



**THE NEW LEARNING  
ENVIRONMENT:  
HYBRID DESIGNS  
FOR HYBRID LEARNING**

BY DR KENN FISHER

## INTRODUCTION

Educational delivery is at last seeing the ICT revolution we were promised a couple of decades ago when the desktop computer became commonplace. Since that time the internet and email were supposed to kickstart an online approach to learning, but in reality the time and cost of production of interactive multi-media material has been too prohibitive to mainstream the concept.

Now, with the advent of highly mobile ICT devices, coupled with wireless capabilities and broadband access generally, this has put even more pressure on teachers to prepare material which is in formats other than lecture notes, textbooks and laboratory practicals. CDROMs are also becoming common and now distance education is merging with online delivery to offer a seamless educational delivery platform which ranges from fully online to fully face-to-face.

And of course there is everything in between leading to what is increasingly becoming a blended or hybrid educational delivery platform. This is affecting the nature of face-to-face campus-based teaching, learning and research, but in ways still not well understood to date. Campus based students continue to "vote with their feet" confirming the adage that learning is socially constructed – people still want to be part of a community of learners. Whilst there is an increasing virtual element to this, there is a corresponding refocus on what role the campus – and the relationship between pedagogy, place and space – takes.

Yet the physical learning environment is still predominantly stuck in the industrial age egg-crate model, with classrooms, laboratories and lecture halls dominating the campus learning environment. Space and place – whilst of some interest to university managers in terms of image, identity and market position – still has an uncertain link to the pedagogical process. It is now time that a complete rethinking of the position space and place plays in campus life is considered – the same level of attention that ICT's are given in planning and management should be given to the physical environment. I am arguing for a more seamless approach to ICT and facilities – for both are what I call "technologies of learning". ICT, place and space should all be considered under this umbrella so that they are planned, designed and managed in a fully integrated manner as illustrated in Bill Mitchell's elegant diagram (Figure 1). Only then can architects, ICT managers, facility managers and, ultimately, teachers offer a fully integrated educational, technological delivery to students on (and off) campus.

**FIGURE 1**  
Integrating ICT, space and place in learning<sup>1</sup>

	Synchronous	Asynchronous
Local	Face-to-face meeting places	Site specific signage exhibitions installations white board
Remote	Telephone Video Conference Text Messages Shared Cyber Links	internet web virtual Studio 'google it'

## GRADUATE COMPETENCIES AND PEDAGOGIES

Concurrently with these developments in ICT, universities and vocational colleges have been exploring what characteristics their graduates need to have to succeed when they finish their studies. Vocational colleges have been focusing on competencies shaped by Industry Advisory Boards, whilst universities have increasingly been adopting the European model of graduate competencies or student attributes (Figure 2). These are significantly broader, in my opinion, than what can be achieved in the traditional classroom context<sup>2</sup>.

These competencies require a much broader range of pedagogies than provided by the teacher-centred approach in the traditional classroom. They are clearly more student-centred and more aligned with what is required of adult learning pedagogical approaches. A much wider range of pedagogies is now necessary, as illustrated (Figure 3).

Planners, designers and facility managers, not to mention teachers, now need to explore alternatives to the classroom to deliver such a range of pedagogies. Such a strategy should link the pedagogical paradigm, its approach and its spatial archetype so that they are all directly related (Figure 4).

This illustrates that the classroom has to adapt to a range of pedagogical delivery approaches – clearly the traditional teacher-centred classroom is increasingly unable to offer the range required.

**FIGURE 2**  
Graduate competencies & student centred learning<sup>3</sup>

Teacher Centred		Learner Centred
Content focussed	>>>	Process focussed – learn to learn
Memory	>>>	Critical thinking
Rote learning	>>>	Ability to communicate
Individual testing/competitive	>>>	Work in teams/ collaborative
Problems not 'real'	>>>	'Authentic problem solving'
Set tasks within subject	>>>	Project based learning
Within discipline	>>>	Cross disciplinary learning
Rigid timetables & supervision	>>>	Self organise/ self-directed

## LINKING PEDAGOGY AND SPACE

Learning settings are thus becoming much more than the classroom. In fact if these competencies are to be fully developed students will work in a range of modalities, either independently or in teams, and increasingly informally or socially, collaborating through the social construction of knowledge in "learning communities" (Figure 5).

So a wide range of co-located learning settings will need to be available concurrently in the form of a learning hub or flexible learning centre, to allow for such a range of collaborative and alternative approaches.

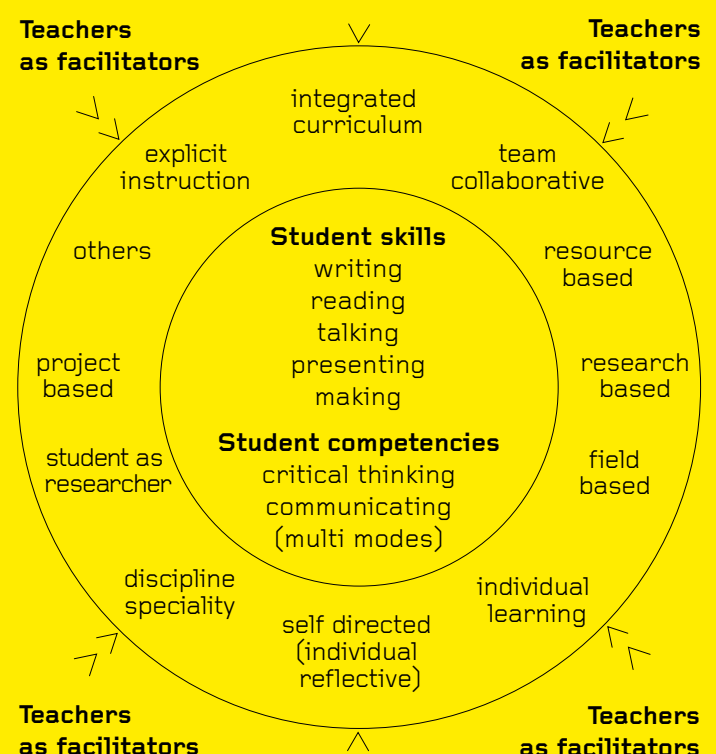
How these settings are arranged is of increasing importance in campus planning and design. No longer should we be measuring utilisation solely based on timetables and room bookings, occupancy and frequency. Students need to be able to move into a range of spaces at will, both formally and informally, inside buildings and outside under colonnades and arcades.

One way of organising spaces is through what we might call modalities of learning. Spaces can be clustered using the following characteristics (Figure 6):

- Mode 1 (teacher-centred)
- Mode 2 (student-centred)<sup>7</sup>
- Mode 3 (informal or social)<sup>8</sup>

Students should be able to move between these modalities according to their needs. Computer laboratories for example, if well designed, can adapt to be all three depending on how the users occupy and use the space, and what rules are established for its use. Such an approach is appearing in various educational institutions across the globe, but only incrementally. Indeed many of these concepts are still in their infancy and the following section illustrates some of the prototypes.

**FIGURE 3**  
Students at the centre of learning<sup>4</sup>



STAFF HAVE CHOSEN TO REDUCE THEIR OFFICE SIZES, INCREASE THE USE OF COLLABORATIVE SPACE, AND CO-LOCATE OTHER SPACES TO CREATE A MORE DYNAMIC SOCIAL LEARNING ENVIRONMENT.

**PROOF**

All educational (and some corporate 'learning organisation') sectors are exhibiting some examples of such innovative learning environments.

Within the secondary schools sector the Australian Science and Mathematics School (ASMS)<sup>9</sup>, completed in 2003, was conceived as specialist focus for senior secondary (10-12) years on the campus of Flinders University in Adelaide, South Australia (Figure 7). The school fosters relationships with the Schools of Education, Science and Engineering at the university, the Professional Teachers Associations and the Curriculum Policy Directorate with the SA government's Department of Education and Children's Services.

Its main aim is to provide leadership in regenerating the teaching of maths and science and makes extensive use of "best available resources", particularly ubiquitous ICT. The curriculum was developed within a series of "BIG IDEAS" rather than traditional subjects, based on learning in the workplace, the community and the university.

The ASMS encourages learning and problem solving within both individual and group contexts, through collaborative working relationships and flexible teaching and learning groups. It "repackages knowledge to create new understandings to meet the complexities of the modern world". It also promotes interdisciplinary life and learning, through collaboration in theoretical, conceptual and practical knowledge from various fields of study.

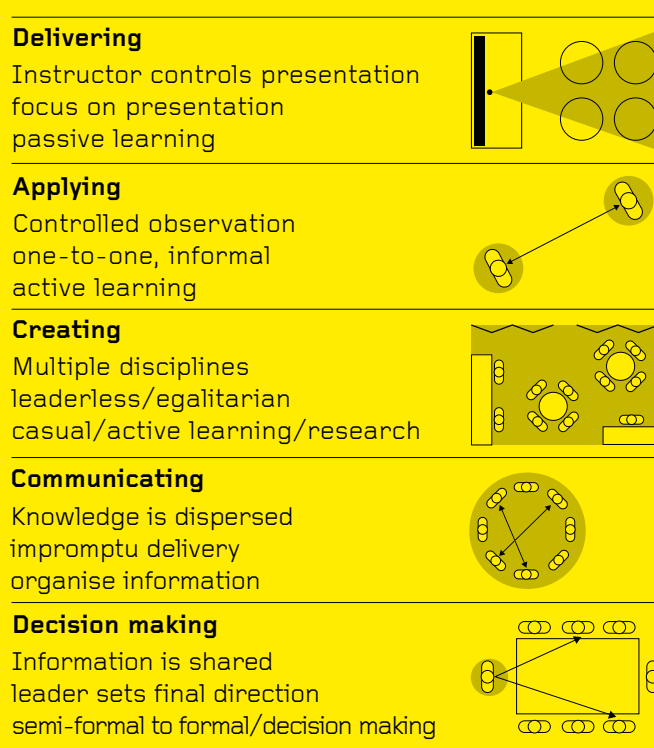
The ASMS takes an interdisciplinary approach to curriculum design, teaching and learning, supporting an approach by "inquiry" and "constructivist" learning. To support this pedagogical strategy, the floorplan has no classrooms and is based around Mode 1, 2 and 3 concepts.<sup>10</sup>

In the tertiary sector, the University of Western Australia's School of Business (Figure 11) is also seeking to rethink its spatial arrangements, more in keeping with its pedagogical aspirations. Staff have chosen to reduce their office sizes, increase the use of collaborative space, and collocate other spaces to create a more dynamic, social, learning environment.

Such approaches are increasingly evident through ARC Linkage Grants, Cooperative Research Centres and the still-robust concept of the research or technology park. Examples of these clustered and collaborative approaches are emerging worldwide, with a number of very successful examples in Australia and the Middle East. The University of Adelaide's Waite Campus and the Curtin University's research park are two in which Woods Bagot have been heavily involved.

Another Woods Bagot project, the Qatar Science and Technology Park (Figure 8), has been designed to encourage the formation and growth of knowledge-based businesses and other associated organisations. The new Park will become a learning centre for world leaders in research and technology fields. Driven by Federal Government policies regarding the commercialisation of intellectual property, the CSIRO in Australia is another adherent to these more collaborative and socially constructed knowledge research practices.

**FIGURE 4**  
 Linking pedagogy and space<sup>5</sup>



**FIGURE 5**  
 A range of settings for a range of modalities<sup>6</sup>

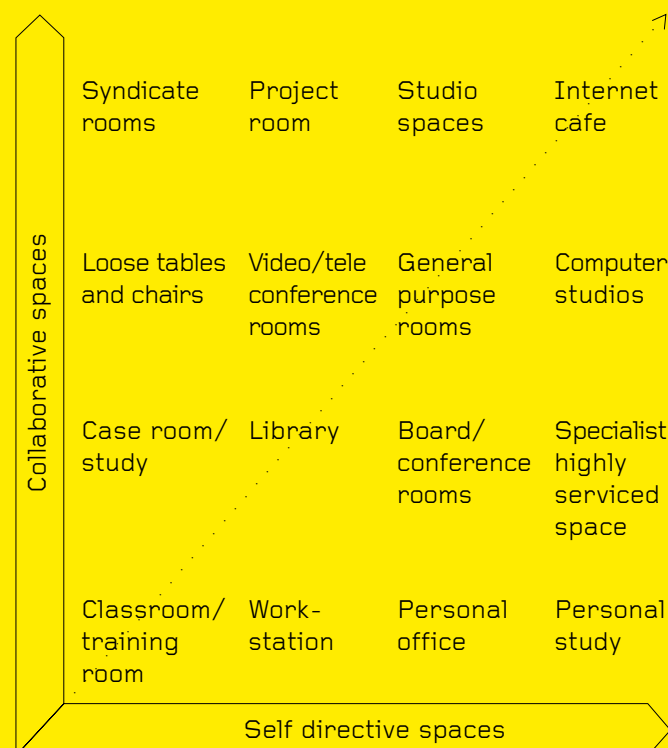




FIGURE 7  
Australian Science and Maths School, Flinders University



FIGURE 8  
Qatar Science and Technology Park

FIGURE 6  
The new production of knowledge

Mode 1 – Closed	Mode 2 – Open
Disciplines	Trans-disciplinary
Homogenous	Heterogeneous
Organisationally hierarchical	Organisationally heterarchical
Tends to preserve its form	Transient
Quality control – codes of practice relevant to a particular discipline	Quality control – more socially accountable and reflexive
Context – cognitive & social norms governing basic research (ARC)	Context – around a particular application (eg CRC)
Lecture Theatres, Laboratories	Flexible Learning Centres, Studios

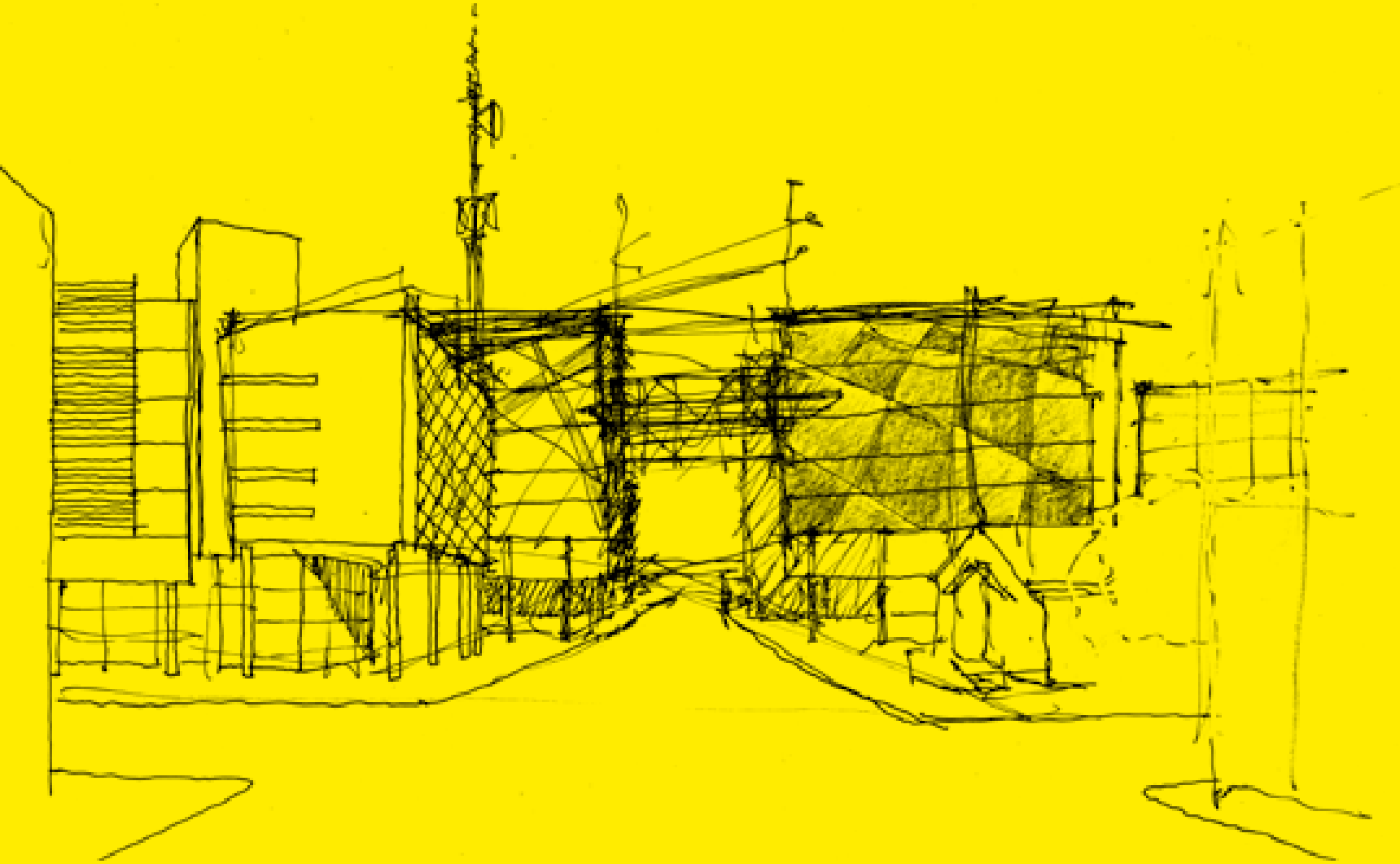
REPACKAGING KNOWLEDGE TO CREATE  
NEW UNDERSTANDINGS TO MEET  
THE COMPLEXITIES OF  
THE MODERN WORLD.



PROMOTING INTERDISCIPLINARY LIFE AND LEARNING,  
THROUGH COLLABORATION IN THEORETICAL,  
CONCEPTUAL AND PRACTICAL KNOWLEDGE  
FROM VARIOUS FIELDS OF STUDY.



**FIGURE 10**  
Project for the Southbank Education  
and Training Precinct, Brisbane.



**FIGURE 11**  
University of Western Australia Business School



## THE FUTURE

Over the past decade or so there has been constant pressure from facility managers within educational institutions to explore more innovative designs in learning environments. This was most recently showcased in the 2005 TEFMA Seminar series in Brisbane (March) and Christchurch (July) where some 20 papers were presented on the design of learning environments.<sup>11</sup>

There are also now emerging signs of interest within the Professional Development Units of universities who are now exploring how ICT, space and place are evolving and how these are impacting on pedagogical practices.<sup>12</sup> There are a number of other research organisations also examining such innovations, although still these tend to be driven by designers rather than teachers. For example the OECD Programme on Educational Building is about to launch its third compendium on new learning environment case studies.<sup>13</sup>

Increasingly architects are being cast by clients as "change managers" where clients are using the re-engineer of ICT, space and place as a means to reengineer the workplace pedagogical and operational culture of their schools, departments and research units.

Yet all too often these attempts become futile as the planning and design approaches often do not get to the root of what it is that teachers, students and researchers actually do, and how and why this is changing (or not, in some cases).

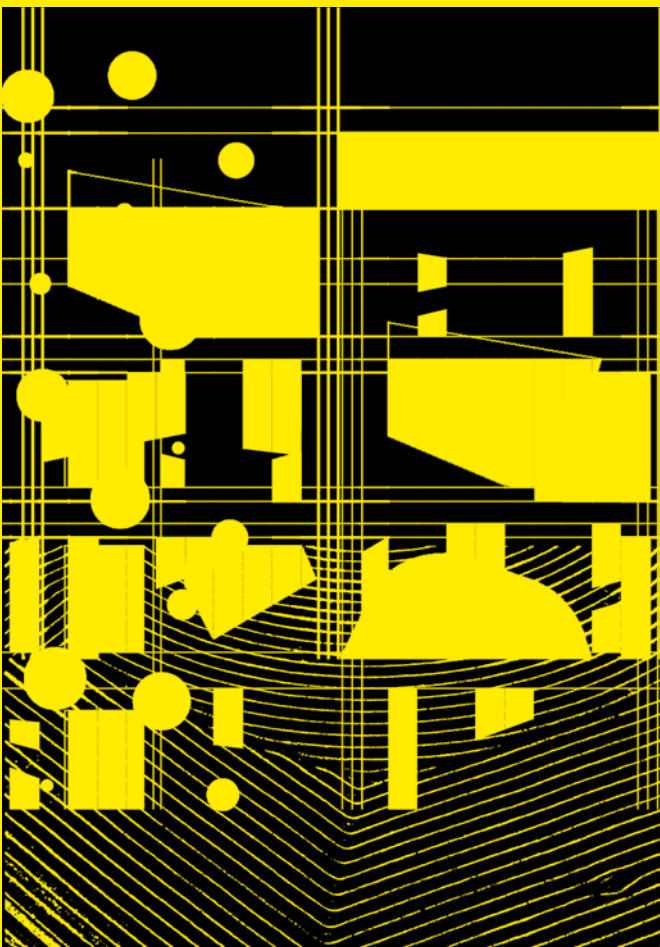
It is only through a collaborative, consultative and "co-constructed" approach to the design of learning environments will more successful outcomes be achieved. The challenge is for designers and teachers to learn each others' language – the language of design and the language of pedagogy must intersect.

To date this intersection has been achieved largely through the role of that rare species known as the "educational planner" who acts as a translator or interpreter. This concept is accepted as commonplace in health planning, but only a handful of educational planners practice across the globe.

It is incumbent on architects to take up the challenge and become defacto educational planners to assist in the ever changing transformation of the emerging new learning environment and learn the language of the science of teaching and learning – or pedagogy – and assist in the teaching of the language of space and place to those who use those spaces.

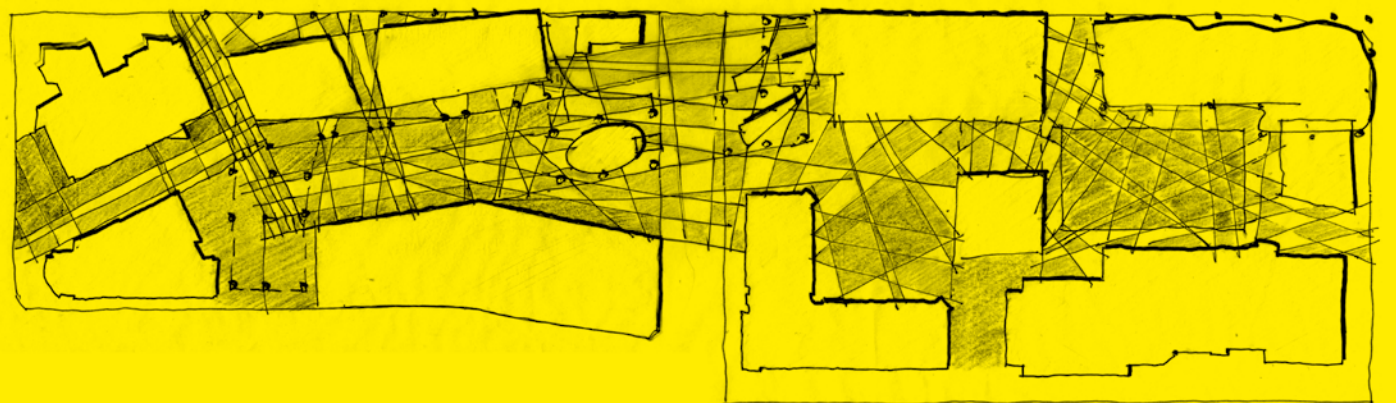
Woods Bagot, through its newly appointed Director James Calder, is hoping to influence this process through the newly launched Workplace Planning and Design Programme at the University of Melbourne's School of Architecture.<sup>14</sup> This will see a generic programme supported by three specialist electives – office planning, health planning and educational planning.

I look forward to a much brighter future in the immediate future for campus based experiences for both teachers and students as a result of some of the concepts outlined above.



**FIGURE 12**

Southbank Education and Training Precinct



- 1 Mitchell, W, Seminar at QUT, October, 2004
- 2 <http://www.unimelb.edu.au/student/attributes.html>
- 3 Fisher, K, TEFMA Seminar, Brisbane (March, 2005) and Christchurch (July, 2005)
- 4 op cit. Fisher, 2005
- 5 Fisher, K, TEFMA Seminar, Brisbane (March, 2005) and Christchurch (July, 2005), adapted from Scott-Webber (2004)
- 6 op cit. Fisher, 2005
- 7 Fisher, K, unpublished Doctoral thesis, 2002
- 8 Frowd, A, QUT, October, 2004

- 9 Fisher, K, in association with Woods Bagot (2003)
- 10 Fisher, K, TEFMA Seminar, Brisbane (March, 2005) and Christchurch (July, 2005), adapted from Gibbons et al (2004)
- 11 [http://www.tefma.com/infoservices/papers/2005\\_FutureLearningEnvironments\\_Workshop\\_Mar05/index.jsp](http://www.tefma.com/infoservices/papers/2005_FutureLearningEnvironments_Workshop_Mar05/index.jsp)
- 12 <http://www.usyd.edu.au/news/84.html?newscategoryid=8&newsstoryid=744>
- 13 <http://tank.infodiv.unimelb.edu.au/mettle/mettleRegister.cfm>
- 14 <http://www.oecd.org/dataoecd/53/17/34514227.pdf>
- 15 <http://www.abp.unimelb.edu.au/courses/pg/pgwppd/>