MEMBERS OF THE eLEARNING AND LEARNING SPACES STANDING COMMITTEE

Director of Centre for Advancement of Teaching and Learning (W/Professor Denise Chalmers) – Chair
Nominee of the Executive Director, Finance and Resources (Ms Rowan Maclean)
Nominee of the University Librarian and Director of Information Management (Ms Margaret Jones)
President of the Guild (Ms Emma Greeney)
Associate Dean (Teaching and Learning) (Faculty of Architecture, Landscape and Visual Arts), Mr Philip Goldswain
Associate Dean (Teaching and Learning) (Faculty of Arts, Humanities and Social Sciences), Dr Alexandra Ludewig
Associate Dean (Teaching and Learning) (Faculty of Life and Physical Sciences), Dr Peter Whipp
Associate Professor Nick Spadaccini (Faculty of Engineering, Computing and Mathematics)

BY INVITATION (STANDING INVITEE)
Ms Rebecca Cameron, Manager, (Construction and Development Services) (Facilities Management Directorate)
Mr Romesh Goonewardene, MArch/LArch Honours Co-ordinator (Faculty of Architecture, Landscape and Visual Arts)
Asst/Professor Shannon Johnston, Higher Education Development (eLearning) (Centre for Advancement of Teaching and Learning)

BY SPECIAL INVITATION
Mr Frank Roberts, University Architect
Ms Sue Smurthwaite, Associate Director, Education Policy Services (Acting Executive Officer)

eLEARNING AND LEARNING SPACES STANDING COMMITTEE MEETING – WEDNESDAY 4TH AUGUST 2010

This is to confirm that the next meeting of the eLearning and Learning Spaces Standing Committee will be held from 9.30 – 11.00am on Wednesday, 4th August 2010 in Winthrop Tower, meeting room W1.

Part 1 of the agenda is to be dealt with en bloc by motion of the Chair. There are no items in Part 2. Part 3 is for discussion. A member may request the transfer of an item from Part 1 to Part 3.

Jan Cardy
Executive Officer
**AGENDA**

**WELCOME**
The Chair will welcome members.

**APOLOGIES**
The Chair will record any apologies. Members are reminded that apologies should be forwarded to the Executive Officer prior to the meeting.

**DECLARATIONS OF POTENTIAL FOR CONFLICT OR PERCEIVED CONFLICTS OF INTEREST**
The Chair will invite members to declare potential for conflict or perceived conflicts of interest, if applicable, with regard to items on the agenda.

1. **MINUTES – REF: 29380**
Confirmation of the minutes of the eLearning and Learning Spaces Standing Committee meeting held on Wednesday 10th March 2010.

2. **ITEMS/BUSINESS IN PROGRESS – REF: F28401, F22828**
Members are asked to note the following items as ‘business in progress’.

<table>
<thead>
<tr>
<th>No</th>
<th>ITEM/BUSINESS IN PROGRESS</th>
<th>ACTION</th>
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<tr>
<td>A</td>
<td>F28401 Proposed Framework for Decisions regarding Adoption of New Technologies at UWA</td>
<td><strong>Terms of Reference 1:</strong> Formulation of an evidence-based framework for developing protocols regarding adoption of new technologies at UWA at both the faculty and central levels. <strong>Terms of Reference 2:</strong> Undertake preliminary scoping study of the University’s online learning needs</td>
<td>Working Group, convened by Associate Professor Nick Spadaccini</td>
<td>In progress. Report due June 2010.</td>
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<td></td>
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<td>In progress - ‘Student IT Needs Study’ report due Aug 2010</td>
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<td>B</td>
<td>ELearning Strategy at UWA</td>
<td>Development of a draft eLearning Strategy</td>
<td>Chair, W/Professor Denise Chalmers</td>
<td>In progress. Report due in 2010.</td>
</tr>
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<td>C</td>
<td>The Built Learning Environment</td>
<td>Teaching Fellowship Project</td>
<td>Ms Rebecca Cameron</td>
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<td>D</td>
<td>Student Feedback on Learning Spaces</td>
<td>Prepare discussion paper</td>
<td>Ms Rowan Maclean Rebecca Cameron</td>
<td>In progress. Report due Sept 2010</td>
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<td>E</td>
<td>F28401 Student IT Needs Study - 2010</td>
<td>Prepare Interim report</td>
<td>Ms Margaret Jones</td>
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PART 1 - ITEMS FOR COMMUNICATION TO BE DEALT WITH EN BLOC

3. WEBCT, LECTOPIA AND REVIEW OF THE UNIVERSITY’S LEARNING MANAGEMENT SYSTEM (LMS) – PROGRESS UPDATE FROM CATL – REF: F5397, F22828, F28027

The attached report (Attachment A) provides a progress update on the current status and performance of WebCT and Lectopia systems and an update on the LMS review.

For noting

4. LECTOPIA RECORDING AT UWA – REF: F22828

At the committee’s December 2009 meeting, members noted that that the following recommendations had been endorsed by both the Teaching and Learning Committee and the Academic Council (R168/09):

- Lectopia recordings should be of good quality.
- When Lectopia recordings are the primary method of teaching they should be specifically prepared for the purpose, appropriately supported with relevant learning resources and the LMS (WebCT) should be used to ensure active engagement.

Members further noted that the following recommendation had been referred to the Faculties for further consideration and feedback to both the Teaching and Learning Committee and the Academic Council:

- That all lectures in all venues which have recording facilities be recorded and made available to students. Exceptions should normally only be made when approved in advance by the Head of School and when at least one repeat lecture is provided

Members are advised that at its meeting of 3 June 2010, the Teaching and Learning Committee had considered the issue of lecture recordings in light of resulting feedback and resolved (R22/10) to recommend to Academic Council that the proposed University Policy on Central Timetabling as it related to lecture recordings be amended to include the following principles:

i. That the University continues to support high quality, blended delivery, and strongly encourages the continued provision of recorded lectures as a complement to face-to-face lecturing and as a significant learning resource for many groups of students;
ii. That lectures registered for provision by lecture recording be listed in the online unit outline at the commencement of the semester in which they are taught;
iii. That all units which are delivered regionally must provide the lecture recordings to regionally-enrolled students;
iv. That units delivered during 2010 via a lecture recording system be automatically rescheduled from 2011, dependent upon venue allocation. Lectures scheduled for recording from 2011 can be opted-out of by teaching staff in keeping with any locally devised and agreed protocols;
v. That CATL provide a list of units utilising lecture recordings to the Teaching and Learning Committee via the eLearning and Learning Spaces Standing Committee annually in second semester each year, and report trends in use, including the year level of units in which lecture recordings are utilised;
vi. That CATL provide a retrospective list of units utilising lecture recordings to Deans and Associate Deans (Teaching and Learning) annually in second semester each year, to enable periodic faculty, school and discipline group review of the lecture recording usage, and any associated pedagogical and access issues;
vii. That staff engaging in team-taught unit offerings in the New Courses determine an overall approach to lecture recording which will pertain for the unit overall;

viii. That it is strongly recommended that lecture recordings be used in at least one of two units at the same level within New Courses majors, where there is a known clash of lecture times in those units and where students are enrolled in those units simultaneously;

ix. That the use of the University’s lecture recording system be reviewed at the end of 2013 by the Teaching and Learning Committee’s eLearning and Learning Spaces Standing Committee, to assess the impact of New Courses upon delivery.

At its meeting of 7th July 2010 Academic Council endorsed (R53/10) the recommendations of the Teaching and Learning Committee. The relevant extract of the meeting of Academic Council is attached (Attachment B) for members’ information.

For information

5. EVALUATING LEARNING SPACES – SEMINAR AND WORKSHOP – REF: F

For members information the Australian Learning and Teaching Council will run a seminar and workshop program on ‘Evaluation Learning Spaces’. The WA seminar is scheduled for Thursday 16th September 2010 at Curtin University. Full details are attached (Attachment C).

For information

PART 2 - ITEMS FOR DECISION EN BLOC

No items

PART 3 - ITEMS FOR DISCUSSION

6. DRAFT CAMPUS PLAN 2010 - CONSULTATION – REF: F33224

The physical planning of The University of Western Australia is guided by the Campus Plan. The plan is the key tool to guide the University in its decisions on the functional layout and future development of the Crawley Campus. It is reviewed every ten years. The University’s Campus Plan 2010 (the Plan) will build upon the Campus Plan 2000, taking into account changes in economic, social, environmental and governance over the past decade. The focus is on 2010 – 2020, but also sets the foundations for campus development through to 2060.

The plan is in the process of being developed. Each of the key elements that have an impact on the campus is examined independently with a series of principles proposed. The draft principles have been developed with the Vice-Chancellors Campus Plan 2010 Steering committee and key University stakeholders. Principles will guide development to ensure the University develops sustainably, while retaining the amenity that is enjoyed by students, staff and the community. In addressing these principles, there will be some repetition as they are relevant to more than one topic.

The consultation process for the plan is in progress to promote discussion and feedback regarding the Crawley Campus in order to best support the future needs of the University and the community it serves.

A document outlining the draft plan is attached (Attachment D). Members are asked to note that this document will be superseded by the Campus Plan 2010 website as at 4 August 2010 at which point members will be asked to refer to the website for the most current version.

This document is in draft and NOT for circulation beyond this committee.
The Chair will invite Ms Rowan Maclean, Director, Strategic Project Management, Finance and Resources Office and Mr Frank Roberts, University Architect to introduce to this item. Members’ feedback is invited to further inform the final plan, in particular Student Life principles.

For discussion

7. UWA LMS REVIEW – SUMMARY REPORT ON THE ENVIRONMENTAL SCAN OF LEARNING MANAGEMENT SYSTEMS (LMS’S) IN THE HIGHER EDUCATION SECTOR – REF: F28027

Members will be aware that a review of the University’s current Learning Management System (LMS) is underway under the auspices of the eLearning and Learning Spaces Standing Committee.

The first task of the LMS Review working group was to conduct an environmental scan of LMS uptake across the Higher Education sector. This will help to identify viable LMS’s for consideration by UWA.

This process involved scanning the LMS market to ascertain which LMS’s are currently in use by Universities, and to understand the factors affecting which LMS was implemented.

In addition, the LMS Reviews of 5 Universities were selected and examined in further detail with the purpose of accessing the data gathered and to examine the processes undertaken by those Universities; so as to inform and guide the UWA LMS Review.

This report (Attachment E) presents a summary of the findings and actions to date.

For discussion

8. ITEMS IN PROGRESS – UPDATES

The Chair will invite members who are responsible for ‘Items in Progress' to provide a brief verbal update on progress to date.

For information

9. NEXT MEETING

The next meeting of the eLearning and Learning Spaces Standing Committee will be held on Wednesday 13th October 2010 from 9.30am – 11am in Winthrop Tower, meeting room W1.
July Update to eLearning and Learning Spaces Committee

Learning Management System (WebCT):

The eLearning Development and Support Team is currently processing requests for Semester 2, 2010 LMS units. Final statistics will be provided at the next meeting.

Several staff development workshops have also taken place for the Learning Management System over the mid-year break. Statistics will be provided at the next meeting.

Lecture Capture System (Lectopia)

The eLearning Development and Support Team is currently processing Semester 2, 2010 Lecture Capture requests. Final statistics will provided at the next meeting.

Several staff development workshops have also taken place for the Learning Capture System over the mid-year break. Statistics will be provided at the next meeting.

During the mid-year break, the Lecture Capture System (Lectopia) has undergone a major technical infrastructure upgrade. This will ensure greater processing and storage capacity. In addition, the delivery settings and groups have been updated to ensure that students can use iPhones/iPads to listen/view their captured lectures. More information about this upgrade will be provided at the next meeting also.

LMS Review

Two more vendors visited UWA as part of the LMS review. The team from Blackboard presented their latest offering, Blackboard Learn 9.1 on Tuesday, 18th of May 2010. The seminar was attended by 22 UWA staff. Representatives from another vendor, Desire2Learn visited UWA on Friday 25th of June and held a presentation of their LMS with 10 staff attending the event. After both general presentations, the vendors met with the LMS Technical Implementation and Integration Group and answered clarifications on implementation and integration with other UWA Systems. A meeting with the LMS Review Working Group followed. An online facility was set-up to get feedback from participants of the various vendor presentations. 6 out of 22 Bb Learn presentation participants submitted their feedback, while 3 out 10 participants submitted for Desire2Learn.

The LMS review website was launched and went live on 18th of June, and the 1st LMS Review bulletin was circulated at the same time. The website is accessible on this link: http://www.catl.uwa.edu.au/elearning/lmsreview

Two members joined the LMS Review working group, W/Prof James Trevelyan, representing Faculty of Engineering, Computing and Mathematics and Ms Belinda Shilkin from the Library. This ensures these business units now have representation as part of the review.

Shannon Johnston, Assistant Professor eLearning at CATL, and CATL LMS team / Working group member, attended Moodlemoot from 12th-14th July 2010 at the Melbourne Convention and Exhibition Centre.

The working group met on Monday, 19th of July and discussed activities for semester 2.
• ITS has commenced comparing the various possible software/hardware specifications and implications (including managed hosting and in-house options) of the three LMS products (Bb Learn 9.1, Moodle, Desire2Learn).
• Findings from reviews of other university LMS Reviews were shared.
• CATL is drafting UWA-specific questions for vendors to address in writing. The draft will be sent to the working group before the August meeting on Monday, the 16th.
• Hosted play sites for UWA were set-up by Blackboard, Desire2Learn and NetSpot (for Moodle). The working group will start exploring the sites from week 1 of semester and were encouraged to provide feedback to contribute in the development of UWA-specific questions and procedures for the UWA community-wide user testing.
• eDS, CATL will start testing content migration into the Bb Learn 9.1, Desire2Learn and Moodle 2.0. Criteria for selecting units were presented to the working group. Working group members were encouraged to nominate a unit for their faculty.
(a) Lecture Recording (Lectopia) at UWA – Ref F3110, F22828

Members were reminded that, by R168/09, Academic Council had endorsed a number of recommendations of the Teaching and Learning Committee concerning issues associated with timetable clashes and referred back to the Committee for further consideration by faculties the following proposal concerning recording of lectures:

“That all lectures in all venues which have recording facilities be recorded and made available to students. Exceptions should normally only be made when approved in advance by the Head of School and when at least one repeat lecture is provided.”

It was noted that the matter had subsequently been referred by the Pro Vice-Chancellor (Education) to all Associate Deans (Teaching and Learning) for further consultation within the faculties and had been considered by the Centre for the Advancement of Teaching and Learning, the Student Guild and the UWA Academic Staff Association.

Members were advised that at its meeting of 3 June 2010, the Teaching and Learning Committee had considered the issue of lecture recordings in light of resulting feedback and resolved (R22/10) to recommend to Academic Council that the proposed University Policy on Central Timetabling as it related to lecture recordings be amended to include the following principles:

i. That the University continues to support high quality, blended delivery, and strongly encourages the continued provision of recorded lectures as a complement to face-to-face lecturing and as a significant learning resource for many groups of students;

ii. That lectures registered for provision by lecture recording be listed in the online unit outline at the commencement of the semester in which they are taught;

iii. That all units which are delivered regionally must provide the lecture recordings to regionally-enrolled students;

iv. That units delivered during 2010 via a lecture recording system be automatically rescheduled from 2011, dependent upon venue allocation. Lectures scheduled for recording from 2011 can be opted-out of by teaching staff in keeping with any locally devised and agreed protocols;

v. That CATL provide a list of units utilising lecture recordings to the Teaching and Learning Committee via the eLearning and Learning Spaces Standing Committee annually in second semester each year, and report trends in use, including the year level of units in which lecture recordings are utilised;

vi. That CATL provide a retrospective list of units utilising lecture recordings to Deans and Associate Deans (Teaching and Learning) annually in second semester each year, to enable periodic faculty, school and discipline group review of the lecture recording usage, and any associated pedagogical and access issues;

vii. That staff engaging in team-taught unit offerings in the New Courses determine an overall approach to lecture recording which will pertain for the unit overall;

viii. That it is strongly recommended that lecture recordings be used in at least one of two units at the same level within New Courses majors, where there is a known clash of lecture times in those units and where students are enrolled in those units simultaneously;

ix. That the use of the University’s lecture recording system be reviewed at the end of 2013 by the Teaching and Learning Committee’s eLearning and Learning Spaces Standing Committee, to assess the impact of New Courses upon delivery.

Members had before them the relevant extract from the minutes of the meeting of the Teaching and Learning Committee held on 3 June 2010.

Invited to speak to the matter, the Pro Vice-Chancellor (Education) explained that as no clear line had emerged following the consultation process with faculties and others the Teaching
and Learning Committee had placed outcomes at the forefront in making its recommendations. She emphasised that recording was not proposed to be mandatory except in the case of units delivered regionally.

A member noted that reporting would occur on the use of lecture recording but that no such reporting was required in relation to its non-use. He drew attention to the potential for units that were not recorded to be significantly impacted by those that were. It was noted also that lectures that were not recorded and were scheduled at the same time as recorded lectures could draw students away from the recorded lectures. The Pro Vice-Chancellor (Education) confirmed that these had been matters considered by the original working party. It was also pointed out that timetable clashes were more likely to occur between units in different majors than between those in the same major.

RESOLVED - 53

to endorse the recommendations in R22(i) to (ix) of the Teaching and Learning Committee as set out above.
Learning spaces in universities are changing. Shifts in student mobility, pedagogy, curriculum management and technological tools are beginning to impact directly on the planning and development of campus learning spaces. However, building and refitting learning spaces is an expensive and potentially risky enterprise. An inappropriate space is not only costly in financial terms, but also for the reputation of the institution, student experience and staff confidence in the driving educational principles. Both pre- and post-occupancy evaluations are important tools in understanding learning spaces and their impact on the curriculum, the institution, and most importantly, the people who use them.

The aim of this seminar and workshop program is to disseminate findings from a recent ALTC funded project on the evaluation of learning spaces, and to provide a forum for sharing experience and expertise in evaluation methods that have been trialed in the tertiary campus environment. Three facilitated workshops will focus on opportunities and challenges faced by participants in evaluating their own spaces.

Dates & Venues:

QLD, Brisbane • 31 August 2010
Venue: University of Queensland

NSW, Sydney • 2 & 3 September 2010
Venue: University of Technology, Sydney

SA, Adelaide • 14 September 2010
Venue: University of South Australia

WA, Perth • 16 September 2010
Venue: Curtin University

VIC, Melbourne • 22 & 23 September 2010
Venue: Swinburne University of Technology

Facilitators:

Nicolette Lee (SUT)
Julie Dixon (VU)
Trish Andrews (UQ)

Keynote Speakers (VIC only):

Geoff Mitchell (QUT)
Jo Dane (Woods Bagot)

For more information on our project, please visit: http://www.swinburne.edu.au/spl/learningspacesproject

Please note, places in workshops are limited. For program details and registration, please visit: http://www.swinburne.edu.au/spl/els

Closing date for registration: 18 August 2010.
Draft Campus Plan 2010

Content for Public Consultation

Note: This document will be superseded by the Campus Plan 2010 website as at 4 August 2010. Please refer to website following this date as it will hold the most current version.

This document is in draft and NOT for circulation beyond this committee.
Access and Parking
The future development of the Campus is dependent upon creating better transport linkages with the City of Perth and other metropolitan centres.

The 1990 Campus Plan signalled an end of the Campus being a primarily ‘drive to’ destination and the provision of public transport, cycling and walking access to the campus was further developed.

Despite being located away from the rail network, the University is accessible through road and public transport (bus) options available to the area. The ability of the University to grow remains linked to the ability to bring students and staff to and from the campus.

In Campus Plan 2000, the University’s parking numbers on the then campus area were capped; a policy that has been supported by the Western Australian Planning Commission. The 2000 plan capped parking at 4250 bays, of which 3300 were controlled by the University and the remaining 950 by local governments. It is intended to continue this cap. The University has continued to grow in student numbers despite the cap and will grow to 25,000 students by approximately 2015, indicating that access has been accommodated by means other than private vehicle and will continue to do so. The policy of having more students living closer to Crawley is likely to result in an increase in walking and cycling access to campus. As the campus land area expands the associated parking provisions for teaching and research buildings will be maintained. However, consideration will need to be given for additional parking for other uses such as residential, collaborative research and commercial use.

Over recent years there have been issues with student parking in surrounding streets. While the University is asked from time to time to address this issue, the University is only able to create parking by-laws over the land which it controls. The University has supported the cities of Subiaco, Perth and Nedlands amending and enforcing their own parking laws.

Transport Policies and plans
The Campus includes an internal ring road which was developed to help students travel between car parks on campus. The ring road mirrors the function of the adjacent roads, resulting in a replicated internal road network. The introduction of a narrower bike lane that can be used by service and emergency vehicles, has proved successful with the development of the Business School at the south of the campus. This model can be continued around the campus, without having an impact on accessibility.

The University is completing the UWA Transport Plan to provide a strategy for the day-to-day and longer-term direction for transport for the University. The transport-related objectives of Campus Planning Review 2010 include:

- efficient and equitable management of the limited parking supply
- provision of a high quality and range of non-automobile transport alternatives
- minimising the impact of parking and access on the physical campus environment
- making better use of campus land area currently used for surface parking and ring roads.

The draft UWA Transport Plan makes recommendations in five broad areas:

- behaviour change and review of programs
- improvement of the public transport network that services the University
- provision of high quality walking and cycling facilities to the University
- increasing the supply of local residential accommodation for students
- reform of the University parking system.

Draft principles
1. Minimise single occupant vehicle usage to campus and encourage increased usage of alternative modes of transport such as cycling, walking and public transport.

Draft recommendations
Alternative modes of transport
• Support the systematic increase in public transport capacity by the Public Transport Authority, including an intermediate form of transport between buses and heavy rail such as light rail.
• Allocate space for future public transport requirements such as light rail stops/depot, bus interchanges and ferry terminals.
• Encourage sharing alternative transport resources and parking with the general community.
• Increase supply of local residential accommodation for students, which (coupled with improved public transport) will reduce demand for car ownership and parking.
• Develop a guaranteed ride home programme for users of alternative transport.

Parking
• Consider parking as a regional issue – ensuring sufficient parking for the area, not a specific campus use.

Ensure the architecture and landscape quality of the campus is enhanced by:
• Providing underground parking, integrated within and under buildings where possible and economically sound.
• Removing smaller surface car parks when the opportunity arises, delivering small building sites or landscape opportunities.
• Reducing the use of cars on campus.
• Ensuring the architecture and landscape quality of the campus is not compromised by roads and parking facilities.
Architecture and Built Form

The Crawley campus is considered one of the most beautiful in the world and since 1914 great care has been taken to prepare periodic development plans to establish principles to underpin the quality of the campus.

An international competition was used to find designs for the Hackett Memorial Buildings, of which Winthrop Hall is the centrepiece. These buildings responded well to the Wilkinson Plan 1927 and became the exemplar of future campus architecture. The grandeur of composition, richness of detail and colour of the buildings have set a formidable design standard for subsequent development.

In the main, later development has respected the qualities of the original buildings and the University enjoys a campus with a totality of design rare on campuses developed over a period of time and under a variety of influences.

Architectural Style

The architectural success of the campus has been achieved by various buildings, each successful architectural statements in their own right, yet being designed to be compatible with their neighbours. Examples at Crawley of where the University has diverged from its simple contextual design approach include the Physics, Chemistry and Engineering Buildings, constructed in the 1960s.

Campus buildings free from passing fashions achieve individual merit by contributing to the success of the total campus, and to depart significantly from the established image and maintain architectural integrity may be impossible. A test of this is to ask if proposed buildings are timeless through their architectural qualities and their contribution to the overall campus.

Matters of overall style are paramount: whether fashion is followed, or architectural integrity is maintained by staying with the established direction of prior Plans.

In 2002, the University built its second major building off-campus at 7 Fairway (the Ken and Julie Michael Building). Designed by Steve Woodland (Cox Howlett & Bailey Woodland,) the building re-interprets the campus aesthetic while introducing different materials and an architectural form influenced by the original commercial function of the building and local planning constraints. On campus buildings are not subject to rules such as set backs and height restrictions. Colonnades on the building help link the building back from the ‘High Street’ to the campus, as does the use of Winthrop Tower as an end vista. There will be many more University buildings built between campus and Broadway, and 7 Fairway is seen to be an urban planning exemplar of meeting University and community expectations.

Campus Planning and Directions 2031

Directions 2031 classifies UWA/QEII as a Specialised Strategic Centre, and signals improvements in public transport and the need for higher density development, possibly setting minimum densities as well as maximum. Buildings of greater scale will be considered for both on- and off-campus sites, though increased height should not unduly overshadow landscaped and other spaces.

In 1959, Gordon Stephenson recommended that it was undesirable to make provision for undergraduate classes in buildings beyond the third level. While this has not been adopted as a principle, it is preferable that the entry level of a teaching building on campus is the location of major undergraduate activity.

The provision of mixed-use buildings is encouraged in Directions 2031 as a means of enlivening streets and sharing resources such as car parking. Off-campus buildings, or those on the perimeter of campus, particularly fronting ‘active’ streets such as Broadway and Hampden Road, have the opportunity to interact with the community, through the use of ground floor retailing or university uses, with research or residential accommodation on the other floors.

Some sites on campus are more architecturally significant than others. The Reid Library, for instance, is located in the Great Court opposite Winthrop Hall. Not only did the building have to be prominent in its architecture and scale but also its use, and a major building with probably the greatest use by
students on campus on this site kept faith with Wilkinson’s 1927 Campus Plan. The siting of the Business School (2009) on the southern edge of campus not only gave the Faculty prominence, but also helped restore balance to a campus focused on the Hackett Memorial Buildings at the northern end. A new roundabout and entrance off Hackett Drive gave additional prominence to the Business School, which now fulfils a similar ‘anchor’ role to the campus as Winthrop Hall.

Draft principles
1. Produce buildings which are ageless, timeless, free from passing fashions, and which achieve individual contemporary merit in their contribution to the success of the whole campus, whilst acknowledging the existing University palette.
2. Confine larger scale built form to the higher western flank of campus between Fairway and Broadway, but avoid a continuous wall of high buildings, and lessen the impact of Fairway as the campus edge.
3. Incorporate cutting edge knowledge into building design and strive to keep research, teaching and learning environments up-to-date.
4. Construct buildings with due consideration to whole of life implications and environmental sustainable development better practice.
5. Provide flexibility in new buildings to allow for a variety of uses over time.

Draft recommendations
- Embrace the concept of larger-scale structures and prepare planning studies to ensure open space is not compromised.
- Embrace the concept of a hybrid architecture within a different form of urban place-making between campus and Broadway.
- Consider opportunities for a different built form, particularly in mixed use buildings, as the University expands towards Broadway.
- Accept the current architectural approach but encourage commissioned architects to innovate, particularly on sites deemed to be of greater prominence or significance than others.
- Continue to provide coherence through the colour palette, and through the placement/design of some sites/buildings which encourage use/connection between both inside/outside spaces. This is a strength that would be beneficial to maintain in further development of the campus and its stakeholders.
- Offer varying opportunities for expressive form of architecture within the colour and material palette on selected sites around campus.
- Accept the future challenge of changing building types, materials and technology.
- Ensure that the clear needs/function of certain spaces, such as teaching spaces, are maintained
Community and Cultural

The Crawley campus and surrounding lands are recognised as Noongar land with the Noongar people as the spiritual and cultural custodians of their land.

UWA has a unique relationship with the WA community, being the first university in the State, with traditionally close ties to the local community. It has a reputation for quality, and through its endowments, bequests and other private income, has been able to maintain a prominent role in the cultural life of the community.

One of the key priorities is to improve the University’s positioning and reputation, developing strategic relationships and community engagement. World-class universities are recognised as strong intellectual and creative resource to the communities they serve and while this service is primarily through its graduates and research, leading universities also make a major contribution to the intellectual and cultural life of their communities.

The University is introducing a new course structure in 2012 with Design as one of the four core degrees. A separate key initiative of the University is the development of a Cultural Precinct. With the interaction between the Precinct and the teaching, learning and research activities associated with this Design core, there will be increasing community and cultural activities.

The University provides a number of educational facilities and services for the local community. University Extension is involved with community education programs including Summer School, running for two weeks every January. UWA Extension provides more than 550 individual community education programs, events, workshops, seminars and customised courses for the wider community and private business each year, as well as Community Education courses. The University of the Third Age (U3A) offers non-award courses as a series of monthly lectures. There are also continuing education courses run by faculties, centres and schools, and lectures and symposia by prominent speakers across all disciplines. The University’s Institute of Advanced Studies conducts cross-disciplinary programs for students, staff and the wider community, attracting eminent international scholars.

UWA Publishing holds regular book launches, panel discussions and lectures.

The University provides a number of cultural facilities and amenities for the community. Perth International Arts Festival was founded in 1953 to provide evening entertainment for people at Summer School. It has retained its links with the University, but has grown to become a major State institution as a festival for film, visual and performing arts. University Theatres, such as Winthrop Hall, the Octagon Theatre, Dolphin Theatre, Sunken Garden and the New Fortune Theatre also host several hundred events every year. The Faculty of Music has an extensive concert program. Many of these events celebrate the diversity of local ethnic and cultural communities.

The Lawrence Wilson Art Gallery is both a centre for research and scholarship in the visual arts and as a major gallery showing the UWA Art Collection and significant visiting exhibitions. The Berndt Museum of Anthropology was established to house the Berndt collection of Indigenous and Asian artefacts, and is also known for its linkage to Aboriginal communities and support for cultural maintenance. The Edward de Courcy Clarke Earth Sciences Museum houses geological specimens, maps and other exhibits. SymbioticA was established in 2000 within the School of Anatomy and Human Biology and is now recognised internationally as a centre of excellence in bio-art. The Cruthers Collection of Women’s Art was donated to the University in 2007, and is housed within the Dr Harold Schenberg Arts Centre. The Cullity Gallery, within the Faculty of Architecture, Landscape and Visual Arts, provides a showcase on activities of the Faculty and provides an exhibition venue for the wider community.

The University has promoted links with primary and secondary schools, including Shenton College, and runs numerous cultural courses with school age children, such as SmARTS and the UWA Junior Music School.

The University manages or hosts numerous community events, including Science Fair, Open Day, Solar Fair, Save the Children Book Sale, Antiques Fair, and Upmarkets. It accommodates community
organisations, such as The Black Swan Theatre Company, which is leasing the Masonic Hall until September 2010.

The University has an ‘open campus’ policy, which encourages the informal use of campus grounds, including family picnics and passive recreational use by local residents. Car parking bays and other facilities are available to the general public out-of-hours and outside of the academic year.

UWA has a number of heritage places (buildings and gardens) at Crawley which are of significant tourist value. The campus is a popular venue for weddings, conferences, modelling sessions and film settings. The iconic value of the Hackett Memorial Buildings is recognised by local, state and federal heritage agencies. Throughout the gardens are sculptures and artworks and other notable buildings by the State’s leading architects. The heritage significance of campus buildings, landscape and external artworks have been detailed in the Crawley Campus Conservation Management Plan 2008. The campus is on the Tourist Tram route, which includes Burswood, Perth City and Kings Park. The campus attracts many local, interstate and overseas visitors. The Visitors Centre is a focal point for visitor information and activities.

The University’s libraries are part of the Library Information Service of Western Australia run by the State Library. UWA’s specialist libraries (such as Humanities, Law, Architecture/Education, Sciences) are regarded as some of the State’s strongest reference resources.

The University Club, opened in 2003, has become the premier venue for social events for the University and outside organisations.

The University values the ongoing participation of its alumni and the local community in its cultural life on-campus. There are many clubs and activities under the Cultural Precinct umbrella in which alumni are encouraged to participate, including groups such as the UWA Graduate Dramatic Society (GRADS).

The University promotes numerous societies and 13 friends groups with a focus on arts and culture, including UWA Historical Society, Friends of Grounds, and Friends of the Lawrence Wilson Art Gallery.

Draft principles
1. Provide a source of enjoyment and intellectual stimulation, enliven the campus, enrich the curriculum and encourage critical engagement with contemporary arts practice.
2. Acknowledge that the University is situated on Noongar land, that the Noongar people remain the spiritual and cultural custodians of their land and continue to practise their values, languages, beliefs and knowledge.
3. Involve the community in place-making

Draft recommendations
- Establish a dynamic, creative and intellectually rigorous program of exhibitions, performances and associated cultural activities that amplify current concerns, flag future issues and provide a perspective from which to view the past.
- Develop strategic relationships throughout the community to improve the University’s positioning and reputation.
- Make a major contribution to the intellectual and cultural life of the University and outside communities.
- Showcase the creative work of staff and students.
- Link and fuse arts and cultural elements within an educational environment and encourage innovative collaborations.
- Plan for the new Cultural Precinct: Stage One development of an Indigenous Gateway supporting Aboriginal culture and society, comprising the School of Indigenous Studies, Berndt Museum of Anthropology and the Rock Art Centre.
- Ensure the Cultural Precinct considers incorporating a virtual space, that is, UWA arts events that also promotes linkages with other sites include the UWA Albany Centre and the UWA Claremont campus and the variety of cultural activities.
- Continue to develop the Lawrence Wilson Art Gallery to resolve Berndt and other storage and display accommodation deficiencies.
- Plan for the co-location of community and cultural activities within the proposed Design Precinct, (to be set up as part of New Courses 2012) and establish a continuous pedestrian link between UWA Nedlands and the main campus.
- Showcase the University by housing community and cultural activities in buildings fronting Broadway and Hampden Road, and contributing to campus and community interaction.
- Plan for the new AXS/lab (Art meets Science lab) to showcase the research activity of the University at the interface of Art and Science and provide a teaching facility for the new Design Degree established under New Courses 2012.
- Consider the re-location to Broadway and Hampden Road of on-campus commercial and retail operations, which are used by the University and outside community, such as the Bookshop;
- Scope design of an extension to the Octagon Theatre foyer to improve access, space and services of public areas.
Governance

The Campus Plan, developed every 10 years, is the document that reports to State Government, through the Western Australian Planning Commission (WAPC), on the physical development and planning issues that have an impact on the Crawley campus.

In the past, WAPC and Department of Planning has viewed the document as the University’s planning strategy, setting out how it will expand.

Three activities may present challenges and opportunities for the University:

1. Local Government Reform (the councils of Perth, Nedlands and Subiaco expressing a wish for their boundaries to be altered to include UWA)
2. State Government’s Directions 2031 planning document signalling higher densities for specialised strategic centres with existing economic drivers, such as UWA/QEII
3. State Government wish to simplify statutory planning processes.

The University of Western Australia Act 1911 (the University Act) gives the Senate, as the governing authority of the University, responsibility for “…the entire control and management of the affairs and concerns of the University and may act in all matters concerning the University in such manner as appears to it best calculated to promote the interests of the University.” Therefore the Senate is responsible to the public for the stewardship of the University as an institution of excellence and integrity, and for the custodianship of its future prosperity.

Subject to the University Act and the Statutes, the University Senate has the following powers in relation to the management of the University’s physical assets:

“14. The Senate shall have the control and management of all real and personal property at any time vested in or acquired by the University; and may set out roads, streets, and open spaces, and erect and maintain buildings upon and otherwise improve any land or other property as in their absolute discretion they may think fit, and may apply any trust funds of the University to any such purposes.

15. The Senate, in the name and on behalf of the University, may grant leases of any lands vested in the University for any term not exceeding twenty-one years, and, with the approval of the Governor, but not otherwise, may grant building leases for any term not exceeding ninety-nine years, and may, with the like approval, mortgage such lands.

16. The Senate, in the name and on behalf of the University, may dispose of any real or personal property acquired by gift, devise, or bequest as they may think fit, subject only to the express trusts of any deed, will, or instrument under which such property is acquired.”

In addition, the University Act outlines responsibilities for Endowments and Revenue. Real property vested in the “The Trustees of the University Endowment” became the property of the University on the appointment of Senate: s35(2). The Endowment Fund is a trust fund and must be managed as such, pursuant to the trusts enacted in the University Act. Senate alone holds the property power.

Other key legislative documents related to the governance of the University’s interests are:

- University Colleges Act 1926 - An Act to establish and endow residential colleges within The University of Western Australia.
- University Buildings Act 1952 - An Act relating to the provision of certain buildings for The University of Western Australia and for other incidental purposes

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1 The University of Western Australia Act 1911 – Powers of the Senate - Section 13
2 The University of Western Australia Act 1911 – Endowments and Revenue – Section 35 to 38
Under the University Act, Senate has the authority to approve the layout of the campus. This includes decision-making for the acquisition, disposal, use, physical design and planning functions. These functions are delegated through the Senate on approval of the Campus Plan to:

- The Vice-Chancellor and further delegated through levels of management.
- Governance committees including:
  - The Strategic Resources Committee, whose role is to "monitor campus planning and advise Senate on major physical developments and associated policy issues".
  - The Planning and Budget Committee, whose role is to "advise and make recommendations to the Vice-Chancellor on behalf of the Academic Council on the following matters:
    1. the formulation of the University's strategic and operational plans;
    2. the setting of priorities and the allocation of funds for major building works and any major re-allocation of space within a faculty or among faculties;
    3. advise and submit recommendations to the Academic Council on policy matters and on major procedural matters relating to University accommodation."

Externally, the University is subject to a wide range of decision-making bodies. The Crawley campus is located within three local governments (Perth, Nedlands and Subiaco), as well as portions under the State Government planning (the Department of Planning and the WAPC) and further government agencies such as Main Roads, The Swan River Trust, The Heritage Council, The Department of Environment and Conservation, and The Botanic Gardens and Parks Authority (Kings Park).

In town planning terms, there are 17 different development scenarios possible, depending on where a development is located on campus. While the University Act confers significant powers on Senate regarding the laying out of the campus, this power has not been tested against planning and heritage legislation enacted since the University Act.

The State Government is undergoing a reform process associated with the number of local authorities and planning generally. The outcomes of the process and local government structural reform are unlikely to be finalised for some time. It is anticipated that there will be some simplification of the planning, building and public health impacts upon the campus.

Ideally, the University should be contained within a single authority, with no more than two development scenarios (one for on campus, one for off campus) and enjoy a range of uses that allows the University to meet all its development needs, whether teaching, research (partnered or University), retail or residential.

There are two other significant changes in the legislative context:
- Increased regulation by local government as a result of Public Health and other legislation.
- Pending changes to State legislation will mean that the University will become formally regulated by the Building Code of Australia (BCA). (Currently, as the main campus is leased under a Crown Grant from the State Government, it is technically exempt from the BCA). The University can then consider pursuing corporate building registration.

**Principles**

1. Ensure all campus development is in accordance with statutory and University governance requirements

**Recommendations**

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The University processes and decision-making of the acquisition, disposal, use, physical design and planning functions is transparent and communicated broadly to both internal and external stakeholders.

Continue to be involved in local government change and State planning reforms.
Heritage and Conservation

The Crawley campus is renowned for its heritage architecture and landscaped grounds.

Planning for the physical development of the campus while retaining its heritage significance is one challenge facing the University. The Crawley Campus Conservation Management Plan (CCCMP) 2008 identifies all buildings, places and artworks of significance on campus and is to be considered as the definitive conservation manual for the Campus. The CCMP makes recommendations for their conservation where necessary, and indicates sensitive areas, which future development should acknowledge.

The various architectural styles present on the campus have been named in the CCCMP and it is accepted that diversity, rather than uniformity, will govern the future built environment. Where possible, examples of different styles will be retained to show the evolution of the campus over the past 100 years.

Some the University’s off-campus properties have heritage significance and examples of these styles will be retained where practicable. The Nedlands Park Masonic Hall in Broadway is one example.

All buildings and landscaped areas on the campus have been listed according to their heritage significance. The higher the degree of significance, the more care must be taken when alterations, extensions or refurbishments are carried out. Significance does not imply a building cannot be demolished or substantially altered. Procedures for monitoring such works are now in place and a conservation manual is being prepared for the guidance of University staff, consultants and contractors. Where necessary, guidance will be sought from a consulting heritage architect, landscape historian or art historian.

Significant vistas across the campus, which should be retained, have also been identified. For example, distant views of the campus and Winthrop Tower, and campus engagement with the river, should be maintained and enhanced.

As UWA’s Centenary approaches, there is continued support for the qualities of the campus and the value of its ongoing preservation. Many of the heritage features, such as Somerville Auditorium and the Sunken Garden, were bold developments for their time and were not part of any defined campus plan. The Tropical Grove, for instance, has never appeared on campus plans and conflicts with the original Wilkinson Plan for a continuous Great Court between Winthrop Hall and the Reid Library. It should always be possible to allow for the innovative, the accidental and the unexpected.

Draft principles

1. The University’s major cultural heritage significance is the University itself, not the buildings or landscape; that is, its ethos to educate, carry out research and engage with the community.
2. The Crawley campus is effectively a series of ‘buildings within a park’ and courtyard buildings which enclose space, with equal importance given to landscape and architecture.
3. The campus is more than the sum of its parts with individual elements evaluated in relation to the overall setting – heritage places can be demolished or altered but only where there is to be a development of greater significance.
4. The orientation of the campus towards the river should be encouraged where possible.
5. Buildings, landscaped areas and artworks with a high level of heritage significance are to be conserved, whilst appreciating the necessity for flexible development in places which do not have heritage implications.
6. Back to top

Draft recommendations

- Consider the campus to be a single place, not a collection of individual buildings.
- Acknowledge that the campus will change to meet different requirements and must constantly review campus assets.
• Contextual excellence is to be pursued in any new development to provide a sense of continuity between generations.

• Alternative innovative methods of interpreting the heritage of the campus are to be explored, in preference to external visual interpretation (such as plaques).

• Delegation of heritage matters is to be negotiated with Heritage Council, so as to minimise undue scrutiny by Council (and others) and to maintain the University’s development options.

• Retention of a limited number of representative architectural examples is to be negotiated with the Heritage Council, and a constructive approach is to be taken by submitting selected University-owned properties for heritage listing (for example, Love House).
Infrastructure

While the University has an efficient campus infrastructure system, there are opportunities to improve and extend the system.

Early campus plans developed a planning structure based on a rectangular grid, which made possible a simple underground services corridor system in primary and secondary easements. Services outside the grid have largely been re-routed to conform. With the planned expansion of the University across Fairway towards Broadway, the expansion of QEII affording opportunities to link up and/or provide back up capacity, and the proposal to increase student residential accommodation around the campus, there will be a need to increase infrastructure and to extend service easements off-campus. There may also be opportunities for sharing infrastructure services with the community.

Energy costs on campus are projected to increase approximately 35 per cent over the next three years. Air conditioning accounts for between 20-23% of the University's total power consumption (total cost of power consumption for 2008 was $3.085m) and air conditioning alone creates 11,100 tonnes of CO2 emissions each year (approximately 3500 cars worth of emissions). New development practices to reduce the dependence on such cooling infrastructure are considered critical.

Chilled water storage tanks
The installation of a chilled water storage tank at the south end of campus in 1998 resulted in cheaper energy costs and increased supply capacity. Much of the chilled water is used for the purposes of air-conditioning. Given our climate, and specific research activities, the University acknowledges the need for climate control within buildings. However, the University will encourage the utilisation of passive design within buildings where possible. Campus Plan 2000 highlighted the need for an additional similar size tank in the north end of campus. A proposal to construct a 4 megalitre tank at Physics did not proceed and the campus system is now at capacity (it actually exceeded capacity during 2010) and a 6.5 megalitre tank is required as a matter of urgency. Such a storage tank would provide the University with sufficient chilled water without having to run chillers during ‘normal’ (that is, overly hot) days. The provision of the second chilled water tank will take advantage of the wider gap between on- and off-peak tariffs and enable the University to enter into Demand Side Response programmes (discussed below). A third tank of 2 to 3 megalitre should be considered as part of the design for buildings planned in the northwest corner of the expanded campus.

Alternate sources of energy
Alternate sources of energy will be explored/used for example geothermal energy.

Sub-station upgrade
Western Power is upgrading the QEII/Hollywood Hospital sub-station as part of a western loop linked to UWA. It has flagged the need to expand the campus electrical sub-station. The sub-station serves both the University and the local neighbourhood. Space will be allocated in the plan to meet this need. The proposed change is from low voltage electricity supply from 6.6 kilovolts to 11 kilovolts. Most of the in-ground cables laid –up to 30 years ago were rated to 11 kilovolts and their reliability when subjected to the maximum designed load is a risk.

Services precinct
A proposal has been developed to create a services precinct off Fairway Entrance 4. This will co-locate and conceal industrial type operations, including engineering workshops, waste facilities including biochemical and electronic waste and geothermal plant. A second services precinct is also suggested, preferably at UWA Nedlands, where additional infrastructure is required.

Engineering redevelopment, planning of which will begin within the next ten years, should be co-located within the proposed services precinct to enable Engineering to exploit teaching and research synergies with on-campus utilities.

Draft principles
1. Expand campus infrastructure in a logical and practical manner as new buildings are added, identifying expansion needs.
2. Increase renewable energy, recycling and water reuse to decrease the carbon footprint.
3. Maintain in-ground ringed services corridors across campus. Wherever possible lay and maintain services under hard landscape with easily identifiable segregated alignment with appropriate access with suitable expansion capacity.
4. Whole of life design will underpin the acquisition and management of infrastructure

Draft recommendations
Management and maintenance
- Integrate infrastructure (e.g., chillers) into built form where possible
- Locate service easements north-south or east-west but not in a diagonal direction.
- Ensure services are ringed wherever possible to maintain security of supply and to minimise pressure differentials.
- Ensure campus wide back up data protection and disaster recovery systems.
- Establish looped electronic communication linkages between existing and newly acquired remote sites, such as: Sports Park, Claremont, and the main campus at Crawley to the single campus vision.
- Centralise research activities, wherever possible, so as to improve resource use, services back up and continuity of supply.
- Centralise service facilities into a services precinct and plan for a second services precinct at UWA Nedlands or a location west of Fairway.
- Ensure special purpose requirements (such as security of supply) are in place for buildings with ongoing research needing continuity of services, including Molecular and Chemical Sciences and Physics.

Sustainable development
- Maximise water reuse on and off campus.
- Aim for zero waste through encouraging recycling and reuse practices.
- Ensure infrastructure design and planning accords with energy efficiency, environmental sustainability, practicality and life cycle costing requirements.
Land Use – Teaching, Learning and Research

While land use in and around the Crawley campus is dominated by teaching, learning and research, the University recognises it is a significant part of the greater Crawley community and business area.

The discussion on campus land use has been divided into two broad areas

Teaching, learning and research
Non-traditional uses -

Teaching, learning and research
The University's current Strategic Plan articulates a vision, which includes the following defining characteristics:

- High quality, as the pervading criterion for all our activities.
- Comprehensive, with a broad teaching and research profile in the arts, sciences, and professions.
- Selective, within a comprehensive base, to develop particular areas of research strength and emphasis.
- Research-intensive, with a strong teaching and research nexus across all our disciplines. Internationally focussed, for both the content and standards of our activities.
- Technologically innovative, to maximise our flexibility.
- Responsive, to meet the needs of the community, our students and our graduates.

The Operational Priorities Plan 2009-2013 states that it continues to support a strategy of seeking and achieving funded growth commensurate with the University's comprehensive teaching and research character and with a continued commitment to quality. It articulates an enrolment target of approximately 25,000 students by 2020 with an appropriate course type mix, though this student number may be reached earlier.

The physical location of faculties on campus has generally followed Gordon Stephenson’s principle of ‘locating like departments and facilities in functional groups’ established in 1954. The decision in 2009 to move towards a new course structure (New Courses 2010) of core undergraduate degrees – Commerce, Science, Arts and Design, plus the Bachelor of Philosophy Honours degree for high-achieving students – will have an impact on the grouping of activities on campus.

The Campus Plan 2010 is addressing future growth through analysing the maximum growth scenarios for the campus.

Research activity has increased dramatically since 2000 with numerous research centres established at the University. These include the 2010 opening of the International Centre for Radio Astronomy Research. Funding for research has increased significantly, in line with the University’s move towards a more research intensive split with teaching. There have also been increased partnerships and collaborations between the University and government, industry, and other institutions. Increased funding has also come through the Western Australian Biotechnology Development Strategy, with research facilities such as the Western Australian Marine Science Institute (WAMSI), Western Australian Institute for Medical Research (WAIMR) at QEII and Fiona Stanley Hospital underway. The University has determined six strategic research areas, and several emerging and seed priorities to provide focus and direction.

The strategic areas are:

- plants, animals, agriculture and environment, including management of natural and agricultural systems;
- exploration, production and utilisation of minerals, oil and gas;
- fundamental biomedical and translational approaches to health;
- indigenous knowledge;
- bio-engineering and bio-imaging; and
neurosciences, including psychology.

Organisations in partnership with the University currently occupy 3.5 per cent of all campus building space. The University often places staff on other institutions’ sites such as CSIRO at Floreat. We expect further research partnerships will see additional staff and researchers located on UWA land over the coming decade as research becomes more collaborative.

There is an increased demand for temporary accommodation or pre-built flexibly serviced workspace into which the University can immediately house researchers on appointment while specific construction projects are completed for more permanent housing. There is potential for dedicated research hubs and sites will be required for business incubators to transfer research to industry.

The University currently has 274,000m² of floor area on the Crawley campus, which includes the Nedlands site (excluding residential college land). This equates to 15 m² per equivalent full time student load (EFTSL).

Research facilities are space and service intensive. The University’s growth plans project a greater requirement for this type of accommodation.

This Campus Plan considers growth in the context of preserving the area’s amenity. The measurement of the development is through plot ratio. It is intended to maintain a “campus in a park” approach for the main campus. In terms of plot ratio, this is not intended to grow beyond 0.65 of the traditional main campus, while the Nedlands site, with the emerging main street of Hampden Road, could develop a plot ratio in excess of 1.0 without having an impact on the amenity of the area.

Based on these plot ratios, a total build of the two sites would allow for 340,000m² of development. However, as some buildings on campus have come to the end of their useful life and require replacing, this means that the University will require more than 70,000 m² additional space. Taller construction will allow for the actual amount of green space on campus to be retained or even expanded. With this approach, the majority of new space will be created towards the southern end of campus and Nedlands.

Should the University wish to expand beyond 25,000 students, a move from the traditional campus will need to be considered. Development towards Broadway should be considered as a mixture of university research, teaching, residential and other compatible uses. There is already a University presence in this expansion area, with the sleep clinic, artist in residence program and Indian Ocean Marine Research Centre (IOMRC) operating between the traditional campus and Broadway. Redevelopment of this area should address the opportunities and surrounding developments, making use of the topography and respecting existing land uses. The Edward Street site between Fairway and Broadway could generate as much as 13,000m² of new space and the planned second stage of the Ken and Julie Michael Building itself will likely generate 3,500m².

The land area between campus and Broadway could generate some 100,000m² in total (UWA’s ownership is limited to about 50 per cent) but is likely to have significant levels of student residential and other accommodation.

**Draft principles**
1. Maintain Crawley campus for core teaching, research activities, locate land-intensive research and community activities on other sites.
2. Co-locate complementary activities in appropriate facilities.
3. Provide maximum flexibility in new buildings to allow for growth and changes in activity requirements.
4. Provide sufficient land to establish a high quality teaching, learning, research and community engagement environment;

**Draft recommendations**
- Work towards grouping centres with common needs together to facilitate better resource sharing, such as libraries.
• Align campus and accommodation planning with the University’s strategic goals, review current space standards and building layouts in the light of changing technology/learning methodology and establish accurate student space standards for each discipline.
• Ensure the efficient use of existing accommodation and the timely provision of future accommodation.
• Extend the academic timetable to increase the utilisation of teaching facilities.
• Upgrade existing teaching infrastructure.
• Re-locate activities that do not directly enhance the University experience to an off campus location.
Land Use – Non Traditional Uses

A university can best be compared to a small city, with elements of retail, commercial, residential, sports/cultural amenities and green spaces all needed to support teaching research.

A modern university consists of more than just lecture theatres and research spaces. There are many uses critical to the running of a university within a broader precinct that are not considered under the traditional education based understanding of what a University is.

The University and surrounding areas are coming under increasing pressure from development markets other than education. There has been a marked increase in demand for residential and office space and ultimately the University will be competing with the market for building sites. The acquisition of properties in the land between campus and Broadway, a farsighted program begun in the 1960s, means the University now holds 40 per cent of the land area and will play a key role in determining the future of Crawley.

As part of becoming a sustainable hub and fulfilling the objectives of a primary centre (Directions 2031), the UWA/QEII land area will likely have a population by 2020 of 50,000 and more (UWA 25,000 plus students, staff and up to 20,000 QEII staff, patients and visitors). The population of the area is comparable to the City of Albany and comes with a recognition that the area will require the services of a regional city, without compromising the viability of the University or QEII.

The University is a popular venue for conferences and seminars. With the addition of the University Club, the campus now offers a range of venues competing with the Perth Convention Exhibition Centre and other conference facilities in Perth. While the campus offers good connectivity to the central business district, there is demand for visiting delegates, as well as guest lecturers, scholars and artists in residence, and parents of students, for accommodation on campus.

Many university campuses including the Australian National University in Canberra and many overseas offer on-site, short-stay accommodation. This is in addition to the student colleges, which are used for accommodation outside of the academic year. These facilities could also be used for crisis-care accommodation, for newly appointed staff and for people undertaking continuing professional development and skills ‘top up’ courses. The Business School has foreshadowed the need for 20 to 30 beds to be able to run these lucrative courses more often.

The area around Crawley has attracted professional associations such as the Institute of Architects and the Australian Medical Association, who have strong links with the University. The ability to share resources and to use University facilities such as University Club, lecture theatres, specialist libraries and seminar rooms means that Crawley will continue to be an attractive location. Roads such as Broadway have many boutique office developments, as well as attracting larger engineering companies. It is likely that demand for office space will continue to grow over the coming decades and some larger building footprints off-campus should be identified in planning schemes as commercial hubs.

With emerging research being conducted on campus, there may be a market for business incubators, to help ensure that the University retains staff taking the next step in developing their own research products. This may also attract a knowledge-based business centre, which would have synergies with University research and education.

The UWA/QEII Activity Centre needs to be able to offer facilities for the daily lives of the significant population in the area. The ability to reduce trip generation by offering a range of services and facilities in one place has a strong nexus with public transport usage. This population brings spending power to the area each day and this spending employs many people in local businesses.

There are opportunities to develop an integrated urban retail centre adjacent to campus to cater for the daily requirements of University/Hospital people and residents. Such a centre would complement the existing Broadway Fair centre and could be located centrally between UWA and QEII. A mixed-use development would follow the principles of public use on lower levels, with much needed accommodation being incorporated on upper levels.
Retired people are living longer and demanding intellectual stimuli such as educational and recreational activity. UWA Extension and Summer School courses meet these needs. With the ‘baby boomer bulge’ nearing retirement, the University of the Third Age is likely to be a considerably larger institution in the decades to come, and UWA already encourages participation in a range of non-degree courses and units.

The University has partnered with Study Group Australia to set up a Foundation College. The buildings were opened at UWA Claremont in 2006 to provide pre-university education. There is a demand for more local residential accommodation for students, in addition to the 24 students housed at Currie Hall.

**Draft principles**

1. Develop Crawley area as a small city, meeting the day-to-day needs of residents, visitors, students and staff and recognising that an expanding student population will require additional services.

**Draft recommendations**

- Encourage community engagement through mixed-use models of development on- and off-campus: retail/community engagement, commercial/administration, teaching/research and residential adjacent to the campus.
- Support the development of Broadway/Hampden Road as a ‘High Street’.
Landscape

The advice of Sir John Winthrop Hackett in selecting the Crawley site for The University of Western Australia in 1913 was that campus design should be based on convenient, wide and spacious lines and that the riverfront provided one of the rarest attractions offered any of the universities in Australia.

Harold Desbrowe-Annear won the 1914 competition for ‘laying out the Crawley site for University purposes’.

Despite considerable development on campus, the planning approach of ‘buildings in a park’ still prevails and the campus is defined with equal importance given to the buildings and the landscape. Several landscape places have been listed by the National Trust, and the entire campus was adopted into the National Estate in 1980 by the Australian Heritage Commission. As well, the University received the inaugural WA Civic Design Award in 1986 and there are many formal spaces listed on the State Heritage Register and Municipal Heritage Inventories. While many of the landscape qualities of the campus are accepted today, ideas such as creating a cathedral of pine trees (Somerville Auditorium) were quite radical for their time and not part of the original planning. The Sunken Garden was created out of the opportunity to find a use for an excavation site, and the Tropical Grove was another unplanned accident — a screen of vegetation to conceal gardeners’ huts.

The quality of the landscape differs greatly across the Campus, from the very formal north to the less developed south, and with imported trees complementing European-style architecture and native trees on the campus perimeter. The University has been developed around the provision of generous open spaces and intimate courtyards, often with colonnades and cloisters. The landscape is characterised by generous tree canopies, large fig trees and eucalypts, magnificent specimens of European trees, remnant indigenous trees, expansive open green spaces, semi-secluded courtyards, pedestrian areas, river views and abundant and exotic fauna.

As the campus expands westward towards Broadway, there is an opportunity to integrate the campus landscape approach through to the urban areas. The expanded University will include a more diverse style of development where precincts will be characterised by a mix of accommodation, research, retail and service facilities. This urban neighbourhood style of mixed use development will add positively to the economic and social vibrancy of the community and will contribute to environmental sustainability through increased land use efficiency and a reduced carbon footprint.

There are opportunities to further enhance the setting of the campus through improved links with Matilda Bay and Kings Park; three elements that already contribute to a single landscape of major regional significance. The Campus has strong north-south linkages through its walkways, landscaped spaces and roadways. The east-west landscapes are somewhat less defined and will need further landscape consideration in an attempt to knit together the campus and the predominantly residential area to Broadway.

Draft principles

1. The expanded landscape will be characterised by the features of a ‘university in a park’ for the main campus, and a ‘university in a town’ character for the expanded campus, as well as a hybrid of the two as a transitional zone.
2. Develop a mix of expansive open green spaces and semi-secluded courtyards.
3. Create clear pathways and signage (wayfinding) opportunities through clear logical routes on the campus.
4. Conserve and enhance the exotic heritage landscape and remnant native landscape.
5. Introduce green infrastructure landscapes as a sustainability measure.
6. Retain and enhance passive and active green spaces.
7. Support biodiversity through design and maintenance of the campus.
8. Offset tree removal with additional planting to preserve the carbon sequestration capacity of the campus.

Draft recommendations

- Acknowledge indigenous heritage of the campus through local indigenous plantings and use of indigenous nomenclature.
- Maintain the inner pedestrian precinct and restrict vehicles to the campus perimeter.
- Reinforce planning spines north and south and create strong spines running east and west.
- Enhance the river presence with river views.
- Protect the abundant and sometimes exotic wildlife.
- Make proper provision for artworks, street furniture and lighting.
- Link buildings by broad, well-lit pedestrian ways and create a continuous system of colonnades as part of campus pedestrian system.
- Establish locations for permanent landscaping, which will never be built over.
- Rationalise and simplify paving materials across campus, following the landscape manual and agreed hierarchy.
- Ensure signage and graphics are consistent, hierarchical, direct and informative, and fully reflect identity of building and users.
- Consideration should be given to prioritising green space over other spaces such as parking and access roads (currently 11 per cent of total campus land area).
Security and Safety
The University is committed to best practice in safety risk management as an integral part of good management. The physical environment, movement of vehicles, cyclists and pedestrians, theft and assault and environmental related events (storms, lightning) all have an impact on the personal safety of those on our campus.

The establishment of the Risk Management Division in 2009, to cover Internal Audit, Business Risk Management, and Insurance Services, recognises the increasing complexities, regulatory requirements and stakeholder expectations facing the University. The University now has a cohesive, strategic and structured approach to managing risk.

UWA is committed to providing a safe and secure environment on campus through design and practices such as:

- building access control and intruder detection
- well-developed services covering campus security
- personal safety and property protection.

The planned Emergency Call Points program and access control of buildings will improve security and personal safety. As the campus and off-campus population increases, there is a growing risk of personal injury from the intermingling of transport modes – pedestrians, cyclists, service vehicles, public transport and general traffic. Vehicle access control (remotely controlled barriers with inter-visibility and communications) will reduce the number of vehicles using the inner campus and enhance pedestrian safety.

The University has Emergency Plans and Procedures and a Critical Incident Management Plan in place. Emergency response procedures (booklets, posters, emergency phone numbers) are displayed across the campus and included in staff and student inductions. The University has installed emergency warning systems, emergency control procedures and emergency control organisations. A building specific and campus wide public address system would greatly assist in emergency related communications including for building lockdowns.

It is envisaged that planned additional student accommodation will bring about more activity 24 hours a day the year round. For safety and security, future planning should incorporate the principles of Crime Prevention through Environmental Design and use a scale and quality of development to stamp a ‘university city’ cultural brand on the area.

Student presence in overlapping activities within a relatively small campus and off-campus land area will also encourage more face-to-face social meetings. As well as increased social surveillance, there will be a greater awareness of students who may have or be developing personal, societal or study related difficulties. This will be further discussed at a later meeting on student engagement.

Principles
1. Ensure the Crawley Campus has a high perceived and actual sense of safety for all students, staff and the community. Develop a strong sense that the University is a safe place to visit, work and study.
2. Maintain the campus as a University without fences with strong intuitive wayfinding system across campus and through buildings, improving ease of access for all.

Recommendations
Universal Access
- Integrate best practice universal access design principles into developments.
- Provide continuous pathways of travel for simplified access to buildings.
- Wayfinding to incorporate emergency access routes for all campus users.

Security
- Integrate crime prevention through environmental design principles and integrate risk management in asset acquisitions, including buildings.
• Provide passive surveillance of pedestrian paths and courtyards from buildings. For example locate staff offices and other ‘populated’ spaces on building perimeters. Use opportunities to construct mixed use buildings on and off-campus to increase the hours of operation, and to provide surveillance.
• Establish a network of wide, well-lit pathways throughout campus. Avoid the placement of dense shrubbery and other ‘ambush opportunities’ close to pedestrian pathways.
• Broaden the network of emergency contact points throughout the campus (and off campus at vulnerable locations, such as bus stops) connected back to Security.
• Protect inner campus and vulnerable pedestrian spaces from vehicles by the use of bollards, operable or fixed. Increase pedestrian safety with better separation from cycle routes and major traffic routes at entries to the University.
• Minimise the number of entrances to buildings to enable more effective security. Main entry doors and heavy traffic areas should naturally lead to reception or administrative offices.
• Locate meeting rooms and other public accessible spaces close to the building main entrance to minimise penetration of the building by non-occupants, and to allow more out-of-hours use of these spaces.
Sports and Recreation
The University provides sporting facilities on and off-campus for students, staff, alumni and the general community. These include the Recreation and Fitness Centre, Watersports Complex, Boatshed, and the Aquatic Centre. There are also College facilities, which are available to all residential college students on a reciprocal basis. UWA Sports Park, which includes McGillivray Oval and the Tennis Centre, is five kilometres away and the International Martial Arts Centre is located at UWA Claremont.

UWA Sports coordinates a range of sporting competitions and activities including inter-faculty, inter-college and inter-university sport. It organises major local, national and international events such as the Indian Rim Asian University Games and the Australian University Games, and recreate programs (40 per cent of participants are from the general community). For young people there is Uni Sport for Kids providing sport-based programs to primary school children during school holidays, and Campus Challenge, a live-in orientation camp introducing high school students to university activities including sport and culture.

The UWA Sports Council is the governing student body of sport at the University, responsible for the oversight of 32 sports and recreation clubs covering 36 sports. Clubs have around 2500 members of which 40 per cent are students and staff, 30 per cent alumni and 30 per cent general community. Though most of the sporting clubs are based at UWA Sports Park, the University Cricket Club plays first grade cricket at James Oval, which is considered to be the finest cricket wicket in the State and the venue for occasional interstate and international matches.

As staff and student numbers grow, particularly when the University becomes more of a residential university, there will be a need for more sports and recreation facilities on campus or close by. There should be an assessment undertaken of the sports and recreation requirements of students at Crawley, including those in residential colleges and planned student housing proposals, as well as staff and community needs. Sites for additional facilities will be included in Campus Plan 2010.

There are difficulties retaining and allocating high-value land for sport when there are competing teaching, research and other needs. For example, the tennis courts occupy half a hectare of prime on-campus land valued at $8 million. Opportunities must be taken to share campus land footprints, such as having tennis courts on the tops of buildings, and for other organisations such as colleges and the cities of Subiaco and Nedlands to share the provision of facilities.

The lack of satisfactory public transport between Crawley campus and UWA Sports Park is an issue for Crawley-based students and it makes it difficult to consider re-locating sports and recreation facilities from Crawley to Sports Park.

Principles
1. Develop sporting and recreation strategic relationships, collaboration and engagement with the community and other organisations to improve the student, staff and community experience reinforcing the University’s positioning and reputation.
2. Ensure sports and recreation make a major contribution to the cultural life of the University and outside community.
3. Negotiate with other organisations in the Western Suburbs to avoid duplication and gain maximum utilisation of sporting facilities through shared access arrangements. Better promote the University’s contribution to sporting activities.
4. Plan for the coordination of relevant research into the nexus between physical activity and health (‘wellness’ or ‘preventive health’), notably at the Schools of Population Health and Sports Science, Exercise and Health.

Recommendations
- Ensure there are sufficient permanent green spaces and sports facilities at Crawley to meet the sports, recreation and fitness needs of an expanding University.
- Promote improved public transport between Crawley and UWA Sports Park, as well as other campus sites such as UWA Claremont to ensure greater use of sporting infrastructure.
- Work with State Government to create the regional sports precinct at UWA Sports Park, combining Government and University interests and the sharing of resources.
- Prepare further studies for the development of a Sport Science and Health Institute within a Centre for Health and Sporting Excellence (CHASE) at UWA Sports Park, and for adoption as a priority area in UWA Strategic Research Initiatives and a future Commonwealth Government funding application.
Student Life
Enhancing the student experience is a key outcome of the University's Strategic Plan. There are many physical implications of delivering a quality student environment, with a focus on providing flexible spaces in which new learning environments can be readily introduced. There is an emphasis on providing affordable student accommodation near to the campus.

Development of suitable learning spaces has been a key element in the delivery of new buildings over the past ten years. Buildings such as the Business School, Sciences Library and MCS offer a range of teaching and learning spaces, especially for collaborative work, in addition to the traditional lecture theatres, which are less receptive to changed approaches to teaching.

The delivery of New Courses 2012 will help to engage with the modern needs of students. Suitable student centres are needed to help students in the new system. Such a centre or centres should be centrally located in easy-to-find locations with a ground floor location.

Student hubs, and student presence generally in overlapping activities within a relatively small area, will promote more face-to-face social contact and counteract the social isolation of the virtual world. As well as increased surveillance generated by the presence of more students, it is likely there will be a greater awareness of students who may have or be developing personal, societal or study related difficulties.

The urban renewal of the Crawley area, in addition to higher demand for rental properties, has limited student opportunities to live close to the University. Longer engagement with students on campus is proven to lead to better learning outcomes. For the first time, the University has engaged specialist student housing contractors to deliver more student accommodation.

Recognising that the majority of the world's top 50 universities are residential institutions, this University should focus on the delivery of further student accommodation. Over the past ten years the market has failed to deliver affordable student housing, despite significant waiting lists at the University residential colleges and a 2004 report prepared by UWA's Professor HY Izan calling for a further 300 beds.

Carolyn Daniel's report on the world's top 50 universities indicates that the better universities including Harvard, Cambridge, Oxford, Stanford, Yale, have between 90 per cent and 100 per cent of their students in residence. The location of additional beds is important to the future built form of the UWA area. The options include consideration of student residential accommodation on the top of teaching and research buildings. While this may create better surveillance and more vibrancy on campus, there may be an impact on campus amenity and security.

Staff also find it difficult to buy or rent affordable properties close to the University. Staff housing will need to be a priority if the University wishes to attract and retain quality staff, one of its operational priorities. For newly-appointed staff, the ideal would be short stay accommodation of up to three months, allowing the staff to look for permanent accommodation to rent or buy. It is not the intention to displace private residents from the Crawley area with student and staff housing, but to retain and add to the existing diversity of the area.

There is evidence of students wanting to spend more time on campus. The Law Library operates 24 hours a day due to demand, and further use of the campus outside of the core weekday hours will lead to better use of space and more efficient use of buildings.

The University provides a number of sporting, educational and cultural activities involving the local community. The addition of many more students living in the local community will bring demand for an increase in these activities, and students will play a significant role in the life of the local community.

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5 Foot note required confirming information source.
6 Foot note required confirming information source.
Principles
1. To make the student experience at University as fulfilling as possible.

Recommendations
- Develop a range of accommodation types, to suit shared, single and family accommodation for students and staff, and also for those with special requirements or different cultural needs.
- Ensure the ground or entry level of buildings on campus includes student engagement areas and showcases the use of the building.
- Encourage the integration of learning and living at residential colleges, and at other student residential complexes.
- Develop flexible and adaptable learning spaces to allow for future change.
- Cluster after hour facilities to ensure passive surveillance and increased safety for all users.
- Plan for student presence and encourage more face-to-face social meetings, rather than the social isolation of the virtual world.
- Prepare development plans for the College sites to include higher densities as proposed in Directions 2031\(^7\);
- Increase the University’s residential accommodation around Crawley to accommodate all first year undergraduate enrolments.
- Encourage development along transit routes and other places within a 10 minute commuting time from Crawley campus.

\(^7\) Foot note required confirming information source.
UWA LMS Review

Summary Report on the Environmental Scan of Learning Management Systems (LMS’s) in the Higher Education Sector

Prepared by

Marilyn M Bacus
30 July 2010
Executive Summary

The first task of the UWA LMS Review is to conduct an environmental scan of LMS uptake across the Higher Education sector. This will help to identify viable LMS’s for consideration by UWA.

This process involves scanning the LMS market to ascertain the LMS’s which are currently in use by Universities, and to understand the factors affecting which LMS was implemented.

In addition, the LMS Reviews of 5 Universities were selected and examined in further detail with the purpose of accessing the data gathered and to examine the processes undertaken by those Universities; so as to inform and guide the UWA LMS Review.

This report presents a summary of the findings of these tasks and provides the following recommendations.

UWA actions

1. Shortlist three Learning Management Systems (LMS’s) for further consideration in the UWA LMS Review. These are:
   - Blackboard Learn 9.1
   - Moodle 2.0
   - Desire 2 Learn 9.1

2. The Sakai LMS (an open-source LMS) will not be included in UWA LMS Review processes. This software does not have a user community as large as the Moodle LMS and has less market share (only one Australian university currently uses this LMS at an enterprise level). It has a decreasing international community.

3. Request selected LMS Vendors and/or Official Partner provide UWA with live, hosted, production systems for the purposes of facilitating future LMS Review activities such as user testing.

4. Test the migration of content from our current LMS (WebCT CE 8.0.4) to each of the three shortlisted LMS’s to evaluate the quality, integrity and functionality of each of the shortlisted systems.

5. Conduct user-testing with both UWA Staff and Students to also assess usability and functionality.

6. Identify and evaluate the hardware specifications of each shortlisted LMS to assess technical fit and the skill required to implement each shortlisted LMS.

7. Identify the total cost of ownership and implementation of each of the shortlisted LMS’s.

8. Identify the costs and implications of external hosting
Market Scan

A common reference of market scan information was conducted by Delta Initiative in 2008. It's a North American-centric survey of commonly used LMSs in the higher education sector. Major products are categorised into two, open-source (Moodle and Sakai) and proprietary (Blackboard, Desire2Learn and eCollege) systems.

Figure 1: LMS Market in North America

Of the five products, Blackboard dominated the market especially with their acquisition of WebCT and Angel Learning. Moodle and Desire2Learn followed with Sakai and eCollege having less market shares.

Blackboard’s status as the market leader is similar to that experienced in Australia. In 2008, Blackboard Inc gained 91% of the market share with Blackboard Academic Suite (48%) and WebCT (43%) products combined.
With the decision from Blackboard to cease development and support of WebCT from 2012, some of the 17 Australian universities affected decided to undergo a full review of the LMS options and applications. Of the 17 universities using WebCT in 2008, 2 have moved and 3 are moving to Moodle, 2 will adopt Bb Learn 9.1 in 2011, 1 is moving to Desire2Learn, 8 are undergoing review, and 1 with an unknown status. Please refer to Appendix A for the LMS status of these 17 Australian universities.

The LMS uptake of the 39 Australian universities is presented in Table 1 below reflects movements and a new entrant in the Australian higher education sector. A detailed list is presented in Appendix B.

From 2011, four different LMS systems will be adopted and implemented in Australian universities which represent a significant change in the LMS marketplace. These four systems are Blackboard, Moodle, Desire2Learn and Sakai.

Table 1: LMS Uptake in Australia

<table>
<thead>
<tr>
<th>LMS</th>
<th>Number of universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackboard</td>
<td>19</td>
</tr>
<tr>
<td>Under review</td>
<td>1</td>
</tr>
<tr>
<td>Moodle</td>
<td>8</td>
</tr>
<tr>
<td>Desire2Learn</td>
<td>1</td>
</tr>
<tr>
<td>Sakai</td>
<td>1</td>
</tr>
<tr>
<td>WebCT</td>
<td>10</td>
</tr>
<tr>
<td>Under review</td>
<td>9</td>
</tr>
<tr>
<td>Unknown status</td>
<td>1</td>
</tr>
</tbody>
</table>

It is evident that Blackboard Inc is losing market share while Moodle is gaining with an increase from 3% in 2008 to 21% including those that have decided to move. One university that adopted Moodle in 2008 was and will be joined by other universities that previously used or are currently using WebCT (5), Blackboard (1), their home-grown LMS (1). Sakai has maintained its market share with the same university still adopting the system. However, the
Australian LMS market welcomed a new entrant Desire2Learn with one university deciding to adopt the system. The market isn’t stable yet with 10 universities still undergoing review.

Examples of University LMS Reviews

A summary of five recent university’s LMS reviews conducted between 2008 and 2010 are described below. Of the five universities selected, three are Australian and two are overseas. These reviews were gathered from vendors and from other university contacts. While it is ideal to present a balanced reference of product recommendations, it is important to note the difficulty of getting reviews that recommend a particular LMS. Blackboard Learn in particular lacks review papers because existing Blackboard clients appear not to undertake a formal LMS review process when deciding to upgrade to the latest version. In fact, the LMS review report provided by Blackboard came from a university overseas, and is not as comprehensive as the others included in this paper. Desire2Learn, being a new entrant in the Australian higher education sector, was selected by only one Australian university (to date). Thus, proprietary LMSs are under-represented in this paper. Moodle on the other hand, has benefitted from its active community where user institutions share relevant information to guide in the review of different LMS products. The site “Move To Moodle” was established to store a wide range of information, a site highly recommended by its official partners.

Four out of the five universities included in this paper are WebCT users affected by the change of its product development and support. These universities find this change an opportunity to align the next LMS with changes in their structure, curriculum, teaching and learning goals.

Table 2: Purpose of Review

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor has ceased further development and will discontinue support of their current LMS</td>
<td>La Trobe University</td>
</tr>
<tr>
<td></td>
<td>University of Ballarat</td>
</tr>
<tr>
<td></td>
<td>Deakin University</td>
</tr>
<tr>
<td></td>
<td>La Salle University, USA</td>
</tr>
<tr>
<td>Align LMS implementation with change in university structure or teaching and learning goals.</td>
<td>La Trobe University</td>
</tr>
<tr>
<td></td>
<td>Deakin University</td>
</tr>
<tr>
<td></td>
<td>University of Canterbury, NZ</td>
</tr>
<tr>
<td>Current LMS is cumbersome by modern standards</td>
<td>La Trobe University</td>
</tr>
<tr>
<td></td>
<td>University of Ballarat</td>
</tr>
</tbody>
</table>
Shortlisted LMSs and Criteria Used for Selection

In the review, four universities shortlisted Blackboard Learn and Moodle while one university shortlisted Blackboard Learn, Desire2Learn and Moodle.

Table 3: Shortlisted LMSs

<table>
<thead>
<tr>
<th>Shortlisted LMSs</th>
<th>Universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackboard Learn 9.1 and Moodle</td>
<td>La Trobe University</td>
</tr>
<tr>
<td>Blackboard Learn 9.0, Moodle, Desire2Learn</td>
<td>Deakin University</td>
</tr>
<tr>
<td>Blackboard Learn 9.0 and Moodle</td>
<td>University of Ballarat</td>
</tr>
<tr>
<td>Blackboard and Moodle</td>
<td>University of Canterbury, NZ</td>
</tr>
<tr>
<td>Blackboard Learn 9.1 and Moodle</td>
<td>La Salle University, USA</td>
</tr>
</tbody>
</table>

A collation of criteria used by these universities in selecting a new LMS is provided on the table 4 below.

Table 4: Criteria Used for Selection

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usability</td>
<td>La Trobe University</td>
</tr>
<tr>
<td></td>
<td>Deakin University</td>
</tr>
<tr>
<td></td>
<td>University of Ballarat</td>
</tr>
<tr>
<td></td>
<td>University of Canterbury, NZ</td>
</tr>
<tr>
<td></td>
<td>La Salle University, USA</td>
</tr>
<tr>
<td>Functionality</td>
<td>La Trobe University</td>
</tr>
<tr>
<td></td>
<td>University of Ballarat</td>
</tr>
<tr>
<td></td>
<td>Deakin University</td>
</tr>
<tr>
<td></td>
<td>University of Canterbury, NZ</td>
</tr>
<tr>
<td>Technical fit</td>
<td>La Trobe University</td>
</tr>
<tr>
<td></td>
<td>University of Ballarat</td>
</tr>
<tr>
<td></td>
<td>Deakin University</td>
</tr>
<tr>
<td>Reliability and consistency of ongoing service</td>
<td>La Trobe University</td>
</tr>
<tr>
<td></td>
<td>Deakin University</td>
</tr>
<tr>
<td></td>
<td>University of Canterbury, NZ</td>
</tr>
<tr>
<td></td>
<td>La Salle University, USA</td>
</tr>
<tr>
<td>Cost (TCO, transition and long-term)</td>
<td>La Trobe University</td>
</tr>
<tr>
<td></td>
<td>Deakin University</td>
</tr>
<tr>
<td></td>
<td>University of Ballarat</td>
</tr>
<tr>
<td></td>
<td>University of Canterbury, NZ</td>
</tr>
<tr>
<td></td>
<td>La Salle University, USA</td>
</tr>
<tr>
<td>Market share</td>
<td>La Trobe University</td>
</tr>
<tr>
<td></td>
<td>University of Ballarat</td>
</tr>
<tr>
<td></td>
<td>Deakin University</td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>La Trobe University</td>
</tr>
<tr>
<td></td>
<td>Deakin University</td>
</tr>
<tr>
<td></td>
<td>University of Canterbury, NZ</td>
</tr>
</tbody>
</table>

End-users assessment on usability and functionality is the most common determining factor. Different user groups were formed to include participation by staff and students. Participants were given set of tasks to rate the different
LMSs. La Trobe University commissioned UsabilityOne to analyse the tasks performed by students. Accessibility testing was separately assessed by Vision Australia. Both Blackboard Learn 9.1 and Moodle got a high rating and both assessed as capable LMSs. The report further emphasised the importance of careful implementation and the role of staff to produce accessible content.

Cost is another common consideration. Different models were used in calculating cost. Deakin University calculated TCO based on the cost of implementation programme (from pilot to change management) and 7 years of operation. The model depicts a clearer picture of which LMS is more cost-efficient over a longer term than just migration and establishment phases. Cost consideration also includes comparison of maintaining the system in-house or hosted externally by vendors or official partners (case of Moodle).

Technical fit is another important factor, especially when the system is implemented at an enterprise-level. This includes assessing the capability of internal development team to maintain and scale the system; architecture and infrastructure (ease of integration, openness to development and third-party extensions); and software performance and maintenance (upgrades, system outages).

Perceived risk was assessed by comparing risks associated with open-source to proprietary products, considering that all 5 universities shortlisted Moodle (open source) and Blackboard (proprietary). In the case of proprietary softwares, vendor’s reliability and consistency of ongoing service was evaluated. This is important because factors such as merging and acquisition impacts development of the LMS that affects the university’s planning and implementation.

Outcomes of the University’s reviews

Three of the five universities recommended Moodle with two of them supporting the system in-house. The major consideration of this is internal capability to develop and support the system. The other university that recommended Moodle will work with an official partner, NetSpot, to combine blended hosting and services. The contract will be reviewed annually from 2012.

The university that recommended upgrading to Blackboard Learn 9.1 finds that the system is an improvement of their current LMS. It exceeds expectations on usability as assessed by staff and students.

The university that recommended adopting Desire2Learn emphasised the importance of successful vendor negotiation. This implies vendor’s openness to meet client’s needs, especially on product development. They require the vendor to develop their product to ensure seamless integration with their systems.
UWA Actions

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5. Conduct user-testing with both UWA Staff and Students to also assess usability and functionality.

6. Identify and evaluate the hardware specifications of each shortlisted LMS to assess technical fit and the skill required to implement each shortlisted LMS.

7. Identify the total cost of ownership and implementation of each of the shortlisted LMS’s.

8. Identify the costs and implications of external hosting
### Appendix A

**Status of LMS Uptake of Australian Universities affected by WebCT’s life cycle**

<table>
<thead>
<tr>
<th>Australian Universities</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Catholic University [ACU]</td>
<td>Unknown status</td>
</tr>
<tr>
<td>Australian National University [ANU]</td>
<td>Moved to Moodle 2009 - 2010</td>
</tr>
<tr>
<td>Deakin University [Deakin]</td>
<td>Moving to Desire2Learn 2011</td>
</tr>
<tr>
<td>Flinders University [FLINDERS]</td>
<td>Under review</td>
</tr>
<tr>
<td>La Trobe University [LATROBE]</td>
<td>Moving to Moodle 2.0 2011</td>
</tr>
<tr>
<td>Macquarie University [MACQUARIE]</td>
<td>Under review</td>
</tr>
<tr>
<td>Monash University [MONASH]</td>
<td>Under review</td>
</tr>
<tr>
<td>Murdoch University [MURDOCH]</td>
<td>Under review</td>
</tr>
<tr>
<td>University of Ballarat [BALLARAT]</td>
<td>Moving to Moodle 2011</td>
</tr>
<tr>
<td>University of Canberra [CANBERRA]</td>
<td>Moved to Moodle 2008</td>
</tr>
<tr>
<td>University of New England [UNE]</td>
<td>Moving to Moodle 2.0 2011</td>
</tr>
<tr>
<td>University of Sydney [SYDNEY]</td>
<td>Moving to Bb Learn 9.1 2011</td>
</tr>
<tr>
<td>University of Tasmania [TASMANIA]</td>
<td>Under review</td>
</tr>
<tr>
<td>University of Western Australia [UWA]</td>
<td>Under review</td>
</tr>
<tr>
<td>University of Western Sydney [UWS]</td>
<td>Moving to Bb Learn 9.1 2011</td>
</tr>
<tr>
<td>University of Wollongong [UOW]</td>
<td>Under review</td>
</tr>
<tr>
<td>Victoria University [VU]</td>
<td>Under review</td>
</tr>
</tbody>
</table>
## Appendix B
### LMS Uptake of Australian Universities

<table>
<thead>
<tr>
<th>Australian Universities</th>
<th>From</th>
<th>Moving to</th>
<th>In</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Catholic University [ACU]</td>
<td>WebCT CE 8.0 + D2L e-portfolio</td>
<td>unknown status</td>
<td></td>
</tr>
<tr>
<td>Australian National University [ANU]</td>
<td>WebCT CE 4.1</td>
<td>Moodle 1.9</td>
<td>2009 - 2010</td>
</tr>
<tr>
<td>Bond University [Bond]</td>
<td>Blackboard 7.0</td>
<td>Blackboard</td>
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