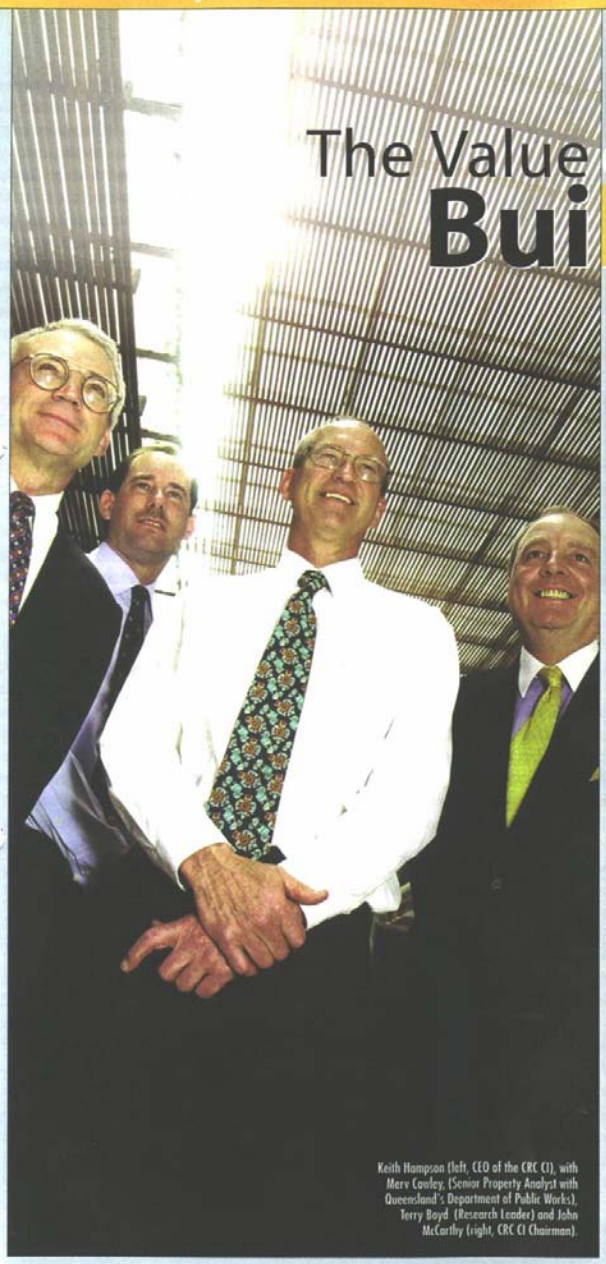
The Value of Buildings



Keith Hampson (left, CEO of the CRC CI), with Merv Cowley, (Senior Property Analyst with Queensland's Department of Public Works), Terry Boyd (Research Leader) and John McCarthy (right, CRC CI Chairman).

Buildings are valuable because they provide the physical infrastructure for almost all economic and non-economic activity. For example, 95% of work in Australia takes place in the built environment and 90% of Australia's GDP is produced there.

Every day thousands of decisions are made by organisations throughout Australia about buildings and their use. All these decisions are influenced, at least implicitly, by judgements about the value of specific individual buildings now and in the future. Yet it is difficult to determine the current value of a specific building, and even more difficult to forecast its value several years ahead.

In appraising a building's worth, valuers rely on current market prices and accumulated experience of the local market. Their work is acknowledged to be a mixture of art and science, because there are so many different factors that can influence the value of any given building.

The complex task undertaken by valuers has its roots in the fact that buildings are designed to meet a specific set of user needs, and it is this which makes them valuable rather than any particular physical characteristics.

Indeed buildings can remain physically sound for many decades but cease to be financially viable much earlier, because the needs of the organisations that occupy them change and the buildings no longer make an effective contribution to productivity, health or the general well being of the people who work in them. Such buildings become functionally obsolete and their value drains away.

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CRC CI Partners in this research project:	Arup Australasia
	Queensland Department of Public Works
	Queensland University of Technology
	Queensland State Development
	Rider Hunt
	Royal Melbourne Institute of Technology
	University of Western Sydney

However, different organisations with different needs could well use such buildings effectively for many years, and in doing so transform their value. Of course these are extreme situations, but all buildings are influenced to a greater or lesser extent by the changing needs of the organisations that occupy them.

Making decisions based on this dynamic situation is currently inhibited by a lack of objective information about the factors that influence the value of any given building at a point in time, and still less its value in the future as circumstances and conditions change.

This is why the Australian Cooperative Research Centre for Construction Innovation (CRC CI) has embarked on research in this [illegible]. The project titled *Evaluation of Functional Performance in Commercial Building*' involves CRC CI partners [see text box, right] and is being carried out by a team led by QUT's Professor Terry Boyd. It will develop a decision tool to assist building owners to better understand the present and future value of their buildings.

According to CRC CI Chief Executive Officer, Dr Keith Hampson, it is crucially important for the construction and property industries to have soundly based guidance on the value generated by buildings.

"The decision tool that Terry Boyd and his research team are producing promises to radically improve the quality of advice available to building owners and managers," Hampson said. "As this is put into practice and buildings are used more effectively there will be significant benefits for the whole Australian economy."

A decision tool for commercial building owners and managers

Initially the CRC CI's research will concentrate on commercial or office buildings, because it is possible to obtain useful data about all the factors valuers need to take into account.

The CRC CI research aims to produce a decision tool that calculates a range of present and future values for a commercial building under different assumptions about economic conditions and the property market.

In addition, the research aims to produce robust data so that valuations produced are more consistent and accurate than those provided by current practice. Beyond this, the decision tool will make the valuation process more open, enabling the effect of different assumptions to be explored.

In this way building owners and managers will have a better understanding of the choices available to them as they consider buying, leasing, altering, refurbishing or selling a building.

The decision tool being developed by the CRC CI uses descriptions of buildings in terms of the spaces they contain, the categories of functions they support, and the financial performance they deliver. It will take into account data about the factors that influence the rental income that the building should attract, including location, layout, facilities, services and overall condition.

In addition to rental income, the decision tool takes account of operating costs, land values, economic factors (as reflected in discount rates and rental growth rates) and trends in the demand for specific types of buildings and office space. It also takes account of the risks inherent in all these factors, so that the values it calculates are as soundly based as the data will allow.

The factors included in the decision tool implicitly take account of tenant satisfaction, functional and physical obsolescence, property market cycles, and the physical and financial performance of individual buildings. It will therefore provide objective measures of property performance, and allow individual buildings or portfolios of buildings to be benchmarked against leading practice. In these ways, the tool will help owners to maintain investment value and monitor their ongoing financial performance.

The CRC CI research team is analysing the operating and capital costs and income generated for four commercial buildings owned by Queensland Department of Public Works. According to Queensland Department of Public Works Senior Property Analyst, Merv Cowley, the buildings were selected as being representative of those built during the last four decades.

This part of the research will test key assumptions currently used in valuation practice, and thereby give the decision tool a uniquely robust basis for the valuations it helps produce.

"The project has involved teams of property and building professionals inspecting and examining the buildings and their historical records in detail, to generate realistic forecasts that will provide a sound basis for the predictive decision model," Cowley explained.

Currently, valuation tools tend to provide a single estimate of the present value, and do not allow users to question the basis of the calculations used. This method inhibits any discussion of the assumptions and issues that have been taken into account and can therefore result in poor decisions being made.

The new decision tool makes inputs explicit, and provides a range of present and future values for a building, as different assumptions are considered regarding economic conditions and demand. This will allow owners and their advisers to discuss the main factors influencing value before making decisions about a building.

In the first instance, the decision tool will be used by the Queensland Department of Public Works to provide guidance on the management of its portfolio of commercial buildings. The Department currently owns about one tenth of the commercial floor space in Brisbane's CBD: the vast majority of which is occupied by government departments.

The decision tool will allow the Department to determine whether the actual or estimated return it is receiving for each of its buildings in

fact corresponds with that achieved in the private sector. It is expected that in some cases, the current return will be low by private sector standards, but this may be justified by 'public good' or environmental advantages in the way the building is operated and managed.

One of the key benefits of the decision tool is that it will help make these trade offs explicit and open to review.

As the decision tool is used over a number of years, it will help in identifying savings to the public purse through more efficient use of public assets. An initial target of a 5% increase in net annual income return, after the first two years of the model's use, has been set by the Queensland Department of Public Works.

In current dollars, such a saving would reflect an increase of about $3m in income and, if sustainable, could be translated into an increase in capital value of over $30m. When the tool is in wider use, the same is likely to be the case for other public sector organisations and also some private sector owners.

According to Queensland Department of Public Works' Merv Cowley, the CRC CI's research will prove highly valuable.

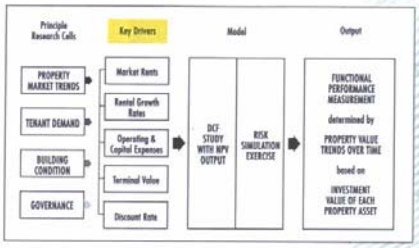
"Through the use of the best available property market and building data, the predictive model will provide for sound risk, sensitivity and scenario analyses to generate optimal timings for building refurbishments, disposals and developments," he explained. "This, together with increased operating cost efficiencies, will assist the Queensland Department of Public Works in the optimisation of its commercial property portfolio's performance in terms of income and capital returns."

The decision tool in use

The CRC CI decision tool uses a two-step process. The first step describes the external and internal factors influencing the key assumptions applied to the commercial building. The second step involves the rental schedules being analysed and cash flows forecast.

This process takes into account relevant economic and property factors, including interest rates and the current supply and demand for that particular type of building. All these inputs are explicitly stated, and can therefore be compared and altered by users.

The decision tool will be able to provide a current valuation, and valuations up to five years into the future, based on current trends and specific inputs provided by the user. This interactive process will provide clear and robust guidance to enable property owners to make sound decisions about their building's use, refurbishment, redevelopment and possible future sale.



The decision tool may also provide a vehicle to enhance the performance of new buildings in both financial and non-financial terms. It will therefore assist property owners and managers to identify the way changes to design and quality factors are likely to influence the building's functional performance and rental levels.

Indeed, some building owners and managers will be able to identify capital investments that yield disproportionately high rental returns, or identify design features in a planned new building that would help potential occupants achieve exceptional levels of performance. In these ways, the decision tool will allow property portfolios to be actively managed with much greater confidence.

Research into the investment implications of changes in the kind of space organisations need in commercial buildings is at a very early stage. The research team undertaking this project accepts that there are clear benefits in being able to measure office building quality and performance in a way that can be linked directly to the risk of reducing value caused by functional obsolescence.

The team plans to tackle these difficult issues in future phases of the research. For the present, the research will provide benefits in more active and efficient portfolio management for owners, as they make decisions about the purchase, design, facilities management, refurbishment and sale of commercial buildings.

Benefits to building owners, managers and users

It has been reported that a 10% increase in construction industry efficiency would result in a 2.5% improvement in Australia's GDP over a five year period. While a similar calculation has not yet been carried out in relation to the management finished buildings, it is clear that any enhancement in property management practice or procedure that delivers efficiency gains within the built environment would provide considerable economic benefits to property owners and investors and in turn to the national economy.

An initial target of a 5% enhancement in the project's sample property portfolio's performance has been set. This should also be reflected in a proportionate increase in the portfolio's value.

Additional benefits are likely to arise by assisting organisations to use buildings more effectively, by relating the value resulting from current uses to the value potentially available from alternative uses.

This will help identify opportunities to make more efficient use of buildings, and will also serve to identify the significance and value of 'social good' outcomes and environmental benefits. The total of 'social good' and environmental benefits flowing from improvements in the management of property assets may well be of much greater benefit to the community than those benefits arising from concentrating on economic considerations.

The decision tool will also help design teams better meet the needs of the organisations that use new buildings, because they will be able to consider the present and future value of design decisions rather than, as at present, just considering the costs.

This potential has important implications for building design and the CAD systems that designers use at present. Current CAD models attach information to models of the physical elements and systems of buildings.

Establishing the value of buildings shifts the focus to the spaces formed by the physical elements and systems. This change in emphasis from engineering and cost, to architecture and value could have profound implications for the quality of future building design.

While these design developments are not part of this research project, they are important issues for the property and construction industry and may form the focus of CRC CI research in future.

Also beyond this immediate research project, it is expected that the research into commercial buildings could provide lessons for owners and managers responsible for other building types, in both the public and private sectors, such as schools, hospitals and residential accommodation.

The decision tool is based on a generic model, which means it can be applied in these wider contexts providing the relevant data is available. [illegible] building owners have detailed records of the costs of owning and operating their buildings that can be analysed to provide the required inputs. The decision tool resulting from the CRC CI's research could be used to guide their future decisions, to maximise the value they receive from their buildings.

About the CRC CI

The CRC CI is a national collaboration involving the following 19 industry, government and research partners:

- Arup Australasia
- Australian Building Codes Board
- Bovis Lend Lease
- Building Commission
- CSIRO
- DEM
- John Holland
- Kennards Hire
- [illegible]ueensland Department of Main Roads
- [illegible]ueensland Department of Public Works
- Queensland State Development
- Queensland University of Technology
- Rider Hunt
- RMIT
- Springfield
- University of Newcastle
- University of Sydney
- University of Western Sydney
- Woods Bagot

The Centre has been made possible through a $14 million Federal Government grant through the CRC Program and $50 million in industry, research and other government funding. The research project described in this report is one of 20 projects currently underway by the CRC CI.

** Professor John Bennett is an International Visitor with the CRC CI and has made a significant contribution to the performance of UK's construction industry, through researching and introducing "world best" construction practices that were studied over a number of years in America and Japan.*