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The impact of sustainability on the investment environment

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Abstract

Purpose – The purpose of this paper is to investigate the key drivers affecting property investment decisions within a context of sustainability and how these drivers are likely to change the investment product landscape and the management of existing property investment portfolios.

Design/methodology/approach – Examples from the Australian property market are discussed in order to demonstrate how sustainability principles may form part of the wider agenda of corporate property investment strategy and social responsibility.

Findings – A full understanding of the impact of sustainability on the property investment landscape can only be found by adopting an holistic approach, including the behavioural effects of economic, social, ecological, policy and regulative environments.

Originality/value – This paper provides important new insights as to the effect that sustainability may have on future investment decisions and the future investment product landscape.

Keywords Economic sustainability, Cost benefit analysis, Social economics, Investments, Property finance

Paper type Conceptual paper

1. Introduction

The notion of sustainability is not new for the real estate investment community, with many leading industry players (including fund managers and developers) well down the path of adopting and implementing sustainability principles. Both Mansley (2000) and McNamara (2000) predicted the impact of pressure of ethical property investors on property companies to place a high level of importance on social and environmental issues. Within the academic published literature, a number authors have identified an increasing emphasis on corporate responsibility and an increase in ethical investing within the property sector (RICS, 2007; Sayce *et al.*, 2007; Jayne, 2000). More recently, the importance of sustainability has received unprecedented attention predominantly due to the growing global issue of climate change, which was highlighted with the release of The Stern (2007) Review.

The main aim of this paper is to provide an overview of the potential impacts of sustainability from a property investment perspective. In particular, attention focuses on investment performance, investment products and investment strategies. Examples from the Australian property market are used to highlight many of these issues.

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Section 2 of the paper provides a brief discussion on the concept of sustainability. Section 3 discusses the impact of sustainability on the property investment landscape. Outstanding issues are briefly discussed in Section 4 and a final summary and conclusion are presented in Section 5.

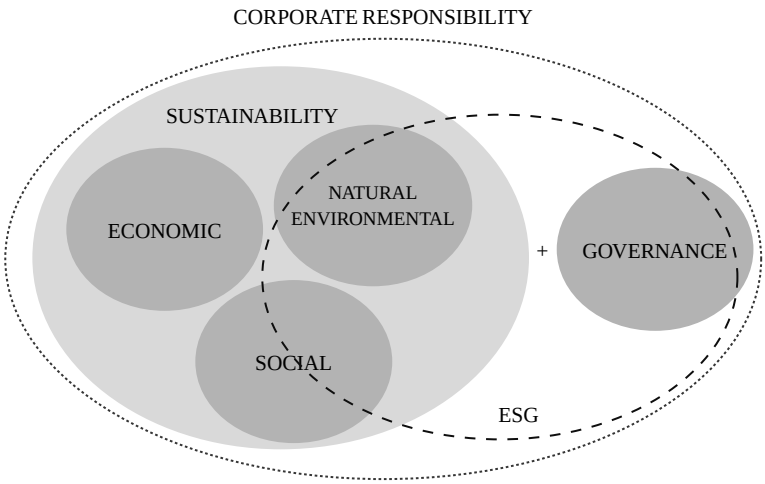
2. What is sustainability?

The issues surrounding sustainability within the property sector have been examined by a number of authors. Pivo and McNamara (2005) link sustainability with the concept of RPI or responsible property investment. They define RPI as:

> [. . .] maximizing the positive effects and minimizing the negative effects of property ownership, management and development on society and the natural environment in a way that is consistent with investor goals and fiduciary responsibilities.

Taking this definition and others within the literature, sustainability may be viewed as providing a framework for adopting investment principles which give joint consideration to the economic, social and the natural environments that effectively utilise resources for current and future generations. Thus, sustainability considers the three key elements of economic prosperity, social advancement, and environmental protection. With regards to the social environment, the emphasis is on changing the behaviour of property market participants to become more aware of day-to-day sustainable living. Figure 1 shows how these three key elements are nested within the sustainability agenda. Consequently, a question arises over which of these environments drive the sustainability agenda which can in turn create frustration when formulating sustainability policies.

Concepts confronting the investment community, such as corporate (social) responsibility and in particular RPI have resulted in investors demanding greater disclosure from companies. As shown in Figure 1, corporate responsibility includes not only sustainability but also matters relating to corporate governance, such as reporting and transparency. Environment, social and governance (ESG) on the other hand has a narrower agenda focused on the (natural) ESG aspects. Within the property investment context,



Source: CFS Research

Figure 1.
Corporate responsibility

corporate responsibility is synonymous with RPI. Taking these issues into account it is clear that sustainability has far reaching implications not only for property investment *per se*, but also for strategies related to corporate responsibility.

2.1 Sustainability and risk management

Sustainability by incorporating a range of intangible risk factors can be viewed as providing a holistic framework for risk management. Property investors can thus invoke sustainability for assessing risk across a variety of impact dimensions or parameters. Such parameters may include: the time dimension (either short-, medium- or long-terms); the reach factor (whether local, regional or global); consequence (whether mild, reversible, severe or irreversible), and the likelihood (i.e. low, medium, high). This approach can be viewed as a powerful tool when assessing certain environmental issues as global climate change (or warming). Figure 2 highlights this by showing three of the impact dimensions as axioms of a cube, where the cube encompasses the universe of sustainability issues. With respect to these parameters, the impact of global warming can be characterised as being long term, global in its reach and irreversible as represented by the top solid region of the cube. In this respect, climate change can be considered a subset of sustainability.

2.2 The economics of sustainability

From an economic perspective, sustainability provides a framework for incorporating external costs (such as environmental or social) not usually included in the traditional market price mechanism. External costs that have negative impacts are referred to as "negative externalities" where the marginal social cost outweighs the marginal private cost. For example, Figure 3 shows the price and quantity for producing, say, office buildings. The demand curve (denoted as "D") represents the marginal benefit of an additional unit of building produced. The supply curve also represents the marginal cost

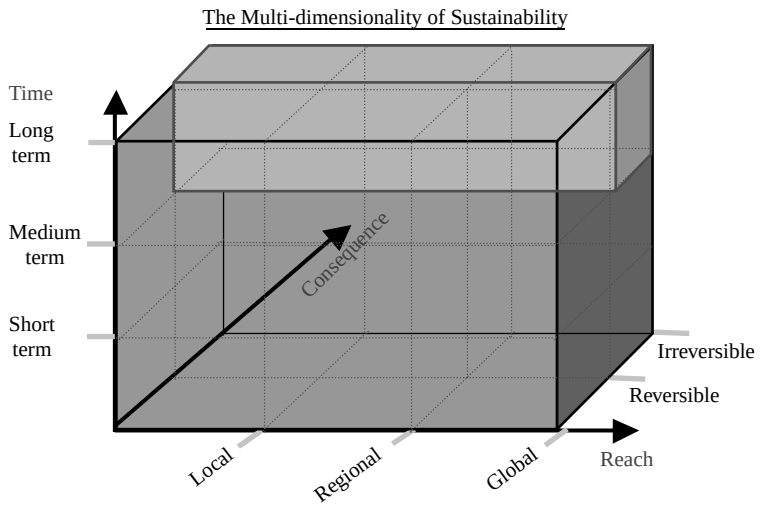


Figure 2.

Source: CFS Research

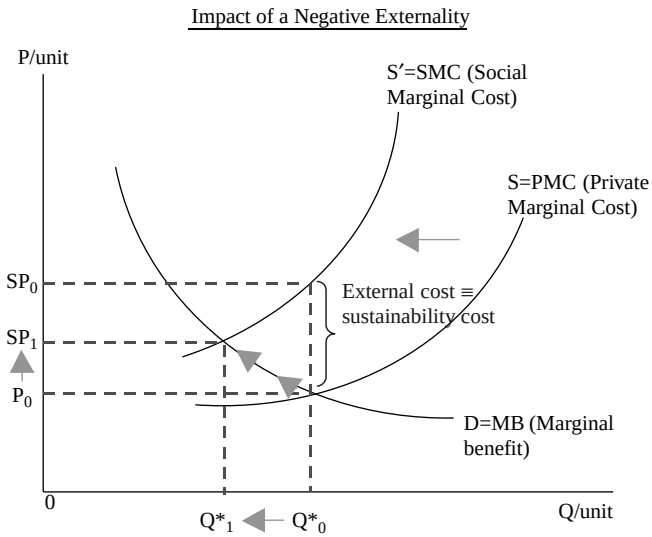


Figure 3.

per unit of production. Notably, the social and private costs will differ when external costs are present. Sustainability therefore has the ability to alter the economic cost or opportunity cost by incorporating externalities (whether they are environmentally or socially based) within the price mechanism. Internalising' such a negative externality (incorporating its price into the market price), should lead to a general rise in the market price and consequently lead to a reduction in output. This suggests that incorporating sustainability should deliver a more socially optimal outcome due to a more efficient market pricing.

The higher market price should provide the catalyst for greater incentive to undertake research and development and initiate investment in alternative technologies (that are tailored towards lower emissions, such as renewable energy). The big dilemma for the industry is how to place value or price on these external costs given they are input factors in general valuation models. (This is discussed in more detail later in the paper).

3. The impact of sustainability

While sustainability has gained considerable attention with regards to operational aspects of the property sector, little attention has been given to understanding its full impact on the property investment landscape. One approach to assessing this impact is to identify the main players within the market. The players are many and diverse, a reflection of the heterogeneity of the property sector due to its investment segments (AUS-REITs, unlisted wholesale funds and syndicates) as well as a vast array of products along the risk-reward space (core, enhanced, value-added, and opportunity). Figure 4 shows the different property environments potentially impacted by sustainability. These include; pure investment, the built environment, the regulatory environment and the external environment. It is anticipated that the interplay between these environments will provide an important role in fashioning property markets, especially the opportunity for knowledge transfer between the different players all possessing varying perspectives and

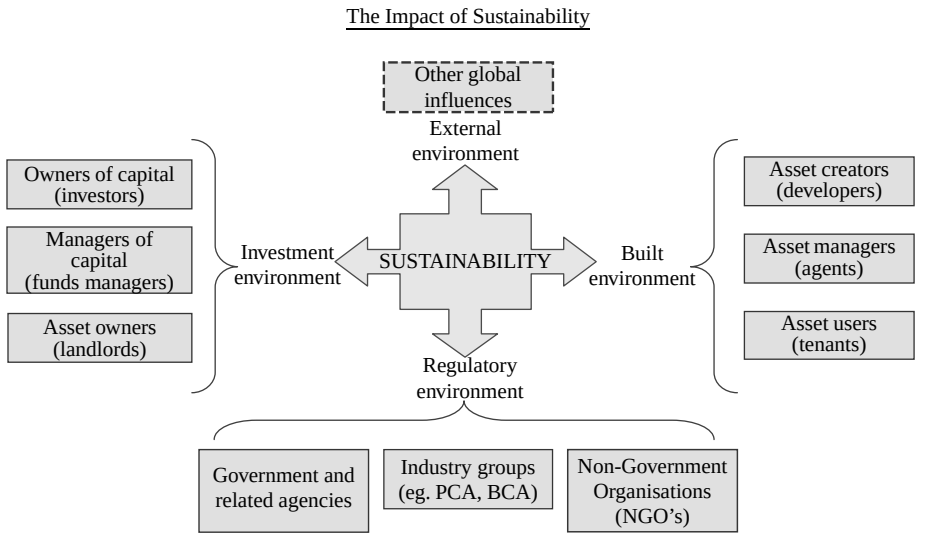


Figure 4.

information pertaining to sustainability. An important aspect relating to this is the alignment in the value chain between players on the basis of sustainability. For example, the establishment of green leases (now relatively popular in Australia) highlight how an effective engagement between property asset users (tenants) and property asset owners (landlords) results in effective sustainability outcomes. It can be argued that any property investment strategy failing to recognise the interrelationships between these environments and their respective players may well be deficient and lead to a suboptimal outcome. The following subsections set out a more detailed discussion on various environments.

3.1 Investment environment

A pertinent issue to be considered in the investment environment revolves around how the value proposition for an investment changes or is impacted by embracing sustainability. For example, how do market participants scrutinise and filter the relevant information sets and incorporate it into an existing investment framework?

The main players in the investment environment can be identified as the owners of capital (or investors), the managers of capital (also referred to as fund managers) and the asset owners (or landlords). Each of these is required to identify and measure the impact of sustainability on investment. As set out in Figure 5, the major impact areas to be considered when undertaking such evaluation include investment performance, investment products and investment strategy. Each of these areas is now considered.

3.2 Investment performance

In evaluating the impact of sustainability on investment property performance, Boyd (2006) proposes a triple bottom line approach. In this paper, investment performance (for both existing and new business) is evaluated by considering risk and return, property valuations and the cost of capital.

Investment Environment

PLAYERS	IMPACTS	EVALUATION METRICS
Owners of capital (investors)	Investment performance ■ Risk and reward parameters ■ Valuation – cash flows ■ Cost of capital (or discount rate)	Investment performance ■ Returns for assets incorporating RI ■ Availability of investment indices ■ Using transactional data or modified DCF model to account for externalities
Managers of capital (funds managers) Asset owners (landlords)	Investment products ■ Product offering ■ Nature of product offering ■ Product marketing ■ Product pricing	Investment products ■ Competitive product analysis ■ Scope out global metrics on RIs ■ Identifying investor demands for RIs ■ Trade-between short-term and long-term returns
	Investment strategy ■ Portfolio construction. ■ Asset allocation decision. ■ Investment mgmt requirements	Investment strategy ■ Portfolio analysis: RI versus non-RI ■ Segmenting space market statistics ■ Changing investment objectives for RI
	Corporate responsibility ■ Fiduciary duty ■ Business conduct–minimum level of corporate behaviour	Corporate responsibility ■ RI philosophy ■ Company disclosure (transparency)

Figure 5.

In the context of sustainable investment, the parameters of risk and return for properties are potentially set to change. Returns will either come under pressure or be enhanced whereas risk considerations are set to widen. These potential outcomes suggest the importance of the inclusion of a comprehensive risk appraisal. As the impact of sustainability within property investment appears to be in its early stages of understanding, there is still uncertainty as to how the parameter values of risk and return will vary over a given investment time horizon. This necessarily demands rigorous evaluation processes based on relevant and extensive data sets (with defined metrics) which are able to identify and quantify the effects of sustainability.

As previously mentioned, a fundamental issue relating to sustainable property investment is the accurate assessment of property valuations. To the frustration of many industry practitioners, there is currently no consensus on how to effectively embed sustainability principles within the valuation process. Intuitively, it appears that any valuation framework would need to adequately build upon the standard industry approach based on discount cash flow (DCF). This approach effectively takes into account information pertaining to space market fundamentals (such as rental levels and expected growth rates) and capital markets (such as capital flows and pricing variables). Reviewing the DCF valuation expression represented in equation (1), sustainability potentially will impact both the cash-flows (C_t) and discount rate (r_c):

$$P_0 = \frac{C_1}{(1+r_c)} + \frac{C_2}{(1+r_c)^2} + \frac{C_3}{(1+r_c)^3} + \cdots \sum_{t=1}^{n-1} \frac{C_t}{(1+r_c)^t} + \frac{\mathrm{TV}_n}{(1+r_c)^n} \qquad (1)$$

where $C_t = D_t(1+g_t)$, C_t is the estimated cash-flows paid at period t, g_t is the anticipated growth rate of income in period t and TV_n is the terminal value.

Focusing on the cost of capital or the discount rate, this can be neatly represented using the CAPM framework presented by equation (2). The simple model includes the risk-free rate (r_f) and a second term representing the market risk factor component. Many models have been modified to consider additional risk factors, represented by the third term $\beta_2' X$. Conveniently, this multi-risk factor model can also consider additional risks associated with sustainability. While it highlights the risk evaluation nature of the sustainability framework, it also emphasises the complexities present in the identification and quantification of relevant risk factors:

$$r_c = r_f + \beta_1[E(r_m) - r_f] + \beta_2' X \tag{2}$$

Sustainability can have either a direct or indirect impact on the discount rate. As mentioned earlier, sustainability can address a negative externality scenario which would have the tendency of adding an additional cost structure and uncertainty not previously reflected in general market pricing and risk. These negative externalities will ultimately have a direct impact on the discount rate, which is likely to rise (at least in the short-term). The vast reach of sustainability is in turn likely to adversely impact competing asset classes due to different industry exposures which potentially have an indirect impact on the cost of capital. The direction of this impact could be either favourable or unfavourable, depending on the relative risk exposure. As an illustration of this, it could be argued that the property industry is taking a leading role against other competing asset classes on RPI, and hence, is better equipped or prepared to deal with sustainability challenges going forward. This should ultimately be reflected in a relatively lower cost of capital. In essence, sustainability will directly impact the discount rate via influencing the risk-premia quantum.

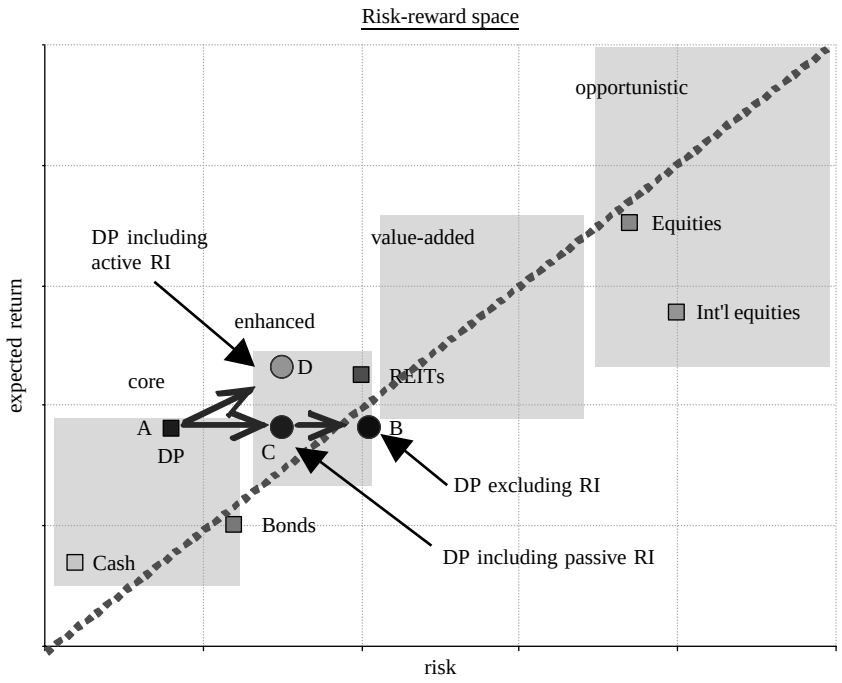
3.2.1 Impact on value: a pragmatic approach. Currently, in the Australian property industry, there appears to be a holistic approach adopted in the market valuation of sustainable buildings with valuers jointly assessing key items such as demand determinants, rentals, operational costs and risk premiums (in deriving a discount rate). Rental streams (level and growth rate) are driven by the tenancy profile and leasing structure. Tenancy profiles take into consideration the type of occupier (for example, government versus non-government) as well as retention and screen rules, while leasing structures give consideration to building ratings such as the Green Star and Australian Building Greenhouse Rating (ABGR) (www.abgr.com.au/) Schemes. If building specifications fail to meet stated criteria within these schemes, then there is the potential to adversely impact on rental growth. The effect of these rating tools utilised in Australia are expanded upon in a later section of this paper.

While the cost-benefit assessment of sustainability initiatives seems to be a necessary part of the evaluation process, there is evidence that the cost equation focussing on utilities (energy, water and gas) and associated efficiency gains is a primary industry focus when attempting to assess value. This may be because it is easier to estimate existing costs which are identifiable, as opposed to factoring in benefits (both social and private) that are more difficult to identify and quantify. As a result, the cost benefit analysis can be considered to be partial rather than a complete. With regards to the discount rate, key issues of concern to industry associated with the utilisation of an appropriate discount rate include certainty in preserving and enhancing the quality of net rental cash flows as well as assessing the impact on the risk premium. As the understanding of the impact of sustainability on real estate values matures through

empirical analysis, valuers and academics will be able to more accurately ascertain valuation tools to accurately assess the variables influencing value.

3.3 Investment products

In addition to the impact on valuation and investment returns, sustainability will also impact how property investment companies assess the nature of future investment products and associated marketing strategies. There are a vast array of investment products that are positioned within various segments (or investment styles) of the risk-reward space. These include core, enhanced, value-added and opportunistic investment styles. It will become essential to develop and/or (re) position existing investment products in line with RPI and changing investor demand. The product offering can either passively or actively adopt RPI principles. Products with passive RPI have the potential to mitigate the risks associated with sustainability whereas products with active RPI are aimed at not only mitigating risk but also increasing their market competitiveness. In illustrating this further, Figure 6 shows a stylised risk-reward diagram with the space segmented into different investment regions. A vanilla core type property product that carries no sustainability issues may well sit within the core region, denoted by the "A" square. If sustainability has a material impact on investment performance, but uncertainty exists as to its impact on return and no action is taken, then the product offering moves from points A to B. If RPI considerations are now incorporated into the investment offering, then it could either move to point C, where it predominantly attempts to mitigate risk or to point D,



Source: CFS Research

Figure 6.

where it not only addresses the risk but also exploits this risk in a manner which delivers an enhanced return.

From this scenario, it becomes clear that marketing has a major role to play in enhancing the demand for sustainable buildings and property portfolios. Marketing can affect such aspects as product differentiation, pricing strategies, and green branding. All these initiatives require an effective communication platform, including effective media campaigns. Such campaigns can only be fully effective with the support of a proven track record on such investments, which again requires a set of sustainability metrics.

3.4 Investment strategy

Portfolio construction, asset allocation decisions and investment management requirements are key considerations for any property investment strategy. The formulation of effective future strategic decisions, which take into account sustainability issues, will need to be tailored for both existing and new asset portfolios. The effect of sustainability on the construction of property portfolios will depend on the implementation of tools which can effectively screen or select on the basis of RPI as well as portfolio exposure. In addition, the risk associated with existing asset portfolios that are non-compliant with ratings standards will need to be assessed and managed. For instance, when considering asset allocation decisions this will require a review of the allocation rules which may not necessarily be solely based on popular measures such as risk-adjusted returns. An additional complexity is viewed as the ability to factor in the investment time horizon (i.e. short-term versus long-term) given that markets are not in equilibrium but rather in a transition phase of adopting and embracing the responsible investment paradigm, as shown in Figure 7.

3.4.1 Built environment. A focus of much discussion is the role of sustainability on the built environment. From an investment perspective, it is important to consider the interplay between the key market players; developers (or asset creators), asset managers (which include real estate agents), and tenants (the asset users). As shown in Figure 8, the major impact areas are anticipated to be construction, asset and property management and tenants. Aspects relating to these impact areas are now discussed.

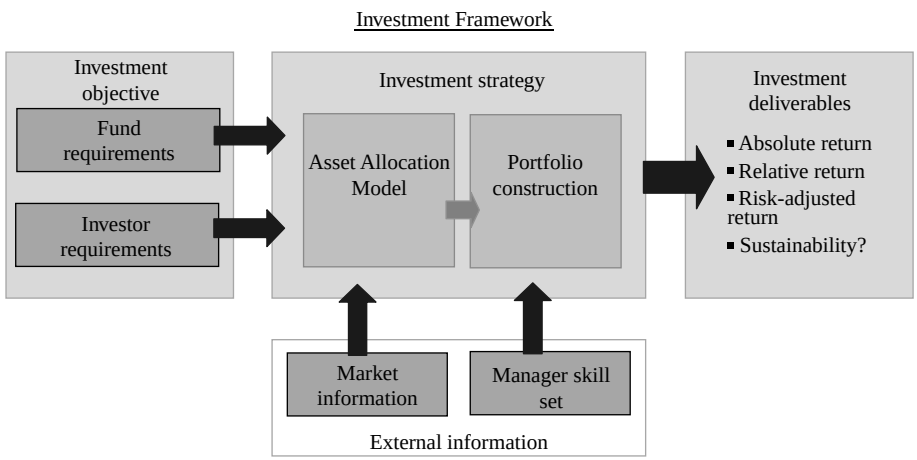


Figure 7.

Built Environment

PLAYERS	IMPACTS	EVALUATION METRICS
Asset creators (developers)	**Construction** ■ Employing new technologies in design and construction phases ■ New standards (eg. Green Star, BCA) ■ Urban redevelopment / regeneration	**Construction** ■ Specified in new buildings ■ Flag upgraded buildings ■ Analysis of CO_2 produced & embedded in buildings
Asset managers (agents)	**Asset managers** ■ Use of more efficient techniques in operations ■ Adopt risk-management practices	**Asset managers** ■ List of alternative practices and their costing / savings ■ Performance rating: ABGR & Green Star
	Property management ■ Initiatives to cut carbon emissions ■ Use of renewable energy source ■ Waste management & recycling ■ Water management ■ Indoor air quality	**Property management** ■ Cost/benefit analysis ■ PCA quality matrix ■ Utilisation indices (eg. NSW BASIX) ■ Performance index (eg. NABERS)
Asset users (tenants)	**Users** ■ Demand green buildings (slowly but growing) ■ Expect discount on occupying non-RI buildings, and impact on value	**Users** ■ Additional (quality) features in terms of amenities

Figure 8.

3.5 Buildings and rating tools

There have recently been a number of building codes, standards and rating tools introduced to Australia pertaining to sustainable buildings which have impacted on building construction and design decisions. As noted in Property Council of Australia – PCA (2006), Table I reports a variety of rating tools currently used in assessing Australian buildings, each tool is matched against a set of criteria to highlight its purpose. For instance, National Australian Built Environment Rating System (NABERS) is used to assess the performance of an existing building while the Green Star rating tool is commonly used to assess new buildings at the design or built stage. Notably, rating tools will differ in relevance across property sector (e.g. Green Globe 21 is commonly used by the hotel sector).

The various array of rating tools, relating to both the different types of participants in the market and the heterogeneity of property asset types, has tended to cause market participants a level of frustration and confusion. One suggestion is to rationalise these ratings tools to one overall rating tool with a series of sub-rating tools that are sector specific. Accordingly, these sector sub-rating tools are differentiated by assigning different weights to sustainability items that best reflect the characteristics of the respective sector.

3.6 New and existing stock

With the evolution and implementation of sustainability rating tools for buildings in the Australian market, there appears to be a need for differentiation between initiatives for new and existing buildings; with the latter representing the majority of property stock. Currently, new prime commercial buildings are being constructed with a minimum 4 star (Green Star/ABGR) rating or better, driven by demand from key tenants.

Sustainability issue	Basix	NatHERS	ABGR	Green Star	Green Globe 21	NABERS
Management				✓	✓	✓
IEQ				✓	✓	✓
Energy	✓		✓	✓	✓	✓
Transport				✓	✓	✓
Water	✓			✓	✓	✓
Materials				✓	✓	
Land/ecology				✓	✓	✓
Emissions				✓	✓	✓
Innovation				✓		
Waste				✓	✓	✓
Thermal	✓	✓		✓		
Occupant satisfaction				✓		✓

Notes: ✓ indicates criteria incorporated in rating tool; Basix = NSW sustainability index; NatHERS = The National House Energy Rating Scheme; ABGR = Australian Building Greenhouse Rating; Green Star = The Green Building Council of Australia (GBCA) Green Star; NABERS = The National Australian Built Environment Rating System
Source: PCA and CFS Research

Table I.
Rating tools

A key feature of these new buildings is that they embrace technologies which make them more efficient. Examples of these technologies include smart metering and efficient and effective building management systems. While many rating tool initiatives have been targeted towards new buildings, which some believe have encouraged the demolition of older buildings unnecessarily, the market is now seeking schemes that effectively address existing stock that is currently difficult to rate due to lack of data or with structural limitations for improvement. Some advancement is being made in this area by the Green Business Council of Australia (GBCA) (www.gbca.org.au/green-star/) with the development of a rating tool for existing office buildings. It appears that the implementation of these rating tools is accentuating the fragmentation of the commercial office market which has traditionally been subdivided into primary and secondary property markets.

Capital expenditure (or capex) planning is another area that requires consideration of sustainability initiatives. In terms of upgrades and refurbishments, this may require the implementation of high-technology products such as efficient lighting and air-conditioning systems, and more efficient designs and fit-outs. Marmot (2002) notes that sustainability is a driver of "future proofing". Indeed, the "future proofing" of buildings is becoming common place where future cost structures associated with sustainability are factored into capex planning. For example, current planning will take into consideration the expected future increase in energy costs given that current pricing is considered by many market participants in Australia to be relatively low. Overall, it is anticipated that planning for capex is likely to require an on-going upward adjustment to accommodate increased technology and efficient approaches to sustainability rather than a one-off increase in costs.

Management strategies relating to properties are also affected by sustainability initiatives. Consider that a number of property companies in Australia incorporate

schemes into their management strategies like "green leases" (where tenants conform to sustainability principles) and seizing opportunities based on lease expiries.

3.6.1 Regulatory environment. A key area impacting the construction of green buildings is the regulatory environment; Figure 9 shows this in the context of industry players, impacts and evaluation metrics. Regulation can take two broad forms: regulating on emissions produced by products or regulating the production process. The importance of this is that it directly impacts on companies' investments in capital equipment (whether it is machinery or buildings). As such, in Australia many companies are pushing for greater (federal and state) regulation to provide greater certainty surrounding investments decisions.

3.7 Federal and state governments

In Australia, the federal government has implemented a number of sustainable property initiatives relating to tenancy requirements, reporting, and natural environment policies. The Energy Efficiency in Government Operations (www.environment.gov.au/settlements/govermnent/eego/publications/eego.html) Policy document released by the government in 2006 requires government tenants with occupancy floor area requirements greater or equal to 2,000 square metres to occupy a building with a minimum rating of 4.5 stars ABGR or equivalent. In 2005 the Department of the Environment and Heritage released a document on the state of sustainability reporting (Australian Government, 2006) which was based on a survey of companies in the S&P/ASX300 index, top 100 private companies, and top 100 unlisted companies.

State governments in Australia are also following their federal counterpart. This is most noticeable in the area of tenancy requirements, where they have similar occupancy rules. Other initiatives evolve around carbon emissions, for example, the New South Wales State Government introduced the NSW Greenhouse (Gas) Abatement Certificates (www.greenhousegas.nsw.gov.au) initiative in 2003 aimed at

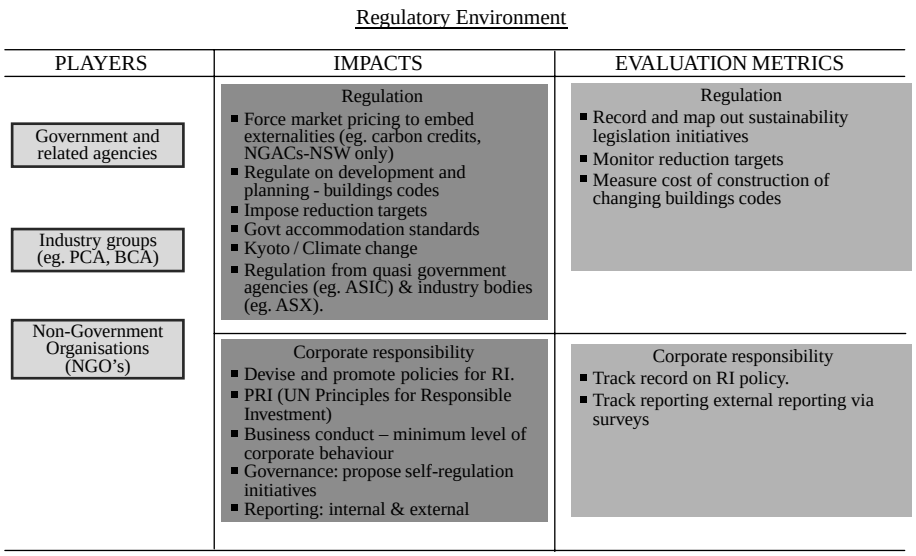


Figure 9.

encouraging businesses to reduce their greenhouse gas emissions as well as attempting to market price carbon.

3.8 Investment industry

A global investment industry initiative impacting the Australian property market is the United Nation's Principles for Responsible Investment (UN-PRI) (www.unepfi.org/work_streams/investment/principles/index.html). This was developed by the United Nations and world's largest institutional investors in 2005/2006. It is a voluntary program that encourages best practice in environmental, social and corporate governance issues. Six principles of UN-PRI include incorporating ESG issues into investment analysis/decision making; incorporating ESG issues in business policies; seeking disclosure on ESG issues by the entities in which we invest, promoting acceptance of UN-PRI within the industry; working to enhance effectiveness in implementing UN-PRI; and reporting on activities and progress towards implementing UN-PRI. Signatories include Australian pension funds (ARIA, HESTA and VIC Super) and fund managers (Portfolio Partners, Colonial First State, AMP and BT). Companies incorporating these principles will be better placed in gaining a competitive advantage over non compliant competitors by being able to attract both investors and tenants.

3.9 Property industry and business community

As previously mentioned, the property sector in Australia has been very active in embracing sustainability initiatives and its support has been instrumental in encouraging many sustainability initiatives which are being embraced by the major players within the market. Some specific examples include the PCA who has taken on a number of sustainability initiatives including running education programs to increase awareness of sustainability issues, creating a property sector fund to initiate abatement activity in existing buildings and establishing a number of minimum standards such as grey water standards for high-rise buildings. In addition to these initiatives, the PCA and Investment Property Databank Governance Committee (which reviews the property investment index before it is officially released) is considering investment indices which segment assets by sustainability metrics. This will enable the comparison of investment performance of green-star rated buildings versus non-green star rated property assets. The GBCA has also been an active player with recently developing Green Star rating tools for sectors other than office, such as retail shopping centres, health, education, convention and mixed use (including residential). Another industry group, the Investor Group on Climate Change Australia/NZ (www.igcc.org.au/), comprising of various investment industry players (such as, fund managers and investors) is currently considering the impact of climate change on the property investment sector. This group also supports the Carbon Disclosure Project: a global request by institutional investors for disclosure of information on Greenhouse Gas Emissions.

There are a number of other sustainability initiatives within the Australian property investment market. These include the establishment of a sustainability unit by many property fund managers with the responsibility to develop and support sustainability programs, targeted essentially at the asset management level. Another initiative involves reworking funds such that they qualify for investment indices oriented towards RI. For instance, two global indices with a sustainability focus include the Dow Jones Sustainability Index (www.sustainability-index.com/) and

the FTSE 4 Good Index (www.ftse.com/Indices/FTSE4Good_Index_Series/index.jsp). The Dow Jones Sustainability Index is assessed on environment, social, economic, biodiversity and stakeholder management. The FTSE 4 Good Index is aimed at measuring the performance of companies that meet Corporate Responsible standards. Many Australian real estate investment trusts (AUS-REITs), such as Commonwealth Property Office Fund and CFX (CFS Retail Property Trust) have been included in these indices.

In the area of reporting, many AUS-REITs and unlisted wholesale real estate funds are beginning to produce stand-alone sustainability reports with the ability to translate the cost-benefit of many sustainability initiatives into standard financial valuation measures. It is anticipated that many more sophisticated strategies that attempt to address sustainability issues will be incorporated in the future as businesses realise the impact on their competitiveness and profitability.

4. Outstanding industry issues

As illustrated in this paper, the Australian property investment community is working at an unprecedented rate to address and understand issues associated with sustainability; however a number of issues can be identified as inhibiting the process. These issues include data collection and analysis, the development of responsible investments, pricing and valuation, standardisation in rating tools and regulation.

Data collection and analysis remains a key obstacle in effectively evaluating sustainability principles. More specifically, the issues relate to adequately identifying key performance indicators (KPI) and the measurement of their impact on investment. One way to do this is for industry leaders to get together and collectively decide what KPIs are required and set up a data management system for data collection and warehousing. This could be facilitated via an industry body such as the PCA.

With regards to product development, while there is much discussion on tailoring products to take account of sustainability, it is envisaged that sustainability will become part of a mainstream management process that delivers to the investment market responsible investments.

As highlighted in the paper, there are many rating tools currently available in the market for evaluating buildings. While these tools attempt to address different building types, they also give rise to confusion in the industry in deciding which rating tool to use. What is required is a consistent framework for identification, reporting and evaluation, but also robust that it accommodates for the heterogeneity of property assets.

Regulation appears to be another crucial driver of responsible investment. Notably, the debate as shifted from if legislation will be enacted to when and in what format or structure. While various levels of governments are active in this aspect, there approach appears to be piece-meal and uncoordinated. There is an opportunity here for industry leaders to become more proactive in their engagement with governments to try and develop holistic regulatory solutions that are consistent across state jurisdictions. In addition, the enactment of legislation will place greater certainty to investment decisions that need to be made now.

A final issue relates to pricing and evaluation. While this is an area of much debate and discussion, three aspects are worth highlighting. The first relates to the pricing of assets versus pricing at the investment level. The second issue requires new and or

modified concepts that can be used to effectively evaluate risk. The third relates to the assessment of risk factors. On this front, the industry still struggles to develop any comprehensive solutions.

5. Final remarks

The topic of sustainability gives joint consideration to the three key elements of economic prosperity, social advancement, and environmental protection. However, this paper has sought to demonstrate that sustainability principles form part of the wider agenda of corporate property investment strategy and social responsibility. Consequently, a full understanding of its impact can only be found by adopting a holistic approach, incorporating the behavioural effects of economic, social, ecological, policy and regulative environments. As shown by Figure 4 in this paper there are numerous interrelationships that need to be understood and considered thoroughly.

The importance of sustainability on the corporate environment is reflected by the growing number of investors seeking companies to adopt sustainability as part of pursuing best-practice. The behaviour of these investors tends to indicate an implicit expectation of an ultimately improved investment performance.

There are many key challenges for property managers, investors and academics in appreciating the full impact of sustainability on property markets and future corporate investment. One of these challenges includes the accurate pricing and valuation of responsible investments and developing strategies for managing risks and converting these into business opportunities. Consequently, there is a competitive advantage for industry players who effectively embrace responsible investments.

References

Australian Government (2006), *The State of Sustainability Reporting in Australia 2005*, available at: www.environment.gov.au/settlements/industry/corporate/reporting/survey.html

Boyd, T. (2006), "Evaluating the impact of sustainability on investment property performance", *Pacific Rim Property Research Journal*, Vol. 12 No. 3, pp. 254-71.

Jayne, M. (2000), "The environmental, management of industrial estates", *Proceedings of the 2000 Annual Conference for the Association of Chief Estate Surveyors (ACES)*.

McNamara, P. (2000), "The ethical management of indirect control – an internal perspective of SRI", *Estates Gazette*, Vol. 47.

Mansley, M. (2000), "Into the ethics of things", *Estates Gazette*, Vol. 47.

Marmot, A. (2002), "Future proofing: key trends influencing the future of the workplace", *Research Perspectives*, available at: www.occupier.org/papers.htm

PCA (2006), *The Sustainability Tools Pathway: Your Guide to Green Building Rating Tools*, Property Council of Australia, Sydney, September.

Pivo, G. and McNamara, P. (2005), "Responsible property investing", *International Real Estate Review*, Vol. 8 No. 1, pp. 128-43.

RICS (2007), "Financing and valuing sustainable property: we need to talk", *Findings in Built and Rural Environments*, April.

Sayce, S., Ellison, L. and Parnell, P. (2007), "Understanding investment drivers for UK sustainable property", *Building Research and Information*, Vol. 35 No. 6.

Stern, N. (2007), "The economics of climate change: the stern review", available at: www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm

Further reading

Lash, J. and Wellington, F. (2007), "Competitive advantage on a warming planet", *Harvard Business Review*, March, pp. 95-102.

McTaggart, D., Findlay, C. and Parkin, M. (1999), "Externalities, the environment and knowledge", *Chapter 18 in Economics*, 3rd ed., Addison-Wesley, Reading, MA.

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