

# inside newsletter



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## president's message

Mike Quinlan, University of New England  
TEFMA President



Welcome to the latest issue of the TEFMA *insideneutral*. As usual, Chris White and Chris Box and their

editorial team have produced an informative and quality publication for TEFMA members.

Last year was a very busy year for TEFMA and the Board with the very successful and enjoyable TEM Conference in Canberra during September. Bart Meehan of ANU and his organising committee should be congratulated for an excellent job.

At the conference two of TEFMA's Strategic Partners gave papers. Master Ngoma of Tshwane University of Technology gave an update on the South African tertiary sector and recent developments within HEFMA, and Bill Elvey, the President-elect of APPA, gave a dramatic account of the tragic incident at his then institution, Virginia Tech, when 32 people were killed by a disturbed student. The effects and outcomes of this event on Virginia Tech's Facilities Department were dramatic and long lasting.

The TEFMA dinner as always was an event to be remembered, being held this time at the Australian War Memorial under the wings of 'G for George', a World War Two Avro Lancaster bomber.

One of the highlights of the evening was the presentation of the TEFMA/SKM Innovation Award to Melbourne University

for its best practice and innovation in Facilities Management.

In conjunction with the Canberra Conference the incoming TEFMA Board meeting welcomed some new faces: Bart Meehan from ANU, Peter Molony from the University of Canterbury and Jenny Bentley from the Victoria University of Wellington. Sadly, Peter Lennon from Charles Sturt University resigned from the Board; I would like to thank Peter for his contributions to the Board and especially to the Melbourne Workshop in March 2007 on Benchmarking. As a result of this workshop the Board has decided to expand the TEFMA Benchmarking Survey with more strategic benchmarks that can be compared internationally. New benchmarks on institutions' carbon footprint and security statistics will also be added.

The TEFMA Workshops continue to provide value for money on short courses that our membership requires. The coming workshop (really a course) is in Contract Management and will be held at UNSW on 10 and 11 March. This course is designed for mid level facilities staff and will provide a good basis for those staff in the effective management of contracts – so necessary in today's environment. This course has proved to be extremely popular so don't hesitate to register intent now as there are only 70 places. Check the TEFMA webpage for details.

A second workshop is planned for Brisbane at QUT on 23 and

24 June on Critical Incident Management and is designed for senior level staff. This course became more relevant after hearing Bill Elvey's paper on the tragic incident at Virginia Tech. More details in the near future.

The Board has provided additional resources and funding to enhance the TEFMA website so as to become more user-friendly and easier to navigate. The TEFMA list has been discontinued and all members are now encouraged to use the TEFMA Forum to exchange information on relevant topics of interest. Please take the time to look at the TEFMA web page and see how easy it is.

The Management Development for Facilities Managers course will again be conducted in 2008 at Mt Eliza on the beautiful Mornington Peninsula in Victoria. This course had a record attendance in 2007 (see Karleen Smith's report in this issue) and has consistently recorded excellent user surveys by participants. If your future is in Facilities Management I would recommend that you attend this course.

I hope you enjoy reading this issue of the TEFMA *insideneutral* and hope to meet many of you throughout the year either at the workshops or at the TEM Conference in Christchurch New Zealand – from 28 September to 1 October. For all the information on these coming events and on any topics of interest within TEFMA, the website is the place to get it: [www.tefma.com](http://www.tefma.com).



## tefma scholarships



We have had a wonderful response from some recent recipients of TEFMA Scholarships for this issue of the TEFMA *insideneutral* magazine. Read on!

[www.tefma.com/education/scholarships/index.jsp](http://www.tefma.com/education/scholarships/index.jsp)

## grounds for success



*David Elms has been the Grounds Maintenance Supervisor for the University of Ballarat for more than five years.*

*His role includes managing the day-to-day grounds maintenance at the university's Mt Helen campus, which has three full-time gardeners, as well as overseeing the grounds contractors at the five other main campuses and the university's two accommodation properties. He has been working in the horticultural arena for 20 years, with most of this time in educational institutions.*

Earlier in 2007 I was fortunate enough to be selected as one of the joint recipients of the TEFMA/Programmed Maintenance Services scholarship to attend the inaugural Grounds Workshop, which was held at University of Queensland's St Lucia campus in Brisbane. The team at UQ certainly welcomed us with beautiful weather and equally beautiful grounds.

The workshop, which was held over two days, was themed 'Learnscaping' and had various speakers ranging from current and retired facilities managers to academic staff and students who expressed their views and

expectations of grounds from a customer perspective. More than 60 attendees came from various universities around Australia and New Zealand and were from a mix of backgrounds ranging from gardeners and supervisors through to architects and operations managers. This gave all who attended a great chance to network and compare how we operate against others from similar areas. I personally found this to be a great learning opportunity – as much as any of the papers that were presented.

'Learnscaping' was about how we can play our part as horticulturalists in creating an environment in which people want to teach and learn, that extends beyond the traditional classroom or lecture theatre. The workshop was broken down into separate sessions that covered topics like OH&S, development planning, auditing and integration of buildings and landscapes. All of these sessions not only had me thinking how I can better manage the grounds I have in my control, but also through discussions with others attending how we are all facing many similar problems and challenges. As modern day supervisors and managers we have to deal with a greater range of problems than ever before – OH&S, staff and contractor

management and environmental issues are all taking up more of our precious time. It is through workshops like this one that we are able to find better ways of doing our job.

My only regret after going to this workshop is that more staff from my institution did not attend; I came away feeling that what we had heard, discussed and seen would have been relevant to numerous people with whom I work. Although it was a grounds workshop anyone who has anything to do with grounds in any capacity would have come home with some new ideas and I will encourage more people to attend future workshops.

I would like to congratulate Geoff Dennis, Shane Biddle and all the staff at UQ who worked so hard to get this workshop happening. I would also like to thank Programmed Maintenance Services, particularly Mark Collins, for providing the scholarship to attend. I hope that this is not the last grounds workshop to be held and would like to see them held every couple of years. As I have previously said I would encourage all TEFMA members to attend future workshops, especially those directly involved in grounds maintenance. I hope to see you all at the next workshop. ●

## aude conference: superb insight and networking



*Dr Robert Dyson is Deputy Director, Engineering and Infrastructure, in the Division of Buildings and Grounds at La Trobe University.*

*Based at the Bendigo campus, his responsibilities include management of the capital plan, space management and master planning. Dr Dyson has extensive experience both as an academic and more recently in facilities management. He has degrees in science and electrical engineering and is a fellow of the Institution of Engineers, Australia.*

As the 2006 recipient of the Maurie Pawsey Scholarship I attended the annual Association of University Directors of Estates (AUDE) conference held at the University of Bath in the United Kingdom.

The conference commenced on Sunday, 1 April 2007, with a reception for overseas guests. This afforded an opportunity to catch up with overseas colleagues including APPA President, Chris Ahoy, whom I first met at the 2005 TEFMA conference in Perth. Chris was instrumental in organising my attendance at the APPA Leadership Academy in Tucson, Arizona, in 2006 and I used the opportunity to catch up again and to thank him in person for facilitating the invitation. Chris has recently completed writing a new book for APPA and he enthusiastically appraised me of its merits. I also met Master Ngoma, President of the Higher Education Facility Management Association of Southern Africa (HEFMA), together with three Australian colleagues attending the conference.



### AUDE 2007

This reception was followed by a further reception and welcome for all delegates, after which the conference-eve dinner was held. The dinner provided a further excellent networking environment. I had the opportunity to discuss a number of issues with Peter Kerr, AUDE Chairman, and to meet many UK colleagues.

On Monday, 2 April, the conference was officially opened by Peter Kerr, followed by a welcome to the University of Bath by the Vice-Chancellor, Professor Glynis Breakwell. The conference

consisted of eight plenary sessions and three integrated workshop blocks each of consisting of four programs. Throughout the conference, several informal social functions and a major exhibition provided excellent additional opportunities for professional networking. The exhibition consisted of 56 exhibitors including architects, service providers, laboratory equipment providers and a wide range of specialist contractors.

Professor Drummond Bone, Vice-Chancellor at the University of Liverpool and Chair of Universities UK, delivered the first plenary session titled 'Trends in Higher



BATH STREETSCAPE.

Education and their impact on the estate'. Professor Bone reviewed his work as President of Universities UK, an organisation engaged in consultation, lobbying and campaigning across a range of issues pertinent to higher education including a detailed response to the UK Government's 2007 Comprehensive Spending Review. Among the many issues he addressed, Professor Bone outlined the importance of Senior Estates Managers being 'part of the loop' (part of the Senior Management Team), the need for academics to embrace the idea of shared space and the need for universities to identify core activities.

Sara Parkin, Chief Executive, Forum for the Future, presented the second plenary session, titled 'What does sustainability in the higher education sector mean for key resourced decision makers?' Sara is a Foundation Director and Trustee of Forum for the Future, the leading UK sustainable development charity, and has taken a leading role in education focused on integrating sustainability into post-secondary education, engineering and other professions. During her presentation, Sara outlined a large number of sustainability issues of major importance, including sustainability in building regulations, climate change recognition in planning

new developments, carbon neutral processes, carbon footprints in new developments, green procedures and energy efficiency. Recognition of many of these sustainability issues is now evident by way of inclusion in UK building codes and other planning documents.

On Monday evening an informal session of pre-dinner drinks was followed by an Italian-style meal held in the 18th century Tea Rooms of the magnificent Bath Assembly Rooms. The evening was sponsored by Parsons Brinkerhoff Ltd and Shepard Construction Ltd. Again, the welcome drinks and dinner provided an excellent avenue for networking with a range of UK consultants engaged in university projects and with estate management colleagues.

The third plenary session was delivered by Mike Entwisle, Associate Director, Buro Happold, and David Herd, Director, Buro Happold. The presentation was titled 'Sustainability and re-use of 1960s Higher Education Estates'. The joint presentation focused on refurbishment design supported by comparative energy statistics following the regeneration of old buildings. Both Mike and David made several references to the 'Stern Report – Costing Climate Change'. They also outlined many issues of energy performance and highlighted the introduction of energy certificates for buildings.

John Plumbridge, Director of Projects, AIMS, delivered the fourth plenary session titled 'Platform to launch the revised UK Planning Guidelines'. John presented an overview of the recently completed Planning Guidelines for UK

▷ institutions. He explained how the document provides up-to-date guidance for planning in key areas through consultation with the sector and how it now provides a platform for influencing national policy.

Chris Ahoy, Mike Quinlan (TEFMA) and Master Ngoma jointly delivered the fifth plenary session. Each gave a short presentation on matters of interest arising from their organisation. Chris outlined APPA's seven key future strategies and their desired outcomes. He also explained the new APPA digital dashboard (software) for assessing finances, internal processes, innovation and learning, and customer satisfaction. Mike outlined the then upcoming TEFMA conference in Canberra together with a range of other relevant TEFMA items of interest. Master

explained the HEFMA structure and future educational management challenges in Southern Africa.

Plenary session six, titled 'Presentation from the UK Funding Councils', was presented by Andrew Smith, Head of Estates and Sustainable Developments at Higher Education Funding Council for England (HEFCE), Martin Kirkwood, Deputy Director of Finance, Scottish Further and Higher Education and Chris Cowburn, Head of Estates, Higher Education Funding Council for Wales. Each presented an update from the Funding Councils on current issues including space management, EMS, capital funding and sustainable development. To put the funding council tasks in perspective, the total HEFCE grants in 2007–2008 are 6.884

billion pounds (approximately \$15–\$16 billion). These grants service institutions with a total student enrolment of 1.16 million (FTE).

The late afternoon Tuesday program consisted of a choice of several excursions to sites of interest in and around the city of Bath. The excursions were followed by a champagne reception at the Roman Baths, followed by a black tie conference dinner in the Roman Baths pump room. As a conference dinner venue it would be very hard to surpass. An excellent meal punctuated by a minimum of well-timed formality proved a very successful formula for a most enjoyable evening. Throughout the evening I took full advantage of the many available networking opportunities, finally succumbing to the need for sleep well after midnight.

## attention tefma members – we need you! ... ... or rather, your magazine needs you.

TEFMA is a strong and growing association, reflected in the pages of your magazine *insidenewsletter*.

Your magazine relies on the input from you – the members of TEFMA. It has been reassuring and indeed gratifying to note the increasing input from members in these pages in recent issues.



So please keep your informative and interesting articles – and great photographs – coming in. Whenever you feel the urge to put finger to keyboard, at any time and not necessarily just before editorial deadline, please do so and send us the fruits of your labour.

Thanks to all those TEFMA members that have contributed to this issue and in the past. Now sit back and enjoy reading the current issue of your magazine. Please send your submissions to Bart Meehan at:

**bart.meehan@anu.edu.au** or Tel: **(02) 6125 0777**,  
to Chris Box at: **chris.box@rmit.edu.au** or Tel: **(03) 9925 2797**.



Professor Rudi Klein, Chief Executive SEC Group presented plenary session seven, titled 'Managing risk in major construction contracts'. Professor Klein presented an extensive program outlining management of risk in diverse areas such as design, performance, procurement, completion and payment. Professor Klein also spoke extensively on risk management in the future.

The eighth and final plenary session was delivered by Professor David Chiddick, Vice-Chancellor, University of Lincoln. Titled 'A new approach to an effective estates strategy', Professor Chiddick delivered an extensive presentation on a wide range of issues related to the estates strategy that included local/regional economic strategies impacted by changing teaching and learning approaches together with the impacts of space management, cost effectiveness and efficiency.

He spoke of a linked approach to academic pursuits, research and community, and concluded with an informative insight into an extensive university/community development at the University of Lincoln.

I attended the three conference workshops programs. The first workshop was delivered by Clive Wilson, Director of Estates, University of Bradford, and was titled 'HEFCE/AUDE Self-assessment tool kit'. The workshop consisted of a description of the EMSAT website and the online management self-assessment tool kit followed by a demonstration of the software. EMSAT provides good-practice estates management knowledge base comprising web pages and hyperlinks to relevant documents and websites. The self-assessment software model allows AUDE members to measure estates management capabilities of their organisation benchmarked

against their peers. The voluntary benchmarking program is a comparative capability model and employs data entered in response to 109 questions. HEFCE plans to use the returns as a means of assessing estate management performance as part of future funding management.

Anthony Wilson, Director of Faber Maunsell, delivered the second workshop, titled 'European Building Performance Directive'. Anthony outlined new building regulation that came into operation in 2006. The regulations cover the calculation of energy performance in dwellings and non-dwellings and the demands for consequential improvements to larger existing buildings. The workshop addressed various issues on how to meet these requirements. Anthony also addressed the issue and display of energy performance certificates.

The final workshop program was titled 'A Guide to the Revised Statutory Planning Process' and was delivered by Jim Claydon. Jim provided an insight into the new planning system in England and how it is working in practice, together with his observations regarding supporting development planning documents.

The conference concluded on the Wednesday afternoon with a closing address and a call to the 2008 conference.

Finally, I sincerely congratulate the organisers for delivery an excellent conference and extend my special thanks to Patrick Finch and his staff from the Estates Division of the University of Bath for their friendship and hospitality. ●

## condition auditing and asset management



*Emmett Mackle is Buildings and Plant Manager at the University of Auckland, New Zealand. Emmett has been in this role for 10 months and prior to that was Maintenance Manager at the university for nine years. He has an electrical engineering background, is a Registered Engineering Associate and has a postgraduate diploma in Engineering Management. Emmett was the recipient of the TEFMA Travel Scholarship and visited six institutions to look primarily at condition auditing and asset management.*

*Please note: dollar figures quoted in this article are NZ dollars.*

The University of Auckland (UoA) is New Zealand's largest university, comprising three suburban campuses and a large CBD campus in the heart of Auckland city. Key statistics from the latest TEFMA benchmark survey are:

- Gross Floor Area (GFA) 425,000 sqm
- Asset Replacement Value (ARV) ~ \$1.5 billion
- Total EFTS 29,451

### UoA Condition Audit Project

The Senior Management Team of the UoA decided in 2006 that a full condition survey of the university's assets was required to ensure that planning for future upgrades and capital works was prioritised according to asset condition information. This would enable informed decisions on what work to include or exclude from capital projects, and provide a planning tool for maintenance projects

needed to reduce the backlog liability that existed.

Consulting firms that had previously worked with the UoA were invited to submit proposals to carry out the audits. They were asked to provide information of reference sites where they had carried out similar projects in the past, and to detail what resources they would provide to support the project.

The firm Opus International Consultants was selected and awarded the contract. The university was able to provide detailed information on existing assets, including plant and building fabric assets with locations and floor areas. It was planned at the outset that the data in the completed report would be integrated into the UoA's asset management system (Maximo). This would enable easy maintenance and retrieval of data and reporting of information.

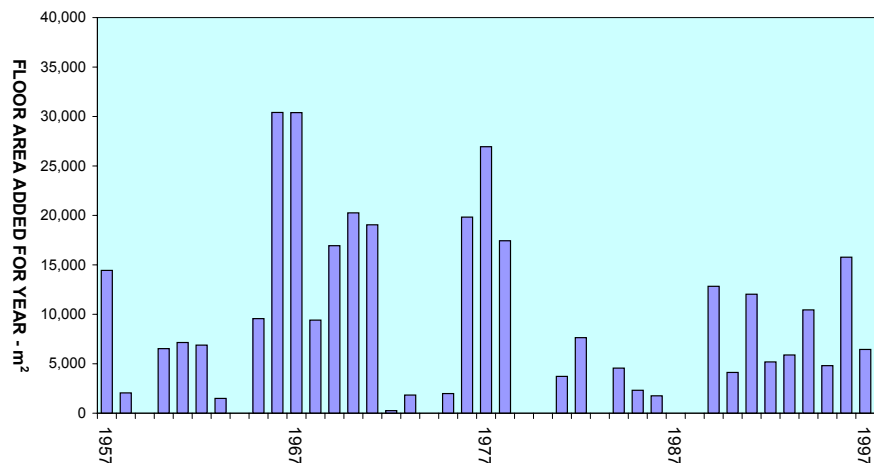
Another deliverable in the project was a web tool interface to the data that would enable the UoA

to search the data and produce reports on any combination of asset-type criteria. For example, a condition report could be generated for just the chilling plant within a single building or for a campus or the entire university.

Once the audit was completed, UoA Property Services would be able to produce reports showing the priorities for backlog maintenance projects. Funding would be sought for the projects based on condition weightings. Further prioritisation would be based on weightings for risk, functionality and importance as per the AAPP publication: *Guidelines for Strategic Asset Management Oct 2000*. These additional ratings were not included in the scope of work for the initial audit but are planned to be added later.

The audit was completed and results delivered in early 2007. It identified roughly \$100 million worth of backlog maintenance to be addressed over a 10 year period.

UoA GROSS FLOOR AREA



### The TEFMA Travel Scholarship

Having led the condition audit project for the UoA, I felt it was important to see how other large institutions were managing their backlog maintenance liabilities and continuing to manage their condition audit information into the future.

A number of large TEFMA institutions had run similar projects and were also actively engaged in keeping their data current. The TEFMA workshop held at Dunedin in March 2007 focused on Strategic Asset Management. This provided an excellent opportunity to network with other Facilities Managers and to see who was actively engaged in this area.

Based on the Dunedin workshop discussions and networking, I identified five institutions that were active in this area and were also of a similar size to the University of Auckland. They were Melbourne University, RMIT University, Queensland University, QUT University and Griffith University. I also identified that NSW Health was operating a similar asset management system to the UoA. I felt it was important to compare how a different type of institution had integrated condition data into their asset planning processes.

In July 2007, I embarked on the TEFMA Travel Scholarship and visited the five TEFMA institutions plus NSW Health in Newcastle. Below is a quick comparison of the institution's sizes based on TEFMA benchmark data:

- Melbourne University (GFA 758,000)
- RMIT University – Melbourne (GFA 412,000)
- NSW Health – Newcastle (GFA 421,000)
- Queensland University (GFA 616,000)
- Griffith University – Brisbane (GFA 289,000)
- Queensland University of Technology (GFA 301,000)

### Report findings

Each institution varied in the way they collected and maintained the asset condition data and produced reporting information. Each institution had to justify backlog maintenance funding by prioritising projects case by case and making submissions based on projects.

Despite each institution being able to show aggregated totals of backlog maintenance liabilities, funding was rarely granted in a lump sum format. Institutions

invariably needed to request funding for a list of specific projects in order to tackle the backlog. Without a system to identify individual projects, it was difficult to get executive teams of institutions to grant funds just as a simple addition to operational budgets.

In some institutions latitude was granted for Facilities Managers to set project priorities with relative flexibility. However, the budget was always set at executive level and this could swing widely each year depending on other institutional demands and priorities. In some cases, funding had been secured out over a number of years based on reported predictions of backlog maintenance liability. This gave these institutions a solid base from which to plan and allocate resources.

### Data collection system

The information systems used to manage the audit data amongst the institutions varied widely. In two instances, the systems were home-grown and reliant on key staff to keep them running and to provide report information from the data. These systems seemed to meet the institutions' needs. However, both institutions raised ►

## tefma scholarships – apply now

Are you interested in getting assistance to develop your skills or the skills of your staff? Apply for a TEFMA Scholarship!

TEFMA provides a number of scholarships that cater for a range

of disciplines and levels working in the tertiary education facilities management sector. Scholarship winners have invariably found their experiences rewarding in so many ways. You can read the enthusiastic reports from various scholarship

winners in this and previous *insideneewsletter* TEFMA magazines.

For more details on each TEFMA Scholarship, please check out the TEFMA website: [www.tefma.com/education/scholarships/index.jsp](http://www.tefma.com/education/scholarships/index.jsp).

▷ the concern that staff resource dependency was a risk should staff leave the organisation. Those using Microsoft Excel or Access software raised similar issues. In these cases particularly though, version management of data was important to ensure that outdated data was not inadvertently used for reporting.

An advantage with proprietary systems is less dependency on specialist in-house resources and standard reporting. A disadvantage can be initial purchase and set-up cost; however, a true comparison to in-house systems can be difficult with staff costs not always visible as a project cost.

**Institutional reporting of backlog maintenance**

One institution put a lot of time and effort into producing a professionally edited glossy report on the backlog maintenance liability. The report was tabled annually with the institution’s executive at budget planning time. There appeared to be a tremendous awareness of the backlog projects at executive level of the institution. The level of importance given therefore meant

that projects were highly regarded and visible, and the approval process for backlog maintenance funds appeared simpler and less competitive than in those where the executive had less awareness.

I noticed that effort spent on producing a high quality report annually, which provided details of achievements and future project plans, appeared to pay dividends. It ensured that the organisational awareness of backlog maintenance was high on the budget planning agenda.

As a contrast another institution had very little reporting reaching the executive level of their organisation. There seemed to be little current planning for dealing with the backlog maintenance that existed, to the point that resources that were previously dedicated to the condition auditing role had been moved to other operational roles. Future plans for investment in the auditing software had been stalled and there was a possibility that a new system would take its place. With a reduced emphasis now being placed on identifying backlog maintenance it was interesting to see that important

rehabilitative projects were not getting traction and approval.

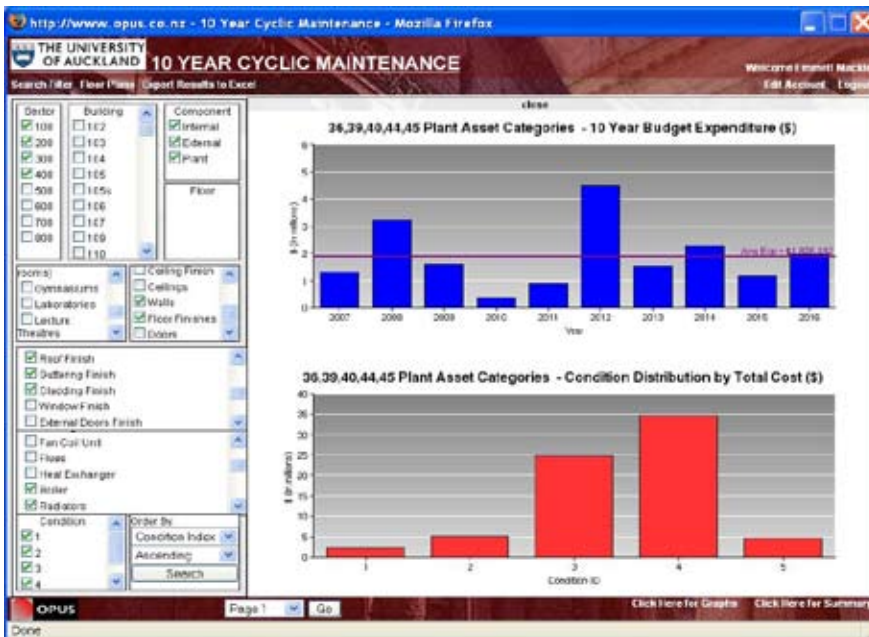
**Audit team resources**

Each institution varied in the way they resourced the condition auditing team. One used purely outside consultants who did all the ‘number crunching’ and produced multiple copies of a bound report. The majority used a mixture of both internal and external resources, with reporting shared between the two groups. In one case an institution used only in-house resources. While in another the organisation had lost staff to more ‘urgent’ matters, and there was no-one currently dedicated to the condition auditing process.

As can be seen from Table 1 (below), some institutions were well resourced with dedicated staff focused on backlog maintenance and condition assessments. In these cases the audit team often comprised internal staff and was not reliant solely on consultants. The institutions that used this model felt that there was more ‘buy-in’ internally to the process. These institutions also felt there was a positive spin-off with in-

Table 1 – Comparison of condition monitoring systems by institution

|                      | UoA      | A        | B         | C         | D         | E         | F           |
|----------------------|----------|----------|-----------|-----------|-----------|-----------|-------------|
| Audit frequency      | 5 yrs    | 5 yrs    | 20% p.a.  | 5 yrs     | 3 yrs     | 3 yrs     | 3 yrs       |
| Data system          | Maximo   | In-house | In-house  | MS Access | MS Access | MS Excel  | Proprietary |
| Staff resources      | 1.5      | 4        | 5         | 4         | 1.5       | 3         | Nil         |
| Audit team           | External | External | Int + Ext | Int + Ext | Int + Ext | Int + Ext | Internal    |
| Grounds incl.        | No       | No       | Yes       | No        | No        | No        | No          |
| Infrastructure incl. | No       | Yes      | Yes       | No        | Yes       | No        | No          |
| Backlog liability \$ | \$100m   | \$36m    | \$80m     | \$61m     | \$11m     | \$59m     | Unknown     |



house staff taking more interest in audit outcomes and planned projects.

### Infrastructure and grounds auditing

Regular auditing of both grounds and infrastructure assets was not occurring in all the institutions I visited. The primary focus for most has been on building and plant assets. There is consensus that infrastructure assets should be audited regularly, particularly underground infrastructure assets, which were a high priority item. Most institutions were planning to look at this seriously over the next couple of years.

### Backlog maintenance liability

A comparison of the total backlog maintenance liability cost for each institution revealed a wide spread in the value of work identified from audits, from \$11 million to \$100 million. Some institutions had been working on backlog maintenance for many

years and were well advanced with projects and in reducing the backlog. Other institutions had not been running a program for long and were only just beginning to tackle the identified work.

The age of an institution's building stock and the actual years in which buildings were added to portfolios was another factor on the predicted backlog cost. In the case of the UoA for example, a large number of substantial buildings were built during the 1960s and '70s. Some are now aged 40 years or older, with significant maintenance liabilities. The backlog liability cost curve when extrapolated out over 10 years or more is therefore not linear with largish swings in cost from year to year.

### Conclusions

Any institution that is considering undertaking a Facilities Audit should first refer to the October 2000 AAPPA publication *How*

*to undertake a Facilities Audit*, which gives clear guidelines for undertaking an audit and documenting backlog maintenance. Obviously, different institutions will choose different auditors based on their experience and location. However, my research indicated that using in-house staff provided better results in terms of clarity and understanding of the problems/condition of assets than an outsider's view in reporting on the facilities.

The selection of a data capturing system for audit information is an important decision, which should not be underestimated. Some organisations that have been using spreadsheets or in-house systems are now looking for proprietary systems to remove the dependence on individuals with expert knowledge.

A key driver for success in dealing with the backlog maintenance liability in an institution is to identify and scope projects, attach priority weightings and report these formally to the executive level of the organisation. Reporting to a high level and communicating risk raises the awareness and profile of projects, and assists in focusing attention to the needs of the institution.

In summary, the opportunity to visit these institutions provided me with a valuable insight into how others manage their backlog maintenance liability. I am extremely grateful to the institutions and individuals who hosted me. To the TEFMA Board, thank you once again for the opportunity. 🍷

## leadership development for the facilities manager program



*Karleen Smith,  
Technical Assistant,  
Facilities Management  
Division at the  
University of Waikato,  
was the recipient of  
the 2007 TEFMA/*

*OPUS Management Development  
Scholarship. She attended the  
Leadership Development for the  
Facilities Manager program at Mt  
Eliza, Victoria.*

First, I would like to say a big thank you to the TEFMA Board for awarding me the 2007 TEFMA/ OPUS Management Development Scholarship. This meant that I was presented with the opportunity to attend the Leadership Development program held at the Mt Eliza Centre for Executive Education in Victoria, which I was thrilled to be a part of. I would also like to thank John Cameron, Tony Dicks and all my colleagues for their encouragement and support.

I have to admit, I was a little apprehensive as to what to expect when attending the Leadership Development program as I had never been involved in a program such as this one before. However, once I arrived and settled in, program director Eugene Fernandez and the staff at Mt Eliza were so helpful and welcoming that any reservations I did have smartly disappeared.

We started off exploring our own leadership and management styles by introducing the MBTI self-assessment. This not only showed me my personality type, but also my strengths and weaknesses and how I can build on those strengths and improve the weaknesses so that I could become a better leader. We then touched on a number of leadership skills such as strategic

leadership, leadership and change, negotiation skills, coaching and consulting, relational skills, financial and project management, creativity and problem solving, and finished off with goal setting and creating an action plan to take away and work on. I got a sense from the start that I was really going to have to walk a few steps out of my comfort zone and embrace the whole experience with an open mind and be accepting of any challenges that I may face.

During the evening we worked in our syndicate groups, where we had to work on a project and then present it to the rest of the group on the final day. I thoroughly enjoyed this part of the course and have never laughed so much in such a long time. Our syndicate group chose to work on Backlog Maintenance as the project topic and whilst our presentation was not going to win any awards, we had a blast and certainly gained many laughs from the crowd.

It certainly wasn't the overseas holiday that some of my colleagues suggested it would be, but all in all I had a fantastic time and was so thrilled to have been part of such a great group of people. I have not only built a network of people that I can relate to and make contact with, but I have also gained many friendships.

Once again I would like to thank the board for giving me this opportunity. I would also like to thank the staff at Mt Eliza for their great hospitality and, of course, Eugene Fernandez and the other presenters for making the whole learning experience so enjoyable. I would like to encourage other TEFMA members to attend this program if the opportunity arises as I have certainly gained the skills needed to enhance my effectiveness as a leader. ●



REPAINTING TO HERITAGE BUILDING, F BLOCK, GARDENS POINT.



REFURBISHMENT TO PUBLIC SPACE, LEVEL 4, S BLOCK, GARDENS POINT.



REPAINTING TO HERITAGE BUILDING, J BLOCK, GARDENS POINT.

## humour caps a memorable week



*Peter Stegman commenced work in Facilities Management as a base trade painter in 1989. During his time*

*at Queensland University of Technology he has undertaken further training to enhance his skills base in wider areas and actively pursued opportunities for greater responsibilities, achieving promotion to Building Trades Foreperson in 1998, to act in higher level appointments, and in a secondment in a project-related position in Maintenance Services. Later, he was offered an ongoing appointment as Project Coordinator within Maintenance Services and has worked in that role for three years.*

In my role I use my project management skills to deliver maintenance and minor works projects across a range of trades. On a regular basis I take the initiative to supervise maintenance and operational staff while on higher duties and make decisions that will allow QUT to continue operations without disruption.

I manage the upgrading to all teaching space areas including lecture theatres and computer labs, where Facilities Management works in conjunction with Audio Visual Services, providing students with the most up-to-date equipment. Included in the refurbishments are acoustic work, painting, window coverings, fixed bench seating, lighting upgrades, airconditioning works and floor coverings.

I relish opportunities to extend myself and participated actively during my attendance at the Management Development for the Facilities Manager program held at Little Bay, Sydney, in 2004. This was an engrossing experience, spending a week with colleagues from Facilities Management departments throughout Australasia, networking with the group members, coming away feeling confident and pleased to have had this interacting experience and later sharing my new knowledge with my work colleagues back at QUT.

My application for the Currie & Brown Scholarship was to exercise the opportunity to engage with my colleagues with similar interests to me, to share ideas and discover better ways of doing things. As a relatively new project coordinator I welcomed any chance to improve my skills base.

The Tertiary Education Management Conference held last September at the Hyatt in Canberra provided me with more than I had envisaged. Being my first conference, the program content was instrumental to my gaining further knowledge to where Facilities Management will be progressing within the very near future. Networking with other university people was invaluable: interacting with colleagues of similar working interests, finding how other universities operate, making a mental note on how to approach situations wiser for the experience. Morning

teas, lunch breaks and dinners provided opportunities for us all to communicate and interact with each other and speak about the day's proceedings and how beneficial workshops and guest speakers had delivered their addresses.

Sustainability is the way of the future and here at QUT, Facilities Management currently has in place a program to use recyclable products and reduce the use of non-renewable products, such as using recyclable vinyl-backed carpet tiles. Non-toxic paint is being trialled presently with positive feedback from staff, students, the general public and the tradespeople themselves.

In conclusion, this was a memorable experience for me being awarded the Currie & Brown Scholarship, a company that provides funding to TEFMA encouraging members to improve their knowledge of contemporary Facilities Management practices. This scholarship enabled me to interact with people from various universities throughout Australia and other parts of the globe, bringing back to my university goals and objectives that I will put into practice to improve methodologies. A special thanks to Richard Kerr (Director, Currie & Brown) for his encouraging remarks and education he provided to me over the conference week. It was a very well organised conference with excellent learning experiences that on many occasions included the humour that put the finishing touches to a great week. ●

## look to the future – 2007 temc report



*Paula Leishman  
from Leishman  
Associates  
in Hobart:  
[www.leishman-associates.com.au](http://www.leishman-associates.com.au).*

The 2007 Tertiary Education Management Conference (TEMC), held on 23–26 September 2007 at the Hyatt Hotel, Canberra, was another successful event, with positive feedback from delegates, speakers, sponsors and exhibitors alike being received. The conference attracted 450 full delegates from across Australia and New Zealand, the majority of which came from NSW and Victoria.

In the post-conference survey the majority of respondents rated all aspects of the conference as very good, with social events rated very good to excellent. Chairman of the Organising Committee, Steve Langley, said the 2007 conference “was one of our best yet – Canberra provided a wonderful venue, which truly suited the conference theme”.

The theme, ‘Look to the Future’, provided speakers with a broad pallet to develop their presentations, and gave the delegates a challenge to discover and discuss the changing face of tertiary education on a global scale.

With eight keynote presentations, including Dr Keith Suter, Dr Allan



'BLAST FROM THE PAST' CONFERENCE DINNER 1970s NIGHT.



TRADE EXHIBITION. ANOTHER SUCCESSFUL AND WELL ATTENDED TRADE EXHIBITION.



DELEGATES IN KINGS HALL AT OLD PARLIAMENT HOUSE.

Hawke – Chancellor, Australian National University, Max Kerr – Tertiary Education Commission, New Zealand, and Janine Shepherd, delegates had a range of interesting and informative sessions to attend. The concurrent sessions and workshops included more than 40 individual presentations, which explored diverse subjects

such as technological advances and flexible learning, policy issues, general safety, leadership, facilities management, economics, ergonomics, environment and globalisation.

The conference was again supported by a large number of sponsors and exhibitors, with

Campus Living Villages coming on board as the new major sponsor for the event. While there were many regular exhibitors and sponsors at the conference, it was an opportunity for some new organisations to get involved, including Integrated Facilities Management and Academic Search International.



TEFMA AWARDS DINNER AT THE AUSTRALIAN WAR MEMORIAL.



SAM RAGUSA AND DENIS STEPHENSON (MC).



STEVE LAKE IS PRESENTED WITH AN AWARD ON THE NIGHT.



▷ At the conclusion of the conference many sponsors and exhibitors signed up for the 2008 event, including Campus Living Villages again as the major sponsor. This wonderful partnership will ensure the success of the conference for another year.

The social and networking program was, as usual, an integral part of the success of this annual conference,

and delegates attending had ample opportunity to meet and mingle during proceedings and at a variety of social events.

The Welcome Reception, held at Old Parliament House in the grandeur of Kings Hall, was an enjoyable evening and gave people a chance to mingle and wander through where Parliament once met to decide the

future of Australia. Delegates enjoyed the sounds of the string quartet and had the chance to see into their own future with a professional tarot card reader on hand for the evening. The tarot card reader ended up being onsite until close to 10.00pm, well after the conclusion of the reception, undertaking readings for keen delegates.



CANBERRA TURNED OUT TO BE A GREAT PLACE FOR THE SOCIAL FESTIVITIES OF THE ANNUAL CONFERENCE.



FEARLESS EDITOR, CHRIS BOX, GETS SATURDAY NIGHT FEVER.



Throughout the conference ATEM members had a chance catch up at a variety of special member functions, including the annual breakfast held at the Hyatt Hotel and the eighth annual 'Ghosts Lunch', which took place at the historic Lanyon Homestead.

The Official Conference Dinner was a 'Blast from the Past' 1970s night.

It was held at the National Museum with comedian and professional MC Scott Williams our host for the evening and great '70s music provided by local Canberra band Big Boss Groove. Indeed a groovy night was had by all, with many of the delegates getting into the spirit by wearing their 1970s gear.

With another successful

Tertiary Education Management Conference over we can look forward to planning the 2008 Conference, which will be held in Christchurch, New Zealand, from 28 September to 1 October. So register early: 'Invest In Success' and join your ATEM colleagues in New Zealand for what promises to be another great event. ▶

TAROT CARD READER ON HAND FOR THE EVENING.



STEVE LANGLEY, CHAIR ORGANISING COMMITTEE FOR 2007.



## 2007 temc – looking to the future

THE HYATT HOTEL, CANBERRA, WAS THE VENUE OF ANOTHER SUCCESSFUL TEM CONFERENCE, ATTRACTING 450 FULL DELEGATES FROM AUSTRALIA AND NEW ZEALAND.

THE THEME, 'LOOK TO THE FUTURE', OPEN DISCUSSION FOR BOTH SPEAKERS AND DELEGATES ON THE CHANGING FACE OF TERTIARY EDUCATION WORLDWIDE.

CANBERRA WAS A WONDERFUL PLACE FOR THE SOCIAL AND NETWORKING PROGRAM, ALWAYS AN IMPORTANT PART OF THE ANNUAL CONFERENCE.

MANY ENTHUSIASTIC SPONSORS AND EXHIBITORS HAVE ALREADY SIGNED UP FOR THIS YEAR'S EVENT, INCLUDING CAMPUS LIVING VILLAGES ONCE MORE AS MAJOR SPONSOR.

WE LOOK FORWARD TO THE 2008 CONFERENCE, TO BE HELD IN CHRISTCHURCH, NEW ZEALAND, FROM 28 SEPTEMBER TO 1 OCTOBER. REGISTER EARLY. VISIT [WWW.TEFMA.COM](http://WWW.TEFMA.COM) FOR MORE DETAILS.



KEYNOTE SPEAKER, KEITH SUTER, FUTURIST.



## the acts of the environmentalists



*Lania Lynch has a Bachelor of Science, she is an Environmental Auditor and has numerous additional environmental*

*qualifications. Lania is the Environmental Management Coordinator and Cairns Campus Workplace Health and Safety Officer at James Cook University, Cairns campus. Lania works in the Facilities Management Office, is Secretary to the Vice-Chancellor's Environmental Advisory Committee and Secretary to the Cairns Campus WHS Committee. Lania works closely with JCU managers to provide environmental compliance, management and sustainability advice to all areas of university operations.*

*As Australia's leading tropical research university, JCU operates research stations in two world heritage areas – the Great Barrier Reef (Orpheus Island Research Station) and the Wet Tropics World Heritage Area (The Australian Canopy Crane at Cape Tribulation). Lania has recently been involved in a JCU project to showcase JCU's biological diversity, called Discover Nature @ JCU.*

*Lania was elected as President of Australasian Campuses Towards Sustainability (ACTS) Inc in late 2007, having worked with outgoing President David Carpenter (ANU) and other Executive Committee members as the Australian Vice-President from 2005. She has been a member of the ACTS network since inception*

*in 2001 when it was known as AUEMN (Australian Universities Environmental Management Network) and coordinated the incorporation of ACTS in 2005.*

### **ACTS overview**

Australasian Campuses Towards Sustainability (ACTS) Inc is a not-for-profit incorporated association that serves as the umbrella body for sustainability initiatives in the Australian and New Zealand tertiary and vocational education sectors. The Griffith University EcoCentre is the registered address of ACTS.

**ACTS MISSION** The ACTS mission is to promote Environmentally Sustainable Development (ESD) and Education for Sustainability (EfS) by giving practitioners the resources, knowledge and developmental opportunities they need to 'green' their campuses and ensure that education for sustainability is integrated into further and higher education.

ACTS serves members of the further and higher education community from all institutions including universities, colleges, polytechnics and TAFEs. It supports everyone, from academics looking for creative and innovative ways of teaching about sustainability, to environmental managers whose primary focus might be on reducing an institution's environmental impact.

Since the development of membership packages in November 2006, 31 Australian and New Zealand universities, TAFEs and polytechnics have become financial members of ACTS.

### **ACTS WEBSITE and E-MAIL FORUM**

The ACTS website has been designed to give members and non-members access to the information and tools they require to further the cause of ESD and EfS in further and higher education (see [www.acts.asn.au](http://www.acts.asn.au)).

The online e-mail forum has more than 150 members from throughout the Australasian tertiary and vocational education sector. Any ACTS member or subscriber to the ACTS e-mail forum may send an e-mail to the rest of the forum subscribers. The e-mail content must relate to sustainability in the further and higher education sector. This covers issues concerning campus environmental management and Education for Sustainability. Content can include questions, comments or opportunities relating to the afore-mentioned topics. For details on how to subscribe, please refer to the website.

Annual conference papers are available for download from the website. ACTS will be making changes to the website in 2008 following the appointment of a project officer.

**ACTS MEMBERSHIP** ACTS Inc currently has members from most universities and a significant number of TAFEs around Australia and New Zealand. Membership benefits include access to a wide range of environmental management and sustainability information, experience of ACTS members on practical sustainability and EfS initiatives, e-mail discussion networks and the electronic newsletter. For further details on membership benefits, please contact [Lania.Lynch@jcu.edu.au](mailto:Lania.Lynch@jcu.edu.au) or [Delwyn.Langdon@griffith.edu.au](mailto:Delwyn.Langdon@griffith.edu.au).

▷ **Events for 2008**

The highlight of the ACTS program is the annual conference, which provides delegates with outstanding information exchange, collaboration and networking opportunities in operational and educational sustainability initiatives in the Australasian further and higher education sectors.

A snapshot of the first day of the 2007 conference is outlined in the separate box to whet your appetite! Papers presented at Day 2 can be viewed on the website under the conference tab. The 2007 papers are available for download from the website.

The 2008 Conference will be held in Christchurch on 2–4 October, directly after the TEMC Conference 'Investing for Success'. ACTS members from the University of Canterbury and Christchurch Polytechnic will be coordinating the conference and TEFMA and ATEM members are encouraged to attend.

ACTS will continue strengthening its partnership with TEFMA under its Memorandum of Understanding. The timing and location of the 2008 conferences will make it more practical for delegates to attend both conferences. In recognition of the many new TAFE members of ACTS, a Vice-President (TAFE) will be appointed in early 2008. ●

Lania Lynch can be contacted by e-mail at:

[Lania.Lynch@jcu.edu.au](mailto:Lania.Lynch@jcu.edu.au).

## acts 2007 annual conference

*Following is a snapshot of Day 1 of the 2007 conference – just to whet your appetite! Check out the ACTS website for conference papers.*

The 2007 conference was sponsored by Sydney Water and held at the TAFE NSW Western Sydney Institute – Wentworth Falls Campus on 3–5 October 2007. Annual conferences have been held since 2001, and the seventh event was the first time the conference had been hosted by the TAFE sector.

The conference attracted more than 70 delegates from Australia and New Zealand. We were fortunate to have one delegate from the UK, who provided an informative and entertaining presentation on the impact and challenges to UK universities of the Green League Table (a sustainability ranking system).

### Registration and Day 1

The conference commenced with a welcome drinks function on the Wednesday night at the Katoomba YHA and moved into full swing on Thursday 4 October with a welcome to delegates from Anne Ford – Acting Associate Director, TAFE NSW Western Sydney Institute. Rebecca Gilling from Planet Ark, keynote speaker, provided an engaging and informative overview on the branding and marketing of Planet Ark and public and business responses to environmental issues and effective engagement techniques.

### Morning papers included:

- Developing a Whole-of-University Approach to Educating for Sustainability: Linking Curriculum, Research and Sustainable Campus Operations (ANU)
- Sustainable Campus Reporting for Universities and TAFEs (Monash/ Maunsells)





A CULTURAL INTERLUDE.



A SWINGING TIME HAD BY ALL.

- Envirolearn – Community Learning for Sustainability, Judy Lee (Gunnedah Campus, TAFE NSW).

#### Afternoon

After lunch the program was divided into two streams, in keeping with the mission of ACTS – an operational focus on Campus Sustainability programs and Education for Sustainability.

Innovating composting techniques using HOTROT technology, Sydney Water's 'Every Drop Counts' Business Program and Efficient Building Services Operations were discussed in the Campus Sustainability stream. Papers outlining teaching and learning aspects of sustainability included best practice EfS initiatives from TAFE NSW Western Institute, Student engagement to reduce Greenhouse Gas Emissions and programs to encourage sustainable activism.

The final paper presentation was RMIT's 'Review of Beyond Leather Patches Project', which outlined innovative new trans-disciplinary program to integrate operational sustainability and EfS into curricula.

#### Green Office program – cultural interlude

Matt Salter, Sustainable Transport Officer from La Trobe University, provided an entertaining parody of a small work unit's reaction to the introduction of a Green Office program. Read live by ACTS Conference delegates, the radio play tells the story of a small work unit facing the replacement of individual office bins with a recycling bin. The eager green

office rep must overcome strong resistance from stereotyped office characters, making for outrageous excuses, hilarious confrontations and enough hot air to melt the polar ice-caps.

"When we rolled out our office recycling program, some of the reactions defied belief," says Matt. "I found them so ludicrous; I just had to write a parody." Matt chose the annual ACTS Conference to present his play because he wanted to help other staff see humour in the midst of frustration. "People's stubbornness against change can be very trying. But, if we pause to think about it, it's really very funny that people care so much about their little rubbish bin."

#### Conference dinner

The conference dinner was held at the historical Carrington Hotel, Katoomba. The theme was 1920s Cotton Club and it was great to see everyone dressing up and getting 'into the swing of things'. Once again Matt Salter entertained us with his etiquette and elocution lessons from the '20s. Entertainment was provided by a talented local swing band, in full 1920s character (including original '20s instruments). The band tunefully inspired many delegates to engage in various interpretations of the Cha Cha and other energetic, '20s-inspired dances.

We would welcome TEFMA members to join us at the 2008 conference at the conclusion of the TEM Conference. 🎯

- Developing a Travel Smart University – Theory and Practice of Sustainable Transport Behaviour Change (La Trobe)
- Sustainable TAFE: TAFE NSW Environmental Officer's Group (Illawarra TAFE)
- A New Green League Table for the United Kingdom: Measuring Success or Driving Performance (University of Exeter, UK)



## using water wisely: creating a sustainable campus



*Kathy Brass and team at Properties, Curtin University of Technology.*

Curtin University of Technology's Bentley Campus – its main campus six kilometres south of the centre of Perth – is well known for its beautiful gardens and massive expanses of lawn, but with this beauty comes a number of management issues, with the biggest challenge of all being water.

The campus is spread across 116 hectares of land, with the university irrigating 46 hectares of lawns and gardens, 19 hectares of recreation areas and 1.2 hectares of synthetic turf. If an irrigation system of the size and complexity of the Curtin system were to be designed today, a central management system

would be the automatic choice. However, when the existing Curtin system was conceived, the required technology was not available and even now is in an evolving stage.

With Australia's current water shortage and the rising need for greater accountability for water usage, it is time for planning to ensure our irrigation water usage is as efficient and effective as possible. To this end, Curtin has started to introduce upgrades to the current system to bring the university to the point of having a suitable central management system.

The current irrigation system as installed at the university comprises a number of separate irrigation installations mainly operated as manually synchronised systems. Overall, the system includes seven operational bores and 30 irrigation controllers.

Due to the practical complexity of operating such a system, it was proposed that the irrigation system be rationalised and automated. The original proposal involved three stages of implementation:

**Stage one:** All bores and pumps to be connected to a common communications network, and activated to achieve both pressure and flow rate requirements.

**Stage two:** The communications network to be connected to a controlling computer enabling the remote monitoring of volumes, flows and pump faults.

**Stage three:** The inclusion of a central management system, which allows all of the functional operation of the total installation to be remotely monitored and controlled as required.

The system should meet all aspects of Australian Standards for irrigation hardware and the design should comply with state watering practice requirements to ensure the system is efficient in its water delivery.

At the time of writing this article, stage one of the project is complete and in the testing phase, stage two is 20 per cent complete, while the software element of stage three is fully complete and the hardware element 20 per cent complete.

There are a number of identified benefits to installing such a system, including:

- Both power and water savings will be generated by new bore pump controllers fitted with variable speed drives (VSD), which the current pumps do not have (they are either off or on full power). The new pump will run only to deliver the amount of water required and reduce the pressure in the line. This reduced pressure in the pipes should also result in extending the life of the pipes and a reduction in the costs of replacements.
- Faults will be identified immediately by the central management system and the operator notified by SMS, allowing for an instant response and, if necessary, a remote shutdown of the system to prevent further damage or loss of water until the fault can be fixed.

- Should there be a fault with one bore then the next bore in line will automatically back up with water required to keep the system pressurised due to the ability of the bores to 'talk' to each other.
- Time savings are made as all controllers can be set or adjusted from one central point, replacing the person hours previously required to set each one manually over a campus covering 116 hectares. This is particularly valuable when a program change needs to be made or the system shut down for a special event on campus.
- The new system will record all data and allow for tracking of the water used on each station of the system, which will greatly



**what's new?**

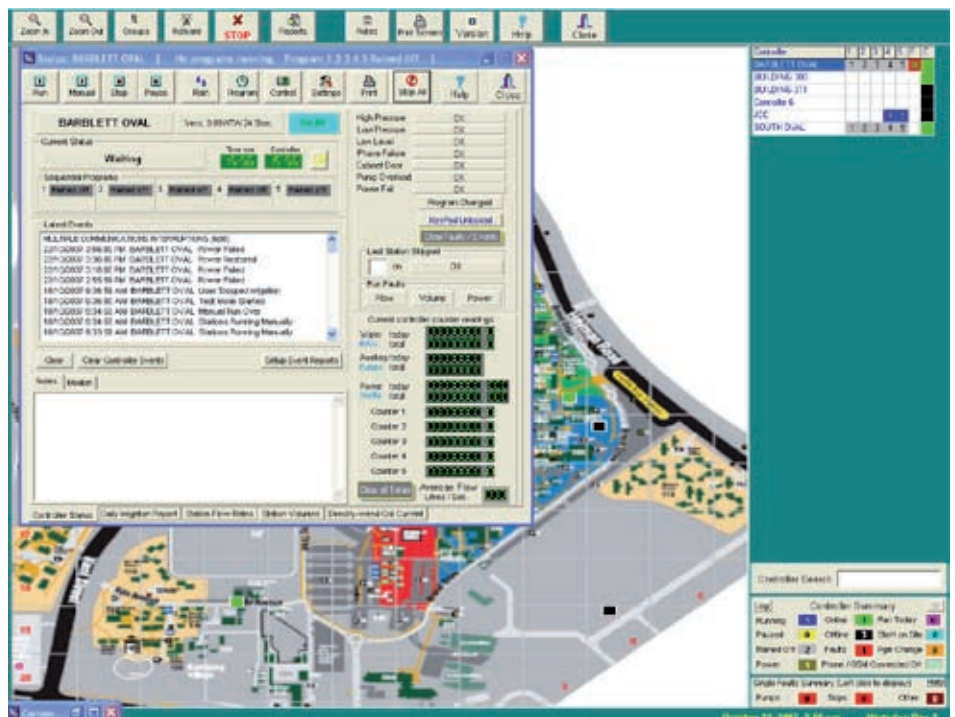
Remember, if you want to know what is happening in TEFMA, visit the 'What's New' page of the TEFMA website at: [www.tefma.com/whatsnew/](http://www.tefma.com/whatsnew/).

improve our ability to produce timely and accurate reports on all aspects of the system's operations including water usage, faults and so on.

A Perth-based company has been selected to design and install the system, which will allow for a more rapid response to and need for expansion and/or alteration to the system. 📍



THE CURRENT IRRIGATION SYSTEM WILL EVENTUALLY BE CONTROLLED BY A COMPUTERISED REMOTE CENTRAL MANAGEMENT SYSTEM.



## managing external assets with gis



*Everett Gay is Queensland University of Technology's Facilities Management Geographic Information*

*System (GIS) Administrator. His past experience spans engineering and topographical surveying, photogrammetry, asset management (water infrastructure) and geographic information systems. Everett has been responsible for migrating the GIS dataset from a local coordinated system to the Australian Standard – MGA94 system 56, as well as the implementation of the interactive web-based GIS System.*

Queensland University of Technology Facilities Management now makes good use of the strengths of two Geographic Information System (GIS) platforms in the management of its external assets.

Initially Autodesk – AutoCAD Map 3D was the sole GIS tool. However, with the need to provide efficient access to asset information via web-based mapping solutions to the entire Facilities Management Division and consultants, other options were explored: ESRI ArcIMS web-based GIS was the chosen solution.

### What is GIS?

Geographic Information System platforms provide a way of mapping above-ground and underground assets. With the new web-based mapping system, it is possible to locate and track underground services and actually control utilities, as well as update data on a regular basis. And being

web-based it allows access to information about the university's assets to QUT staff as well as contractors – for many purposes, including maintenance, security and design.

### Some technical details

The master GIS data sets are housed within Autodesk – AutoCAD Map 3D GIS. The prime reason for this is the powerful editing function that is offered by Autodesk. In addition to this, the internal space management system is also reliant on Autodesk – AutoCAD and most of As Constructed data is also delivered in the AutoCAD dwg format (a file format used for storing two- and three-dimensional design data and metadata).

AutoCAD Map 3D also has a powerful export utility that enables 'attribute data' from a magnitude of sources to be exported to ESRI GIS Shapefile format. These attribute data include:

- physical properties, such as horizontal lengths of assets, computed area, point coordinates
- AutoCAD Block Attributes
- AutoCAD Map 3D Object Data (asset type, diameters, material, installation dates, elevations, reference IDs etc.).

The Shapefiles generated from AutoCAD Map 3D are then imported to ESRI ArcIMS Author and published in the form of an interactive GIS WebMap using the Java and Apache web server software accessories.

The website is hosted on a virtual server and is available to all on the Facilities Management intranet.

The functionality of the interactive WebMap is very user-friendly and offers the user direct access to all external asset data on all three QUT campuses.

### Asset information and control points

Asset data covers the following:

- piped assets such as sewers, potable water, storm water, chilled water, gas
- cabled assets such as electricity, communications
- buildings
- surface topology
- signage
- trees
- survey control
- orthophotography.

The available attribute data is comprehensive and covers aspects such as: installation dates, material, diameters, elevations, lengths, areas, reference numbers (for meters, wayfinding signs, light poles etc.).

The ESRI ArcIMS online query function permits one to easily locate shut-off points for potable water supply to buildings as well as electricity isolation locations for specific buildings.

Statistical information is also easily accessible via the query function, which returns information such as:

- total length of assets (e.g. sewer pipes, potable water supply)
- gross floor areas and footprint areas of buildings
- surface use areas.

There are numerous other useful functions such as measure, zoom, pan, overview pan and the switching on and off of data not relevant to the viewer.

The updating of the Shapefile data is currently undertaken on a weekly basis. Automation of this process is currently in the development stage and will enable these updates to be carried out on a daily basis keeping the WebMap up to date.

**New system easier to use**

QUT's Maintenance Services Manager, Harvey Baldwin, appreciates the ease of use of the new web-based GIS mapping system. "This system greatly enhances ability in locating underground services and in controlling utilities, with the benefit of being simple enough for everyone to use it," he says.

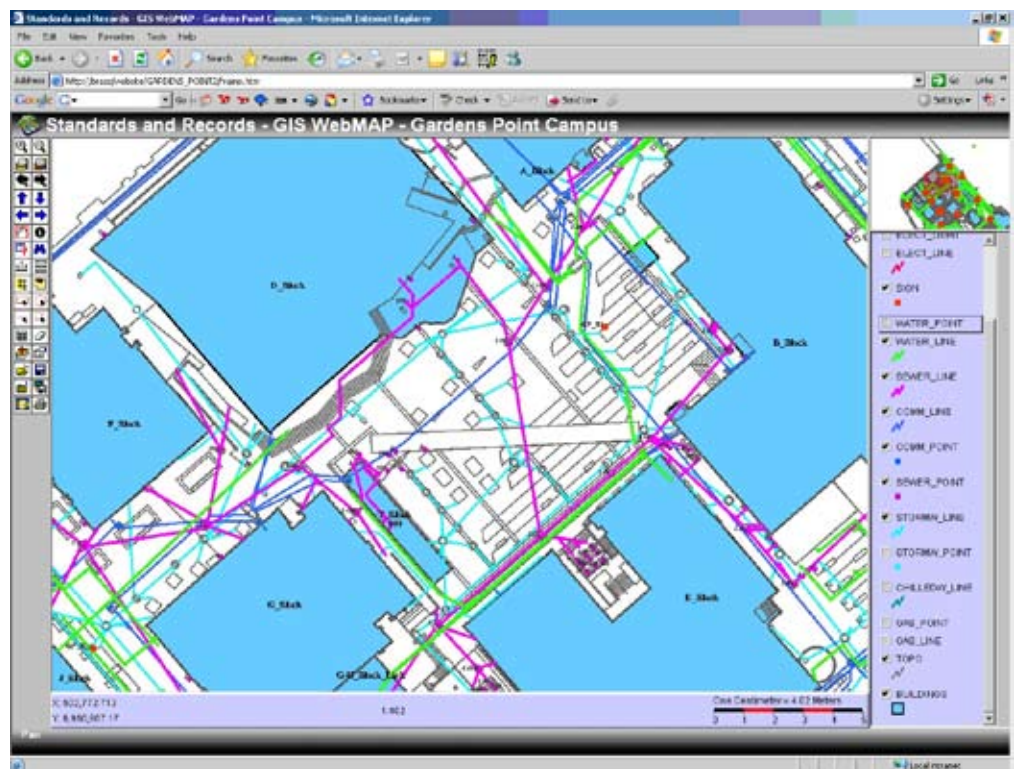
And QUT's Engineering Services Manager, Geoff Woods, is full of praise for the GIS mapping system. "The web-based GIS mapping system is an extremely user-friendly front end enhancement to QUT's GIS database," he says. "Accessibility to in-ground services information is now readily available to both in-house and external service providers involved in maintenance, design and investigatory activities."

Future development of the GIS will embrace:

- **Tree management function.** This will provide GIS data on significant tree statistics such as: biological name, common name, base diameter, heritage status, height, canopy spread, condition, special needs, etc.

- **Parking management function.** This will include parking type (university vehicles, staff, general pool, paid, special, visitor, loading, mobility impaired), number of bays, area, etc.
- **External lighting management function.** This will include isolation switch locations, light type, illuminator type, voltage, status (e.g. emergency), etc.

The aim has been to allow a variety of users to easily find the one bit of information they may want out of the huge collection of data that we have covering above-ground and underground assets. With our new web platform we are now well on track to have the best of both worlds. ●



## the dilemma of air quality in anatomy facilities



*Ryszard Knopf,  
Registered  
Architect and  
Managing  
Director, Scientific  
Interiors (Aust)  
Pty Ltd; written in  
association with*

*Adam Janssen, OH&S Coordinator  
(Bio-Safety), OHS & Workers'  
Compensation Unit, University of  
New South Wales.*

### **Exposure Standards in Compliant Anatomy Facilities versus Sustainable Design Solutions – A New Paradox**

The old adage, 'Donating your body for medical research', is true today where many institutions seek body donations from the general public for use in medical and anatomy research and teaching. But what of the facilities that house these areas that include body storage, embalming, dissection, preparation, teaching and examination.

For many, the entry into such areas and the experience of such facilities may never occur, but at Scientific Interiors not only has our office been involved with one facility, but five facilities throughout NSW including new anatomy teaching facilities for the University of New England, the University of Newcastle and the University of Wollongong.

The reason for the sudden interest in anatomy facilities may be in part explained by the Federal Government's incentives to produce more trained doctors. But a more realistic explanation may be the need to update those

facilities that are outdated and do not comply with the federal, state and territory occupational health and safety legislation. Of particular concern are those facilities that do not have any ventilation systems that meet the requirements of the formaldehyde exposure standards.

Recent articles in OH&S and chemical publications have highlighted the acceptable exposure standard of living humans to formaldehyde as being 1 ppm (part per million). Measured over an eight-hour period and known as the time weighted average or simply the TWA, with exposure to more than 1 ppm the risk of carcinogenic exposure is highly probable. Previously, this exposure standard was 5 ppm and even higher at 10 ppm. Recent US commentary is to decrease exposure to as low as 0.1 ppm.

Whilst some universities are exploring the use of alternatives to formaldehyde that are non-carcinogenic, there still remains a large number of existing cadavers and valuable specimens that have been processed using formaldehyde. The use of formaldehyde is still seen by some as the primary and most effective substance used in the embalming process.

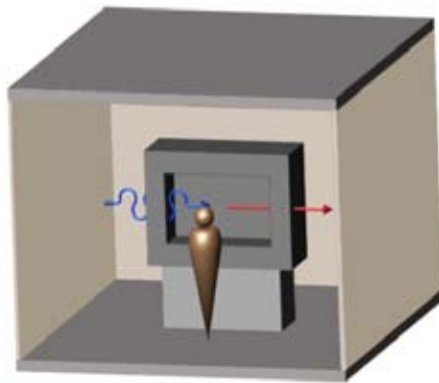
But how does an institution go about achieving 1 ppm when formaldehyde is being used? Based on extensive local and international research conducted by Scientific Interiors, the optimum solution is a complete air extraction system. But how

much air and at what room exchange rate? Does the space become a negative pressure facility to conform with criteria for a PC2 (physical containment 2) facility? As no standard or guideline exists to provide advice on required exhaust rates the task of determining these rates forced empirical information to be obtained. The method for achieving this empirical information was to place approximately 20 cadavers (formaldehyde infused) and/or equivalent number of body portions in an existing anatomy facility, measure the air quality over an eight-hour period and send the measured samples to an accredited laboratory for analysis. The results were then used by a mechanical engineer to determine the required air exchange rates. An OH&S specialist confirmed the air rates for compliance with required exposure standards.

Together with the determined cadaver fuming rate, overall room volumes, required pressure differentials (for compliance with PC2 requirements) and temperature (critical for cadaver preservation, dampening formaldehyde fumes and human comfort), the air exchange rate can be determined. An example of current determined air exchange rates currently being applied are as follows:

- teaching areas – 25 to 35 air exchange rates per hour
- preparation areas – 35 to 50 air exchange rates per hour.

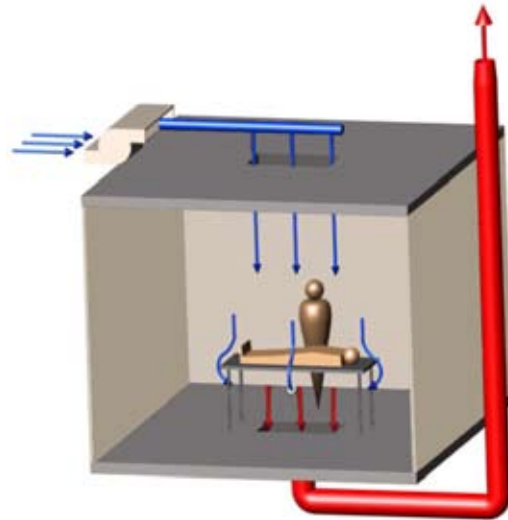
FIGURE 1



→ SUPPLY AIR

→ EXHAUST AIR

FIGURE 2



→ SUPPLY AIR

→ EXHAUST AIR

Whilst correct air exchange rates are critical for achieving acceptable exposure standards throughout the overall facility, the provision of correct exposure standards at the interface between the cadaver/body part and the student or staff member remains the most critical aspect.

Achieving this interface is problematic. When working with biological hazards, the use of Class I and Class II biological safety cabinets provides primary containment of biological hazardous material being used and an excellent level of protection to the user from aerosols generated in the cabinet (see Figure 1). But these cabinets exhaust into the room, making them unsuitable for work involving fixed tissues that fume formaldehyde that is

not captured by the filters in the biological safety cabinet. In an anatomy facility the primary level of protection from formaldehyde is best achieved by either the use of down draught tables or locating a floor air exhaust grille below each proposed worktable location, thereby creating a vertical laminar flow arrangement (see Figure 2). In essence, the principle is to provide a protective clean air barrier between the user and the contaminated or fuming object of study.

Herein lies the conflict: does compliance with exposure standard levels outweigh the provision of a sustainable design solution? The answer remains one for further discussion and comment. The difficulty is that a complete air extraction system relies on the provision of 100

per cent outside air. Based on required air exchange rates, quality of air being conditioned, transferred though ducting, exhausted and expelled from an anatomy facility, the total volume of air can run into millions of litres per hour and hundreds of kilowatts of power to operate. Essentially, every litre of exhausted air represents an outgoing dollar value to an institution and represents an environmental cost. But what is the cost as compared against the cost of maintaining human life?

In a facility that deals with preserving the dead for the teaching of those who undertake to save life, the paradox remains that the lives of those preserving the dead need to be maintained – but then at what cost to the environment? ●

## rmit round-up



*Chris Box is RMIT Property Service's Human Resources & Communications Coordinator and currently also provides editorial support to the*

*TEFMA insideneewsletter magazine.*

### Information corner

The University's Office of Prospective Students is now operating successfully out of its new home located on the Melbourne City campus's most prominent corner. The new centre has seen a dramatic increase in prospective students seeking details of tertiary study options at RMIT.

The ground floor development and second floor refurbishment completed the first stage of this building, which will now progress on to the second stage to encompass a total refurbishment and culminate in a new fifth level. This new level will feature a rooftop space designed for seminars, conferences, receptions and special events. A rainwater catchment system will also be installed.

### RMIT in Vietnam

RMIT International University Vietnam recently opened a new nine-level building in Hanoi's Dong Da District.

RMIT Vietnam's President, Mr Michael Mann, said, "This building provides much needed teaching space for our rapidly increasing enrolments at the Hanoi Campus of RMIT Vietnam. More than 800 students are now studying English, undergraduate and postgraduate programs in Hanoi. This new building doubles the space RMIT

has available in Hanoi for program delivery and will be equipped with wireless infrastructure to create a flexible learning environment."

RMIT University's Vice-Chancellor and Chair of RMIT Vietnam, Professor Margaret Gardner, said, "It is fitting that one of Vietnam's newest universities and its only international university should be located near the Temple of Literature, the site of the oldest university in Vietnam. It is also appropriate that RMIT Vietnam has opened this facility at Ngo Tat To Street, named after the respected journalist, novelist, literary critic and translator. It is fitting that the opening of this new facility coincides with RMIT Vietnam's first graduations in Hanoi and RMIT's 120th anniversary."

Starting in 2001 with 30 students, RMIT Vietnam now boasts a dynamic student body of more than 4000 including more than 200 students from more than 20 other countries in both Hanoi and Ho Chi Minh City.



RMIT BUILDING 1.



RMIT VICE-CHANCELLOR OPENS NEW HANOI FACILITY.



INFORMATION CORNER.

### Building 1

RMIT's 'Building 1' turned 120 years old on 7 June 2007 and a number of its infrastructure components are unavoidably outdated. The upgrade project will rectify this and also comprehensively improve the internal appearance and functionality of the complex in keeping with its role as the University's head office. The project will be implemented with full consideration to the fact that the building is a significant landmark for RMIT and indeed for the Melbourne CBD.

The works entail the complete internal refurbishment of all levels, the provision of a new central stair and improved internal circulation, a new passenger lift serving all levels, alterations to the rear of the building to open up the building and the courtyard to the north, removal of existing ceiling and walls to reinstate the original volumes of the central wing and an upgrade of all the building's services to meet regulatory requirements. Construction activity will continue until early 2009.



### School of Applied Communication

Significant work is under way on one of the University's most ambitious recent projects – to extend Building 9 vertically by adding two more storeys. The extension creates 2050 square metres of additional space and the building will be the new consolidated home for RMIT's School of Applied Communication.

Whilst the works will involve some unavoidable disruption to campus routine, the benefits will far outweigh

the short-term inconvenience. These benefits include but are not limited to:

- the establishment of a discipline precinct for the School the co-location of the School's support resources
- reduced time taken to journey between learning activities
- the reinforcement of the School's identity with a specific 'home'
- closer and more frequent contact between School staff and students. ▶

## invitation to tefma business partners

The TEFMA Board has decided to promote TEFMA Business Partners through the placement of 'advertorial' pages in the insideneutral TEFMA magazine.

The purpose of the advertorial is to promote TEFMA Business Partners, and to introduce the company to readers of the magazine and to other TEFMA Business Partners. The charge for a full page of advertorial is \$500 per issue.

To simplify the process and to give the advertorial pages an ongoing consistent and recognisable appearance, Business Partners are asked to supply short answers to a list of questions, which will be the basis of the advertorial. Graphics for the advertorial should also be supplied.

TEFMA looks forward to strengthening its relationships with Business Partners through this medium in future issues of the *insideneutral* TEFMA magazine.



### Contact for your advertorial

In the first instance and for more information, please contact Bart Meehan at: [bart.meehan@anu.edu.au](mailto:bart.meehan@anu.edu.au), Tel: (02) 6125 0777.

▷ **Design Hub**

The Design Hub will form an exciting component of the mixed use 'village' to be created at the former CUB site on the section to be occupied by RMIT at the corner of Swanston and Victoria streets.

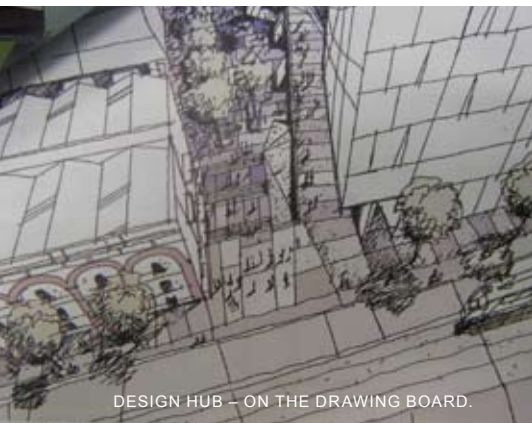
This landmark facility will be a collaborative research environment for trans-disciplinary teams from RMIT and industry to work together to innovate by design. It will draw together design professionals, engineers, technologists, scientists, social scientists, entrepreneurs, government and the community and, in doing so, will: raise awareness and disseminate use of design in industry; grow design capability in the Victorian economy; and help develop new products, services and constructed environments and design futures.

plus a major new RMIT teaching and learning centre. For business students in particular the new location will provide greater access to student services and facilities.

State-of-the-art teaching facilities and staff accommodation will be the hallmark feature of what will be the largest academic building project ever undertaken by the University. The development will also bring a new energy and vibrancy to RMIT's Swanston Street frontages by incorporating 'student'-related commercial activities with pedestrian traffic to and from teaching spaces. The look of the location will be dynamic and eye-catching. Works are expected to begin in 2009 for an anticipated opening in 2011.



SECURITY CAMPAIGN POSTER.



DESIGN HUB – ON THE DRAWING BOARD.

**Swanston academic building**

Consolidation of RMIT's City Campus is taking a step closer with project planning now well under way for the development of RMIT's vacant Swanston Street and A'Beckett Street sites. Comprising in excess of 35,000 square metres of floor space, it will be the new home for the Business Portfolio



CENTRALISING BUSINESS AND ADMINISTRATION.

**Safety and security upgrade**

Additional closed circuit television cameras have been installed throughout the university's City Campus. These are hard-wired to the City Security Control Point and give an instantaneous image feed. New CCTV cameras have also been installed at RMIT's northern suburbs campuses and are linked via the internet back to Security.

A Petty Theft Awareness Campaign was successfully implemented at the City Campus with posters and electronic displays in the libraries, cafeterias and other common use areas. Indications are that the theft of small, easily disposable personal items has reduced, although

diligence by staff and students is always necessary.

**Campus signage**

A range of colourful, large and user-friendly signs and maps has been installed across RMIT in the past year. These have all been developed using the university's new Signage User Guide and all present school tenancy details and directional instructions in a clear and consistent fashion. Signs range from small units at the doorways to buildings, to large sky signs and freestanding front of campus installations such as the one at our Bundoora West Campus, which stands 10 metres high.



CAMPUS SIGNAGE.

**investing for success – temc 2008**

'Investing for Success' is the theme for the 2008 Tertiary Education Management (TEM) Conference, to be held in Christchurch, New Zealand, from Sunday 28 September to Wednesday 1 October 2008. The annual conference is jointly run by TEFMA and the Association for Tertiary Education Management (ATEM) and regularly attracts hundreds of delegates from across Australia and New Zealand.

"Our 2008 theme, 'Investing for Success', will provide a great opportunity for delegates from all levels and sectors of tertiary education to discuss and consider how their institutions' strategic investment decisions will impact on the ability of their organisation to deliver quality outcomes," says



Peter Molony, chair of this year's organising committee.

An impressive list of keynote speakers has already been engaged for the conference. However, the committee is seeking further presentations that will encourage debate, develop ideas and endeavour to plan for the challenges of investing in new technology, facilities, curriculum and staff, and how community and government expectations of the tertiary sector will affect those

investments. "This event will provide an excellent opportunity for people to present to their colleagues and to spark discussions in a variety of areas. Through our call for papers process we are seeking innovative topics and presentations," says Peter.

The TEM Conference always provides a wide range of opportunities for learning and professional development. Networking is an integral part of its success and delegates will, as usual, be able to meet and mingle during formal sessions and at a variety of social events.

For further information on the conference, including the call for presenters and registration information, visit the conference website on [www.temc.org.au](http://www.temc.org.au) or contact the conference managers on telephone **(03) 6234 7844**.



▷ **Energy contract**

RMIT is pleased to announce the successful negotiation of a new three-year energy contract with Country Energy, commencing in 2008. Country Energy is a NSW State Government-owned supplier, retailing electricity across the eastern states of Australia. RMIT has negotiated a significant Green Power component, with 15 per cent of total energy supplied from accredited renewable sources in 2008, rising to 20 per cent in 2009 and thereafter. The Green Power commitment by RMIT puts us at the same level as Monash University and ANU in terms of procurement of energy from alternative sources.



The tender process was managed by consultants Energetics and reviewed by the RMIT tender panel consisting of Property Services staff, including our Energy Manager and was overseen by external probity auditors. A key feature of the tender was that the new contract also allows for RMIT's choice of proprietary energy metering that further facilitates our cross-campus

energy management. As the imperative to reduce our ecological footprint continues, this contract forms a vital component of overall operations and a sustainable outcome for the university.

**Commercial services**

Following the passage of VSU legislation and the decisions made by RMIT Council as a result, Property Services has been busy transitioning various commercial services on our campuses from RMIT Union management to management by or on behalf of RMIT University.

A tender process was undertaken last year to determine a new operator for the Bundoora cafeterias and this new operator took over management of remodelled facilities effective with the beginning of the 2007 academic year. Informal feedback on the cafeteria operations is very positive but a survey will be conducted during first semester 2008 to fully gauge Bundoora Campus community satisfaction with the new operator and facilities. The Bundoora Netball and Sports Centre has also been successfully tendered; the new operator began last November.



**www.tefma.com**

Now you have found your TEFMA *insideneWSletter* magazine online, don't forget to check out the other interesting, useful and valuable information on TEFMA's website.





NEW CAFE AT BUNDOORA.

**Online project information**

In an effort to further improve communication on property matters, RMIT's Property Services is expanding their use of one page on their website to provide links to summarised updates on current projects. Readers can also look up details on a number of projects that have been concluded. Project Summaries typically indicate the various consultants engaged for the design, preparatory and buildings phases, the relevant Property Services Project Manager and Client Relations Manager, costing detail and timeline milestones. View the site: [www.rmit.edu.au/browse;ID=fwt54i55s9fe](http://www.rmit.edu.au/browse;ID=fwt54i55s9fe).

industry for more than 30 years and in 1999 became Executive Director, Property Services with RMIT University. In this role, he was responsible for the effective development and management of the university's \$1 billion property portfolio. He will be missed by the RMIT community but we wish him well in his new venture. ●



CHRIS WHITE

**Chris White**

RMIT's Executive Director of the Property Services Group has moved on. Chris White (also a TEFMA Board Director) won a posting recently to a new job at the University of Melbourne as Vice-Principal Property & Campus Services. He took up duty in January.

Chris is an architect who has worked in both the private and public sectors of the property

**upcoming events**



TEFMA provides an ongoing series of workshops and conferences. Please visit the TEFMA website ([www.tefma.com](http://www.tefma.com)) for a full list of up-to-date TEFMA events, information services and 'What's new'.

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## article submissions

We welcome submissions from TEFMA members for *insideneewsletter*.

Articles should be accompanied by a short biography (40–70 words, including institution and title) and a head and shoulders photograph of the author; please include any relevant pictures or graphs. Articles may be edited for layout purposes.

Please send your submissions to Chris Box at:

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## disclaimer

The opinions expressed in this publication by the contributing authors are theirs alone and do not necessarily reflect an agreed view by TEFMA members, its President, its Board or its Business Partners.