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9 July 2015

Dr Bill Pender
Inquiry Secretary
Standing Committee on Infrastructure and Communications
PO Box 6021, Parliament House
Canberra ACT 2600
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Dear Dr Pender,

RMIT University submission into the Inquiry into Smart ICT - House of Representatives Standing Committee on Infrastructure and Communications

RMIT University (RMIT) would like to thank the members of the House of Representatives Standing Committee (the Committee) on Infrastructure and Communications for the opportunity to provide a submission into this Inquiry.

As a public sector institution RMIT is both a user and advocate of smart ICT in the design and planning of infrastructure. RMIT is the largest holder of property in the Melbourne CBD, and employs Building Information Modelling (BIM) and smart ICT systems to improve the organisational productivity and learning and teaching experiences for our students.

RMIT also has a strategic commitment to design excellence and is active in research and development that contributes to increased social and economic benefits generated through smart infrastructure design.

RMIT believes smart ICT is a catalyst for business activity and social interaction. Effective use of smart ICT allows RMIT to better utilise existing assets, design more efficient infrastructure, tailor learning experiences to new markets and provides a focus for research discovery and application.

RMIT believes the Government can be an advocate for and facilitate the future development of smart ICT in Australia. The Committee could consider measures including, but not limited to:

- Continued support for research and development funding;
- Encouraging the adoption and investment of smart ICT by business; and,
- Ensuring a high degree of regulatory symmetry for users, providers, and stakeholders.

The benefits of broader adoption of smart ICT from RMIT's perspective are an improvement in organisation level productivity, the potential for service-level quality improvements and the opportunity to explore and capture new markets for higher education delivery.

RMIT's responses to the inquiry's terms of reference is attached. Should you require any further information on any of the issues raised in this submission please contact Executive Director Property Services Chris Hewison (9925 2428) in the first instance.

Yours sincerely

Martin Bean CBE
Vice-Chancellor and President

Background

RMIT is the largest holder of property in the Melbourne CBD. RMIT's total property portfolio asset value across all campuses is currently worth $1.80 billion, with a Gross Floor Area (GFA): 474,342m².

The strong city presence, vibrant urban environment and commitment to architectural and urban design excellence create a sense of place that is inextricably linked to RMIT's image. This strong base has enabled the progressive development of RMIT as a leading global provider of higher education. The quality of physical infrastructure is of critical importance to support RMIT's global reach.

The RMIT Capital Development Program (CDP) details a five year plan for the delivery of approved Major Infrastructure Works, over AUD$1 million. The total capital expenditure planned to support delivery of the Infrastructure Plan is in the order of AUD$650 million over the period 2015 - 2019. Gross Floor Area (GFA) space to be renovated is approximately 37,000m² GFA. Space to be created represents 9,000m² GFA.

Minor Works requests, including maintenance, are submitted for review and approval through a structured submission process for projects up to AUD$1million. These total approximately 150 teaching space upgrades and approximately 500 operating cost activities annually.

To provide our internal and external stakeholders with excellent customer service while effectively managing this vast portfolio and the ongoing maintenance of RMIT built environments, RMIT's Property Services Group (PSG) is always looking for continuous improvement opportunities that enable smarter ways to design, develop, deliver and maintain infrastructure projects.

RMIT and smart ICT

Building Information Modelling (BIM) and Smart ICT is fast becoming recognised as an industry leading application and represents an opportunity for an improved approach to developing and managing built environments, while providing a better user experience for both internal and external stakeholders. A key objective of RMIT is to improve our collective efficiencies in delivering services at the University.

Building Information Modelling (BIM) is a digital representation of physical and functional characteristics of a facility. A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle; defined as existing from earliest conception to demolition.

BIM and smart ICT offers RMIT the opportunity to develop more accurate project cost estimates, based on actual elements of the built asset, better design and construction processes and methods, and a means to engage our stakeholders in the design phase of the built asset. Figure 1 on the page below provides a succinct summary of how BIM can improve sustainability and asset management as it enables collaborative knowledge management across all stages of the asset lifecycle.

Enablers such as Cloud-based storage and fast-internet allow for engineering knowledge management to be easily shared, not only within RMIT, but also across organisations. This improved and simplified knowledge management in turn facilitates the potential to increase sustainability and asset management for all stages of development.

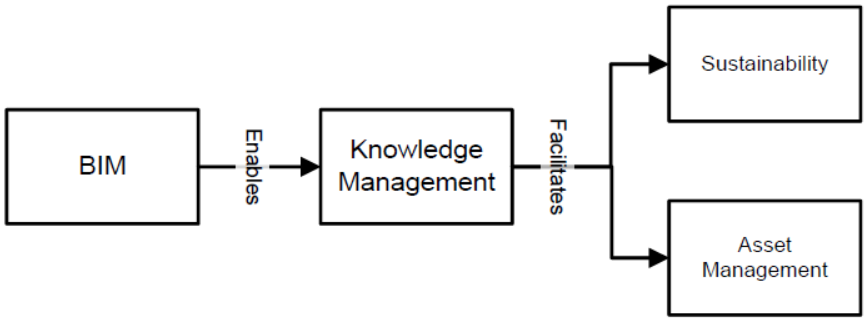

Figure 1 – BIM is the foundation to sustainability and asset management improvement

The opportunities of BIM and smart ICT for RMIT

BIM and smart ICT provides an opportunity for RMIT to consolidate, and in some cases, replace many of the various software and legacy applications. BIM can replicate functions in existing software and non-software systems and processes, some of which are deficient and others that are manually dependent. This can also include improvements to existing Quantity Surveying approaches through 5D modelling, providing a much more rigorous approach to costing projects, providing a more accurate budget for business case development.

A list of functional examples of BIM and smart ICT opportunities is provided for the Committee's interest in the appendix of this submission.

House Standing Committee on Infrastructure and Communications Terms of Reference

The following section of the submission provides RMIT responses against the Committee's Terms of Reference.

Summary

Building Information Modelling (BIM) and smart ICT represents an opportunity for an improved approach to developing and managing built environments, while providing a better user experience for both internal and external stakeholders.

RMIT believes the Government can play a light-touch and facilitative role in the future development of smart ICT in Australia. The Committee could consider measures including, but not limited to:

- Continued support for research and development funding;
- Encourage the adoption and investment of smart ICT by business; and,
- Ensuring a high degree of regulatory symmetry for users, providers, and stakeholders.

Identifying innovative technology for the mapping, modelling, design and operation of infrastructure

RMIT is actively pursuing and investigating improvement opportunities across the built environment. This includes identifying technologies that support improvement of space utilisation, a key metric of productivity amongst universities. Available technologies include heat mapping to inform the efficient 'real time use' of teaching and learning areas using hand held and portable devices.

BIM and smart ICT will assist RMIT unlock improved outcomes at all stages of their infrastructure asset lifecycle. The benchmark for this technology would enable a full virtual production, analysis, evaluation of an RMIT infrastructure asset. This would allow RMIT to scenario model optimum asset utilisation and performance across the asset lifecycle.

Identifying the new capabilities smart ICT will provide

Smart ICT and BIM will enable RMIT to interrogate equipment and systems to streamline preventative maintenance of the built environment. This will generate efficiencies in our approach to routine servicing and maintenance, enable real time interaction and improved customer service.

Examining the productivity benefits of smart ICT

There are general productivity benefits to be gained from smart ICT systems that include increased business level activity and improved social interactions across the economy.

Within the higher education sector there are also real and structural efficiencies to be gained. A contemporary example at RMIT would be improvements to annual audits on space utilisation. Smart ICT and BIM would enable this labour intensive process to be automated and provide direct feedback loops. This will speed up service time to customers and ensure remedial action is taken in a timely manner.

Harmonising data formats and creating nationally consistent arrangements for data storage and access

BIM is universally recognised for its adaption to open smart ICT protocols. This is an important move away from the previous proprietary constrained smart systems and is a general move that should be supported to promote integration.

In some cases the replication of data to support smart ICT is required in order to bridge the compatibility of older (legacy) systems. RMIT would appreciate the Committee taking this technical requirement into consideration when forming views on regulatory symmetry.

Identifying international best practice in the use of smart ICT in the design and planning of infrastructure

It has been well documented that the 'I' in BIM is the key to delivering long-term benefits for a mature and long-term asset owner like RMIT. With this in mind, it is crucial to identify and document the information requirements needed to optimally manage and maintain the campus' facilities. This information can be incorporated in design and construction agreements, as well as maintenance contracts to ensure that RMIT's data is structured, accessible and reusable across the business.

Considering the use of smart ICT in related fields, such as disaster planning and remediation

RMIT has invested in business continuity and disaster planning in the event it needs to respond promptly in an emergency to ensure the student and staff experience is upheld. Smart ICT would enable the University to reassign operations in back up facilities within a very short time scale. This includes RMIT's approach to Data Centres support and redundancy of critical systems to ensure continuous operation. In the built environment, smart ICT can start and stop critical systems and enable duty stand-by measures, again ensuring continuity of operation. These links could also provide feedback loops to the emergency services and assist in development of joint first response procedures and actions.

Considering means, including legislative and administrative action, by which government can promote this technology to increase economic productivity

RMIT believes the Government can play productive role in developing smart ICT systems for the benefit of the productivity improvements and new opportunity creation.

RMIT considers a light-touch and facilitative role may be best to facilitate the future development of smart ICT in Australia. The Committee could consider measures including, but not limited to:

- Continued support for research and development funding;
- Encourage the adoption and investment of smart ICT by business; and,
- Ensuring a high degree of regulatory symmetry for users, providers, and stakeholders.

RMIT would welcome the opportunity to participate in a change process and take a leading role in the implementation of mutually agreed proposals for Facilities Management within Australian higher education context.

Appendix: Functional outputs of BIM and smart ICT opportunities

By selecting an element in the model, BIM and smart ICT will allow open, yet varied levels of access to multiple levels of information, from different sources in one place, providing benefits to various stakeholders.

Opportunities BIM presents to stakeholder groups in a higher education context are summarised below:

- **Students and Staff**
  - Dashboard view of finding available space or next teaching session / meeting space quickly. e.g. Building Management Systems / Timetabling links to touch screens and handhelds to find available space, scheduled classes
  - Security: Safe Zone - Isolate levels, mapping and monitor standing orders, Link to CCTV
  - Improved Post Occupancy Evaluation and feedback process to drive continuous improvement

- **Corporate & Client Services (C&CS)**
  - Improved facilities overall providing a better user experience and reduction to helpdesk queries
  - Leasing and acquisitions streamlined

- **Planning and Asset Utilisation (PAU)**
  - Business Cases and Briefing: Use BIM models for planning and future development, new projects, costs, disposal of assets.
  - Archibus information: Utilisation, location information, capacity, m² by room and area
  - Thermatic Mapping: Identify space by department or cohort type
  - Timetabling: Classes, utilisation, grading system by room type.
  - Enable accurate and efficient future planning
  - Links to the corporate employee data to integrate with Archibus, providing employee locations allowing improvements to vacancy management
  - Industry benchmarking

- **Projects**
  - Plans and Drawings: e.g. wall penetration information
  - Receive BIM models for review during design, to enhance client understanding and coordination
  - Updates of the BIM model can be published over-riding old versions
  - Reduce the need for consultants, e.g. mechanical engineers
  - Improvements and adherence to design standards
  - Future proofing with holographic view of property – i.e. Oculus Rift

- **Facilities Services (FS)**
  - Archibus information: Asset condition, location information, capacity, m² by room and area, type, heritage information, department and school.
  - CRM capability: To track and keep correspondent information timely with follow up functionality
  - Building Management Systems (BMS) providing live information such as air quality, wind, temperature, run status.
  - Services and equipment information, replacement cost of parts, and other equipment
  - Document depository with smart filing within BIM: All information related to the property within the BIM property
  - HAZMAT identification
  - Standard format modelling allows regular updates as the facility changes over time
  - Field data collection: Open access to all RMIT staff and students using standard BIM formats
  - BIM models can be updated over time as facilities change
  - Automatic email functions, e.g. Building, fire alarms, and other events
  - Field data collection by pin drop

- **Consultants and Contractors**

- Access to consistent, up to date and accurate information
- Allow contractors and visitors to quickly understand complex issues on site
- Allow operators in the field to quickly review the model and access, plans, Archibus information
- Improve overall process on delivery and maintenance
- Facilities manuals and Maintenance manual etc.

- **Project Construction and Project Management (PCPM)**
  - Access to consistent, up to date and accurate information
  - Support research and innovation
  - Human aspect, ie. Training, change management, Work Integrated Learning opportunities.
  - Opportunity to further improve engagement with PSG, industry and the broader community
  - Guidance, expert advice and mentoring to PSG and ITS

- **Built Environment**
  - Improve sustainability and asset management
  - Improve collective efficiencies delivering good 'customer' services to the University

Summary of key Goals of BIM and smart ICT at RMIT

- Increase productivity;
- Increase building utilisation;
- Reduce documentation costs;
- Reduce and consolidate software platforms;
- Provide improved and new services;
- Improve coordination and accuracy of design deliverables;
- Quickly identify the implications of design changes;
- Streamline workflows;
- Simplify and improve the quality of information;
- Improve staff skills;
- Improve customer satisfaction and enhance the experience;
- Be more competitive;
- Improve data management;
- Integrate different tasks, such as design and drafting;
- Stay abreast of the latest technologies and procurement methods;
- Mobile, lightweight, open platform.