



SB08 PRESENTATION

SB08 SPECIAL FORUM 12 – TRIPLE BOTTOM LINE CASE FOR GREEN BUILDING: COST CSR AND WORKPLACE PRODUCTIVITY

DAVIS LANGDON SESSION TITLE:

THE INTERPLAY BETWEEN ECONOMIC AND SOCIAL IMPACTS OF GREEN BUILDINGS

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ABSTRACT

This paper is about the evaluation of the economic and social impact of green buildings on existing buildings. It is only by an holistic objective assessment of all existing community social responsibilities (CSR) factors, including the impact of green building criteria affecting the triple bottom line of properties, that we can provide owners with clear economic evaluations about what needs to be done to improve the sustainability performance of their property whilst simultaneously increasing their property yields, developing refit options; or where necessary to exit their existing properties.

For the property to remain economic and meet contemporary standards this advice needs to be more than just about green buildings. Owners require our industry to define economic impact using uniform and consistent assessments of environmental sustainability (green building) criteria as well as the economic impact of all their CSR imperatives such as social equity, property compliance and remaining life.

So that the asset remains compliant and competitive in the market place economic impact assessments of properties demands that objective "forensic" evidence from on-site assessments based on normative standards. These audits will identify what must be done to meet triple bottom line imperatives (environmental, social and condition).

For portfolio owners this means providing a whole of property indexing of for the performance of each building in their portfolio against similar buildings and using uniform assessment criteria to report on the carbon economy driven GHG emissions as well as community and social based health and safety obligations.

Unfortunately for property owners the industry may have failed property owners by not delivering to them a uniform and consistent rating tool. They may be confused about what "rating tool" to use and to evaluate the economic and social impact of green buildings.

Unfortunately the existing stock of carbon economy driven GHG emission calculators and the ever increasing number of "green building rating tools" have not made it easy for owners to understand what to do. On the contrary the rating tools have made understanding and economic evaluations nigh on impossible because apart from a few the existing rating tools they are either not applicable beyond green building criteria (ie exclusive of comprehensive CSR content) are not uniform, and at worst inclusive of specific technical evaluation criteria that cannot be compared. In all cases the existing rating tools do not give property owners the complete picture on how their properties compare or what needs to be done to bring them to contemporary standards. The full range of CSR imperatives for green building, social equity, property compliance and remaining life are missing from most rating tools and the owners are getting misinformation on the way forward for their properties.

To evaluate the economic and social impact of green buildings complete and independent objective assessment audits should evaluate all CSR risks to determine "what must be done" at each property to make improvements. These must include energy minimisation as well as green house gas emissions, and water usage and waste improvements. But these must be supported with assessment audits of health and safety, disability provisions and incident and security management; and for issues such as compliance requirements for building code, disability obligations and essential emergency system and remaining life remedial works.



It is only by this holistic objective assessment of existing building that we are able to advise property owners on the full economic impact of green buildings. In this way owners can improve the satisfaction, retention, and growth of their tenants by ensuring properties are suitable for the market, or make decisions to exit the property as appropriate. Likewise owners can be provided with Reports that enable them to improve their assets in the market place to the satisfaction, retention and growth of tenants and their working environment.

This means the economic and social impact of green buildings has to be part of the wider assessment and inclusive of CSR obligations if owners are to be properly informed with information to make economic decisions about their properties. Consequently the economic and social impact of green buildings needs to be more than green regulations and the consolidation of the ever increasing number of inconsistent and incomparable green rating tools.

It is our expectation and recommendation that property owners need to be provided with effective, uniform and consistent strategic advice on the impact of not just green building but the economic impact of all that needs to be done for their property to meet contemporary standards whilst also remaining competitive in the market.

Whilst not in any way wanting to address the economic and political issues in society, what our paper attempts to demonstrate is that property owners have a need for a deeper requirement beyond just green buildings and that the interplay of social and economic issues in the built environment sector can lead to a more useful and accelerated methodology for enhancing the triple bottom line performance of buildings for property owners beyond the economics of just "greening buildings". Our Paper shows that the economic impact of properties can be enhanced simply by employing the best of existing energy, water, waste and GHG emissions calculators (meeting international protocols) combined with CSR assessments. Overall we see that in practical terms it is the benchmarking of property that is the key factor in enabling the transition to the integration of the economics of green buildings with CSR (triple bottom line) performance.

1. INTRODUCTION

Over the last thirty years a new paradigm has started to emerge, a world where the principles of sustainability have developed, initially as environmentalism, later as sustainable development and more recently as ecological modernisation.

Sustainability is fast becoming an integral part of the Australian building industry. Increasingly, building owners, operators, occupants and indeed investors desire 'green buildings'. In response to this, the Australian building industry needs to be able to assess and quantify sustainability outcomes in terms of a balanced assessment of environmental, social and economic impacts – also commonly known as a triple bottom line assessment.

Various "Green Buildings" groups have strived to meet this need by developing green rating tools to that provide the building industry with the means to make these assessments. However, a common observation with all these rating tools is that they are very strong on environmental issues "green issues", but largely silent on social and economic issues. Note, whilst we have used the term "green building" in our paper title, we must acknowledge that this may have differing meanings, and in some cases the meaning has lost some currency due to the increasing disparity in tools and approaches.

For example, in the planning process "greening buildings" means developing the planning permit to satisfy "environmental sustainability legislative requirements and if we are fortunate enough to have an enlightened developer it will also mean putting policies in place for the ongoing environmental sustainability standards and environmental management plans for "green building" procurement and sustainable buildings specification requirements. For the designer this means either responding to the planning permit or developers green criteria or simply putting together a green building design that satisfies the most preferable green building rating tool.

There are also the "carbon foot print" designers who seek to establish "carbon neutral outcomes" for each design. For designers green buildings means something very different. Green building designers set out to consider all embodied energy in the development and delivery of a building and its ongoing life cycle green building efficiencies. This aspect of green building design suddenly takes off on a tangent to include such things as lighting, indoor air



quality, glare, numbers of showers and etc. This sudden shift is no longer about environmental sustainability but something very human and much wider in meaning than just a "green building".

In fact the term "green buildings" harks back to the very early concepts of "sick building syndrome" so well and effectively articulated by Annette P Altree-Williams, Stephen Altree-Williams and Nigel C March in their concise and excellently detailed Australian Encyclopedia of Occupational Health and Safety 1998. We have "re-discovered" that contemporary designs are no longer about "green building" but are also about social responsibility and equity as well as regulatory and good corporate governance and market driven objective. It is becoming increasingly evident that to retain tenants (and their staff) green leases are far more sought after than a cheaper B Class building even just on OH&S impact issues alone. Legislative and regulatory compliance is something that discerning tenants are prepared to accept above others.

It is in the stock of existing buildings where the greatest economic returns and reductions in GHG emissions can be made. But now (2008) "green building" for existing buildings means more than energy savings. It has become to mean the whole of building operation and remaining life of the property inclusive of the corporate governance social responsibilities and building compliance requirements. What is needed however is a single Report methodology for property owners of existing buildings which demonstrates the economic impact of the property on their portfolio against contemporary standards.

2. DEFINING ASSESSMENT METHODOLOGIES

Whilst not wishing to go over such well understood principles in detail we simply include the following to make the simple point that true assessment methodologies need to be holistic. Many of these are just focussed on "sustainability" or "green building issues" but it is not always clear in how they are directed at the planning, design, operation and maintenance or ongoing ownership of buildings.

The Need for Holistic Analysis

The Brundtland report, "Our Common Future", in its landmark findings created a new definition for the term, Sustainable Development; "*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*" In the report several global issues were analysed, including, human population and human resources; food security; species and eco-systems; energy; industry; the urban challenge; managing the commons; and peace, security, development and the environment; Brundtland (1987). This work clearly established the need for a transdisciplinary assessment approach to sustainability assessments.

A few years later the same holistic approach to assessing sustainability was popularised by the term, "the triple bottom line" (TBL) which was coined by John Elkington. This required that sustainability assessment reports moved more into the mainstream with many corporations voluntarily reporting the social, environmental and economic triple bottom line, Elkington (1994). From this point forward we will refer to sustainability assessments as TBL. More recently, as well as social, environmental and economic, the phrase the "three P's", people, planet, profit is often heard.

Whilst the sustainability analysis must put the subject through a prism, as it were, to separate out the "ethical", "economic" and "environmental" for separate consideration; it is also essential that the analysis considers the interconnectedness of these considerations.

Figure 1, below, gives a very simplistic representation of the interconnectedness of the social, environmental and economic considerations in a triple bottom line assessment. The aim for "green buildings" would be that they occupy the area in the centre, where all three items overlap.

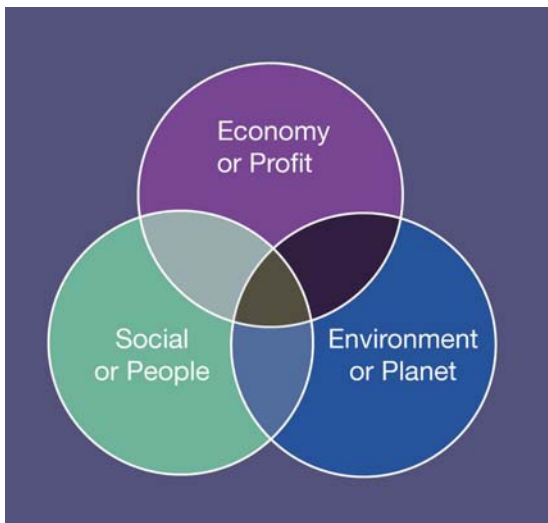


Figure 1 Simplistic Representation of Triple Bottom Line Assessment Criteria

The following section the key factors that help define the connectedness between the various issues being considered.

3. THREE WINDOWS OR VIEWS TO TRIPLE BOTTOM LINE ASSESSMENTS

There may be a temptation to approach triple bottom line assessments (TBL) in much the same way as a crime scene investigation - to preserve the site and meticulously examine the evidence. However, the fundamental holistic approach demanded by the sustainability concept requires that this is not the case. The "crime scene" needs to be enlarged to take into consideration three additional variables. These are the geographical boundaries, the time frame and the paradigm or "discourse" view. The first two of these have been extensively explored by the systems analysis discipline whereas the third has origins more from the social sciences.

In a way these variables, geography, time and discourse view, can be likened to lenses or windows, each offering a very different, expanded and more complex view of the TBL analysis.

Geographical Factors

The meaning of geography has been extended to include both physical geographical issues and material process flows throughout the supply chains.

Figure 2, below, gives a very simplistic representation of the geographical factors, and Table 1 below that, gives a brief summary of the applicable factors, issues and parameters.

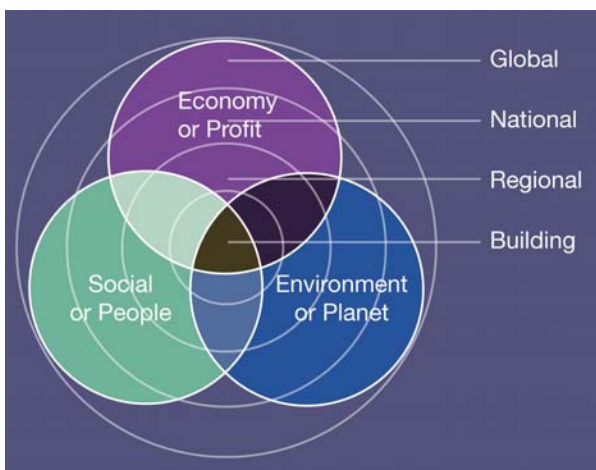




Figure 2 Simplistic Representations of the Geographical Factor

Factor	Issue	Parameters
Geographical	Physical	Global, National, Regional, Building
Geographical	Global Commons	Air, Sea, Fresh Water, Natural Resources
Boundaries	Stakeholders	Building Owners, Users (Tenants/Customers), General Public, Supply Chain
Boundaries	Social	Globalisation, Political, Regulatory
Boundaries	Energy	Scope 1 – Direct Emissions
		Scope 2 – Indirect Emissions
		Scope 3 – Indirect Emissions

Table 1. Brief Summary of Applicable Geographical Factors, Issues and Parameters

Time Factors

Another consideration is that of time, or when the analysis ought to be undertaken. Because the subject of the TBL analysis is a physical entity, namely a “building” it is also necessary to consider the phase during which the assessment is to be considered. This could be during the planning, design, construction, operation or disposal phases. Ideally all phases should be included in the assessment. This constitutes a whole of life triple bottom line assessment.

The traditional view on time lines for undertaking building assessments is generally that the assessment is a “freeze frame”, a picture, of the situation at the time of the assessment. Increasingly sustainability assessment methodologies are extending their view to include the various phases of the building life.

It is noted that the TBL approach can also extend the time scale to include for inter-generational equity issues; and for supply chain life issues, including end of life issues related to, for example, the residual time for harm for say toxins in landfill or pollutants in the atmosphere.

Life cycle and whole of life analysis is increasingly being utilised in the assessment of sustainability for buildings; but the use is generally confined to decision making during the design phase. By assessing the whole of life impact of products and services associated with buildings, more informed decisions can be made to increase environmental performance. However, it is apparent that life cycle and whole of life analysis is not appearing in building sustainability assessment tools.

Figure 3, below, gives a very simplistic representation of the time related factors.

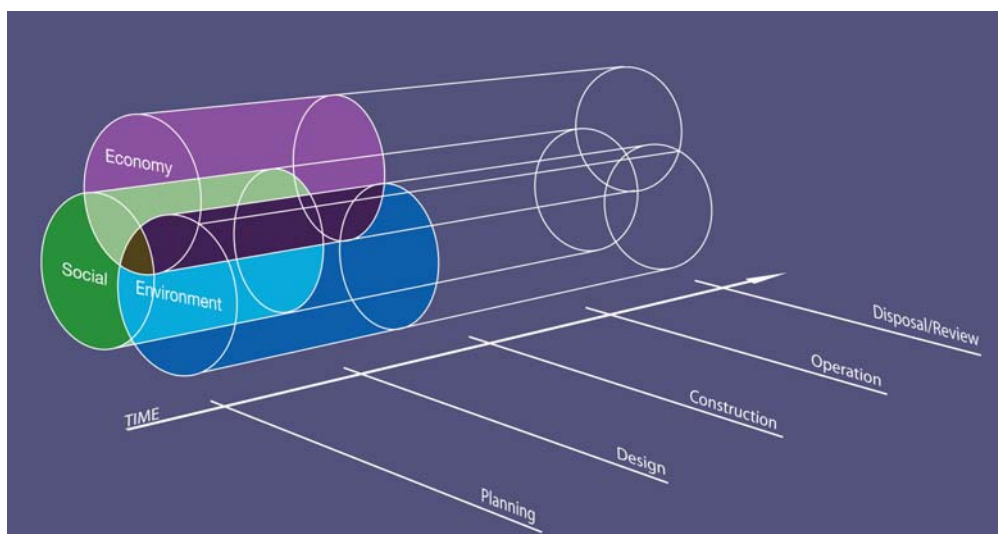




Figure 3 Simplistic Representation of Whole of Life Triple Bottom Line Assessment Criteria

It should be noted that the sustainability network of factors and relationships changes along the time axis; for example, the process starts with the planning stage where planning regulations, community consultation, project needs definition and business case development are critical; and progresses along a path where generally the issues move from the macro level to the micro level.

Discourse / Paradigm Views

The subjective nature of our assessments cannot be escaped. Whether we are considering environmental, social or economic factors, we do so through our own theoretical and philosophical constructs - our own world view – to deny this is amiss if not negligent. As our world views clearly influence our perceptions it is crucial that some critical appreciation of them is held and that they are clearly factored into the sustainability assessment.

Generally, in the context of sustainability, it is assumed that there are two paradigms, the old unsustainable paradigm and the new sustainability / ecological perspective. The problem is that this is not the case, there are in fact numerous paradigms and as we will show that if they are not critically understood they can lead to the design of quite distorted sustainability assessment tools.

Figure 4, below, gives a very simplistic representation of the discourses / paradigms:

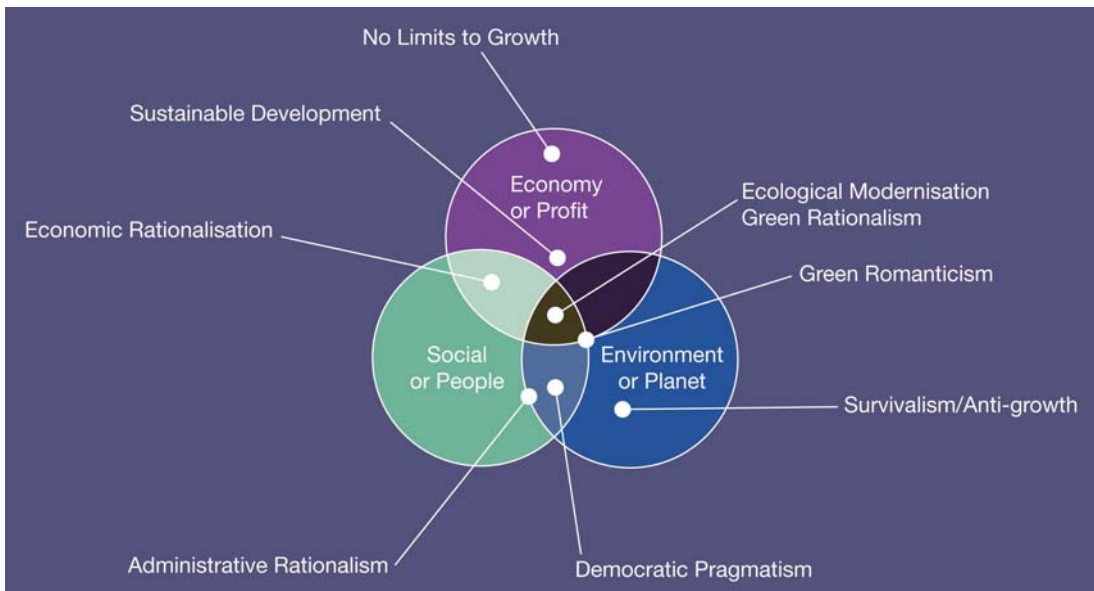


Figure 4. A Simplistic Representation of the Discourses / Paradigms

By way of example, in Australia it is suggested that the discourses of dominance are a mixture of; No Limits to Growth + Administrative Rationalism + Democratic Pragmatism + Economic Rationalisation + Sustainable Development.

Viewed from within these discourses the proposition that prescriptive green building assessment tools, such as those in common use in Australia, can be used to deliver green buildings is quite acceptable. But within this view the issues of poor planning regulation and poor product safety are not even considered.

Some examples of these include; the disparate and “bottom up” or “tail-pipe” approach to sustainability in the Australian planning process, Jackson (2008); the fact that non-renewable resource depletion is not included in many sustainability assessment tools (i.e. LEED in the US, BREEAM in the UK and Green Star in Australia); and that materials containing toxins, many being known carcinogens, that are heavily regulated in industry are sold into the public domain, where, albeit in dispersed form, they slowly poison us. An example of this is the use of PVC electric cabling which is banned in the UK and Europe due to the particularly nasty dioxins that are produced when it burns - it is still not banned in Australia.



4. ECONOMIC INTERPLAY CONSIDERATIONS

Whichever world view or paradigm is considered the one overarching fact is that economic factors dominate and colour every view. Take for example the social issue of work – “what is work”? The prevalent response would be along the lines that it is something we either pay for or get paid to do. Employment and GDP statistics tell us about work. This works fine, but it just happens to devalue, if not ignores, the work done in the voluntary/home context; or the natural capital and work provided by the environment. The main objections to the discourse of economic rationalisation, prevalent in industrialised societies, are exactly this – i.e. what it doesn't account for.

The following paragraphs outline some new and not so new developments that are increasingly broadening the scope or coverage of economic reporting, albeit, more at the private enterprise level than at the State / governmental level.

Money and Risk

The value of money has always been linked to material risk (as assessed by the insurance industry) and the credit risk (as assessed by the financial institutions). Increasingly both these institutions have been talking about the significance of “carbon exposure”, by which they mean the related climate change risk and the related exposure to energy costs and CSR factors. Some recent milestones in the increasing materiality of carbon in economic considerations are shown below:

- The Carbon Disclosure Project (businesses that report on carbon related risk) now has over US\$50 trillion under management (third of Global economy).
- Globally – Carbon Trading Market: 2005 US\$8.7bn, 2006 US\$31bn, 2007 US\$64bn.
- Recent creation of Carbon Funds – Morgan Stanley US\$3bn; Bank of America US\$20bn; City Group US\$50bn to name but a few.

Economic Reporting Initiatives

The collapse of Enron (US global mega utility) is an example that brought great attention to, and triggered the rolling out of regulations for the reporting of, non financial material reporting. The following are some recent initiatives, in addition to the carbon Disclosure Project mentioned above:

- The Sarbanes-Oxley Act - a piece of US compliance legislation, with global implications, which was signed off in 2002 and has the intention of preventing financial malpractice and accounting scandals such as the Enron debacle.
- Accounting Standard 1031 - within Australia, Accounting Standard 1031 provides guidance on quantitative thresholds for determining the materiality of an item such as environmental risk. The guidance suggests that an issue is material if it amounts to greater than ten percent of an entity's equity, asset and liability class total. The standard also provides that further indications of materiality may be evident from making assessments of items in an absolute and a relative context.
- Clerp 9 – the Corporate Law and Economic Reform Paper (CLERP 9) was released on the 18 September 2002 (Australian equivalent to the US Sarbanes-Oxley Act).
- UN Principles of Responsible Investing, 2006.
- Rapidly increasing percentage of businesses voluntarily undertaking Corporate Social Reporting (CSR).

We should remind ourselves that the rapidly increasing prevalence of CSR is not because being good is catching on, but because as mentioned above, it is reducing insurance and banking costs and increasing investment and customer confidence.



5. SOCIAL INTERPLAY CONSIDERATIONS

As mentioned above in our discussion on economic interplay it is the very fact that all human measuring and reporting approaches are and will always tend to be anthropocentric, that elevates social consideration above all others.

In this section we have focused our discussion upon exploring the reasons and significance for improved information sharing and benchmarking.

Making the Sustainability Problem & Solutions More Visible

At the most basic level we can consider how the human brain works. Koger and Scott (2007) discuss a branch of psychology called, cognitive psychology, and note that humans and their perceptual and cognitive mental systems evolved in a natural world where threats and dangers were mainly physical; and that we are therefore not adapted to respond or fear the largely invisible or slowly acting dangers we now face (toxins and carcinogens in water, air, food, clothes and the built environment).

Making the sustainability problem more visible and apparent is therefore a very important step. The effect of, for example, Al Gore's movie, *An Inconvenient Truth* was significant. In the months following its release the media reported the phenomenon of LOHAS (Lifestyles of Health and Sustainability) in the US, and market research reported in Wikipedia saying that about 30% of the US consumer population having some preference to buying green.

In Mikhail Gorbachev's book, *Manifesto for the Earth*, he states that in his agenda to reform the Soviet Union of its social, environmental and economic ills the number one policy was, glasnost, which means transparency, Gorbachev (2006). He believed if he could make visible the devastating environmental damage and social ills that as a part official he had seen, (these had been kept hidden from the general public) and let the people see it, he would have their mandate for the changes he would put in place – the rest is history...." How could reforms be put in train if one did not tell the truth about the actual situation, if people could not hear the truth about the past." Gorbachev (2006, p. 18).

Green Buildings and Information Sharing

There are numerous sources of information on green buildings, but most of them focus on new design. But this is not where the work is – over 90% of properties are comprised of existing buildings. There has also been a recent spate of existing buildings conferences over the last two years. A common theme from these was the need to find ways to better convert / tune up these old buildings into improved performers. But the most significant theme was the lack of information on the performance of existing buildings; and this included the performance at many levels, including energy, comfort, condition, lifecycle, and adaptability / suitability to change.

A further essential factor is that within the management of existing property there is a large amount of performance related data that is currently managed in a disparate manner. For example; as built drawings, O&M manuals, tenant guides and leases, fit-out drawings and specifications, essential services paper work, BMS generated performance data, financial data, insurance and valuation reports, asset registers etc. These data sources can be seen as a data mine for populating many of the TBL reporting criteria.

Globalisation and Standardisation

Global phenomena often require standardised solutions, e.g. Microsoft software, the Kyoto Protocol for emissions trading, etc. For the following reasons we see the same applies to property performance reporting:

- To enable consistent and simplified procedure for owners with international property portfolios.
- To enable consistent and simplified procedure for investors with international property portfolios.
- To enable consistent and simplified procedure for tenants with international property portfolios.
- To increase the pool of consistent benchmarking data.
- To widen the virtual property community beyond national and regional confines.
- To serve as a catalyst to spur on improved property standards in nations that may have standards below the dominant international norm.



6. OVERVIEW OF BUILDING SUSTAINABILITY ASSESSMENT TOOLS

There are a numerous buildings related sustainability assessment tools in operation around the world. However, most of these predominantly focus on environmental considerations, some also consider social issues but to a much lesser degree and none except for the Davis Langdon Property Performance Rating consider economic and social issues.

Table 2, below, provides a basic comparison of some of the buildings sustainability assessment tools in use around the world.

Criteria	Tool: BREEAM	LEED	Green Star	CASBEE	IPD Environment Code	Global Green Rating	DL Property Performance Reporting
Launch Date	1990	1998	2003	2004	2008	2008/09	2008
Domain	UK	US	Australia	Japan	Global	Europe	Global
Units Certified*	110808	1823	50	23	0	0	3013
Domestic	109450	540	N/A	N/A	0	0	0
Non-Domestic	1358	1283	50	Not Known	0	0	3013
Sectors Covered	11	8	7	Not Known	14+	Not Known	All
Planning	No	No	No	Yes	No	No	Yes
Design	Yes	Yes	Yes	Yes	No	Yes	Yes
Existing / Operation	Yes	Yes	Yes	Not Known	Yes	Yes	Yes
Assessment Criteria							
Environmental **	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GHG Protocol Compliant Emissions Measurement	No	No	No	No	Yes	No	Yes
Water & Waste Measurement	No	Yes	No	Not Known	Yes	Not Known	Yes
GHG carbon trading: Measurement and monitoring	No	No	No	No	No	Not Known	Yes
Social Equity**	No	No	No	No	No	Yes	Yes
Property condition and compliance	No	No	No	No	No	No	Yes
AS 4360 Risk management and continuous improvement control	No	No	No	No	No	No	Yes
Independent recommendations for Property to meet contemporary standards	No	No	No	No	No	No	Yes
Remedial Cost Estimates	No	No	No	No	No	No	Yes
International web enabled access	No	No	No	No	No	No	Yes
Uniformity and consistency across rating tools	No	No	No	No	No	No	Yes
Economic**	No	No	No	No	No	No	Yes

* As of February 2008

** Where there are a significant number of considerations

Table 2. A Basic Comparison of Some Buildings Sustainability Assessment Tools.



A very brief description of these tools is included below:

BREEAM

In the UK, the Building Research Establishment (BRE) launched their first commercial office environmental rating tool in 1990. This was called the Building Research Establishment Environmental Assessment Method (BREEAM) Offices. In 1996 the BREEAM rating tool was adopted in Canada and Hong Kong. It was also used to help develop national rating systems by the European Commission, Norway, Sweden, Netherlands and France.

Each BREEAM tool can provide separate assessments for design and procurement; post construction; and management and operation. Overall BREEAM also has tools for 11 different building typologies, albeit, one of these is called "bespoke" and can be used for any type or combination of building, BREEAM website (2008):

- Retail
- Industrial
- Schools
- Housing
- Courts
- Prisons
- Hospitals soon to be replaced with BREEAM Healthcare)
- Ecohomes (which has been adapted for England in partnership with the Department for Communities and Local Government for use in England as The Code for Sustainable Homes)
- Bespoke (tailored to any building not covered by a standard scheme)
- International (this version is based on any of the existing schemes which are adapted to assess any type of building and any region in the world).

LEED

LEED was first launched in 1998 and was based upon BREEAM. It was set up by the USGBC (US Green Building Council) to improve the way that the construction industry addresses sustainability by providing a simple easy to use label. It focuses on "market transformation".

LEED tool can provide separate assessments for design, management and operation, and existing buildings. Overall LEED has tools for 5 different building typologies, with a further two under development, LEED website (2008):

- New Commercial Construction and Major Renovation projects
- Existing Building Operations and Maintenance
- Commercial Interiors projects
- Core and Shell Development projects
- Homes
- Neighbourhood Development
- LEED for Schools
- LEED for Retail
- LEED for Healthcare (under development),
- LEED for Labs (under development)

Green Star

The first version of Green Star was developed in 2003 in a partnership between Sinclair Knight Merz and BRE. As BREEAM was used as the basis of the Green Star methodology the two methods are very similar. It focuses on "market transformation".

Green Star tool can provide separate assessments for design, as-built and existing. Overall Green Star has tools for 3 different building typologies, with a further three under development, Green Star website (2008):

- Green Star - Retail Centre v1
- Green Star - Education v1
- Green Star - Office Design v3
- Green Star - Office As Built v3
- Green Star - Office Interiors v1.1
- Green Star - Multi Unit Residential PILOT
- Green Star - Mixed Use PILOT



- Green Star - Healthcare PILOT
- Green Star - Office Existing Building EXTENDED PILOT

CASBEE

CASBEE (Comprehensive Assessment System for Building Environmental Efficiency) was first launched in 2004 by the Japan Sustainable Building Consortium. The methodology uses a score that distinguishes between environmental load reduction and building quality performance. It can be used to evaluate impacts throughout the life of a project. According to Professor Shuzo Murakami, Chair of JapanSBC, "... *The system meets both the political requirements and market needs for achieving a sustainable society.*" Under CASBEE, all building permit applicants must submit the required data, part of which is displayed on a public website. There are more than 80 CASBEE projects in Nagoya alone, Saunders (2008)

There are 4 different versions of CASBEE, but it is not apparent from their website for what building typologies they are for:

- CASBEE for Pre-Design, for projects at a very early stage to help with planning and site selection.
- CASBEE for New Construction to assess buildings during design and construction stages.
- CASBEE for Existing Buildings for buildings that have been occupied for at least one year.
- CASBEE for Renovation to help generate proposals for building upgrades and to assess improvements.

IPD

IPD is a UK based property sector information business. IPD has recently put together a new tool called the "Environment Code" for measuring the environmental impacts of corporate property. The Code is a good practice template for the collection, measurement and analysis of environmental information. Through use of common terminologies, it can be applied to buildings anywhere in the world. The Environment Code is a tool for the collection of information relating to the occupancy and use of corporate buildings; as such it is applicable to a wide range of property types and uses, for example, IPD website (2008):

- Offices
- Call Centres
- Data Centres
- Retail Stores and Shopping Centres
- Laboratories
- Warehouse and Storage Facilities
- Hotels
- Public Buildings
- Supermarkets
- Airports
- Hospitals
- Leisure Facilities
- Educational Buildings
- Industrial Buildings

Global Green Rating

AEW Europe, Axa Reim, Bureau Veritas, GE Real Estate Europe and ING Real Estate are launching a joint program aiming to develop a classification for the green buildings existing across Europe. The name for this initiative is the "Global Green Rating". Its objective is to assist owners and property managers to rank, mark and benchmark the environmental performance of their built assets, and to provide a common language for our asset and property managers and owners. The main items taken into account and evaluated will be energy, carbon, water, waste, health and transport. It was reported that this initiative would be launched before the end of 2008, Reuters (2008).

Davis Langdon Property Performance Report (PPR)

Davis Langdon has developed a "diagnostic methodology" to provide clients with uniform and consistent Property Performance Report recommendations to bring their property to contemporary standards.

PPR provides a unique, holistic and independent economic advice covering sustainability (green building criteria including LEED, BREEAM, GRI (SAM DJI), Green Star, and NABERS) plus the social equity regulatory compliance,



and remaining life criteria (CSR) criteria. This is an independent assessment audit and includes a triple bottom line gap analysis against all the aforementioned. It is an internationally applicable methodology and as such can be utilised by property owners who wish to compare each of their properties by city, state, region or internationally.

Property owners are provided with an independent Report on what needs to be done to increase property yields, develop refit options or advice to exit their existing properties.

The Audit assessments on-site cover:

- Environmental Sustainability; energy, waste and water usage
- Green House Gas Emissions using a property based carbon rating tool (by EC3 Global P/L)
- Social equity: issues such as OHS, DDA, Legionella, building environment including indoor air quality etc
- Building condition including RICS Inspection criteria and the UK Building Services Institute
- Remaining life assessment of services

The PPR automatically calculates an index for each property – the Property Performance Index (PPI). For each property owners their PPI is completed in the assessment of over 3 of their properties and establishes the benchmarks for their portfolio. These benchmarks include each of energy, waste, water, GHG, social equity, building condition and whole of building using a consistent weighting across each. This is done using EC3's unique internationally verified carbon calculators and software. The EC3 calculators are supported by over 17 Universities and are climate zone modified.

7. CONCLUSION

We have seen that the response to the need for the development of green buildings and the greening of existing buildings is often along the lines that there needs to be more green regulations and more, and perhaps mandatory, use of green assessment tools. This would appear to be the prevalent discourse on this subject and one that reflects very well the bottom up and tailpipe solution paradigm employed in market driven societies.

We can see that the improvement in the TBL performance of existing property can be achieved by a comprehensive CSR property assessment audit. This is not necessarily via increased hoops for industry to jump through, but rather by better employing the existing market incentives and in particular the innate strength of social characterises in the property sector.

Overall, we see that in practical terms improved sharing of information and availability of a uniform and consistent approach for property owners is necessary and that benchmarking is the key factor in enabling the transition to an economy, society and built environment. This means the delivery of assessments using a uniform and consistent approach to all CSR obligations if we are to achieve the effective interplay between economic and social impacts of green buildings and the true benefits of TBL improvements for property owners.