

## **PROCUREMENT & RISK SHARING**

### **Full Paper**

## **INNOVATIVE BENCHMARKS FOR BUILT ASSET PERFORMANCE – THE TRIPLE BOTTOM LINE APPROACH**

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### **ABSTRACT**

The utility of enclosed space is the basic performance measure for built assets. Historically these assets have been assessed on the ability of the occupier to pay for the space, resulting in an expression of the financial return from the investment. However, astute investors are beginning to expand this concept today, particularly with respect to the sustained optimal utility of space.

This paper is concerned with the development of triple bottom line performance benchmarks for operational built assets. Specifically it maps out the conceptual changes taking place from short-term financial agendas to longer-term economic, environmental and social considerations. It also identifies the innovative work currently being undertaken internationally on environmental standards by the Green Building Council of Australia and others.

While reasonable progress has been made developing environmental rating systems for building design and operation, significantly less work has been done identifying and measuring the social factors relating to built assets. With this in mind, particular emphasis is placed on the identification and measurement of important social issues relating to building performance. The case study research of the CRC-Construction Innovation project on 'The Evaluation of the Functional Performance of Commercial Buildings' is outlined, and the complementary work of other leading researchers in this field is reviewed. Finally, avenues for further research are suggested.

This paper is highly relevant to the property asset management sector because it advances the development of the triple bottom line performance measures that are being keenly sought by forward-looking property owners.

The research described in this paper was carried out by the Australian Cooperative Research Centre for Construction Innovation within Project 2001 – 11 – C.

## 1. INTRODUCTION

The recent favourable economic climate in Australia has helped to fuel significant growth in the property and construction sectors. Construction costs have risen at an exponential rate and property values have escalated as investors increasingly view property as a desirable security. Moreover, the technological aspects of construction have advanced strongly, meaning that the market is now being supplied with products that continue to improve in various ways. This is delivering better value for money, increasing productivity and enhancing well-being for users and occupants, and is providing scope for more environmentally friendly products.<sup>1</sup> Some of these improvements are reflected in the financial returns of the asset, and can be measured accordingly. However this reflection is somewhat indirect and hence, sole reliance upon financial evaluation methods are sub-optimal for determining built asset performance. Indeed, this traditional evaluation approach privileges financial concerns and fails to keep abreast of technological change, environmental demands, and new expectations in social responsibility reporting.

Technological change is impacting the property industry by creating more durable and flexible built assets that allow for longer investment horizons, and is helping occupants to better utilise space. What remains unclear though is the relationship between standard costs and the additional cost to investors of incorporating technology above market expectations, particularly innovation geared toward sustainability. Basically, the question is whether the advancement in technology is, or will, result in improved returns from property assets?

Another aspect of change relates to the impact of social values on the built environment. There is a demand for users of built space to have an improved living and working environment and social aspects feature among their requirements. Many of the social aspects of buildings have more to do with design and management than technology directed at energy savings. Social sustainability of built assets are measured in terms of user friendliness, compatibility, the free flow of information, and the impacts the building itself may have on the wider social environment. These criteria are more difficult to measure than technological or environmental features, which helps explain why there has been comparatively less research undertaken attempting to understand and evaluate the social side of built assets. However, it makes little sense to talk of performance in the built environment if property is not measured against human satisfaction. Appropriate benchmarks arguably need to be developed, tested and applied.

The development of social benchmarks will complete the triple bottom line performance assessment approach to the evaluation of operational built assets. Some astute property investors are likely to embrace such an approach, and it

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<sup>1</sup> There is a growing literature encouraging improved building performance. Probe (Post-Occupancy Review of Buildings and their Engineering) has been very influential in the UK. It was a research project that ran from 1995-2002 under the Partners in Innovation scheme carried out by Energy for Sustainable Development, William Bordass Associates, Building Use Studies and Target Energy Services. The Sustainable Building Task Force (California) and the Rocky Mountain Institute are at the forefront of this research in the US, while the CRC CI projects such as 2001-005-B Indoor Environments: Design, Productivity and Health, and 2002-043-B Smart Building for Healthy and Sustainable Workplaces are also making a significant contribution.

can reasonably be expected that the entire industry will, over time, be either coerced by regulation or encouraged by competition and internal pressure, to provide triple bottom line performance data. The benchmarks used will vary depending on a number of variables, such as asset type, utility and locality, and will change over time according to market demands, social attitudes and political and economic conditions. What must be remembered though is that the data delivered by measuring the benchmarks “has to be available in an accessible format that allows meaningful comparison of one building with another...[and]... it has to be capable of being fed into a standard appraisal tool, such as a DCF, by a valuer, or similar, without specialist environmental or engineering training.”<sup>2</sup>

This paper will explain the emerging trends in building performance evaluation with particular reference to the current research into the setting of benchmarks for the environmental and social measures that should feature as part of the evaluation basis. The paper will conclude with proposed standards and measures for the Triple Bottom Line (TBL) evaluation of investment-type buildings.

## **EMERGING EVALUATION TRENDS**

Traditionally, the property valuation approach for investment-type buildings calculates the market value using financial analysis – the bottom line. In a market that has been dominated by ‘profit-only’ goals, this method has been capable of simulating the market activity provided the limitations of subjectively assessed variables are understood.<sup>3</sup>

However, in recent years advanced economies have increasingly entered into a climate of heightened public scrutiny with respect to corporate and public administration practices. This new environment is characterised by the proliferation of independent watchdogs driving expectations of greater self-regulation, accountability and transparency. All this means that there has been a shift in the institutional landscape that legitimises the property industry. And this has implications for the market in terms of the socio-political backdrop forging the demand for built assets of a specific calibre.<sup>4</sup>

Meanwhile, much of the property industry has been trying to carry on with business as usual, largely ignoring subtle, yet fundamental differences in the way the market is responding to changing attitudes and value systems. Major companies are becoming aware of the changing business environment, evidenced by the enthusiastic embrace of non-economic performance self-reporting. These broadened ‘profit-plus’ objectives have come to be known as the triple bottom line. Although outcomes from this new accountability are mixed, research indicates that for a number of reasons, businesses that

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<sup>2</sup> S. Sayce and L. Ellison (2003) ‘Integrating sustainability into the appraisal of property worth: identifying appropriate indicators of sustainability’, paper presented at the ARE and UEA conference, August 21-3, Skye, Scotland, p.8.

<sup>3</sup> The impact of key variables in cash flow studies is demonstrated in T. Boyd (2003)

<sup>4</sup> For a discussion on this see P. Kimmet and T. Boyd (2004) ‘An Institutional Understanding of Triple Bottom Line Evaluations and the use of Social and Environmental Metrics’, paper presented at the PRRES conference, Bangkok, January 25-8.

endorse triple bottom line principles were making changes in the way they carried out, or at least thought about, what they did.<sup>5</sup> Yet there is new evidence indicating that such changes have slowed, and perhaps even stalled.<sup>6</sup> What this demonstrates is that corporate performance needs to be closely, independently and objectively monitored, to ensure business is paying more than lip service to the environment. This is especially the case in regard to the seldom reported yet highly visible, physical and procedural changes relating to built assets that businesses occupy and sometimes own.<sup>7</sup>

To portray triple bottom line as an altogether new phenomenon is not entirely correct. It clearly has its roots in shareholder activism commencing in the 1960s. Shareholders with vested interests progressively called company executives to account, and have in this way become influential in generating community values that have sponsored 'new' corporate values that reach beyond narrow economic constructs.<sup>8</sup> While ultimately important from a business point of view, profit taking now competes for elbowroom at the board table along with a raft of priorities that relate to continuity, efficiency, legitimacy, goodwill, reputation and morality. Indeed, there is now clear evidence that these ostensibly non-tangible elements of business are having significant impacts on economic assessments in terms of demand and supply factors – the major determinants of market value.<sup>9</sup> This has implications for market transactions, and prompts suggestions that both shareholders and investors are informing the market in a way that reflects the advancement of institutional economics. And from a valuation perspective, this 'institutional' process is clouding various input variables.

The fuzziness that is now obscuring what was once a relatively straightforward, essentially numeric exercise is the very reason for the research summarised in this paper. It is about providing a way forward for valuers, owners, managers and investors to adequately assess built assets from a total life-cycle and performance perspective relative to the market. To successfully navigate through the thickening institutional fog, it is argued both here and elsewhere that an agreed set of social and environmental benchmarks will need to be developed.<sup>10</sup> How to apply such benchmarks in practice is open to speculation,

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<sup>5</sup> C. Deegan, M. Rankin and P. Voght (2000) 'Disclosure Reactions to Major Social Incidents: Australian Evidence', *Accounting Forum*, 24:1, pp.101-30.

<sup>6</sup> An Australian Conservation Foundation corporate report has recently concluded that Australia's top 50 companies failed to improve their environmental performance in 2003. See ACF (2004) *Corp Rate: An Assessment of Australia's Top 50 Listed Companies in 2003*.

<sup>7</sup> The Upstream group have reported that companies in the property sector are beginning to move away from a narrow concern with environmental issues towards a broader agenda of corporate responsibility and socially responsible investment. *Upstream* (2003) 'Sustainability and the built environment - an agenda for action', June, London, p.15.

<sup>8</sup> The efforts of Ralph Nader were inspirational for the shareholder movement. See T. Whiteside (1972) *The Investigation of Ralph Nader: General Motors vs. One Determined Man*, Pocket Books, New York.

<sup>9</sup> Kimmel and Boyd (2004) 'An Institutional Understanding of Triple Bottom Line Evaluations...'.

<sup>10</sup> See P. Kimmel (2003) 'Socially Responsible Public Administration and the CBD', paper presented at the *Vision 2020* IPAA conference, Griffith University, Brisbane, November 26, available at [http://www.gu.edu.au/school/gbs/ppp/ipaa/ipaa\\_papers.htm](http://www.gu.edu.au/school/gbs/ppp/ipaa/ipaa_papers.htm); P. Kimmel (2003) 'Socially Responsible Commercial Property Entities and the Allocation of Cultural Space', paper presented at paper presented at the International Association for the Study of Common Property 2<sup>nd</sup> Pacific Regional Meeting, Brisbane, September 7-9. To become available at <http://www.iascp.org>; Sayce and Ellison (2003)

and will largely be configured through use over time, and according to individual asset specifications and data collection purposes.

### **3. IMPACT OF TECHNOLOGY AND SUSTAINABILITY ON BUILDING ASSETS**

This paper questions the impact of advances in technology and the current focus on sustainability in buildings, in terms of the performance of the building assets. In the introduction the following question was posed: “whether the advancement in technology is, or will, result in improved returns from the property assets?” In short, the answer to this question is inconclusive at present. Some experts are predicting that with an increasing number of ethical investment funds emerging, it is inevitable that investors will begin to look more seriously at property over the next 5 to 10 years, and that this increased demand for environmentally and socially sustainable buildings is likely to result in premium values.<sup>11</sup> Even now, a good energy rating (e.g. a 4 to 5 star ABGRS rating)<sup>12</sup> on a building that otherwise conforms more or less to standard gives it a market edge. And there is some evidence that for public sector tenants at least, a fall in the rating during tenancy can actually trigger a diminution in rent.<sup>13</sup> This suggests that a premium rent can be achieved based on an expectation of lower occupancy costs or a better working environment. And these higher rents influence the capitalised value and the calculations generated by DCFs.

Sustainable building features have more distinct benefits in the long term. As Deutsche Asset Management’s Tony Gulliver explains, “unless you make the decisions now that are standard expectations in the future, you’re really going to be behind the eight-ball”. For many though, making investment decisions based on future market expectations is an enormous commercial risk. Most developers depend on selling their recently completed buildings to institutional investors who primarily look at specification in relation to industry standards, tenant quality and rental level. On the other hand, long term property owners, such as funds, companies, trusts and public bodies are more interested in future building performance, and seek to optimise both the short-term and long-term performance of property assets under their management.

Many of the cost effective technological advances relate to environmentally friendly ‘green construction’. Some green building features are not obvious or might not be appreciated by occupants, particularly in the short-term. This emphasises the need for ongoing management support and building feature instruction to ensure green components are understood and used to their

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‘Integrating sustainability into the appraisal of property worth’; and G. Newell and P. Acheampong (2002) ‘The Role of Property in Ethical Managed Funds’, paper presented at the ERES Conference, Glasgow, June 4-7.

<sup>11</sup> Howard Brenchley of APN Funds Management is quoted by Terry Ryder to this effect, (2003/4) ‘Facing up to the Future’, *Property Australia*, Vol 18, No.4, p.50.

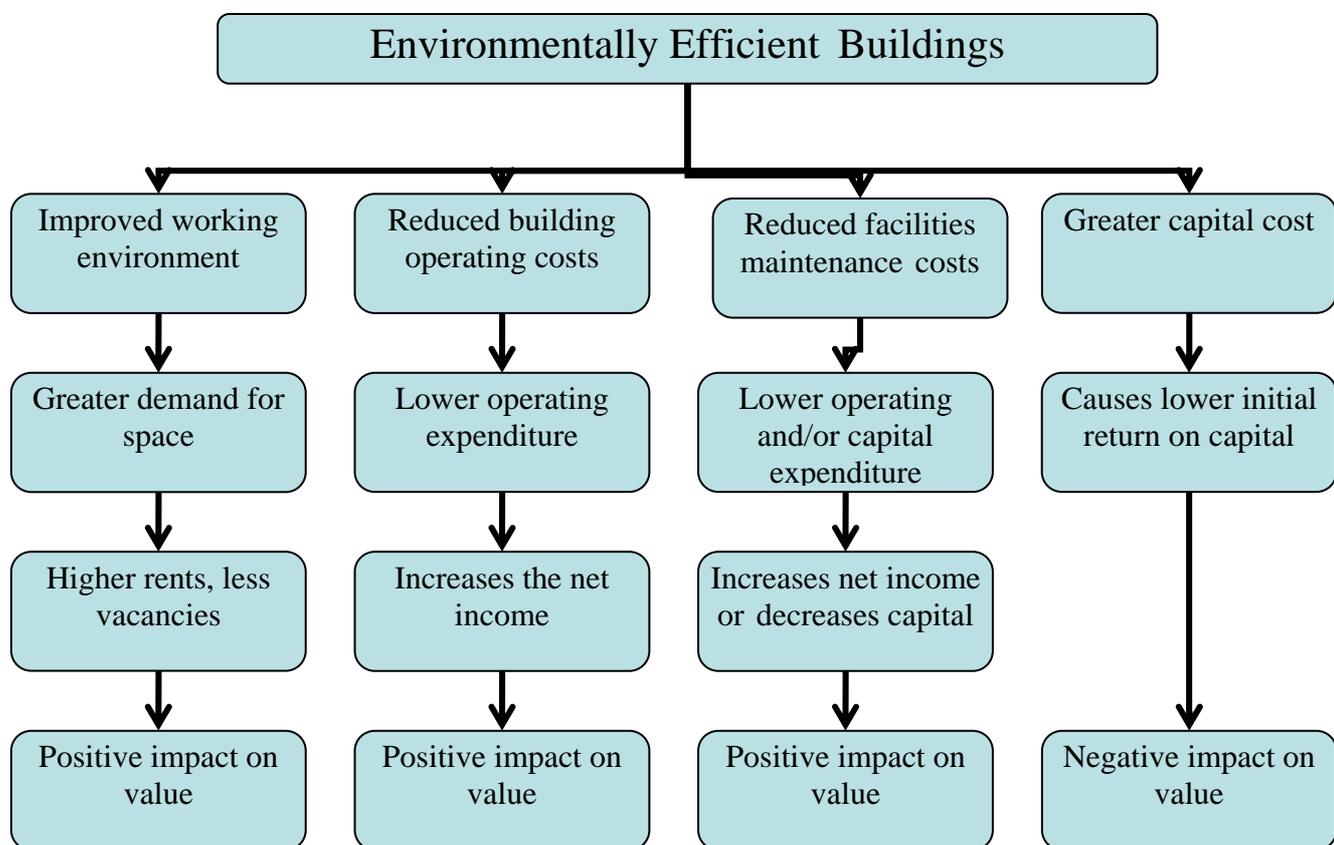
<sup>12</sup> The Sustainable Energy Development Authority (SEDA) ABGRS - Australian Building Greenhouse Rating Scheme, or alternatively a favourable Green Star rating.

<sup>13</sup> New South Wales Police Services have signed a lease with Multiplex for the Parramatta Headquarters declaring that the rent is to be reduced if its 4½ star rating falls. See Michael Dorfling (2004) ‘Buildings put to the greenhouse test’, *the Australian*, May 6, p.40.

optimal potential. It is in the medium-term however, when the benefits of operating cost savings, and the even less obvious employee satisfaction, are factored in to the equation. It may only be then that advantages of green buildings are fully realised by tenants, resulting in a willingness to pay rental premiums. Even if rental premiums on new green buildings are not factored in until the first rent review process when outgoing savings and tenancy satisfaction is more fully understood, the leasing up period is still speeded up by green credentials.<sup>14</sup>

The overall impact of enhanced environmental characteristics on investment-type buildings is illustrated in Figure 1 below:

**FIGURE 1: Value Impact of Environmentally Efficient Buildings**



The diagram in Figure 1 indicates that there are four expected results from greater environmental efficiency and that three of the four impacts should have a positive effect on the capital value of the building. However the degree and timing of the impact is complicated and will differ according to the type of environmental improvement. It is too simplistic to conclude that the change will always, or even frequently, have a positive impact on the capital value. What

<sup>14</sup> This is confirmed in by Chris Kinder of FPD Savills, managing agent of Brisbane’s 4½ star William Buck Building (120 Edward St.), which was leased in 12 months to high quality tenants, with energy savings likely to be factored into the first round of rent reviews.

is important is that environmental factors have the potential to provide a better return from a building asset.

#### **4. ENVIRONMENTAL BENCHMARK RESEARCH**

Valuable work identifying appropriate environmental indicators for built assets has already been undertaken both in Australia and overseas. The Green Building Council of Australia has been very active in this area. The Council's office rating tool was particularly instructive for developing indicators to measure the CRC-CI's Evaluation of the Functional Performance of Commercial Buildings project's case study commercial high-rise office buildings that this paper has emerged from. The tool focuses on strategies to enhance efficiency and reduce greenhouse gas emissions, and it should also be part of the performance assessment. However, environmental rating schemes on the whole tend to focus on the design, construction and management rather than looking at buildings as operating entities within a broader market framework in the manner that property valuers do. A few studies that approach environmental benchmarking from a valuation perspective are worth closely reviewing here.

The Royal Institute of Chartered Surveyors (RICS) Foundation funded a report by the Upstream group, which lists energy use, water use, waste management, transport; pollution; and materials use and selection, as the most prominent environmental criteria for valuers.<sup>15</sup> There is little dispute over the validity of their criteria, although others have further expanded the list. For instance, a project underway at Kingston University in the UK and supported by government and business partners, also includes management, or as they call it – occupier criteria, within their categories. Known as The Sustainable Property Appraisal Project, this project prefers to label water consumption and waste management – ecology, while materials use and selection is subsumed by building flexibility, and design categories. What Kingston's Sarah Sayce and Louise Ellison also identify is that indicators in each criterion vary in their impact with respect to environmental, social and economic components. For instance they argue that the indicator 'build quality' has environmental and social impacts only, while 'reuse of building', 'quality of management', and some transport and energy efficiency indicators are exclusively environmental and economic in nature.<sup>16</sup>

Sayce and Ellison list reuse of building; operational CO2 emissions; embodied CO2 emissions; CFC emissions; methane emissions; nitrous oxide emissions; hydro fluorocarbon emissions; perfluorocarbon emissions; efficient use of equipment; distance from local public transport nodes; provision of facilities for non-drivers; policies to encourage alternatives to single occupancy car journeys to work; use of brown field sites; quality of management; water consumption; and waste management as distinctly environmental indicators. Let's look at these indicators in a bit more detail.

According to Sayce and Ellison, the more a building is reused in a variety of ways by its occupants, the more flexible it proves to be, and the more resources

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<sup>15</sup> *Upstream* (2003) 'Sustainability and the built environment'.

<sup>16</sup> Sayce and Ellison (2003) 'Integrating sustainability into the appraisal of property worth', p.11.

and energy invariably spent in total redevelopments is conserved.<sup>17</sup> While office high-rise is seldom used for any other purpose, there is no reason why less desirable and aging offices cannot be converted to apartments or a variety of other uses, or even upgraded to exemplary environmentally sensitive space.<sup>18</sup> And there is no reason why the original materials cannot be re-used in refurbishments, and if the façade is retained, this may also add to heritage values.

Operational and embodied CO<sub>2</sub> emissions (greenhouse gases) are chosen by Sayce and Ellison to measure the energy efficiency of a building because carbon tax and climate change levies in the UK fails to allow for the use of energy generated from renewable resources such as wind power and photovoltaics. This complicates reporting, reduces energy use to an economic basis, and fails to adequately reward the use of renewable energy supplies. In the Australian context, a more accurate picture of responsible energy use can be ascertained by recording and comparing the net fossil fuel energy use on an intra-building (sub-metering) and market comparison basis. Energy efficiency is clearly a very important environmental indicator, and features prominently in the calculations of the various environmental building rating schemes such as *Green Star*. As far as embodied energy is concerned though, Sayce and Ellison admit that this indicator “is so far considered to be of very limited or no significance to property worth within the existing building stock.”<sup>19</sup>

CFC emissions largely relate to the age and condition of air-conditioning equipment, and the desirable use of ODP, and to a lesser extent, GWP refrigerants.<sup>20</sup> To be adequately reported, maintenance records must be made available to the valuer. The various other emissions specified by Sayce and Ellison are generally not released in high enough quantities from office high-rise to warrant individual reporting at this stage. It is perhaps more manageable for the valuer to follow the example of the GBCA and include them under the greenhouse gas reduction criterion.

Efficient use of equipment is closely related to the social indicator recommended in this paper – “level of awareness and training on building/socially responsible facilities” except that it takes an environmental perspective. And as pointed out with the social equivalent, unless there is widespread awareness of the environmentally sensitive design features of the building, optimal benefits will fail to accrue.

From an environmental perspective, transport indicators focus on the availability and efficiency of public transport. The inference is that if public transport is not close by, is irregular, or fails to service a wide area, then occupants will opt to commute using private means, which may result in further reductions in environmental quality. Public transport is of course not the only solution to regular worker commuting. A raft of strategies should be in place to

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<sup>17</sup> Sayce and Ellison (2003) ‘Integrating sustainability into the appraisal of property worth’. p.13; S. Brand (1997) *How Buildings Learn* 2<sup>nd</sup> Ed (London: UK Phoenix Illustrated), [www.bre.org.uk](http://www.bre.org.uk)

<sup>18</sup> See for example Melbourne’s 60L project (60L stands for 60% less energy). Go to: [www.60lgreenbuilding.com/](http://www.60lgreenbuilding.com/)

<sup>19</sup> Sayce and Ellison (2003) ‘Integrating sustainability into the appraisal of property worth’. p.16.

<sup>20</sup> GBCA (2003) *Green Star...*, p.19.

discourage single occupancy vehicle journeys, and there is no reason why these cannot all be reported under a single indicator.<sup>21</sup>

As high-rise office buildings are nearly always located in highly developed centres, they are seldom erected on green field sites. This indicator may be relevant to new developments and the history of the land prior to development. Like the efficient use of equipment, an environmental indicator covering this criterion has a very similar social equivalent. In this case it is – “facilities and recognition appropriate to the cultural requirements of indigenous people and the preservation of heritage values where applicable”.

There are at least three major elements of ‘quality of management’ – managing risk, facilitating the optimal environmental potential of the building, and ensuring good corporate governance, particularly disclosure. The first two elements are reported elsewhere – risk is distributed throughout all the indicators, and maximizing environmental capabilities has its own indicator. Governance on the other hand is such a major component of both the social and environmental dimensions of buildings that it should be divided into sub-categories. It is suggested that transparency of environmental data, any non-compliance with regulations, the winning of awards, and environmental expenditure of any type should be reported as a governance metric. What cannot be emphasised enough though is the centrality of disclosure with respect to governance. Without quality disclosure an accurate triple bottom line assessment cannot be made.<sup>22</sup>

Water consumption and waste management are issues that are likely to increase in importance over time. While there may be some equipment installed for these purposes, particularly in more modern buildings<sup>23</sup>, these measures rely largely on good policy and implementation of conscientious practices. Specifically, these indicators reflect recycling, water capture measures, and the disclosure and relative performance of wastewater discharge that reduces flow to the sewer. They also question the nature and impact associated with any hazardous and non-hazardous waste and effluents, and recycling or removal strategies.

The 5 indicators that Sayce and Ellison attribute to both environmental and social dimensions are briefly considered here from the environmental viewpoint. Building age may have environmental significance depending on the materials used, condition, and the technology incorporated in the design features. It is clearly less important than build quality, however it may indicate the possible extent of obsolescence and depreciation in terms of environmental appeal. And location from centres assumes greater importance when vehicles are used to traverse the distance between them and the building.

Finally, corporate environmental engagement should reflect the overall performance of the building against environmental benchmarks. This includes internal quality in terms of worker satisfaction, a crucial environmental measure that arguably deserves individual attention. Indeed, the GBCA tool offer credits

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<sup>21</sup> Next to public transport, the *GBCA* offer the second highest transport credits for the provision of cyclist facilities, p.18.

<sup>22</sup> Kimmet, P. (forthcoming) ‘Benefiting from Disclosure: Reporting the social responsibility of built assets’, to be presented at the CRC CI conference, Gold Coast, Oct., 2004.

<sup>23</sup> Particularly in regard to cooling tower water consumption.

for several indoor quality features ranging from ventilation to natural lighting, views, individual thermal control, noise abatement and particularly the absence of indoor air pollutants.<sup>24</sup> And external quality should also be addressed specifically in terms of aesthetics and visual blending. This involves a building's celebration, utilization, connection, contribution and appropriation of its street frontage and local precinct.

## 5. PROPOSED ENVIRONMENTAL BENCHMARKS

*Taking account of the GBCA measures and the substantial work of Sayce and Ellison (referred to above), we recommend the environmental indicators listed below for existing investment-type buildings (Refer Figure 2). They do not appear in any particular order for weighting purposes, but they are organised into 3 distinct fields.*

**Figure 2: Recommended Environmental Benchmarks – Existing Buildings**

<b>1.Resource consumption</b> 1.1 Energy	<ul style="list-style-type: none"> <li>• Net fossil fuel energy use (assessed on an intra-building and market comparison basis)</li> <li>• Effective action to reduce greenhouse gas emissions (particularly from energy use)</li> <li>• Office lighting power density and peak energy demand reduction strategies</li> <li>• Evidence of alternative energy supplies from renewable sources or from cogeneration</li> </ul>
1.2 Air conditioning	<ul style="list-style-type: none"> <li>• Condition of air-conditioning plant</li> <li>• Use of ODP or GWP refrigerants</li> </ul>
1.3 Water	<ul style="list-style-type: none"> <li>• Water consumption (potable, hygiene and cooling towers)</li> <li>• Recycling and water capture measures</li> <li>• Wastewater reduction</li> <li>• Hazardous and non-hazardous waste and effluents recycling or removal strategies</li> </ul>
<b>2.Design and Use</b> 2.1 Transport	<ul style="list-style-type: none"> <li>• public transport availability and standard of service</li> <li>• strategies to discourage single occupancy vehicle journeys, including cyclist facilities</li> </ul>
2.2 Building fabric	<ul style="list-style-type: none"> <li>• Age of building (obsolescence or depreciation of materials)</li> <li>• Re-use or upgrade history or potential</li> <li>• Suitability of original materials for refurbishment and façade retention</li> <li>• Ecological impacts of materials used (can be ascertained by using LCA Design<sup>25</sup> or similar software package)</li> </ul>
2.3 Interior	<ul style="list-style-type: none"> <li>• Indoor quality measured by ventilation, natural lighting, individual thermal control, noise abatement</li> <li>• Absence of indoor air pollutants</li> </ul>
2.4 Environment	<ul style="list-style-type: none"> <li>• Quality of overall built environment and site use in relation to aesthetics, visual blending, connection, contribution and appropriation of its street frontage and wider precinct</li> </ul>
<b>3.Governance</b> 3.1 Awareness	<ul style="list-style-type: none"> <li>• Maximisation by management of the potential of the environmental design features through awareness</li> </ul>

<sup>24</sup> GBCA (2003) *Green Star*, p.18.

<sup>25</sup> This is developed by a project in the CRC for Construction Innovation.

	programs
3.2 Disclosure	<ul style="list-style-type: none"> <li>• Disclosure and transparency of environmental data, regulation compliance, awards, and environmental expenditure of any type</li> </ul>

It is accepted that there are many more useful environmental indicators. The table above is one attempt to identify the major characteristics that relate to operational issues with particular reference to the utility of the building. And it is emphasised that the selection of benchmark indicators should be evaluated against the market's perception of value of the individual measures. Once the appropriate indicators and their component characteristics have been selected, the next challenge is to determine a grading or weighting for the indicators. The GBCA's Green Star rating system is a well reasoned grading approach and consequently it is recommended provided it is applied with the usefulness of the building asset to the occupiers in mind.

## 6. DEVELOPMENT OF SOCIAL BENCHMARKING

While environmental benchmarking is well advanced, a corresponding effort with respect to social benchmarking needs to be made to provide for meaningful triple bottom line assessments of built assets.<sup>26</sup> Upstream list important social issues in the appraisal process as: investment in the community; local employment; stimulating local economic activity; community engagement; accessibility; health and safety; crime prevention; occupier productivity; and employee/ supplier relations. This list is partially endorsed here, with crime prevention the only issue called into question as a legitimate social criterion for benchmarking. Local impacts and cultural issues should also be added to this list of highly significant measures of social sustainability in the built environment. Moreover, local employment and economic activity, investment, and employee/ supplier relations are arguably more conveniently reported within stakeholder relations and community engagement criteria. Each of these observations will be discussed in this section.

Crime prevention is an interesting issue. At this stage though, the profile of crime in the context of Australian high-rise office stocks is not significant, nor is it clear how a prospective benchmark should be measured and what the responsibilities of a commercial property are in this regard. It is felt that this area requires further exploration before it could be recommended as an appropriate appraisal indicator.

Investment in the community is possible as either cash injections or in-kind contributions. It is easily measured, as long as records are kept, and disclosure is made to the valuer. However, 'investment' takes a rather a narrow, material view of community interest, precluding a wide range of building management policies that can benefit the community. It also fails to recognize that the broader community is a legitimate stakeholder in commercial property, which after all relies on social capital infusions for commercial success.

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<sup>26</sup> J. Fiksel, (2001) 'Measuring sustainability in ecodesign', chapter 9 in M. Charter & U. Tischner eds., *Sustainable Solutions: Developing Products and Services for the Future*, Sheffield: Greenleaf Publishing, p.168.

It is important to consider what is actually meant by the level of community engagement of a particular property. The first observation to make is that certain properties, by design and purpose, 'engage' the community much better than others. It is therefore important not to compare dissimilar properties. A second point is the difficulty of distinguishing between properties that actually share many characteristics. Arguably the important distinction to make here is with respect to management.

Accessibility is an important social indicator, however it needs to be more clearly defined. Specifically, access for whom, by what, and by which standard? Transport should be a separate indicator, so we can assume accessibility refers to walking and wheelchair access for occupants and visitors, in both the internal (ease of access to public and leased space) and external (proximity to desirable spaces from the building) senses.

Health and safety is also clearly important. This not only refers to adequate provisioning and maintenance of the building and plant, but should also include generous insurance and public liability cover in case of injury from accident or the contraction of illnesses such as legionnaires disease (*legionella*). This indicator relies heavily on disclosure by management.

Occupier productivity is undoubtedly a leading social indicator for the assessment of commercial buildings. This encompasses the quality of the indoor environment, which is beginning to be researched quite extensively as we have pointed out earlier. It also involves building age and condition, occupant satisfaction, functionality and psychological and physical well-being.

Perhaps more than any other indicator, stakeholder relations relies heavily on disclosure and transparency from management. Objectivity can be brought to the assessment process by interviewing occupants and visitors. An important element here is the quality and content of negotiations with agents, tenants, contractors and staff. It is a strong indicator of management in general, or as it is increasingly referred to in the modern corporate environment, it is the measure of 'good governance'. This will be qualified by the contextual capacity in which the building operates, including the prevailing regulative environment and the level of accountability expected of the individual premises.

Sayce and Ellison identify 6 indicators that impact on the social dimension of the triple bottom line, and find that a further 5 have both social and environmental implications. The 6 social indicators they suggest are: protection of heritage buildings; access to local green space; local economic impact; occupier satisfaction; functionality; and impact.<sup>27</sup> Obviously heritage buildings' protection only applies to certain, usually older building stock. However, it is unclear how this might impact on market value. Some properties actually decrease in value if redevelopment potential is restricted. On the other hand, ownership and preservation of a heritage property contributes to the 'national estate', and may accrue significance in terms of reputation and social responsibility. More research will need to be undertaken in this area to ascertain the implications for triple bottom line assessment. In the meantime, age of building and renovation requirements can be considered under productivity and satisfaction.

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<sup>27</sup> Sayce and Ellison (2003) 'Integrating sustainability into the appraisal of property worth'.

What is of increasing significance in Australia, given the ongoing public debate about reconciliation and native title, is the appropriate recognition of original indigenous owners. This indicator alone occupies the entire focus of a separate paper produced by this project.<sup>28</sup> And a further cultural indicator that surfaced when the social indicators discussed here were recently tested was the art on display, measured as a percentage of total fit out cost.

Sayce and Ellison's final social indicator is more difficult to measure. They explain that:

"a building's physical presence will inevitably illicit a response from the local stakeholder community...[pointing out that]...what *is* important is public perception of design.... The difficulty with this measure is that issues of taste and perception change over time and it is almost impossible to predict what aesthetic design quality will be valued in the future. Nonetheless, as the assessment will be done on a recurrent basis, it can be kept under review."<sup>29</sup>

The rest of their discussion concerning this indicator is well worth citing as well.

"The importance of design is also dependent upon the impact a building has within its location. This requires consideration of the extent to which a building is appropriate to its environment, reflective of local architectural style, a landmark, denoting an important gateway or entrance for example. Does it create a wind tunnel effect for local pedestrians? A building that blends in with the surrounding area will not be unsustainable; neither will it create any positive local impact from which the investor and/or occupier can benefit. A building that has a strong and negative local impact will be a liability to both occupier and investor, in terms of sustainability."

And:

"the fabric of the local environment uniquely effects the local community and, an occupier and/or investor that shows scant regard for these stakeholders is simply not demonstrating good CSR" (corporate social responsibility).<sup>30</sup>

Sayce and Ellison's 5 indicators that have social and environmental significance are: building age; distance from town centre; distance from local centre; corporate environmental engagement; and build quality. Once again, when approaching the appraisal from a social point of view, building age mostly relates to occupant productivity and satisfaction, and how the age of the building influences maintenance and refurbishment strategies. Meanwhile, distance from town and local centres are a mix of locational and transport factors. From a social perspective, accessibility, which has already been flagged, is generally more significant than the largely economic implications of positioning in the most prestigious and central locations. Transport on the other hand clearly also has environmental significance and in this case in particular it is important not to duplicate the reporting process.

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<sup>28</sup> Kimmet (2003) 'Socially Responsible Commercial Property Entities and the Allocation of Cultural Space'.

<sup>29</sup> Sayce and Ellison (2003) 'Integrating sustainability into the appraisal of property worth', p.23.

<sup>30</sup> Ibid.

Sayce and Ellison point out there is a danger of also duplicating reporting by making build quality a distinct indicator on its own, when it clearly influences many of the other benchmarks.<sup>31</sup> And they also warn that low quality buildings are likely to impact on the corporate image of owners and occupiers. They explain that:

“whilst it may not be reasonable to suggest that the very existence of a low quality building within a portfolio will increase investor risk, an absence of evidence of efforts to improve the quality, particularly over the long term, may well have a negative impact. Thus it is not so much the existence of the building but the approach taken by the investor (and occupier) to that building.”<sup>32</sup>

Corporate environmental engagement is about the acquisition of socially responsible capital (meaning goodwill and reputation) by embracing environmental criteria. This is an important indicator for social impact studies, but in a triple bottom line framework it is arguably best left to environmental indicators.

Other social indicators that neither *Upstream* or Sayce and Ellison discuss are largely informed by the extensive and widely acclaimed work of the *Global Reporting Initiative*.<sup>33</sup> Admittedly, their approach focuses on business reporting, but some of the indicators they have developed also make sense in the performance context. For instance, credible indicators include: level of awareness and training on building/socially responsible facilities; and provision and monitoring of facilities/amenities (emphasis on equal opportunity), and lobby space from the public’s perspective. And indicators that can be identified as broader society impacts include the nature of tenant businesses and naming rights, and appropriate training for security personnel.

It is one thing to have a socially productive building and even advanced social policies, but these things of themselves do not ensure a high level of awareness of the socially optimum use of the premises. Training and regular updating needs to be provided for the occupants to facilitate it. This is fairly straightforward to report (assuming adequate disclosure), and can be accurately checked by brief interviews or a survey. And reporting on facilities and amenities provision need not be bound by regulations. This is a very important aspect of social responsibility, so it follows that generous common area allocations are highly desirable.

A simple perusal of the nature of businesses housed within a building will help us gauge the level of social support and services provided by tenants, strongly influencing community impressions of the building’s social responsibility. For instance, tobacco and alcohol companies and other unethical businesses will detract from a building’s public image, particularly if naming rights are acquired. It is envisaged that as triple bottom line assessments are progressively

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<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

<sup>33</sup> Go to their website at [www.gri.org](http://www.gri.org)

accepted within the industry and this indicator is specifically embraced, then socially irresponsible businesses will begin to expect to have to pay a premium for rental space to compensate for the negative impact of their business on the premises.

And finally, in some instances certain business and executive government may require an overt security presence. In such cases it is important that security personnel are adequately trained in public relations.

## 7. PROPOSED SOCIAL BENCHMARKS

In order to select the relevant social benchmarks, the CRC CI project examined not only the sources discussed above but also interviewed major users of office space and property managers, while testing helped to determine the relevance and practicality of the indicators. This helped to identify forward-looking issues for space users. In compiling the benchmarks, we selected seven social criteria and thereafter chose components of these indicators that were both indicative of the criteria and measurable. The table below (Figure 3) sets out the indicators and the measures.

**Figure 3: Recommended Social Benchmarks – Existing Buildings**

<b>1. Health and Safety</b>	<ul style="list-style-type: none"> <li>• compliance with H &amp; S regulations and appropriate signage</li> <li>• adequate public liability and service provider insurance</li> <li>• awareness and training of emergency evacuation and accident first aid procedures for all floor wardens</li> <li>• a first aid station accessible to all building users</li> </ul>
<b>2. Stakeholder Relations</b>	<ul style="list-style-type: none"> <li>• monitoring of stakeholder concerns, views and provisions</li> <li>• transparency and disclosure of landlord/tenant contracts and marketing agreements</li> <li>• supportive use and occupation guidelines for tenants</li> <li>• appropriate training for security and public relations personnel</li> </ul>
<b>3. Community Engagement</b>	<ul style="list-style-type: none"> <li>• encouragement of employment of local residents within the building</li> <li>• provision of accessible public facilities (seating, toilets)</li> <li>• promotion of and linkage to local service providers</li> <li>• accessible communication channels with building stakeholders</li> </ul>
<b>4. Accessibility</b>	<ul style="list-style-type: none"> <li>• connections to designated green spaces</li> <li>• proximity to urban spaces (town centres, malls, etc)</li> <li>• availability and efficiency of public transport</li> <li>• wheelchair access</li> <li>• proximity to childminding facilities</li> </ul>
<b>5. Occupier Satisfaction and Productivity</b>	<ul style="list-style-type: none"> <li>• quality of communal service areas e.g. toilets, kitchen facilities</li> <li>• complementary usage of building (compatible tenants)</li> <li>• occupant productivity in terms of satisfaction and physical wellbeing</li> <li>• smart technology design provisions</li> </ul>

<b>6. Cultural Issues</b>	<ul style="list-style-type: none"> <li>• recognition of indigenous people through allocation of cultural space (for display or performance) and communication of site or community history</li> <li>• consideration of gender equity and minority group requirements</li> <li>• preservation of heritage values</li> <li>• value of artwork as % of fit out</li> </ul>
<b>7. Local Impacts</b>	<ul style="list-style-type: none"> <li>• aesthetic implications (compliance with precinct theme, building scale, etc.)</li> <li>• practical implications (traffic generation, off-street emergency parking and pedestrian management)</li> <li>• nature of tenant businesses and naming rights</li> <li>• community linkages and sponsorship of local neighbourhood activities</li> </ul>

Yet even with the availability of data in this developmental stage, it was decided that given the current unrefined nature of the research it would be premature to report any more than 3 basic findings:

1. not socially responsible
2. social responsibility required of a private corporation
3. social responsibility required of a public body.

## 8. CONCLUSIONS

The CRC-Construction Innovation project on *The Evaluation of the Functional Performance in Commercial Buildings* found that a significant part of assessing functionality performance of built assets involved determining the measure of achievable sustainability relative to the market. Technological advancement has the potential to produce high sustainability outcomes for buildings, but the cost of much of this innovation is difficult to justify to 'rational economic' investors. An examination of market activity showed that property investors were essentially demand driven. They were concerned about the ability to generate increased rental from environmental and social improvements. The project also found though that significant sustainability gains could be achieved largely through management strategies designed to satisfy TBL benchmarks.

A key lesson derived from testing the project's benchmarks on case study buildings is the need for uninhibited stakeholder input. In the case of commercial buildings, stakeholders not only include owners, managers and occupants, but the wider public also has a stake in their operation. By this it is meant that management decisions need to be informed by society norms, habits and values, as well as by the economic and utility objectives of the parties directly involved. A major plank of this normative agenda is environmental ethics, but it is by no means the only emerging issue to consider.

The research project has advanced the benchmarks required for the performance evaluation of commercial buildings. In particular there has been keen interest from property investors and managers on the benchmarks for TBL evaluation. They accept the inevitability of the changing concepts of

performance evaluation but are uncertain about the timing of the market forces that will demand these changes.

What CRC CI project 2001-011-C confirmed is that a triple bottom line assessment approach to built asset performance can be grounded on the development of innovative benchmarks. Moreover, the benchmarks developed in the project were found to be measurable and appropriate for high-rise office buildings. This finding supports the claim that the sooner complete and objective triple bottom line built asset guidelines are adopted, the sooner the property industry is likely to recognise that the provision of a safe, harmonious and productive built environment for people is not negotiable.

It is broadly agreed that rating systems are a powerful driver of environmentally sustainable built asset performance. There is very useful research emerging detailing the costs and financial benefits of improving the sustainability of buildings.<sup>34</sup> However, much more research needs to be undertaken to help determine the market implications of these innovations, and particularly the economic implications of efforts to satisfy the environmentally and socially sustainable benchmarks like those advanced in this paper. It is only when it can be emphatically demonstrated to property investors and managers that such efforts are not just affordable but have significant performance benefits and actually contribute to higher returns and premium values that the triple bottom line will be expressed by more than just lip-service. Assuming this occurs soon, which appears highly likely, triple bottom line frameworks are set to become an integral part of the valuation approach for investment-type buildings.

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<sup>34</sup> See for eg. Greg Kats et. al. (2003) 'The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Building Task Force,' unpublished.

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