ?  
Examinations    Portfolio    Experience  
Other:
  
- 6. What were the selectors looking for ?  
Cognitive/intellectual    Creative/conceptual    Practical/applied  
Motivation/drive  
Interpersonal/team    Aesthetic/artistic    Personality/confidence  
Other:

## B: Pathway through HE

### Institution/Curriculum

- 7.0 How would you describe what you learnt at the AA/Ravensbourne ?  
Values/attitudes Approaches/procedures Information/knowledge  
New ideas/'theories in use'  
Other:
- 7.1 Which were most important for your personal development ?
- 7.2 Do you think there was anything missing from the course ?
- 8.0 How did the learning take place ?  
From teachers/lecturers  
From books/literature/video/film  
From doing/experience/practice  
From each other/mentoring/coaching/role modeling  
With each other/teams/discussions/dialogues  
From outside/experts/consultants/gurus  
Other:
- 8.1 Would you say you were expected to challenge problems and solutions ?  
Single loop Double loop
- 8.2 How would you describe the organizational structure of the AA/Ravensbourne  
Formal - hierarchical Student focus - inclusive  
Matrix - learning groups  
Unstructured - individualistic
9. How would you describe your route through HE ?  
Linear: school/college - HE - job/employment  
Split: school/college/HE - job/employment/other - HE - job/employment  
Other:

### C: Work experience/placement

10. Describe any significant periods of work experience during HE.
11. What did you learn/develop ?  
Self-reliance/confidence Practical skills Administrative skills  
Selling skills Market intelligence Creative skills Other:

12. How much importance would you attach to work experience ?  
Essential Useful Irrelevant

**D: Post HE work experience**

13. What sort of factors allowed you to settle in to the world of work ?  
Induction procedure (employed)  
Previous work experience  
Curricula preparation  
Technical base  
Personal factors/outlook  
Physical location/accessibility  
.....Other:
14. What were the main reasons for starting your own business/partnership ? (if applicable)  
Independence  
Self-achievement  
Family tradition  
Job satisfaction/fun  
Financial benefit  
Needed a job  
Freedom to be creative  
.....Other:
15. What assets do you bring to your business/employer ?  
Creative/innovative talent  
Technical know-how  
Personal reputation  
Flexibility  
Market know-how  
Financial benefit  
Business contacts  
Energy/ambition  
.....Other:
16. What do you seek from your business/employer ?  
Personal development/training/experience  
Chance to create/experiment  
Opportunity to achieve/make impression  
Prestige/status  
Challenge  
Money  
.....Other:

## **E: Continuing development**

17. What are your feelings about CPD/further professional development ?
18. What factors important in your continuing development ?
19. How much CPD do you think is desirable ? (in the average year)  
Isolated days (2/3)    Designated week/s (5/10)    Monthly (10/12)
20. What form should it take ?  
Academic conferences/seminars  
Personal 'study'/interests  
Graduate/discussion groups  
Other:

## Appendix 2 Learning Organisation

### Questionnaire

Which appeals to you more?

1	Choosing what to learn	<< ? >>	Following a prescribed course
2	Learning used to 'fix'/solve	<< ? >>	Learning used to develop
3	Choosing your own mentor	<< ? >>	Having an 'in-house' mentor
4	Technical training	<< ? >>	Cross-training
5	A personal learning plan	<< ? >>	Ad hoc learning
6	Focus on problems	<< ? >>	Focus on growth
7	Cooperative/team work	<< ? >>	Individual work
8	Competing within an organisation	<< ? >>	Competing with external excellence
9	Quality driven work	<< ? >>	Price driven work
10	Learning when required	<< ? >>	Learning all the time



## Appendix 3 Architectural Association School of Architecture

The Architectural Association (AA) was founded more than 150 years ago by apprentices and practitioners to improve the quality of their education and share ideas about design and practice. It was founded as and remains a learned society; the setting up of a formal school of Architecture came much later in the 19th Century - the first in the UK. As a learned society, its formation pre-dates what is now the RIBA. It has been located in Bedford Square in Central London for some 75 years.

The involvement of students in the governance of the institution remains a very powerful force in the direction of the school. Students may be elected to the Council of the Association and also the 'School Community' – the latter comprising both students and academic staff – which retains formal authority for the appointment of the Head of the School (The Chairman).

In 1960, as part of the reforms in Architectural Education in the UK, it was incorporated into the national network of 'Recognised' Schools of Architecture but retained its independent, privately funded status. Attempts, in the late 1950's and 1960's to bring the school into the state system of higher education with Brixton School of Building and Imperial College respectively were unsuccessful - the latter because of the reluctance of the Privy Council to accept student participation in the running of the institution and concern by AUT that AA staff would not accept tenure.

For most of this century the school has had strong international links - historically with the 'Old Commonwealth' but in post war years this has gradually extended and the school is now a truly international institution with students from more than 50 countries making up 75% of the population.

It has always been a small institution by HE standards with an undergraduate population of around 500 spread across 5 years (3 years to RIBA Part 1 Level and a further 2 years to RIBA Part 2 /AA Diploma Level). There is also a small Graduate population of around 60 in specialist areas including Garden Conservation. Those going on to Practice Architecture require a further two years (usually 3) of work experience. The first year of which is usually taken after the 3rd year of study. At the end of this there is a Part 3 Examination for professional entry covering practice and management issues.

The AA accounts for less than 5% of graduate Architects in the UK. However research carried out in the 1970's indicated that AA graduates occupy a very

much higher proportion of senior posts within the profession - both in public and private practice.

## **Student Selection**

Student recruitment is international and the AA markets itself through a variety of the normal channels. However, a high proportion of applicants learn about the school by reputation, word of mouth and recommendation.

The age profile of the students tends to be at least a couple of years older than the norm for the UK. This is not a deliberate part of its recruitment policy, though does bring the advantage of a slightly more mature student population.

Entry can be into any year and the school accepts students transferring in from other schools of architecture and other disciplines - though will sometimes insist on them re-sitting the previous year. It is particularly common at the AA for students to enter at the end of the 3rd year - particularly from provincial schools.

Students must meet minimum academic requirements for entry to architectural education, which are laid down by the RIBA. In sifting entrants to 1st Year, GCSE and A Level Grades are reviewed, but, beyond the minimum requirement, are rarely a dominant consideration in selection for interview.

Selection interviews are the dominant feature of recruitment. This is carried out by panels and interviews go on throughout the year, but the period from March to June is the busiest.

Each panel consists of either the Registrar or someone from that office, two tutors and a student from the part of the school being applied for. There is no set agenda for the interview, tutors learning by experience.

The interview proceeds around a portfolio and an open discussion. Places are offered on the basis of the panel's recommendation - there is no formal 'weighting' or 'scoring' system applied. The process is generally very informal. Nonetheless the process seems to work. It is very rare for students to be offered a place solely on the basis of academic attainment i.e. without attending in person.

As an independent school, fees are high for UK students, though many do qualify for some support towards tuition from Local Education Authorities. For overseas students, tuition costs are broadly on a par with other equivalent teaching institutions in the UK.

## Course and Curriculum

The Undergraduate programme is broken into 3 blocks:

***The First year*** - where students are taken through a basic exploration of design and architectural issues.

***The Intermediate School*** (years 2+3) - where students work in Unit Groups of around 16 Students and are involved in a range of project based studies on architecture and urbanism, often staying with the same tutor for the whole period.

***The Diploma School*** (years 4+5) - again, in Unit Groups and focused on project work, culminating in a final major project.

In parallel with project work, students both at Intermediate and Diploma level undertake a range of assignments relating to technical studies, communications and architectural history which are linked to elective lecture series. The assignments are marked and are mandatory, though the research topics are negotiated between the students and the tutors who manage the specialist course programmes.

The overall direction of the school is the responsibility of the Chairman, and his means of inflecting this (note not 'control') is by the choices he makes in appointing Unit Masters. Once running successfully, Units tend to have a momentum of their own, attracting students from within and from outside the school. Unit Masters write and teach their own programme, and this must achieve certain objectives.

Unit Masters and all other academic staff are contracted on an annual basis and none are full time. Most have a continuing involvement in architectural practice, though some specialist tutors hold academic appointments in other institutions. Maintaining a regular flow of staff between practice and teaching has long been regarded as a key benefit to the institution, not only to keep the School in touch with contemporary issues in architecture, but also as a continuing source of fresh ideas and critical challenge.

Diploma Unit Masters, in particular are under pressure to develop and publish work and to maintain a 'laboratory' atmosphere of rigorous experiment.

The success of the Unit based system lies in the challenges laid down by tutors in setting out the project agenda, co-operation between students and their tutors in the exploration of ideas and robust criticism by peers and tutors (in equal measure) of the solutions presented.

At end of each year, portfolios are reviewed by a panel of Unit masters. Critical acceptance by other Unit Masters means that students who are successful in their own Unit terms pass to the next year or pass their final Diploma with a minimum of argument.

At Intermediate and Diploma (Final) level, external examiners review a sample of pre-graded portfolios from each Unit to negotiate and agree the benchmark for RIBA 1 or 2 exemption. As with all recognised Schools of Architecture, the AA is subject to a quinquennial review by a Joint visiting Board from the RIBA and the ARB (Architects Registration Board)

While Unit Masters focus on design development issues, projects are designed to help students develop a wide range of skills and knowledge relating both to the process and the practice of building. But these are never a universal set, and may range from construction detailing, to planning and urban design to actual fabrication of structures and components.

### **Liaison with Practice**

Nearly all Tutors and Unit Masters in the school are in practice themselves, the majority as partners or in their own practice. Some unit programs make more specific links to current practices, and these typically will be in diverse countries. This year, for example, there are links with Brazil, Manhattan, Spain and London in relation to planning and construction.

While there is no orchestrated programme for linking undergraduate students to architectural practices, the interweaving of practice experience with study is the norm rather than the exception. With an alumni of 3-4,000, of whom half remain members of the Association, AA students are well placed to make contacts throughout the world.

### **Student Placement**

There is an informal but generally highly effective network that each Unit Master builds over the years, usually on the basis of successful former students performing well. The Registrar's office, the School's Professional Training Advisor and the Chairman play a similar role.

Students on 'Year Out', between 3rd and 4th year and graduates preparing for their Part 3 RIBA Professional Examination are monitored by the School's Professional Training Advisor and advised on all aspects of their practical training and professional development.

## **Appendix 4 Ravensbourne College**

Ravensbourne College is, by any standard in the UK HE sector, a very small college with full time academic programmes located in specialist areas of design and Communication. Visual Communication Design, Interaction Design, Moving Image Design, Fashion Design, Furniture and Product Design (BA Programmes) and Professional Broadcasting (BA), Professional Broadcasting (HND with operations, engineering and production streams), Broadcast Engineering (B Eng) and Corporate Communications (BSc). There are new courses at HND and post-graduate level, but these are outside the remit of this project

The College is less than ten miles from the heart of London in buildings which are purpose designed for the study of Art and Design. Spaces are flexible and amenable to changing course and curriculum needs

There has been sustained investment in maintaining the teaching and learning environment to the highest standards. The broadcasting course, from which interviewees were selected, is situated in spaces designed to simulate a professional broadcasting centre.

The current student population numbers around 800 of whom approximately 220 are studying broadcasting across the range of programmes.

### **Student Selection**

Students are recruited to specific broadcasting courses within the range of programmes. Currently, there are negligible opportunities for cross-over after the commencement of a particular programme. However, all students on all HND and BA/BSc courses take a shared induction programme and, in the first twenty four weeks, are required to complete a common-core of learning objectives. A particular purpose of this architecture is to enable students, whatever their later specialisation, to possess an over-view of the range and diversity of knowledge skill and talent appropriate to the professional world of broadcasting and communication. Much stress is laid on team work.

The majority of applicants for the broadcasting programmes research, through contact with industry, the perceived quality and possible employment outcomes of the courses. A great deal of information is imparted by word of mouth. Reputation built over time and at a cost is ever susceptible to a diversity of employers' views.

Individual courses leaders recruit to individual programmes. Current students participate in the process on the interview day. Course leaders look for highly motivated individuals who can communicate evidence of passion for the communication world, real understanding of the world of work, openness to learning, self discipline and interactive skill who will challenge and be enhanced through team work. For those reasons, applicants, whatever their age, will be required to demonstrate maturity of reasoning in a formal interview process which is focused to a diagnostic purpose. More stress is laid on the ability to analyse and to evaluate work; much less on the size of a portfolio of work brought by an applicant. An applicant's record of academic achievement to date will be evaluated in terms of what it may suggest about the core transferable skills and attitudes cited above.

The courses cannot guarantee to interview every candidate who returns a completed application form. Candidates who are unsuccessful on a first application may be advised as to how they could enhance their application for a later date. The course are perceived to be "Pre-selecting for industry" and for that reason no applicant is recruited solely on the basis of a completed application form and without interview.

### **Course/curriculum design and management**

The College has restructured (1996-1997) from five to two schools: Design and Communication (which encompassed Foundation Courses as well as those in Broadcasting). Subsequently (1997-1998) the two schools have merged under the management of a role new to the College, Academic Dean (Professor Mike Baxter).

Responsibility for Quality Assurance rests with the College's Academic Board which also provides a forum for annual course monitoring (of individual Course Teams) within the compass of the College's Academic Strategy Plan and Mission developed by the Management Committee chaired by the Director (Professor Robin Baker). That provides the context for the evaluation of current course programmes and the development and marketing of new course proposals. All course proposals are subject to an internal evaluation (College) and an external accreditation (College/Sussex University). Both development stages involve external specialists who may come from industry or education. The aims, objectives, resources, delivery and assessment processes are periodically reviewed in what is, typically, a five year cycle of validation.

Within the context of the College management structure and academic strategy, there has been substantial research and investment in the development both of new courses and of cross course initiatives to enhance the value to the student,

and to the employer, of the learning experience and the continuing appropriateness of the courses and their qualification and employment outcomes to the evolving worlds of the Broadcasting and Design industry. New or revalidated undergraduate programmes have developed in: Professional Broadcasting, Broadcast Communication, Broadcast Engineering, Interaction Design. Post graduate programmes have commenced. In 1999, there will be a new National Diploma programme in Broadcasting and in 2000 the revalidation of the HND course in the same subject area.

Individual course programmes ( and associated proposals) are managed by Course Teams who take advice from a very broad constituency of industry including current employers, former students in employment, the College's Industry Advisory Board, industry bodies (e.g. Skillset, PACT, the ITS and the TIC). day to day management responsibility is delegated to Course Leaders and to regular meetings of Course Staff and Boards of Studies (including elected student representatives).

## **Liaison with the industry**

The term 'industry' encompasses a wide range of business activities in the professional world of communication, including broadcasting (terrestrial, satellite, cable), format and programming development, the facilities and post production companies, financial services, system support, product development and marketing Ravensbourne has, since 1966, offered course programmes in production techniques and technical operations (1966-1976). The College determined that, in contrast to what was then available in the UK HE, it would provide courses that were vocationally focused and industrially accurate. To enable the appropriate learning environment and allied resourcing, Ravensbourne sought to design a curriculum, educationally rigorous, and meaningful to the then range of employers.

Those decisions taken more than three decades ago provided a foundation for real interaction between education and industry. The formal mechanism for that was an Industry Liaison Committee which has recently been replaced by a Broadcast Advisory Board. The communications world has metamorphosed many times, in that period of thirty years but there have always been both formal and informal links with relevant employers as well as drawing from an ever growing network of Ravensbourne diplomats and graduates. Fundamental to all of that has been a hard fought attainment of professional respect between Ravensbourne and 'The Industry' the belief that the processes of education and those of the business and commercial world are complementary elements of 'the same world' focused to investment in creative talent, highly competent skill in a competitive business environment that aspires to innovation and values survival.

The most important element in the College's liaison with industry is the willingness by so many in The Industry to give generously time and expertise as well as to enable specific financial resourcing through consortia developed with strategic employers in the business of broadcasting and facilities. Ravensbourne becomes a 'brand' which is differentiated both by what it is, a professional resource for education and training for an industry, and what it is not: yet another 'media studies' provider. The College recognises that this position is not one for complacency. Every year's student output is essentially perceived by employers to be a test of why that quality of liaison with industry should continue.

## **Student placement**

Student placement, in quality and quantity, becomes another measure of the College's liaison with industry. Student placement to industry has been an integral element of the course programmes since 1978. The placement is usually located at a midpoint in the relevant course. Where particular opportunities are offered for the placement by an employer and which have significant educational value outside that 'mid point', a placement will be negotiated by the relevant Course Leader and the student. The duration of the placement is typically, six weeks 'en bloc' but exceptionally, it can be organised in shorter discrete time elements over an extended period.

The placements provide a vital diagnostic element in the individual student's education. The student is required to develop, through negotiation with the College's Placement Officer, course tutors and employers, a view of that which is most important to their professional development. Placements are developed with a range of employers in broadcasting, facilities and post production, manufacture and product support. But students may possess an inappropriate understanding of how a particular part of 'the professional business' operates, they may have a 'romantic' or asymmetric view of that professional world and they will always be incomplete in their real understanding. For those reasons, individually or in combination, the educational consequence of the placement may be confirmatory to the student's sense of purpose or it may raise every question about their ability to work in an industrial world. The latter may be more valuable in the educational equation. But given that the range of placements exist only through the willingness of companies, working to tight margins of time and money, to enable the opportunity, a balance is usually sought, in every year, between placements that 'confirm' both to student and to employer and those that may challenge both parties for the best or worst of reasons.

Industry offers placements because it is an investment in the future of business. Crucial to the operational success of the placement, both to the employer and to the individual who is placed is a clear and mutual understanding of the aims and

objectives of the placement and the existence of credible supervision/monitoring within an industrial organisation. This requirement places considerable demand on many businesses who increasingly have minimum staffing levels and 'flat management'. However, the achievement by the student of how the organisation works in reality becomes a valuable learning experience. Students are assessed at the completion of the placement in a 'peer group' debrief and audit.



## Appendix 5 **Details of participants** (Graduation date in brackets)

### **Architectural Association**

**Alan Chandler** (1996). Working as a designer and site architect for Sophie Hicks. Obtained a graphic design degree before attending the AA, family background in the building industry.

**Simon DeGrussa** (1995). Partner in own practice, Degrussa Larkou. Background in technical drawing, initially obtained a job in an architectural practice through a family friend.

**Ingrid Helsing** (1994). Senior teaching position with the AA. Prior to architectural education studied joinery and furniture design in Norway. Strongly influenced by architect father.

**Ylva Kvist** (1996). Working as architect for Arthur Collins. Studies in Sweden before attending the AA. Initial interest in woodwork and model making. Family background in architecture.

**Stephan Orsolini** (1997). Chief designer for John Pawson. Prior to studying at the AA studied graphic design in France. Architectural studies interrupted by requirements of military service in France.

**Gary Thomas** (1996). In practice with AA colleague, Dennis Balent. Family tradition of engineering and blacksmithing. Strong interest in product design, contact with architecture through a family friend.

**Helena Thomas** (1996). Working as architect for Allies and Morrison. Studies Fine Art in Australia before moving to London to work as a painter. Joined the AA after working in the UK for three years.

**Chris Williams** (1992). Working as architect for Roger Meers. Studied Art with interests in sculpture, restoration and conservation. Worked in church conservation before attending the AA.

**Megan Williams** (1994). Working as a project architect for Allies and Morrison. Interest in architecture sparked whilst at college in the USA. Has worked for a number of highly influential architects including Richard Rogers.

**Eiffel Wong** (1996). Designer working for Terry Farrel. Hong Kong Chinese architect who started work as an interior designer. Influenced by father who he describes as a 'fashion engineer' - an expert on fabrics and materials.

## Ravensbourne College

**Maxine Collins** (1994). Obtained an HND in TV Operations, now working for Carlton. Father a journalist, sister works for Reuters. Presently working as a news camera woman, also has firm interest in news gathering.

**Titian Deakin** (1994). Obtained an HND in TV Operations, now working for Carlton. Worked for 10 years as a Dancer, with experience of working on TV commercials. Current position that of sound editor.

**Simon Goddard** (1993). Obtained an HND in TV Operations, now working for MTV. Became interested in TV whilst at school in the Channel Islands. Initially wanted to be a graphic designer, since leaving Ravensbourne has also worked for the Family Channel and Sky.

**Tony Grek** (1996). Obtained an HND in TV Operations, now working for Disney. Some family background in TV and filming, cousin is a Lighting Director. Current position that of Associate Producer.

**Ben Leete** (1995). Obtained an HND in TV Operations, now freelance news cameraman. Long standing interest in TV and video. Serving soldier before studying at Ravensbourne..

**Yewande Osho** (1993). Obtained an HND in TV Operations, now working for Disney. Initial interest in performing arts, father an architect. Presently concerned with facilities management.

**Nadia Servant** (1993). Obtained an HND in TV Operations, now working for LNN. Went to Ravensbourne straight from school. Initial interest in TV confirmed by work placement with Reuters.

**Mark Stewart** (1993). Obtained an HND in TV Operations, now runs own production company which specialises in corporate films and videos. Started work as an actor but has long standing interest in films and filming.

**Chris Williams** (1996). Obtained an HND in Engineering (TV systems), now working for post-production company: 'The Farm'. Started off with an engineering degree, but strong interests in theatre and film. Family friend worked for Thames TV.

**Caroline Wilson** (1993). Obtained an HND in TV Operations, now working for Granada. Family background in TV, father worked for BBC for 30 years. Camera specialist with interest in films - has worked at Pinewood studios.

## Appendix 6    References

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## Appendix 7 Acknowledgments

### Project Management

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### Members of the Steering Group

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Mike Weinstock	AA School of Architecture
Richard A Wills	Artist
Mr John Winter OBE	Architect
John Worthington	Director, DEGW

## **About the Authors of the Report**

### **Dr. Mark Parkinson C.Psychol AFBPsS**

The lead consultant on this project, who is the Senior Occupational Psychologist with The Morrisby Organisation. A Chartered Occupational Psychologist and Associate Fellow of the British Psychological Society, Mark has considerable experience of assessment systems and is co-author of a number of popular psychometric tests. His professional work involves advising and training careers guidance and HR specialists, and designing selection processes for commercial organisations. Mark is also particularly concerned with the development of innovative solutions to business problems and holds a related doctorate from the Management School of the University of Bath - 'The Small Business Entrepreneur: Information, Innovation and Creative Style. This work was supported by Spicer & Oppenheim, Ernst & Whinney, Touche Ross and Barclays Bank plc. He is often consulted on entrepreneur based research, most recently by the US consultancy Lee Hecht Harrison on the biographies of female entrepreneurs.

Mark writes and broadcasts on psychological issues and is the author of over forty articles and reviews. In addition he has written three books on selection and assessment covering interview techniques, personality measurement and psychometric testing.

### **Alastair Robertson AADipl AA Dipl(Trop Arch) MBA, Director of Q-West Consultants,**

Alastair managed this programme and drafted the conclusions. Alastair read Architecture and environmental science at the Architectural Association in London followed by a postgraduate diploma at Manchester Business School.

His career background is in architecture, commercial property development and town planning, but also includes a business career in product design and manufacturing and mid-career training for construction professionals. He has had involvement with both undergraduate, graduate programmes in West and East Europe and the USA and a period as a UNESCO consultant on education planning.

Alastair joined the Training Services Agency (MSC) in 1976 and led research and development work on a number of national training initiatives. In early 1987 joined the newly formed NCVQ and in 1988 became NCVQ Communications Director and

established a strategic communications policy and operational plan for NCVQ.  
Left NCVQ in February 1991 to establish Q-West Consultants.

Between 1990 and 1995 Alastair was a visiting lecturer on professional development and marketing professional services at the Royal College of Art and, since 1971, has been responsible for Professional Studies and Examinations at the Architectural Association, London, which embraces the AA School, the Royal College of Art and the Department of Architecture at the University of Cambridge.

Most recently has been a member of the QAA Benchmarking Panel for Standards in Higher Education (Architecture) and a British Council Consultant on Vocational Education and Training Policy.



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*Additional sponsorship for this research project was provided by:*

- *The Morrisby Organisation*
- *Q-West Consultants*