CREATING NEW GENERATION LEARNING ENVIRONMENTS ON THE UNIVERSITY CAMPUS

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A Scrapbook of a 5 day Design Forum with members of the Universitas 21 network in conjunction with The University of Melbourne and Woods Bagot.

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FOREWORD

Historically, the classroom is the setting in which the bulk of an undergraduate university student’s formal educational experience takes place. It has been this way for centuries. It is the place where, among other things, the teacher provides direction, introduces material, answers questions and sets assessment tasks. The requirement to attend the classroom is often the primary reason compelling students to attend the campus. In recent times, universities have begun to rethink the role of the campus as a place of learning and, in particular, the nature of the classroom and its impact on the student learning experience. In order to support the implementation of its new Melbourne Model, The University of Melbourne recently initiated a number of projects aiming to create environments to support more effective teaching and learning approaches.

In this context, in September 2007 The University of Melbourne convened a weeklong, intensive design forum in conjunction with Woods Bagot to explore the development and role of new types of classrooms. The forum brought together representatives from the Universitas 21 network in an attempt to jointly develop expertise and knowledge in this increasingly important field. This publication is a record of that event and the experience of the participants. It has been produced in the interest of promoting ideas and advancing practice in the higher education sector.

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In September 2007, the inaugural U21 Learning Environment Design Forum was held at the University of Melbourne. The Forum addressed the need of universities to create new generation learning environments on campus to support the shift towards more student-centred, collaborative and problem-based learning approaches. This publication outlines the intention, events and outcomes of the Forum detailing how participants approached the design challenges and ultimately why new generation learning environments are needed.

The Forum was convened by the University of Melbourne in collaboration with the global design and consulting firm Woods Bagot under the auspices of the company’s Public research program. The role of the Public research program is to act as a platform for collaboration, to generate ideas, challenge the status quo and push conventional theory. Woods Bagot has committed two per cent of its annual revenue to research projects of this kind. The U21 Learning Environment Design Forum is one of numerous learning events which Woods Bagot supports.

We hope this publication will stimulate a continuous dialogue with universities and the community as we strive to further expand the knowledge in this field.

MARK KELLY  
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WOODS BAGOT
01
INTRODUCTION
Introduction

Within higher education interest is growing globally to rejuvenate the role of the campus as a place of learning, and to develop new types of classrooms and other formal and informal learning spaces. We can now point to a number of developments creating more dynamic and engaging learning environments; and each new example draws increasing interest from educators, university administrators and architects keen to inform their own projects.
Insofar as they are driven by the desire to challenge the status quo, these settings can reasonably be described as ‘new generation learning environments’. However, sceptics might feel prompted to pose questions such as: In what ways are ‘new generation learning environments’ new? What difference do they make? What need is there to improve the classrooms and other learning spaces where universities have traditionally conducted teaching and learning? Why overturn traditional ideas and practice that have been the foundation of long-standing and successful institutions?

Implicit in the concept of ‘new generation learning environments’ is the view that the current generation of classrooms and other on-campus learning spaces are unsuited for the emerging pedagogy in higher education. Undoubtedly, the traditional lecture theatre and other long-established settings have provided an appropriate environment for a pedagogy that has remained largely a teacher-led, didactic practice. Traditionally, the university lecturer describes what students are to learn and how they are to learn it in physical settings that offer few possibilities for new or innovative approaches. However, there is a move towards more student-centred, collaborative and active approaches to learning and thus a need for physical environments to support such a change.

In essence, this means that universities need to rethink the campus as a learning environment and, in particular, how they undertake the design and development of its most critical component – the classrooms where formal learning takes place.

In September 2007 an international group of university academic and professional staff (mostly without formal design qualifications) accepted an invitation to join a small team of designers in an intensive forum to investigate the design of new generation learning environments. The event was a unique collaboration involving The University of Melbourne and the international consulting and design firm Woods Bagot in conjunction with member institutes of Universitas 21, a global network of universities.

This document is offered as a ‘scrapbook’ of the Design Forum, capturing critical moments, influential ideas, key questions and concerns, various approaches to design and the contributions and thoughts of both the convenors and the participants. It recounts the process of the exercise as it unfolded, the experience of the participants as they engaged in the design task, and the outcome of their collaborative design efforts. While the primary purpose of a scrapbook is to recall past events, this document is deliberately intended to act as a guide for future action, and aims to promote new ways of thinking about and developing improved learning environments. Underpinning the ‘scrapbook’ are key ideas about the design and development of ‘new generation learning environments’ that have informed or emerged from my work on numerous projects across various universities over more than a dozen years.
The material collected here is intended as a resource for those key stakeholders in universities participating in the design and development of new generation learning environments. It should stimulate thinking, not only about the design of new learning environments but also about the need to find more creative ways of engaging participants in the design process and the need to prioritise ‘design’ in the project management process. This scrapbook will be of interest to university property and facility managers and staff, architects, interior designers, audio-visual and information technology staff, faculty managers, instructional designers, academic developers; as well as the academics who, along with the students, are the key stakeholders in the new learning environments.

Like any ‘scrapbook’ the collation of material from the Design Forum was in part opportunistic and its depiction is impressionistic. It is not intended to reflect a single or a comprehensive account, but rather provide a glimpse of the multiple experiences, viewpoints and interests of the entire group contributing to the event. It is likely to be of greatest benefit to those prepared to delve in and out of its content for the diverse insights it offers, rather than those looking for a simple one-size-fits-all solution to their current problem. Most of all, this scrapbook celebrates an approach to the design of ‘new generation learning environments’ that is simultaneously creative, demanding, playful and necessarily uncertain; and which aims to improve the understanding and skills of those participating in the process.

I would like to acknowledge the contribution of the participants to this document, and to the forum itself. The time and effort they put in, their creativity, preparedness to take risks and challenge their own professional assumptions, their willing collaboration with a group of ‘strangers’ and, most of all, their commitment to improving their capacity to improve practice at their own institutions was inspirational. As the convenor of the event it was a privilege to work alongside this group and they have, in turn, taught me much.

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FEBRUARY, 2008
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THE
INTENTION
The Intention
RE-THINKING THE DESIGN AND PURPOSE OF THE UNIVERSITY CLASSROOM
THE NEED FOR NEW GENERATION LEARNING ENVIRONMENTS

Situated in the context of the university campus, the teaching and learning process is a mix of formal and informal experiences that take place in a range of built environments. The primary formal settings include lecture theatres, seminar rooms, practical laboratories, IT spaces and libraries. More informal settings include cafes, learning commons and areas of serendipitous contact such as corridors and other interstitial spaces where effective learning may also take place.
In formal classrooms, in particular, the physical environment is fundamental to the experience of the student. The physical setting shapes expectations, influences class size, enables certain possibilities for acting while impeding or excluding others, and impacts matters such as student control and ownership of the setting (Lefebvre, 2001). More subjectively, the setting is intrinsically linked to student comfort and motivation as it involves fundamental characteristics such as acoustic quality, thermal and lighting levels, as well as decorative aspects such as colour and material finishes that are integral to the occupants’ well-being and capability (Jamieson, 2003).

Historically, the university campus and its formal learning environments were designed to enable a predominantly teacher-directed pedagogy which resulted in a more passive and individual approach to learning (Edwards, 2000). However, there is a growing need for universities to create a new generation of learning environments in order for the campus, and its constituent teaching and learning spaces, to meet the changing needs of teachers and students.

Higher education is moving towards a more student-centred pedagogy which promotes active, collaborative and problem-based learning. This has direct implications for campus learning environments (AMA, 2006). Put simply, the university campus must be able to accommodate a greater mix of teaching and learning approaches while also retaining a sufficient number of classrooms oriented to more teacher-directed practice — if only to meet the need of program delivery models and economies of scale that will continue to require some forms of large-class instruction. The broad task is to make the campus a more robust and relevant setting for both formal and informal learning.

Essentially, there will be a need for new types of formal classrooms that can accommodate a greater range of activity (undertaken simultaneously within a single class group or sequentially by the entire group), that promote movement within the space and enable greater student control over facilities such as tables, chairs, benches, IT devices and learning materials. In seeking to create these new kinds of classrooms it is likely that a radically different conception of the ‘classroom’ as a learning environment will emerge. We need to push beyond the notion of the classroom as a uni-directional, single-level, uniformly lit, rectangular box. Inspiration for the design and use of classroom settings is likely to be drawn from other successful social, recreational and workplace environments.
The challenge of creating a new generation of learning environments raises a number of key questions, including:

- What should the new formal classroom learning environments look like?
- What types of learning activities do they need to support?
- What is the ideal class size (taking into account key factors such as field of study, learning objectives and intended learning approaches)?
HOW MUCH CONTROL SHOULD STUDENTS HAVE OVER THE ARRANGEMENT OF FURNITURE AND THE OPERATION OF KEY FACILITIES WITHIN THE SETTING?

WHAT EMPHASIS SHOULD BE PLACED ON INTERIOR DESIGN ELEMENTS INCLUDING COLOUR AND MATERIALS AS A MEANS OF STIMULATING AND MOTIVATING STUDENTS?

WHO SHOULD CONTRIBUTE TO THE DESIGN PROCESS?

HOW SHOULD NEW INFORMATION TECHNOLOGIES BE INCORPORATED INTO THE CLASSROOM EXPERIENCE, AND WHICH TECHNOLOGIES SHOULD BE PRIORITISED?

WHAT IS THE ROLE OF THE TEACHER IN THE CLASSROOM AND WHERE SHOULD THEY BE PHYSICALLY LOCATED IN RELATION TO THE STUDENTS IN THE SETTING?

HOW CAN A CLASSROOM PROMOTE AND SUSTAIN GROUP-BASED LEARNING?
A research-driven approach to new generation learning environments

Over the past thirty years the development of two distinct yet complementary bodies of knowledge provides both the rationale, and the theoretical foundation, for the creation of new generation learning environments. On the one hand, the seminal research into teaching and learning in higher education has led to a greater focus on student learning and the quality of the student learning experience, as opposed to teaching practice (Marton and Booth, 1997; Ramsden, 1992). Simultaneously, the research into the relationship between human behaviour and where it occurs has increased awareness of the critical role of the built environment in educational and other settings (Lawson, 2001; Scott-Webber, 2004; Taylor and Preston, 2006). Each of these discourses, which have developed independently of each other, needs to inform the design of improved learning environments on the university campus.

For more than three decades a considerable body of research has developed around the issue of student learning in higher education. Much of this research has centered on the way students understand the learning task, in other words, how they make sense of what they are learning and how this affects their approach to the learning task (Entwistle, 1984; Marton and Saljo, 1976; Prosser and Trigwell, 1999; Ramsden, 1979). The consistent findings of this research have been drawn from studies conducted in various national settings and with diverse populations, and have included a wide range of disciplinary fields.

A significant notion to emerge from the discourse on student learning is that of the ‘student experience’. It is this shift from the teacher and what the teacher does, to the student’s approach to learning and the quality of the learning experience that creates the possibility for examining the limitations of traditional classroom environments and, more generally, the impact of the physical setting on the teaching and learning process. In short, in their orientation towards certain teacher and student behaviour traditional university classrooms bespeak particular actions by the occupants at the expense of other possibilities. Often these decisions are based on the simple everyday choice of the occupant (teacher or student) that some actions are more easily achieved (given the number of occupants, the time available or the intended action) than others (Jamieson, 2003).
One only has to think of the traditional lecture theatre to appreciate the significance of this idea. While the lecture theatre is directly oriented towards a ‘presentational’ approach, it also indirectly works against the adoption of collaborative or discursive approaches. In order to implement a new approach, the teacher must find the time for related adjustments in teaching methods and possibly in course material while often relying on furniture and/or facilities designed for other approaches. Similarly, a small tutorial room may not be equipped for a teacher-led presentation, or an IT laboratory with bulky, fixed computers may impede the capacity of students to move around the space and to interact with other students. This is not to say that in any of these cases it is impossible to adopt other more preferred approaches. Rather, it means that in order to adopt alternative practices, teachers and students have to overcome the original design intentions that underpin the classroom setting. In doing this the experience and the outcome may be compromised as a result, possibly reducing the likelihood of further attempts to work in new ways to improve the student learning experience.

At a broad level we need to better understand how humans relate to the built environment and what this means for the performance of teachers and students in the classroom. Efforts to develop more effective classrooms need to be informed by the extensive research into environmental behavior and psychology (Canter, 1974). There is considerable knowledge about the way the built environment impacts upon individual perception and behavior, as well as how the individual interacts with others and the physical setting itself (Bloom and Moore, 1977; Rasmussen, 1999). The need for natural light, the preference for certain colours, the issue of ‘personal’ space are just some of the factors that need to inform the design of ‘new generation learning environments’.

However, it would be a mistake to look for quick-fix solutions in the form of the ‘ideal classroom’ – perhaps emulating the apparent success of another development – that can be replicated endlessly in the manner of the traditional classrooms we no longer find acceptable. One-size does not fit all when it comes to creating authentic and appropriate environments for particular learners in specific contexts. To move forward in our thinking and our practice we need the traditional designers of educational spaces, the architects, along with the educators and other contributors to the design
process, to acknowledge these two complementary bodies of knowledge—concerned with matters educational and matters spatial—and the need to use both to inform the development of more effective design solutions (Fisher, 2004). Lawson (2001) talks about the designer influencing, but not determining, behavior by making a ‘move in space that frames or invites behavior’ and knowing ‘when to leave the space more ambiguous’ (p. 225). It may be as much a matter of what we design ‘out’, as opposed to what we design ‘in’, that leads to an effective learning environment. Can we anticipate all the needs and intentions of the users (teacher and students)? Should we even try? Which needs or functions are most important to accommodate and how do we prioritise these?

A recent and notable contribution to this discourse is Scott-Webber’s (2004) work which draws on our knowledge of human behavior in space in order to design learning environments suitable for ‘delivering knowledge’, ‘applying knowledge’, ‘creating knowledge’, ‘communicating knowledge’ and ‘using knowledge for decision-making’. For Scott-Webber, the design task is to create environments capable of ‘supporting intended behaviors’ (p. 6). It follows, then, that the role of educators in contributing to the design of improved learning environments should be to articulate the intended behaviors of the teachers and students in those settings in order to inform the spatial solutions provided by the design team.

Ongoing, the design process to create improved learning environments

Given the prevailing organisational culture within universities, it is unlikely that existing institutional practices for developing classrooms and other learning environments, either new or refurbished facilities, will result in the creation of ‘new generation learning environments’. Typically, the leadership of such projects rests with that section of the university responsible for the campus estate and with those staff whose expertise largely relates to campus planning, building procurement and project management, including tendering, contracting, financial control, scheduling and campus maintenance. Understandably, the focus of these professionals is on the reduction of risk and the timely completion of projects within budget. They have never been required to serve as the educational visionaries for the institution—which is precisely what is required when looking to create a ‘new generation learning environment’.

In part, this situation reflects the lack of concern of most academics for the classrooms in which they operate. Few academics have given serious thought to how the physical environment of the classroom setting influences their approach to teaching or how it impacts on the quality of the student learning experience. This is hardly surprising when a majority of academic staff are not formally trained in teaching practice, and professional development is infrequent and often optional. Also, due to the formal demarcation of professional responsibilities and authority within institutions, even the most capable and motivated university teacher generally has no opportunity to participate in the design of those learning environments where they conduct their own teaching.
In order to change the way institutions undertake the design and development of new learning environments, universities must first rethink the nature of the task. The design and development of new or refurbished teaching and learning facilities should not be regarded as simply another campus construction project. Rather, it must be construed as an educational development activity with the potential to significantly change and improve teaching and learning practice. For this reason, the process must be driven by the educational vision and the requirements of the educators. The design and construction of a new facility should then be undertaken to serve this purpose which needs to be expressed in the form of a comprehensive ‘project brief’.

To illustrate this point, a useful comparison can be drawn with the implementation of new and similarly expensive IT networks across the campus. Where they are concerned with teaching and learning practice, such developments cannot be implemented successfully without direct reference to the educational practices and intentions of the institution and the direct users. In the present day it is inconceivable that the IT network in a university would be developed independently of the educational program and vision, and so it should be with the development of the physical infrastructure for teaching and learning.

The design of a new educational facility must be underpinned by an educational vision. Developing the educational vision is a major activity that takes time and resources; and it must occur at the ‘front end’ of the project. It should not be undertaken at a time determined by the project manager and with little or no warning for those academics who are suddenly called upon to contribute ideas or attend meetings. Most major campus developments are sequenced in the context of long-term campus plans, involving complex processes for raising and allocating the required funds. In these circumstances, it is unacceptable that project managers would fail to schedule sufficient time or construct a participatory process to include academics whose educational vision and intentions are needed to guide the efforts of the project architects who will carry the bulk of the design responsibility for the project.

Bickford (2002) sees a way forward in the fundamental re-orientation of the institutional culture of the university. He says improved learning spaces require the development of a collaborative culture to overcome a structure previously based on silos of expertise, with the long-term goal being the creation of a learning organization capable of drawing on its collective and evolving expertise. The U21 Design Forum was conducted to provide participants and their institutions with the capacity to develop the culture and practices described by Bickford in order to create effective ‘new generation learning environments’.
Designing the Design Forum

Like the ‘new generation learning environments’ it explored, the Design Forum itself differed from standard professional development activities in universities in a number of ways and required its own design solution. It was designed to:

- Gather a mix of key university stakeholders who, through their diverse professional roles are presently, or ideally should be, involved in the design of new on-campus learning environments.

- Provide sufficient opportunity at the beginning for participants to engage with, and develop an awareness of, each other’s expertise, experience and ways of working. To this end, much of the first day of the forum was devoted to team-building activities before the design exercise commenced.

- Form the participants into small, multi-disciplinary teams for the duration of the forum. Three teams of four were formed with a view to balancing the individuals’ professional expertise, their experience in campus development projects and their campus of origin.

- Challenge existing perspectives by stimulating group discussion on key issues led by guest presenters.

- Engage the groups in a design exercise based on an actual project site and simulated project brief – while not prescribing any form of outcome other than a ‘report’ on their experience or design response. The report would provide the cohort with insight into the experience of other participants and also generate discussion across the groups.

- Schedule the design exercise over a relatively extensive period (compared with typical short-term professional development activities) to allow participants to engage deeply in the exercise, to fully experience the task and the process, and to have the opportunity to explore multiple design solutions.

- Influence participants sufficiently (through their exposure to the design process, key ideas underpinning the forum, or the contribution of other participants) in order that they are better able to contribute to the improvement of the design and the development of new learning environments at their respective institutions.

- Develop sufficient rapport amongst the participants in order to form an on-going common interest group to provide support and resources for relevant projects and activities amongst the represented institutions that reflect the approach of the forum.
Key ideas underpinning the Design Forum

The Design Forum drew on a number of key ideas that derive from my experience designing new generation learning environments and which form the basis of my own approach to new projects. These ideas were introduced to participants throughout the forum in order to inform their approach to the design exercise. The ideas are summarised below:

- Universities must look to their own expertise (not simply to those professionals traditionally responsible for capital projects) in order to generate the ‘project brief’ and to contribute to the design solution for ‘new generation learning environments’. This approach should be undertaken with the aim of developing a comprehensive institutional knowledge which is enriched through each new project and which provides the basis for setting the educational aspirations of subsequent projects. In this way, the university can better act as the ‘client’ for the project architects.

- The design process should involve a multi-disciplinary team, drawing on the mix of expertise and perspectives of the key institutional stakeholders, including ‘facilities management’, ‘information technology’, ‘audio-visual systems’, ‘design’, ‘academic development’ and ‘teaching and learning’. In addition, each participant should be encouraged to contribute equally, regardless of rank or professional role.

Having said this, the matter of student involvement in the design process is more problematic than many would wish to admit. Although student input may be desirable in some circumstances, it may not be possible to achieve. Students may be more concerned with their own immediate priorities than with institutional efforts to improve future conditions that may not directly benefit them. More problematically, how does the institution determine which students represent the student perspective – are only some views sought? It is important to remember that, just as in the case of teachers and their views on teaching, not all students hold progressive views of learning or how it should be conducted.

Equally, students (and teachers) are not always willing or able to speculate on the nature of a new and possibly more radical learning environment. Understandably, students may not favour situations of change where they perceive that the adoption of new teaching practices may jeopardise their own learning experiences and/or grades. In such cases, as a result of misunderstanding or short-term interest, students may actively resist well-intentioned improvements.

Furthermore, in the case of undergraduate education, and despite the shift to more student-centred approaches, the formal educational experience is still guided by the intention, methods and assessment of the teacher. Consequently, the
teacher rather than the student is often better placed to inform the design process, i.e. to describe the activity and behaviour required of students in the formal classroom setting. Ultimately, while the student perspective can be valuable, it may not be essential. Decisions regarding student input should be made according to the specific circumstances of the project.

- Key findings from the research into teaching and learning in higher education should underpin the design of all educational environments. In my own case, these include the concepts that: (i) knowledge is not ‘transferred’ from teacher to student but is personally constructed by the student; (ii) learning should involve students in the active construction of their own knowledge; (iii) learning is essentially a socially-constructed process; (iv) learning is fundamentally about changing the way an individual understands an aspect of the world they are learning about and how they make sense of it. Therefore exposure to the variation in this understanding within the class – seeing how others understand what they are learning – is vital to the individual’s own learning. It is a key function of the teacher to bring out this variation in understanding.

- The design process should involve ‘risk’. Design is a creative process directed at moving beyond established knowledge and practice to provide improvement. It means moving into the unknown. For participants, the ‘design process’ should be engaging and enjoyable. For these reasons the design process needs to be separated from the regular business meeting procedure that dominates the project management process. Frequently, ‘design’ is treated as simply another item for regular project meetings to address. Typically these meetings are dominated by facility and other administrative staff, often with few educators present. There is seldom recognition of the need to support participants in the design process, by allocating sufficient time and opportunity to create the new types of learning environments that are the intended outcome of the project.

- There is a fundamental contradiction in the typical approach to the design of new learning environments. On the one hand, the process needs to promote risk and encourage a critical analysis of current practice and, on the other hand, it relentlessly seeks to reduce the likelihood of risk and promote certainty through the project management process. Presently, within universities, as a result of the predominance of non-educators in the process, the balance is weighted heavily towards ‘management’ rather than ‘risk’.
• Design teams need a common language to overcome their discipline-specific language and distinctive world views. This common language may evolve in the design process; it may assume many forms and be expressed in many ways, particularly when non-professional designers are involved; it may include sketching in front of co-designers or cutting and forming paper models of furniture or other facilities. The basis of this approach is the need for collaborators to establish at the outset the degree of their shared understanding of the educational intention or vision, of key concepts, basic terminology and essential theoretical underpinnings, rather than merely assuming this and creating the possibility of a major fall-out during the project. This does not mean that there will not be differences within the design team, but a common language and sense of purpose can assist in the resolution of major disagreements.

• The use of ‘metaphor’ can provide the basis for individuals and teams (especially when they have little formal design expertise) to engage in the design process and establish a common language. For instance, I have used the metaphor of the ‘classroom as a nightclub or cabaret’ as the basis for a recent and extremely effective refurbishment of a traditional classroom into a multi-level collaborative learning environment. Other metaphors I have used include ‘classroom as empty space’ – a room with little furniture and which conjures up various thoughts of what students would do and how they would do it; ‘classroom as sandpit’ – a space for play and discovery (words that are seldom used when describing learning in higher education); ‘classroom as café’ – a casual lounge setting with no obvious ‘front’ of class location. Each of these have given me a useful starting point for generating new ways of thinking about formal learning environments and engaging others in the process.

Ultimately, universities need to be transformed into a ‘learning organisation’ which Senge sees as a ‘place where people are continually discovering how they create their reality. And how they change it’ (2001, p 13). An important step towards realising this outcome will be for universities to acknowledge that the design of the physical fabric of the campus setting, and its constituent spaces, is a crucial element of their changing reality and integral to the quality of the evolving teaching and learning processes. It is a matter deserving serious attention.
On the first day of the five-day workshop, the participants were formed into three multi-disciplinary teams of four and provided with a project brief. The brief related to an actual campus site which would be the focus of their group design activity. The participants’ introduction to the design task included a site visit – which generated extensive discussion within each group and across the entire cohort – and a written project brief (a simulated document reflecting current institutional intentions and circumstances relating to the site, including scaled plan diagrams of the site to aid design responses).

The project brief for the design task addressed an existing medium-sized, terraced lecture theatre located in a mixed-use faculty building adjacent to a main entry and situated above a small maintenance workshop.

Preparation for undertaking the design task also included visits to other current project sites at The University of Melbourne to promote further thinking and design alternatives.

A key feature of the forum was the involvement of guest presenters from the University of Melbourne and Woods Bagot who addressed a number of important issues relating to educational facility design in higher education, shared their individual expertise and generated wide discussion amongst participants.
The Challenge

Re develop the classroom.

Create an environment which will enable academics and students to be engaged in a much more active approaches to teaching and learning.

Provide opportunity to learn about the developing teaching and learning methods — acting as a laboratory about teaching and learning to PROMOTE discussion and improvement amongst the academic staff.

PROMOTE collaborative, problem-based learning.
THE PROJECT BRIEF

The following statement is characteristic of what is often termed an ‘aspirational brief’ ie a statement of key objectives which the client is hoping to achieve as an outcome of the project. In reality, the client – which may be a faculty or department leader, a teaching team, etc – often provides even less material than is offered here. At times the client’s aspiration is limited to a simple statement of functional need, such as “we require a 400 seat lecture theatre” or “we want a classroom for group work” or “we need an IT lab for formal classes and which can increase our students’ access to IT for informal use”.

For the Design Forum we have provided a slightly more descriptive account which includes the functional needs in terms of class size and use whilst also indicating the broader paradigmatic shift in teaching and learning which is underpinning the project.
The existing classroom setting is a traditional and tiered, medium-sized lecture theatre (approx 100 capacity). Presently, this environment is used for standard lecturing and cannot support more active learning approaches in its current configuration. In the present circumstances, there is an opportunity to redevelop this classroom.

The aim is to create an environment for formal classes – but one which will enable academics and students to engage in much more (inter)active approaches to teaching and learning. Furthermore, it is expected that this new classroom environment will provide the faculty with an opportunity to learn about developing teaching and learning methods – acting as a teaching and learning laboratory to promote discussion and professional development among the academic staff.

It is expected that this will involve students in group-based activity, although it is not possible at this time to accurately predict the ideal size of these groups. It may be that the thinking about the most appropriate group size will be informed by the design responses offered for consideration. At this stage, current planning requires that the new classroom environment be capable of accommodating between 30-40 students (it is not possible at this stage to be more precise regarding student numbers). It is anticipated that regardless of the final decision about class size, that only a single teacher will be involved in the teaching of each class convened in the new setting.

The Faculty recognises that there is a universal shift in the pedagogy within higher education world-wide and that there is a growing preference for learning approaches which promote collaborative, problem-based learning. Within our own faculty, it is likely that students will be using
a range of technical instruments in hands-on application and that these devices would be accessible to each group simultaneously during a class. These instruments would ordinarily fit on a typical student table found in common classrooms and will not require extraordinary allowance of space or other services.

A major faculty concern is the need for students to develop enhanced skills in interpersonal communication and the presentation of disciplinary-based material in formal and informal settings (e.g. for emerging forms of formal assessment, and for application in professional situations including conferences). We want to enhance our students’ potential for employment as professional bodies often comment that graduates are lacking such skills.

It is also anticipated that the availability of a new formal classroom environment that promotes more student-centred learning will be the catalyst for academic staff to reconsider their current teaching methods and course material in order to provide more engaging and stimulating learning opportunities for students.

At the present time it is not possible to predict which level of classes (e.g. first year, etc) will be conducted in the new classroom environment and therefore the redesigned setting must be able to be used by all undergraduate (and possible post-graduate) classes.
The Challenge

AT A BROADER LEVEL IT IS HOPED THAT THE REDESIGNED CLASSROOM WOULD:

MAXIMISE NATURAL LIGHT INTO THE SETTING
ALLOW STUDENTS TO USE THE CLASSROOM FOR INFORMAL LEARNING DURING OUT OF CLASS TIMES

PROVIDE AN APPROPRIATE LEVEL OF AV/IT RESOURCES TO MEET STUDENT EXPECTATIONS AND SUPPORT SUITABLE TEACHING AND LEARNING APPROACHES

ALLOW THE TEACHER CLOSE PHYSICAL CONTACT WITH ALL STUDENTS

PROVIDE SUFFICIENT STORAGE FOR STUDENT PERSONAL POSSESSIONS

SUPPORT TEACHER PRESENTATIONS TO THE ENTIRE CLASS

Brief prepared for the university Property Services Division on behalf of the Dean and key faculty academics, July, 2007 (Prepared brief is fictitious for the purpose of the forum)
Throughout the Design Forum, invited keynote speakers led discussions on particular themes relating to the design of learning environments. The sessions were stimulating and encouraged considerable contribution from the participants. The following section presents the actual order of the presentations in the program and the topics addressed, and captures the key points made by each of the keynote speakers.
RETHINKING PLACES FOR LEARNING

Guest Speaker:
Associate Professor
Peter Jamieson,
The University of Melbourne
• Formally learning environments should be designed to enable three key types of relationship / interaction / engagement:
  – Teacher – Student (addressing how the teacher and student engage, interact and communicate with each other in the setting. Where is it best to locate the ‘teaching’ position?)
  – Student – Content (addressing how the student engages with the content to be learned in the setting. How is it made known to them? What can they do with it?)
  – Student – Student (addressing how students engage, interact and communicate with each other in the setting. How can students learn with, and from, their peers?)

• Space needs to be aligned with teaching and learning intentions: What is the intended approach(es) to teaching and learning? What will the teacher do? What will students do?

• Imagine the learning and teaching spaces in the form of theatre sets, cabaret restaurants, cafés, playgrounds or sandpits. Draw on inspiration from outside traditional educational sources.

• Learning environments include formal and informal learning spaces – someone’s casual or informal setting (a garden seat, a step, a tree) may be someone else’s preferred learning environment.

• Flexible learning environments are more likely to be achieved by providing adjacent or proximate complementary settings, and a breadth of possibilities, rather than striving unrealistically to have a single setting meet multiple and often competing demands.

• Pay attention to what the students do outside the classroom setting? Where do they go?

• What is the desirable maximum number of students? Identify the critical factors determining this number, keeping in mind what we know about effective class sizes and effective small-group learning.

• What surfaces can be activated or made functional in the setting being created?

• The most unused surface in most classrooms is the wall. It needs to do more than just keep the staff and students within a space.

• How can we better utilise the IT and AV devices available to us today to help share, transfer and build upon the knowledge generated by the students?

• Consider how the teachers and students will think and feel about the spaces? Improved environments can and should motivate occupants.

• How is the success of a learning environment measured and what educational criteria are being measured? It may be sufficient to increase desirable approaches to learning (collaboration, communication, demonstration, problem-solving, etc) identified in the research on student learning.
Guest Speaker: Jon Peacock  
The University of Melbourne

- Project briefs ought to be very prescriptive as opposed to very vague, which is typically the situation in universities at present.
- The project brief gives guidance, defines timelines and deliverables.
- Project briefs are helpful in clarifying design principles, necessary technologies for use and the measure of success.
- The brief can evolve over time and serve as a document to trace back design decisions.

THE PROJECT BRIEF

- Generally, equipment is replaced every 3 to 4 years, the furniture replaced every 7 to 8 years, but the actual room may change only after about 20 years.
- Universities are tired of constantly retraining the architects appointed to each new project and expect them to be able to translate the client brief into a design. But universities are often not very good at providing project briefs with enough detail for interpretation by the architect.
- Many projects are based on the priority of project completion, rather than spending time to elaborate the brief and the critical, teaching and design principles informing the project.
- Student experiences should be the starting point of the thinking process – a design can be considered successful only if the students and academics accept the space and realise its potential.
- Play with uncertainties – if a project is too safe, it might inhibit innovation and the opportunity to achieve the best possible outcome.
- A common language is required to ensure that everyone interprets the brief in the same way.

The Challenge
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THE DESIGN PROCESS

Guest speaker: Peter Miglis
Woods Bagot

- Designing is about revealing the spirit of the space.
- Designing is a journey, it is difficult to know exactly what might happen along the way.
- Design is about imagining, envisioning, creating, and getting the spirit out of a project.
- Research is a major component of a designer's work which includes site visits to better understand the setting, conditions, climate, views, etc.

- It is crucial to bring the project into context, to clearly understand the background and drivers as well as the client's needs and expectations.
- Design responses are only as good as the ideas that initiate them.
- Designers give form to the concept.
- Furniture arrangements and IT might change over time but the initially designed zoning and ambience of a space will stay.
- Designers need to be relentless—willing to continually work until all problems have been resolved and a successful design has been created.
- The last step of the design process is testing outcomes against the concept.
AV/IT ISSUES AND THE DESIGN OF IMPROVED LEARNING ENVIRONMENTS

Guest Speaker: Jon Peacock
The University of Melbourne

- Digital media has rapid rate of change; what is appropriate now will not be in the future.
- The use of digital media depends on specific teaching and learning styles.
- How do you measure the expectations and needs of all campus occupants?
- Form a strategy group that would help to share AV/IT resources across campus.
- Teachers do learn to successfully use new classrooms with new technology.
- Teaching and learning would greatly benefit from involving teachers in the process of integrating AV/IT solutions in the design of classrooms.

To maintain the intention of the new classroom in the future, students and teachers will need to be allowed to personalise the classroom – to establish a sense of ownership. Senior managers will need to support the teaching and learning objectives expressed in the design.

- The use of digital media is restricted by the architectural shell.
- It is critical to integrate physical and technological solutions to teaching and learning objectives.
- There is an increasing need to privilege learning experience over teacher performance.
- How may E-learning influence the provision of teaching on-campus and in the classroom?
- Security is an issue.
- Some people are confronted by technologies where as others embrace it – accept this variation.
MEASURING SUCCESS – EVALUATING NEW LEARNING ENVIRONMENTS

Guest speaker: John Holm
Woods Bagot

- Measuring the success of a project is a process to examine the ability of the physical environment to support human activity.

- Post Occupancy Evaluation (POE) is a framework for assessing learning environments in terms of meeting the university’s expectations of the project.

- Baseline data collected in the initial stages/briefing process can be used for post project evaluations/comparisons.

- POEs usually assess the procurement process, technical performance (heating, ventilation, lighting), functional performance of the space and productivity and performance benefits.

- Typically, evaluation after occupancy is taken up usually happens: after 3–6 months to assess building management issues, after 12–18 months to assess long-term building issues and after 3–5 years follows a highly strategic review of the accommodation.

- Traditionally, doing “things right” means ensuring the building is technically correct:
  - Utilisation – current occupancy levels, nature of activities
  - Comfort – temperature, light, ventilation, occupational health and safety, personal safety
  - Condition – maintenance, wear and tear, anticipated life expectancy.

- In comparison, doing the “right thing” means ensuring the building delivers organisational outcomes (much harder to measure):
  - Flexibility — capacity for growth, modification and adaptation
  - Performance — effectiveness of the facility in achieving teaching and learning outcomes
  - Branding — image, design and appropriateness.

- Performance is greatly improved when people are both enabled and motivated.
The Challenge

SITE VISIT

CHEMISTRY CLASSROOM – LEARNING LAB.

In order to facilitate a more radical approach to the ‘design task’ and to stimulate new ideas, the participants were given the opportunity to inspect a recently completed classroom re-development project at The University of Melbourne. The original facility comprised a traditional, multi-tiered, 100-seat lecture theatre. In contrast, the Learning Lab offers a unique three-tiered collaborative classroom which supports small-group learning.

Significantly, the creation of the Learning Lab was based on fundamental educational principles, key ideas and my experience gained from previous projects, and the collaborative, multi-disciplinary approach to design being modelled during the Design Forum.
A multi-level classroom...

'Zones' for group work...
SITE VISIT
ENGINEERING CLASSROOM.

The Challenge
At the time of the Design Forum, a major project was underway to re-develop existing facilities in the Engineering Faculty at The University of Melbourne. Forum participants visited the site and were presented with an overview of the project which aimed to create two 60-student collaborative learning classrooms and a suite of complementary informal learning lounges and IT spaces.

The images show the participants in one of the classrooms under construction – as well as the current state of completion of the same classroom site and related spaces (as of January, 2008).

[Architects: Woods Bagot]
04
THE RESPONSE
At the conclusion of the Forum, each team was required to present a report on their experience of undertaking the ‘design task’ and/or their specific design in response to the project brief. The aim was to reveal and explore ideas, approaches and solutions and to generate further discussion among the entire group. What follows is an account of each team report based on their presentations. Direct comments by team members are indicated as quotations.
DESIGN TEAM 1
JOHN MALPAS
MARK CARPENTER
AISHLING KENNEDY
JOHN GILLIES

Early thoughts...

Table arrangements
Team 1 commenced the ‘design exercise’ very simply – “we did less design, but we talked a lot”, realising that the various members came to the task with very different perspectives.

The team initially agreed to focus on the concept of designing an environment to facilitate the three key relationships (student-teacher; student-student; student-content) that had been introduced at the commencement of the forum. It then moved on to identify other key design issues that it would address in its response to the project brief.

“How should the teacher teach?”

The team was concerned with a particular dilemma: “Are we really in the business of directing teachers as to how they should teach? Should we be saying that any teacher who comes into this room is forced to teach in a specific way because of how it’s designed?”

In responding to this issue, the team posed another critical question which underpinned much of its thinking during the exercise: “Maybe what we really need is much more flexibility?”

The concept of flexibility is extremely problematic in respect to the design of learning environments, and it was unclear from the team’s response whether it had come to terms with this complexity. What is meant by flexibility? Does it refer to the capacity to move and re-arrange furniture at the discretion of the user, allowing the use to change according to need? Does it refer to the range of activity that can be supported in a single space simultaneously? Alternatively, does it mean that the space is adaptable and able support pedagogical alternatives – in other words, different modes of teaching and learning?

A primary concern for the team was the ultimate capacity of the project space: “How many can the space accommodate?” [According to the project brief] we are to provide a facility for students to work in groups. It meant we had to divide them into groups and enable face-to-face contact.

“Diversity of teaching spaces will always be required to ensure the variety of experience will match the diversity of teaching methods and student learning methods.”

John Gillies, University of Glasgow
The existing lecture theatre [project site] can accommodate 100 students. The question we faced was how many students do we place in the new facility – thirty to forty? We could easily fit fifty to sixty students in the space as well.

We had to ask ourselves, “Was it in our mandate to tell the client the room could take more students than the brief requested (30-40)?”

But in this situation, one of the challenges we faced was having no opportunity to clarify this issue with the project client. We could only deal with the written project brief. So we came up with two scenarios and explored the types of designs that could work in this site.

We thought there was an opportunity to provide two different environments.”

Predictably, the team’s first response was heavily influenced by its visit to The University of Melbourne’s Learning Lab on the first day of the forum. The team’s initial design accommodated 36 students and divided the lecture theatre into three tiers, each containing two ‘pods’ of six students.

The team had a major problem equipping each of the pods equally in terms of the functionality available to students, as well as the associated difficulty of providing electrical and data services to the pods.

Importantly, the design was intended to create a facility that could be used by students for informal learning in non-class periods.

The team took this theme forward in its second response, asking the question: “Why can’t we divide the space into two?”

At this point, the team proposed to put forward the metaphor of a ‘sandpit’ to become the informal breakout and social space separated by glass from the primary classroom area.

This second design proposal featured triangular desks that had adjustable sides for greater variation in classroom configurations. One team member stated: “Furniture became a very detailed aspect in this proposal. You can collapse the curved edges and put the tables together to form a large table. We wanted to give full flexibility to the teacher for how the classroom was arranged. We did not want to direct the teacher to teach in a structured room.”

The team wrestled with conflicting issues thrown up by its approach to the design – on the one hand needing to provide accessible storage options for unused classroom furniture, whilst on the other needing to provide power and data services to tables that could be located randomly.

“The difficulty is in the transition between classes – one would need to put furniture away then reconfigure the room. This is the problem with this design. How can this be managed better? If you have a two hour class where students have multiple breakout and presentation activities, you cannot move the furniture all the time.”

A further challenge arose with the team’s interest in providing greater variation in, and student control over, lighting configurations. How, they wondered, can this be done whilst simultaneously allowing users to configure the room according to their preference?
“This room is generous but as people crowd in how can you create an independent atmosphere for each group? You can use mobile whiteboards to separate groups but then it becomes claustrophobic, and how would you store them? Then the room becomes more of a storage room and it will create a different atmosphere.”

The team also grappled with the issue of displaying projected material to the entire class and its associated challenge of sightlines for students, as well as the critical concern of where to ‘locate’ the teacher in the classroom.

Reviewing its approach to the exercise, the team concluded, “We have come full circle in our thinking, from ‘great flexibility’ – didn’t work, you could not accommodate every need – to ‘fixed furniture’ to accommodate the provision of services and lighting. Overall, we were working with concepts rather than towards a final design”.

Compiled by Peter Jamieson

Providing a range of facilities is critical. There are still instances when it will be necessary to address large groups in auditorium style but increasing teachers want to work in group settings.

Aishling Kennedy, University College Dublin

There has to be diversity and flexibility. Obviously no one facility can meet all expectations, so ‘suites’ of facilities have to be considered.

John Malpas, University of Hong Kong
A good physical environment creates less fatigue amongst participants.

Angus Denton,
University of New South Wales
In the spirit of “pushing the boundaries”, Team 2 initially expressed their struggle with the brief that it “did not say enough about what will be going on inside this classroom”. In response, they began brainstorming and discussing the processes and the concepts before transforming their ideas into design outcomes.

“We really did try to begin as a blank slate, we tried not to think about the learning lab (from the site visit) and to let go of our own history and baggage. I felt I was bound by the constraints of my own institution with finances and resources. It was fun with this group because we were able to just let go for a while and see what happens”.

The group’s design process throughout the workshop was evolutionary. They were especially concerned with how to cater for the different needs of the students and university stakeholders. Inspired by a keynote speaker, the team referred to bringing out the ‘spirit’ of the classroom. While carrying on their discussions and site visits, this team also focussed on the three key relationships of student-teacher; student-student; student-content.

“Before determining the size of the room, we needed to know what goes inside and how large they can be, so we delved into furniture to see how it will fit into the room. We explored table shapes from rectangular to oval shapes. Round tables give the ability to spread stuff out but are harder to link with other tables.”

Assuming groups of six students per table, Team 2 began playing with design variations, including the configurations of furniture in relation to its impact on student behaviour. From the result of their discussions, their design proposition accommodated a total of 36 students. The small class number was directly determined by the ability of the classroom to provide group learning.

“We explored the notion of people working individually then working as a large group by moving the tables together. But so long as you get the idea of the common group, I don’t see the tables having to join up”.

“We ended up with the notion of it being a space for students collaborating rather than the process of them always with the teacher. The teacher might be more of a supervisor in this space.”

At this stage the team introduced a mobile podium for the teacher. Similar to a music stand, it had a touch screen so the teacher could easily direct content from individual group work to the class through the screens positioned around the room.

“More diverse types of learning spaces will encourage new ways of learning especially those with a clear understanding of what is needed.”

Kenneth Wong,
University of Hong Kong
The use of technology incorporated into the design became a means of connecting the entire class. ‘Low tech’ objects such as light-weight boards for brainstorming (huddle boards) were also introduced to encourage different learning experiences and not to isolate students. “If one was to demonstrate something, it would be beneficial for them to turn around and not to focus on their laptops.”

The team’s discussions around AV/IT issues considered factors such as security, durability and flexibility of equipment and especially the question of providing power connections. The logistics of servicing, software and support was also discussed but, at the same time, the team was conscious that teaching and learning should not be driven by IT. One concern for the team was that the design should be able to be adapted to changes in pedagogy and technologies in the future.

Another important element of the Team 2 design proposal was the provision of storage space so “students can come in, drop their bags and not have to worry about it”. Storage should also be provided if laptops are to be used in group learning. “Where can students store their laptops? Putting them under the table is too obstructive; maybe you can design a chair with a pouch on the side?”

Team members were especially challenged to provide a flexible classroom aligned with the teaching methods. “We need to have that dialogue with the academics to understand how the furniture may accommodate the learning activities for the setting ….. Anything we do with design has to go in tandem with faculty development and with professors in how to use this space.”

After further exploration, Team 2 began investigating how the space would attract students. Their design proposed the installation of an outdoor deck and kitchen facilities “based on the 24x7 idea, because it gives a sense of handing over control in a way. It has to be a liveable space. Students are always at the coffee shop, so the classroom should be a similar place where students can spill out, especially if they are working from 11pm till 4am in the morning”.

The team was also concerned with utilising the various surfaces around the room. In an attempt to use the ceiling they proposed “sticking existing lecture chairs and benches on the ceiling” to represent the evolution of the classroom and its history.

In summarising its design response, the team highlighted the following features:

Traditional learning methods are prescriptive and locked into dictating student behaviour.

Brian Shirriffs, Melbourne University
Spirit
The classroom is free thinking, creative, with no constraints. It should be pleasant to be in, liveable and welcoming like our homes, to create a sense of ownership for the students. This can be achieved by providing 24/7 access, kitchen, outdoor spaces, storage and secure facilities.

Flexibility
The principle of flexibility is based on student engagement with the learning material. What are the learning preferences? How can the room be configured for various activities? For group learning, students should be able to interact in small groups, engage in class discussions and experience individual moments. The environment should also allow for presentations. Technology should not dictate what the room can or cannot do.

Mobility
This is the ability for interaction. The room should provide multiple zones and promote movement between these zones, so the teacher can easily speak to the whole class and to each individual. If the students are to participate in small and large group situations, the furniture should be able to be configured as required.

Connectivity
The room should facilitate the connection of students with each other, with the teacher, with the content and to the world beyond the classroom. The sense of distance and intimacy can be translated into a sense of group zones without these being isolated from each other. Students should be able to participate through and with their work, feel connected to the outside world and at the same time bring the outside in. There should also be a sense of being connected to the past by honouring the integrity of the space and the building.

Liveability
The creation of a personalised environment provides the users with a quality experience. We should consider student behaviour in terms of what they need to do their work, what they bring to class and what they can leave aside.

Challenges and Possibilities
It is difficult to design learning environments where there is no clear picture of syllabus, i.e. what is to be taught, how it is to be taught, and how teaching and learning is to be evaluated.

Compiled by Hsuhan Chiang
Usability for students and teachers includes aspects such as light, heat, surfaces, accessibility.

Belinda Allen, University of New South Wales

Architects and educators need to be explicit about engaging students and faculty on the value of the existing physical environment as a subject of learning.

Peter Waldman, University of Virginia

A model takes shape
After a quick discussion on the project brief, Team 3 went immediately to the project site to “engage[d] with the qualities of the classroom and its surroundings for inspiration” and “use the site as the beginning point to see what [was] possible”.

As the project site is situated on the edge of the university campus and is a part of the Faculty of Land and Food Resources, Team 3 “interpreted the context to have an immediate connection to the outside and beyond”. This led to the idea of opening the western wall to create an outdoor classroom that extended into the garden, revealing the “temper of changing seasons and thoughts”. The team also utilised the basement workshop area as part of their design inspired by the metaphor of “planting the seeds as one would do in the dead of winter”.

Their initial ideas generated on site began to take shape which inspired the team to continue the rest of their design exercise “using the idea of metaphors of space”. They also began to determine the values and aspirations for the new classroom and explored the possibilities through modelling and drawing. As a result, the design proposal was titled “The learning circus: A catalyst for change”. The metaphor of the circus represents the students as performers and the teacher as ringmaster who can conduct activities from anywhere in the room. “But it may also be configured to become a lecture room where the teacher is the performer and the students become audience”.

The circus metaphor inspired the team to play with ideas such as installing retractable stairs, collapsible circus seating or tracks for curtains that can be pulled down to create individual spaces. “Like acrobats in a circus suspended above – wires coming down”. The ceiling design was also inspired by the metaphor of the circus. Mounted on the ceiling are projection screens that come down like acrobats, and lighting options such as stage lighting and spot lighting hang down for group work.

... at the end of this workshop my horizons have been broadened and I would now say that any space could be a source of inspiration [for the design of new learning environments].

Toni Kelly, University of Birmingham
Team 3 also created a motto for themselves – “Stand up! Be active, be involved, and be engaged.” Their motto was inspired by a student campaign being conducted on the university campus at the time of the Forum. The phrase took momentum and developed into many ideas, including the notion of “the teaching space in default did not have to have furniture; students can work with or without it.” This means lectures can be conducted standing up, which directly challenges the notion of a typical 60 minute lecture – “standing up creates shorter but more dynamic exchanges between teacher and students as well as among students”.

At this stage, Team 3 began to clarify the functional needs of the learning circus. They proposed that the design should provide a range of functions such as:

- an active multifunctional space enabling students to work on different things in different ways at the same time
- a formal lecture facility
- flexible group study areas
- social and collaborative learning space
- AV and IT facilities to support lecturing, presentations, computer-based and independent study
- an environment that reflects and supports the studies of the Land and Food Resources Faculty – a facility that supports the University of Melbourne model.

Team 3’s major ethos, ‘Stand up’, became a metaphor for “trying to be out there” and the team continued to create physical models, drawings and written summaries through playing and working with metaphors. Sometimes the functional objectives of the design also inspired new metaphors to be adopted. The following is a description of the spaces proposed in the design. Each of these spaces is clearly definable, but they work together to create an integrated, sophisticated and complex environment that satisfies a wide range of teaching, learning and technological requirements.

The learning circus consists of a number of spaces:
- the teaching and learning laboratory
- the grotto
- the garden
- Royal Parade (the adjacent, major roadway)

Starting from the main space, the teaching and learning laboratory is a flat floor learning space with four group study rooms on a raised dais. “The laboratory space has no actual configuration for maximum mobility except for the study rooms at the back”. In line with the “Stand up!” credo, the room has café-style high tables that can be moved easily to accommodate group work. There is a mobile bar counter to store laptops connected to one server (assuming wireless and mobile technology). This set-up allows for a transfer of the key information, and it draws students into a discussion circle where the teacher can be at the centre. Students can also break into groups in the room, garden or grotto.

The metaphor of the garden is an outside area which allows engagement with the environment during class – it is a place for work (planting, maintenance, experimenting), reflection, inspiration, socialising, pleasure and observation. Canopy/sails provide shading for the grassy seating areas and
create an additional working area. A sandpit-like area “allows students to learn in a playful way”.

The classroom is situated in the Faculty of Land and Food Resources so the garden will incorporate related activities that reflect current planting seasons. The garden also stands for “engaging with the elements”, like rain, thunder and lightning. This in turn inspired the collection of water from the gabled roof to be used for the plants, a fountain and a de-humidifier. “Engaging with the elements” also inspired the creation of a thunder wall – a ‘low tech’ projection board including virtual flipcharts for work sessions, presentations and communication within the setting and beyond the classroom into the garden and the street, and onto the Internet. The wall is mobile and retracts to the outside of the classroom so “people outside can look at it”. Portable white boards, projectors and cameras can also be taken into the garden to facilitate distance learning.

The learning circus faces the busy Royal Parade thoroughfare. The external walls can be used to show passers-by the activities in the facility or transmit information about the university. “The area becomes a common place relating to the area’s agricultural past and the surrounding gardens, plant and nursery houses. It is a gathering space reaching out to the community and demonstrating activities”.

The grotto or cave was created in the basement as a reflective, informal, social and collaborative space with six areas for group study. It includes individual lighting, Japanese-style low tables and comfortable seating such as beanbags. It also provides access to the garden. It has “mushroom-like columns which provide an inclusive atmosphere” and “walls serve as blackboards where students can write with chalk”.

An atrium delivers light into the grotto, which can be accessed through circular stairs from the classroom as well as from the outside. This would allow 24 hour access. Vending machines ensure that snacks and drinks are available. An Australian flag in the basement “brings the campus context and the larger world into play”.

All the surfaces, outside and inside, above and below, walls, floor and ceiling, and every space in the learning circus, provide ‘live’ writing surfaces for students [white boards, black boards] or projection surfaces to facilitate collaboration. All the spaces in the learning circus take into account the sunlight at different times of the day (morning, high noon and late afternoon) and facilitate optimum use of the space throughout the day – “There is one comment in the original brief on natural light so we created more light and introduced gardens”.

The team wanted the learning circus to be “a place to attract and keep students in”. They discussed the need for campuses to provide more of these spaces so students can “have a sanctuary, a quiet place” and “have soft lighting and surfaces that remind them of the old world”.

In conclusion, Team 3 stated, “we were very clear about the ideas for this project on the first day. It took one hour then we decided to go ahead by modelling and drawing and working with the metaphors”. They also explained that “from the eclectic group of people, we had fun with some sort of structure to our design process”.

Compiled by Andrea Egert
At the conclusion of the Forum, the participants and the convenors, The University of Melbourne and Woods Bagot, sought to build on their collaboration and the relationships that had been established during the event. It was agreed that further collaboration would be established through the U21 global network and Woods Bagot’s Public research initiative, in order to promote the sharing of ideas, successful projects and new developments at both an individual and institutional level. Information about this initiative can be found on the U21 website.

Within a short period following the Forum there were a number of tangible developments. Significantly, a number of the participants undertook to jointly present a paper on their experience of the Forum and to showcase examples of ‘new generation learning environments’ at the U21 conference on Teaching and Learning (Glasgow, February 2008). As well, participants arranged for a number of workshops and seminars to be held at various U21 institutions on the issue of ‘new generation learning environments’.

Perhaps most impressively, in the wake of the Forum several institutions represented at the Melbourne event took action to adopt improved approaches to the design and development of actual projects, drawing on the approach of the Forum and the key ideas which underpinned it.
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THE EVENT WAS SPONSORED BY WOODS BAGOT TO EXPLORE COLLABORATIVE, INTER-DISCIPLINARY APPROACHES FOR IMPROVING THE QUALITY OF UNIVERSITY CLASSROOMS.