Building Commission Research Report
July 2006 – June 2008

Victoria
The Place To Be

Building Commission

Contents

Building Commissioner's foreword

The Building Commission is a self-funded statutory authority established under the Building Act 1993 to regulate the building control system in Victoria. Its mission is to ensure the safety, liveability and sustainability of Victoria's built environment.

The Commission achieves its mission by bringing vision and innovation, as well as leading regulation, to the Victorian building industry. It administers building legislation, regulates building practices, advises the Victorian Government and provides essential building services to industry and consumers.

The corporate objectives of the Commission are:

- **Regulatory Excellence:** Delivering effective and responsible industry governance.
- **Industry Responsibility:** Supporting Government and stakeholders to transform the industry.
- **Environmental Best Practice:** Ensuring a sustainable built environment.
- **Community Accountability:** Ensuring safe building services for the community.

By focusing on these objectives over the next four years, the Commission aims to achieve:

- Regulatory reform;
- Industry transformation; and
- Better safeguards for consumers.

To realise these outcomes it is essential to understand and address industry issues. One way we do this is by investing in relevant research projects in collaboration with key industry and research bodies.

From July 2006 to June 2008, nine collaborative projects were undertaken with the CRC for Construction Innovation (CRC – CI) and the Building Industry Consultative Council (BICC), while a further project to address specific building safety issues was conducted with the Australian Building Codes Board (ABCB).

This, the third biennial Research Report, provides an overview of research projects undertaken by the Building Commission, including their outcomes. Report highlights include:

Regulatory reform

A regulatory environment that ensures the highest standards of building are maintained and is supportive of sustainable development requires constant review and ongoing improvements.

Building Commissioner's foreword

Sustainable building practices have received greater attention as consumers and the industry have become more aware of the impact of buildings on the environment. As a result, the Commission supported a range of projects to help address this aspect of reform in the Victorian building industry.

Other areas of reform where research has taken place include the Security of Payment Act and the maintenance of Essential Safety Measures (ESM) in buildings.

Industry transformation

The building industry is constantly changing, due to advances in technology, work practices and techniques, consumer expectations and regulatory obligations.

Measuring consumer and practitioner satisfaction levels provides critical information on trends and performance of the building industry, including on attitudes to sustainable building practices. Key research in this area that has been supported by the Commission includes greywater system adoption by builders, recycling practices on construction sites, and wellbeing in the building and construction sector.

Better safeguards for consumers

Ensuring the safety of Victoria's built environment is a central role of the Building Commission, which is committed to pursuing public safety in and around our buildings.

Fire safety is an ongoing focus of Commission research, as is the safety of balconies and decks. Following incidents of balcony and deck failure in recent years, the Commission conducted in-house research that demonstrated the need for further investigation. This will occur in 2008-09.

Outlook

Research is an important input to decision-making for the Building Commission and key stakeholders. It enhances the Commission's function as an effective regulator and it responds to and guides Government policy.

The Commission will continue to conduct and promote research relating to regulation and key issues for the industry. Sustainability in the built environment will demand affordable and efficient solutions as will the continuing pursuit of safe, cost-effective housing.

As the industry regulator, the Building Commission will seek to establish strategic partnerships and collaborative research projects to ensure its research program responds to Government policy and industry and community needs.

Further details, summaries and final reports on the Commission's research projects are available at www.buildingcommission.com.au

Tony Arnel LFRAIA
Building Commissioner

Project

Essential Safety Measures (ESM) maintenance – Should practitioners be registered?

Description

Assessment of the current state of play and potential for improvement in the maintenance of ESM and the administration of practitioners within the sector.

In particular to determine whether people carrying out maintenance of ESM should be Registered Building Practitioners (RPBs) and carry insurance.

This project came about from previous work on the review of the ESM maintenance category and classes of practitioners.

The project included:

- a literature review including identification and analysis of current legislative requirements, Australian Standards, previous research and relevant data, alternative models and approaches to registration and non-regulatory approaches
- extensive industry consultation, interviews, a registration test and an online questionnaire
- a cost-benefit analysis of registering ESM maintenance practitioners.

Key research findings

- The criteria for registering ESM maintenance practitioners as RBPs could not be satisfied under the registration test
- The cost of registration appears to outweigh benefits to the community at this stage
- Several knowledge gaps were identified
- Recommendations were made for futher research to better undertand the issues within ESM maintenance.

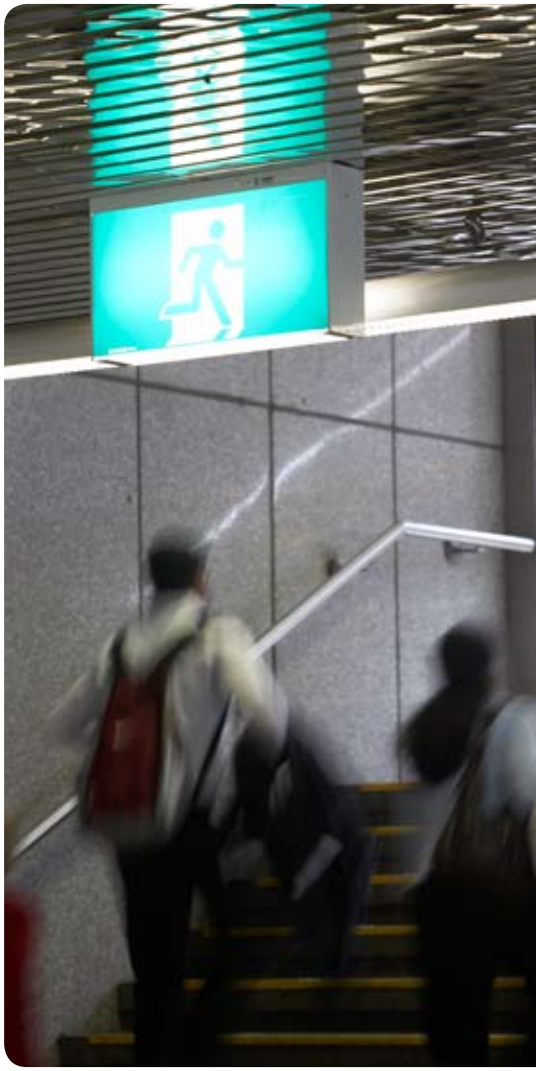
Outcomes

- People who carry out ESM maintenance will not be registered as building practitioners in Victoria at this time
- Further research and additional recommendations will be considered in order to ascertain if the ESM maintenance regulations and supporting infrastructure require adjustment.

Researcher/consultant
Maintenance Essentials, Fire Safety Consulting Pty Ltd and SKIP Consulting Pty Ltd

Total investment
$60,000

Completed
June 2008



Project

Fire fatality coronial database update

Description

An update of the Centre for Environmental Safety and Risk Engineering (CESARE) fire fatality database, from June 2005 to June 2008 using the national coroners information system.

The current database will be expanded to include over 300 variables, which include information about:

- the fire, witnesses and their actions
- escaped occupants
- the condition and actions of the deceased before, during, and after the fire event
- the condition of the building.

Outcomes

- Collation of previously unknown information regarding the specific circumstances of fatal fires in Victoria
- Increased understanding of the fire fatality problem and potential to aid in the development of preventative strategies in Victoria
- The database is also to be further expanded by the gradual inclusion of data from other states as this data becomes available and is entered.

There is potential for extensive data analysis to be undertaken specific to building design and maintenance.

Researcher/consultant
Victoria University of Technology

Total investment
$6,000

Completed
October 2008

Project

Practitioner attitude to Section J of the Building Code of Australia (BCA)

Description

The aim of this research project was to ascertain practitioner attitudes to energy efficiency and specific reactions to Section J, which sets out mandatory minimum energy performance requirements for new or refurbished commercial buildings.

In particular the research aimed to:

- Understand overall attitudes and reactions among key stakeholders to energy efficiency in Commercial buildings
- Determine overall attitudes to Section J and specific reactions.

In-depth face-to-face and telephone interviews were used to gain qualitative feedback.

Key research findings

- Moderate to high levels of support for the principles of energy efficiency exist
- Benefits of increased emphasis on energy efficiency principles were acknowledged but problems associated with it were discussed
- There were mixed levels of practitioner awareness and reactions to Section J
- Key issues with Section J and areas for improved training were identified.

Outcomes

- The results helped the Commission tailor seminars and communication programs for practitioners so that they will become better informed and feel more confident using and adopting Section J
- Further research will be conducted in 2008–09 to measure changes in attitudes and behaviours following the seminars.

Researcher/consultant
Chant Link and Associates

Total Building Commission Investment
$34,000

Completed
February 2008

Project

Security of Payment – Examination of payment practices

Description

The Building Commission is required to monitor the *Building and Construction Security of Payment Act (SOP) 2002*, which helps to protect building and construction contractors from poor payment practices.

This third stage of research builds on previous studies to identify if there has been improved awareness, understanding and uptake of the Act, as well as improvements in payment practices following implementation of the Act and increased communication.

Six hundred building and construction industry contractors participated in the first round of telephone interviews. This was followed by two focus groups in order to gain further in-depth information and feedback.

Key research findings

- Research findings have yet to be finalised.

Outcomes

- Research outcomes have yet to be finalised.

Researcher/consultant
Market Solutions Pty Ltd

Total investment
$46,218

To be completed by
January 2009

Project

Assessment of Indoor Environment Quality (IEQ) – Research for Regulation

Description

Research undertaken by the University of Melbourne to investigate Indoor Environment Quality (IEQ) and its potential relationship with regulation.

IEQ refers to the quality of the air and environment inside buildings. It is based on pollutant concentrations and conditions that can affect the health, comfort and performance of occupants, including temperature, humidity, light, sound and other factors. IEQ can significantly affect the health and well-being of building occupants, leading to potential injury and productivity losses.

The research assessed IEQ research by two Doctoral researchers that compared a conventional office building with one possessing environmentally sustainable design features.

Key research findings

- The research identified specific parameters and minimal standards which may be used to measure IEQ in buildings
- HVAC systems must provide the highest level of energy efficiency possible while maintaining indoor air quality at an acceptable level.

Outcomes

- The report provided some rationale for which IEQ measures might be regulated through the Building Code of Australia (BCA)
- The findings precipitated further research by the Commission into benchmarking international regulatory and non-regulatory practices and solutions for IEQ. See IEQ benchmarking page 11.

Researcher/consultant
University of Melbourne

Total investment
$11,000

To be completed by
August 2007

Project

Indoor Environmental Quality (IEQ) benchmarking

Description

This study reviews the development of metrics for determining the IEQ for buildings in both the commercial and residential sectors. It compares the Australian experience with other relevant countries, with a focus on the development of regulation frameworks or regimes internationally. The current regulatory and policy trends (where appropriate) of the Victorian and NSW Governments were also considered.

The research identified:

- The main features of IEQ performance indicators and how they can be measured
- Key sources of knowledge in Australia and internationally
- The current state of play in Australia and internationally in relation to IEQ monitoring and regulation.

Key research findings

- There are numerous countries whose research has contributed to the global awareness of the health implications of IEQ and who have subsequently implemented IEQ regulation strategies.
- Australia has made some significant developments in the area of IEQ knowledge, including reports, studies, and the inclusion of certain parameters in building code and workplace regulations (although they don't specifically name IEQ).
- Potential short and medium term strategies were recommended.

Outcomes

The findings will be used to inform the Commission's contribution to the development of IEQ measures in the Building Code of Australia (BCA).

Researcher/consultant
RMIT

Total investment
$29,400

Completed
November 2007

Industry Responsibility

Project

Consumer and Practitioner Satisfaction Levels (pulse°)

www.pulse.buildingcommission.com.au

Description

Over the past five years (2003-2008), the Building Commission has conducted a large scale quantitative telephone survey of consumers and building practitioners to measure Victorian building industry outcomes.

In 2006 further research was conducted with consumers and practitioners to probe the reasons why satisfaction levels were consistently high and to address other industry issues.

The survey provides the Building Commission with independent research that is used to benchmark key performance indicators in the building industry. It allows the Commission to be responsive to industry needs and to improve its organisational performance by forecasting business initiatives to address any reported issues.

pulse° research determines consumer and industry outcomes of the building experience, such as:

- Expectations and satisfaction levels
- Knowledge and sources of building advice
- Knowledge and attitudes to Registered Building Practitioners (RBPs), including building surveyors
- Outcomes to costs and time for building projects
- Knowledge and attitudes to Environmentally Sustainable Building (ESB)
- Dispute incidence, costs, causes, outcome of resolution
- Practitioner job satisfaction
- Business activity and outlook for the future
- Continuing Professional Development (CPD)
- Building standards.

Methodology

The consumer survey randomly selected 600 consumers who had building work completed from 2005 to 2007, and interviewed them on their building experience.

The practitioner survey randomly selected 600 registered builders and building surveyors, who were active in the industry during 2006 and 2007, and interviewed them on their experiences.

The focus groups (2007 only) consisted of small groups of consumers and practitioners.

Industry Responsibility

Continued...

Key research findings

- Consumers continued to report high expectations and satisfaction levels with their building project and their builders.
- Consumer research and personal involvement continued to contribute to high consumer satisfaction
- The number of disputes remained low
- The use of ESB elements has increased, with more consumers and practitioners engaging in discussions on ESB
- There was an important shift towards joint-initiation of ESB discussions between builders and consumers in 2007. This implies these conversations are increasingly becoming a normal part of business
- More consumers researched energy conservation and recyclable materials before engaging a builder. The result has been more consumer requests for ESB features, according to practitioners
- Practitioners ESB knowledge has grown, according to practitioners
- Practitioners reported improved or consistent profits over the past two years in their businesses, and expect this to continue until 2009
- Practitioners exhibited some concern over the economic environment for the next 2 years. In 2007, 59 per cent of practitioners reported that they expect the economic environment to improve or stay the same, compared to 74 per cent in 2006
- Practitioners continue to report high job satisfaction.

Outcomes

Key findings are regularly communicated on the pulse° website, pulse° publications and media releases. pulse° data is used for internal as well as industry-wide and government strategic decision-making.

The building industry use pulse° information to benchmark their businesses and monitor trends.

For more information visit:
www.pulse.buildingcommission.com.au

Researcher/consultant
Chant Link & Associates

Total investment
$190,000

Completed
June 2008

Industry Responsibility

Feature

Building Industry Consultative Council (BICC) Research Partner

The Minister for Industrial Relations established the Building Industry Consultative Council in April 2001 to promote an environment that will stimulate building activity and job growth in Victoria.

The BICC aims to:

- provide a high level forum for regular dialogue between Government, employee representative associations and unions
- foster a harmonious working environment in the Victorian building industry
- promote cultural change in the industry
- promote and encourage initiatives to facilitate investment in Victoria
- encourage constructive dialogue about effectiveness of industry structures.

The BICC is supported by the Government through Industrial Relations Victoria. The Building Commission is a member of BICC and the Building Commissioner chairs the 'Reinventing the Image' Steering Committee and the 'Environment and Sustainability' subcommittee.

Industry Responsibility

Project

A close look at work and life balance/wellbeing in the Victorian commercial building and construction sector

Description

The aims of the research project were:

- to develop an industry well-being blueprint that outlines the actions required of Government, industry groups & unions, employers and individuals to address wellbeing in the workplace
- to improve the image of the industry and to identify the tools and support services required to deliver these outcomes.

The research considered the organisational, employee and stakeholder perspectives regarding wellbeing in the workplace. It was carried out using telephone interviews, focus groups, one-on-one consultations and a literature review which examined workplace wellbeing policies and practices nationally and internationally.

The sample group was restricted to major commercial construction companies and a selection of sub-contractors representing a range of trades working on major commercial construction sites around Melbourne.

Telephone interviews were carried out with senior management representatives from 17 construction companies and eight sub-contractors, in addition to 19 focus groups involving 121 employees from across the industry, and individual discussions with a range of industry representatives.

Industry Responsibility

Continued

Partner

Building Industry Consultative Council

Key research findings

- Social and economic benefits can be gained from implementing wellbeing strategies such as increased retention rates, reduced absenteeism and burnout, improved working relationships and morale, and increased productivity
- Unrealistic programming appears to be the root cause of work/life conflict in the Victorian commercial construction industry. The flow on pressure this causes impacts all aspects of project construction and people at all levels of the industry
- The cultural features of construction that have a negative impact include: long hours, weekend work, confrontational work environments, and inadequate attention paid to developing human resource management skills, resourcing pressure and liquidated damages
- There is a need for cultural and behaviour change at both the industry and company level for future sustainability of the industry
- Lack of strategic Human Resources thinking and practice is limiting the capacity of companies to effectively align workforce wellbeing with project outcomes
- Recommendations include: challenging industry programming, an education and awareness campaign, develop a Wellbeing Charter, raise awareness about the strategic role of human resources to align wellbeing with business objectives, undertake an economic analysis of the financial implications of wellbeing issues within the industry and consider pilot projects to test new ways of working.

Outcomes

- In May 2008, an industry debrief was held and was attended by approximately 85 people representing major construction companies, trade unions and government
- Work has been commenced on the development of a Wellbeing Charter and the development of a 'ready reckoner' that will assist in quantifying the costs and benefits of implementing wellbeing strategies.

Researcher/consultant
Equilibrium Worklife Solutions

Total investment
$75,435

Completed
May 2008

Industry Responsibility

Project

Cooperative Research Centre – Construction Innovation (CRC-CI)

Description

The Commission is a member of the Commonwealth Government's Cooperative Research Centre program, the CRC for Construction Innovation. The CRC-CI is an alliance of leading industry, government and research bodies that carry out applied research and development focused on the needs of the property, design, construction and facility management sectors.

The CRC-CI aims to encourage innovation and deliver significant industrial, commercial and economic benefits and to develop science and software tools that improve industry work processes, make workplaces safer, and help reduce water and energy use.

The Commission supported the following collaborative research projects in the CRC-CI extension program (ending June 2009).

- Wayfinding in the built environment – assisting visually impaired and others to navigate cities and buildings using electronic voice assistance. The Commission was a key player in this research completed in 07/08 (final reports are now available)
- The development of national guidelines and case studies that promote consistency in the implementation of digital models for building and infrastructure projects
- An examination of what safety effectiveness measures could be used by industry to identify and measure the effectiveness of critical safety activities
- Dispute avoidance and resolution. Identification and communication of change management strategies to avoid dispute between clients, contractors and other industry stakeholders and to manage disputes more effectively
- The development of www.yourbuilding.org, the key online Australian resource on sustainable commercial buildings for all those involved across the building life cycle.

For more information and to download final reports go to www.construction-innovation.info

Outcomes

- Innovative industry-related research from accessibility, technology and safety, to management and sustainability.

Researcher/consultant
CRC-CI

Total investment
$110,000

To be completed
June 2009

Project

Carbon neutral construction sites

Description

In 2007–08, the Building Industry Consultative Council launched a study to assess the direct and indirect greenhouse gas (GHG) emissions resulting from the construction process. Two commercial building sites were used as case studies.

The project aims to:

- Measure the carbon footprint using the Greenhouse Gas Protocol
- Assess reduction and offset options from an environmental and financial perspective
- Evaluate innovative ways to make GHG emissions abatement plans commercially viable.

The project will identify:

- Whether it is commercially viable to achieve carbon neutrality or whether is it more appropriate to set GHG emissions and/or energy reduction targets
- Opportunities to avoid or reduce generating GHG emissions
- Options available to sequester GHG emissions
- Opportunities to switch fuel sources to lower GHG intensity
- Offsets that will be needed to lower residual GHG impact.

Partner

Building Industry Consultative Council

Key research findings

- Key findings will be released in early 2009.

Potential outcomes

- The project will enable industry to clearly identify the economic and environmental benefits of committing to reducing GHG emissions during the construction phase of property development
- The BICC will consider greenhouse gas reduction and offset options, such as switching to fuel sources that generate lower emissions, as well as ways to make greenhouse gas abatement financially viable
- In the long-term, the study will enable the industry to clearly identify the economic and environmental benefits of reducing greenhouse gas emissions during the construction phase of property development.

Researcher/consultant
RM Consulting Group

Total investment
$30,000

Completed
December 2008

Project

Analysis of the need for incentives to increase recycling in the construction and demolition (C&D) industry

Researcher/consultant
RM Consulting Group

Total investment
$10,000

Completed
April 2008

Description

A cost benefit analysis of recycling practices on commercial construction sites. The original objective of the project was to provide information demonstrating:

- The economic and environmental costs and benefits at each stage of the waste-recycling chain
- The effectiveness of rebates currently offered by waste companies for C&D waste made available for recycling
- The relative financial impacts of onsite versus offsite sorting of recyclables
- The best way to improve recycling rates, whether via rebates, incentives, changes to landfill prices, boosting materials producer responsibilities or some other method
- Where innovation would have the greatest impact on the economic and environmental outcomes of recycling

The project was predicated on 2002 figures that suggested only 54 per cent of C&D waste was being recycled.

To provide background to the study, a literature review of previous work was conducted, followed by data and information collection from key stakeholders including recyclers, landfill operators, Sustainability Victoria, EPA and Master Builders Association of Victoria.

Partner

Building Industry Consultative Council

Key research findings

- The results of the investigation phase of the project suggested that actual recycling rates were much higher at 70 per cent with the uptake of recycling in metropolitan Melbourne closer to 80 per cent
- Current market conditions already support high rates of recycling of construction and demolition waste within and around metropolitan Melbourne
- Rapid growth in recycling has been stimulated by growing market acceptance of the end product. Road construction authorities such as VicRoads have changed their specifications to accept recycled aggregates for use in road construction
- Industry believe that diverting the remaining 30 per cent of waste to landfill will be difficult as it is likely to be contaminated or difficult to recycle (plastic, carpet).

Outcomes

- As a result of the key findings, the project ceased
- The findings were used to inform the development of a best practice waste guide titled - A practical guide to reducing waste on major building and construction sites.

Project

Greywater systems – Barriers for builders

Description

This research project was proposed by the Master Builders Association Victoria (MBAV) and funded by the Building Commission.

The purpose of the project was to investigate the barriers stalling the adoption of greywater systems by builders and the strategies that could be used to address them.

The research included a literature review of current regulations and policies in Australia, in addition to a survey and focus groups targeting builders.

Key research findings

The research identified key barriers such as:

- Minimal government regulations
- Greywater systems not being included in many designs
- Low client demand
- Higher costs to both builders and clients
- Lack of information for builders
- Lack of knowledge about greywater and greywater systems
- Builders believing that greywater systems are predominantly the domain of plumbers.

Outcomes

- A report summary was published in the MBAV publication 'Green Living'
- A number of strategies will be developed to address the identified barriers
- The MBAV will work closely with the Plumbing Industry Commission to address recommendations and education of builders in the future.

Researcher/consultant
Master Builders Association Victoria

Total investment
$40,000

Completed
May 2008

Project

Stimulating demand for 'green' office accommodation

Description

Research was commissioned to provide strategic input into the development of a communication strategy that aims to stimulate demand for tenanting green office buildings.

The objectives of the research were to identify the:

- Existing decision criteria for tenanting office buildings
- Level of understanding of the term green buildings
- Barriers to considering tenanting a green building
- Range of communications propositions that have credibility and preferred media channels.

The research consisted of three focus groups and four face-to-face interviews with commercial real estate agents to explore the attitudes, thoughts and behaviours of people in the commercial property sector to understand barriers, advantages and disadvantages of going green in commercial office space.

Partners

Building Industry Consultative Council
Sustainability Victoria

Key research findings

- The key findings will be released in early 2009.

Outcomes

- The research findings will be used to inform the development of a communications strategy, which aims to stimulate demand for green office accommodation.

Researcher/consultant
Sweeny Research

Total investment
$18,700

Completed
July 2008

Project

Building envelope air leakage study - Mornington

Description

The project studied air leakage and indoor air quality (IAQ) of the Mornington Peninsula Shire Council office buildings in Rosebud before and after sealing the building envelope.

It aimed to address the performance of the building envelope through fan pressurisation testing of the building and remedial building works to tighten the envelope.

The quality of the internal working environment was also measured to ensure the indoor air quality was not adversely affected and to verify the results of the building envelope improvements.

Partners

Mornington Peninsula Shire Council

Key research findings

- Sealing the building envelope significantly reduced air leakage and therefore reliance on the HVAC (Heating, Ventilation and Cooling) system and gas consumption for heating
- IAQ was not compromised and air temperature became more uniform and consistent over 24 hours, providing better comfort conditions
- The building now operates more efficiently, however, the HVAC system is 30 years old and is unable to be slowed. Current data is therefore inconclusive in respect to potential energy reductions
- Energy consumption could be lowered significantly with a new HVAC system.

Outcomes

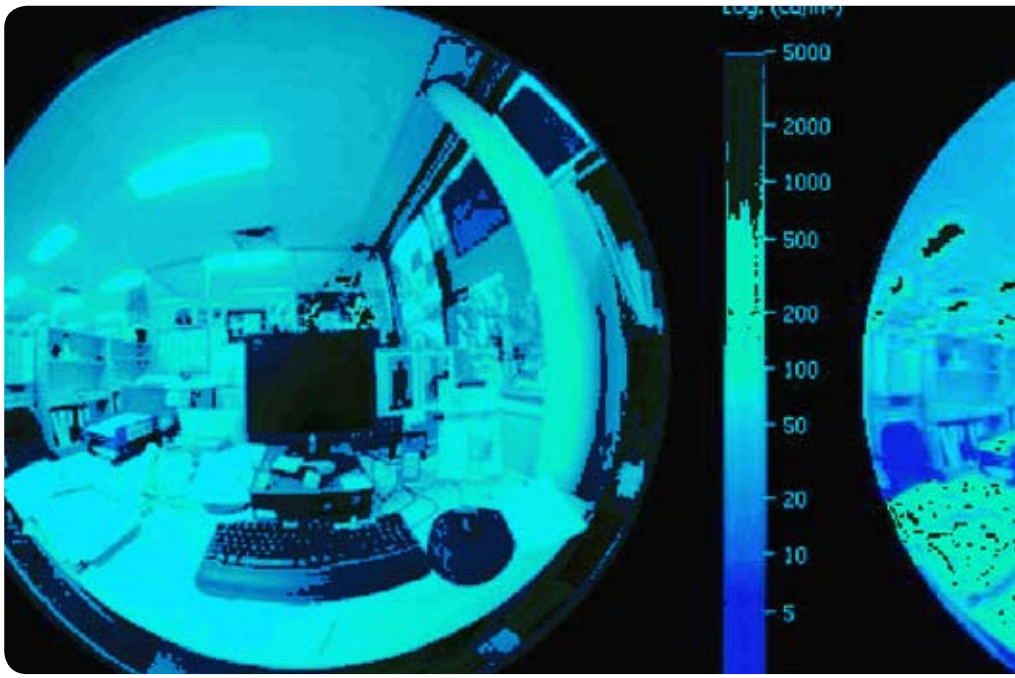
- Mornington Peninsula Shire Council has requested further retrofitting of both buildings with an HVAC (Heating, Ventilation, Air Conditioning) system and research into performance measurement and cost comparisons before and after the retrofits
- The information generated may be suitable for use in defining acceptable air infiltration standards for commercial buildings and their effect on energy consumption and indoor air quality.

Researcher/consultant
Air Barrier Technologies Pty Ltd and Mobile Architecture and Built Environment Laboratory – MABEL (a division of Deakin University)

Total investment

$45,000

Completed
April 2008



Project

Make Your Home Green – market research

www.makeyourhomegreen.vic.gov.au

Description

The development of the Make Your Home Green website required research in order to best tailor it to consumers.

The research aimed to gain feedback from participants on such topics as:

- Becoming green or more environmentally friendly at home
- Awareness of other environmental websites
- Perceptions of the term 'green'
- The website navigation of Make Your Home Green.

Four focus groups of eight participants were held in late February 2008. All participants were over 24 years old and had renovated or built a home in the past six months (or intended to do so in the next six months). Each focus group ran for two hours and contained a mix of males and females.

Key research findings

- Key topics of interest to users included water, heating & cooling, power and insulation
- Consumers did not associate the word 'sustainability' with 'going green'
- Cost was a key element for users and foreseen as a barrier to many. Green benefits should be promoted at each stage but priority should be placed on cost especially return on investment
- The nature of the website needs to be clearly conveyed to users in order to avoid confusion surrounding similar links.

Outcomes

- The key topics of interest were chosen for the website as per the focus group findings
- All references to sustainability were removed from the website and related documentation. 'Green' was used instead
- The website definition was made clear
- Cost implications were incorporated into the website
- In its first month of operation the website received 20,414 visits and 747,994 hits.

Researcher/consultant
Usability One

Total investment
$19,240

Completed
February 2008

Make Your Home Green

Project

Lifetime affordable housing in Australia – Integrating environmental performance and affordability

Description

This study aims to address two fundamental issues in the lifetime affordability of housing in Australia:

- Improved housing design and specification, and
- Utilisation of urban land for increased affordable housing .

It was initiated in order to identify ways of overcoming perceived trade-offs between issues such as climate change and housing affordability.

The study will involve a review of sustainability rating tools, case studies, and cost benefit analyses. Due to the ongoing nature of the project other research methodologies may be adopted to gather data.

Partners

VicUrban, Building Commission, Land Management Corporation, Royal Melbourne Institute of Technology (RMIT).

Key research findings

- Ongoing project.

Outcomes

- The study aims to provide a sound basis for future housing policy in delivering both environmental performance and socio-economic needs. In the process, the project will help accelerate the transition to a more sustainable future for Australia.

Researcher/consultant
RMIT

Total investment
$60,000

In-kind support
$63,000

To be completed by
July 2010

Project

Sustainability leadership guidelines for local government – Partnering on sustainability initiatives

Description

This research project aimed to assist local government to accelerate the uptake of sustainable building designs, technologies and practices in two parts:

- Part 1 aimed to provide a background to existing local government action through a review of policies and practices of local government in Australia and overseas that promote sustainable building
- Part 2 aimed to map the way forward by providing a specific Action Agenda for Victorian councils.

Research was carried out using local and international case studies, stakeholder interviews and workshops held at the 2007 ICLEI green building conference.

Key research findings

Part 1:

- A significant array of policy instruments exist, however, their relative effectiveness is not well documented.

Part 2:

- The resulting workshop Action Agenda reflects the particular circumstances facing Victorian councils and shows the importance of a blend of policy responses
- The Action Agenda will evolve as lessons emerge from the many initiatives around the world
- Evaluation of those initiatives will be an important part of the long-term agenda for all levels of government.

Outcomes

- A report was produced that provides a series of recommendations for how local government can be encouraged to promote green building principles, how they can be supported, and how their relationship with government and the commercial sector can be built on further
- The research findings have been used to inform a new project 'Accelerating Sustainable Council Buildings', which aims to develop and demonstrate practical tools for greening local government owned and managed buildings.

Researcher/consultant
International Council for Local Environment Initiatives

Total investment
$20,000

Completed
May 2007

Project

Smoke alarm warning signals

Description

Research was undertaken as a partnership under an Australian Research Council (ARC) Linkage Grant.

The researchers investigated different pitches and patterns of smoke alarm warning signals in order to establish which signals might be more effective at alerting occupants in a case of fire.

Thirty-nine young adults participated over three nights. Auditory arousal thresholds were measured (AATs) across signals with a range of pitches and patterns to determine the most effective waking signal.

Partners

Australian Building Codes Board, Umow Lai and Associates Pty Ltd.

Key research findings

- Results indicated that the best sound for awakening from deep sleep is a low frequency 520 Hz signal rather than a traditional high pitch signal of 3000+ Hz
- The results supported similar previous research in this area.

Outcomes

- The findings have been referred to the Standards Australia committee responsible for smoke alarms (FP002) for consideration.

Researcher/consultant
Victoria University of Technology

Total investment
$20,000

In-kind support
$2,600

Completed
May 2008

Community Accountability

Project

Fire safety aspects of unregistered movable dwellings (UMD's) in caravan parks

Description

The Building Commission welcomed students from the Worcester Polytechnic Institute (WPI), the third oldest engineering university in the USA, as part of their final year project initiative.

The students worked closely with the Commission and Department of Planning and Community Development to improve understanding of fire safety issues and the existing arrangements for the approvals and inspections of UMD's.

As a part of their project they conducted a literature review, background research, examined fire safety issues and conducted a field survey and face-to-face interviews.

Key research findings

- The study highlighted key areas of importance and potential fire safety issues for future consideration.

Outcomes

- Information from the project will be used to help inform future research and development in UMD and caravan park fire safety
- The students applied new skills and gained further experience in a professional capacity
- WPI students will again be invited to participate in annual projects.

Researcher/consultant
This was a joint project between the WPI students, the Building Commission and the Department of Planning and Community Development.

Total investment
$5,000

Completed
May 2008

Project

Architectural glass related injury – Implications for improving public health

Description

A long-term Monash University Accident Research Centre research project funded by a number of industry partners as a part of an Australian Research Council (ARC) Linkage Grant. The project aims to develop a scientific evidence base to inform the review of standards and best practice for glass injury prevention.

The types and location of architectural and furniture glass causing injuries in domestic settings will be determined using several methods including: literature reviews, data sourcing, examination of incidents, hospital call ups and follow up interviews with injured patients, site inspections and exposure studies.

Industry Partners

Australian Building Codes Board
Pilkington (Australia) Ltd.

Key research findings

- Research findings have yet to be finalised.

Potential outcomes

- Changes to the BCA and AS 1288 with improvement to public safety in the future.

Researcher/consultant
Monash University Accident Research Centre

Total investment
$20,000

In-kind support
$14,000

To be completed by
December 2008

Project

Owner-builder application evaluation

Description

A benchmarking study to evaluate the owner-builder application process.

The Building Commission surveyed consumers who applied for an owner-builder certificate of consent to:

- set benchmarks for satisfaction levels amongst service users
- highlight improvement opportunities that will increase levels of user satisfaction.

Research was conducted by an external consultancy group. Five hundred owner-builder applicants were surveyed by telephone and their responses recorded.

Key research findings

- Overall satisfaction with the application process was high
- The two identifiably lower scoring aspects were the timeliness of the response and the application fee – nevertheless, these still received high satisfaction ratings
- The key reason for high satisfaction was ease of the application process
- Suggestions for improvement were mainly centred around reducing the turnaround time and providing an online application option.

Outcomes

- Improvements were made to the application processes and timelines
- Average timelines have halved as a result.

Researcher/consultant
Market Solutions Pty Ltd

Total investment
$19,989

Completed
July 2007

Project

Balcony and deck failure – Background research

Description

In-house research to better understand the type and extent of domestic balcony and deck failures in Victoria.

Phone interviews, data gathering, media monitoring and literature reviews were used to gather initial information.

Key research findings

- Research showed a potential higher rate of balcony and deck failures in Victoria relative to other states and territories
- Accurate, solid data was difficult to obtain, which made it difficult to fully understand the extent or potential severity of balcony and deck failure in Victoria
- Further research is required to understand the extent of the problem and establish which non-regulatory and/or regulatory initiatives will be the most appropriate to mitigate against future failures.

Outcomes

- Further in-depth research will be commissioned in 2008/09.

Researcher/consultant
Internal

Completed
June 2008

Need More Information?

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A copy of this report is available on the Building Commission's website.