

Green Leases in Australia: Current Trends and Issues

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Abstract

Purpose: Building green is required for environmental sustainability and is now also proving financially advantageous. However, although a commercial green building may be constructed/refurbished to high environmental design standards, the green lease is paramount in operating the building in a sustainable manner. This paper presents an examination of the trends and issues regarding green leases in Australia.

Design/methodology/approach: Data and information for the study were obtained from academic literature, government documents, building and property industry reports, and sample green leases. From these sources was extracted a conceptual exposition of the significant themes regarding green leases and their relationship to building green and achieving sustainability.

Findings: The government is leading by example by using green leases (comprising 30% of the office market) as either landlord or tenant. Corporate reporting requirements and environmental sustainability regulations will also encourage adoption of green leases by the private commercial sector. The growing use of tools for rating environmental design and performance will necessitate the use of green leases as the mechanism for ensuring the establishment and maintenance of building environmental performance. Green office buildings with environmental ratings provide an asset value and return advantage over non-rated office buildings, and green leases will therefore be a means to protect/enhance asset values and returns for property investors. All these drivers will lead to the increasing use of green leases in Australia.

Implications: There is a need to: better match the assessments given by different green building environmental rating tools; improve the consistency of environmental ratings across buildings to provide better information regarding green lease targets; match green lease targets/benchmarks more closely to rating tool parameters; and establish environmental components in green leases other than those of energy and water (e.g. indoor environment). There is also a need to better understand the drivers influencing the landlord-tenant relationship in the private commercial sector

regarding environmental performance/impact, and the role of the government in influencing lease trends in the commercial market.

Originality/value: The study establishes the central importance of the green lease in the Australian commercial property market. Its centrality stems from its backward link to green building environmental rating tools and its forward links to environmental performance/sustainability and the protection of investors' returns.

Keywords: green leases, green buildings, environmental performance, rating tools, Australia, government, sustainability

Paper type: Conceptual / Review

Introduction

The production of environmentally sustainable buildings has required a reinvention of building design processes to incorporate consideration of economic, environmental, and social impacts and costs across the entire life cycle of a building. In Australia, green building initiatives are being motivated by various stakeholders, including government, building owners, tenants, conservation organisations, socially responsible businesses and investors, and the property/building industry. A green building is designed and operated with various aims in mind, including: reducing energy consumption, water use, and waste production; using low maintenance, environmentally benign building materials; providing comfortable and healthy indoor environments; and improving occupant health and productivity. Currently, the major concerns in Australia that are influencing the design of, and demand for, green buildings are water shortages and rising energy costs (Davis Langdon, 2007). There are also international obligations regarding carbon emissions to consider. The Federal Government of Australia has taken a strong lead in green issues, through policy, regulation, and its own example such as the requirement that buildings leased to a government agency or department must be done using a green lease (MCE, 2010). In addition, stakeholder demands and expectations concerning environmental performance are continuing to rise, and businesses are seeking to be employers of choice and retain staff (Hilderson, 2004).

To operate effectively in this context, organizations (including government departments and large corporates) in Australia are increasingly being required to demonstrate proactive management of environmental aspects in their business activities including in the operation of buildings, whether they are owner or occupier. Just as the production of environmentally sustainable buildings has required a reinvention of building design processes, the operation of these same buildings will require a similar revolution in building performance measurement and management processes. Developments in this green operational revolution are now proceeding at

pace, including the increasing adoption of green leases. A green lease establishes a legal agreement between the landlord and tenant(s) of a building regarding the building's environmental performance in such aspects as energy use, emissions output, water use, and waste production. The green lease assumes central importance in the sustainable use of commercial buildings, as it provides the means for setting environmental performance targets, establishes the mechanisms (e.g., an environmental management plan) through which the targets can be achieved, and provides ways for dispute resolution concerning, for example, the revision or non-achievement of targets.

With the foregoing context, this paper aims to provide an examination of green leases/leasing in Australia, with a view to identifying trends, developments, and issues. Particular attention is paid to the relationship between green leases and building environmental rating tools, and to the role played by government through its own sustainable behaviour, including its use of green leases.

Research Methodology

Data and information for the study were obtained from various complementary sources, including: academic literature on various aspects of green building; government documents describing policies, programmes, and initiatives; building and property industry documents and reports; organization websites; sample green leases and schedules; interviews with industrial and government contacts; and the author's own experience in the green building industry. The data and information were synthesized to produce a conceptual exposition of the significant themes and issues with regard to green leases and their relationship to building green and achieving sustainability.

The paper continues by giving a background to building green in Australia, including the costs and benefits involved and how green buildings are assessed for environmental features and performance. Green leases are then examined, including their application within the Australian sustainable property market, followed by a detailed exploration of the current issues, developments, and emerging trends. The paper concludes by identifying the key points and implications.

Building Green in Australia

The Green Building Council of Australia (GBCA) presents a strong case for building green in Australia (GBCA, 2006). The findings show that green buildings can deliver: a reduction in annual operating costs from \$120-\$60 per m² via a 60 % reduction in water and energy consumption; a 10 % increase in market value of asset; higher rents by 5-10%; higher occupant working productivity (1-25 % increase); and lower staff turnover. The GBCA estimates that the cost premium to build green should be < 3 % over the costs of standard construction. This makes the

“green premium” for a central business district office building < \$100/m². In contrast, it would need only a 2 % increase in productivity for an occupant worker with an annual aggregate salary of \$100,000 and occupying a floor space of 20 m² to yield a saving of \$100 /m²/year. For energy cost-saving, at 20 cents per kilowatt hour, a 50 % reduction in office building energy consumption from 200 kw/hr/m² saves \$20/m²/year. A more recent GBCA study (GBCA, 2010) found in a survey of Green Star rated buildings that the average additional cost to build green was 10%; however, 12% of the buildings had zero additional costs and 10% (all small buildings) had 35% additional costs. For large (>40,000 m²) buildings, none went over 5% additional costs.

Another recent analysis of the costs and benefits of building green in Australia (Davis Langdon, 2007) provides not dissimilar results. Modelling using parameters applicable to a large office building indicates that, at present, the impact on green construction costs (compared with standard construction) is 3-5 % for a 5-Star rated building and 9-11 % for a 6-Star rating (see Section 0 for rating tools). These equate to “green premiums” of \$98/m² and \$203/m² respectively. The additional gross lease rental needed to cover these costs for a 5-Star building is modelled to be cancelled by a productivity rise of around just 1.5 %.

The Range of Benefits

Various studies have indicated the beneficial aspects of a building’s green characteristics. Benefits to organizations of building green may include water and energy savings, lower operating and maintenance costs, reduced risk of obsolescence, higher building asset values, ability to command higher lease rates, lower tenant turnover, higher occupancy rates, improved attraction and retention of workforce through improved working environment, improved occupant health and productivity, and better customer relationships (GBCA, 2006; Davis Langdon, 2007; Miller et al., 2008; Miller and Pogue, 2009; IPD, 2011).

Characteristics of buildings and their indoor environments influence occupant health including the occurrence of respiratory illnesses and sick building symptoms (Fisk, 2000). There is increasing evidence that well designed buildings also contribute to occupant productivity (Leaman and Bordass, 1999). Productivity can be enhanced by increases in worker well-being, by reduced amounts of sick leave, and by a reduction in time during which sickness diminishes workers’ performance while at work (Fisk, 2000). Leaman and Bordass (2007) suggest that productivity gains of up to around 20 % may be attributed to the effects of building characteristics on occupants. The pertinent variables include: comfort and personal control thereof; ventilation type and the size, depth, and shape of the building; and the intent of design and the appropriate use of the technologies by occupants. The key factors associated with occupant comfort and productivity are the thermal environment (temperature, humidity level, and ventilation), air quality, and the types and level of ambient lighting. In Melbourne, the 10-storey council building (Green Star rating of 6-star) is expected to give the City of Melbourne council a 4.9% increase in staff productivity and

reduced sick leave, reckoned to save more than 1.1 million dollars per year (Henderson, 2006).

Financial Green Advantage

It is now becoming increasingly apparent that any cost premium in building green (GBCA, 2006, 2010) is being more than returned by better rents and higher valuations (Miller and Pogue, 2009; Property Council of Australia, 2009; Chegut et al., 2010; GBCA, 2010; IPD, 2011). It would seem that green buildings are becoming more valuable than standard buildings, especially when the figures are calculated taking into account their longer lifespan, reduced replacement schedule, and lower operating costs (Davis Langdon, 2007; Ries and Bilec, 2006). It is such aspects of green buildings that appeal most to real estate investors: the correlation between buildings' environmental features/performance and higher investment returns. Investors expect higher returns for improving sustainability and for the level of certification on the environmental performance of the buildings they own. However, until recently, there has been a lack of hard evidence to quantify the relationship between environmental performance ratings and the investment performance of building assets. Investment Property Databank (IPD) (www.ipd.com) provides research and delivers property indices for the Property Council of Australia, the leading advocate for Australia's \$600 billion property industry which represents the nation's major investors, property owners and developers, and the industry's professional service and trade providers. An IPD study of the Australian office market compared rental and capital value for a sample of 84 offices between buildings of lower- and higher-rated environmental performance (Property Council of Australia, 2009). The results showed that rental values increased at \$20/m² (September 2007 to September 2008) for higher-rated energy efficiency buildings compared with \$15/m² for lower rated buildings. The capital value per m² for higher-rated office buildings increased by 9.2% compared with 7.5% for lower-rated. Vacancy rates were also lower by 0.7% (i.e. by 70 basis points) for the higher-rated buildings.

A more recent IPD study of the investment performance of green buildings with respect to their environmental ratings for 570 rated buildings shows a clearer advantage of "green-ness" (IPD, 2011). Property asset valuation data included returns, capital value, rents, and vacancy rates, and the asset rating tool data comprised ratings given by Green Star, NABERS energy and NABERS water. For Green Star 4-6 star rated buildings, the annualized 2-yr return for the office market was 5.6% compared with 1.6% for non-rated buildings, and for NABERS energy was 5.4% for 5 star, 4.4% for 4 star, and 1.6 % for unrated, and for NABERS water was 5.5% for 4.5 star, 1.8% for 3 star, and 1.6% for unrated. The analysis for rentals and vacancy rates is not yet complete but should make interesting reading when it is released. The overall study indicates that the claims of green advantage in investment value are real and significant. Recent international studies are now starting to show that a building's green characteristics have a significantly positive impact on rental prices, of 10-20% premium over conventional buildings (Miller and Pogue, 2009; Chegut et al.,

2010).

Environmental Rating Tools Used for Assessing Green Buildings

There are two major tools available to guide, assess, monitor, and control the design and operation of buildings in Australia in terms of their environmental performance and impact. The Green Star Rating (GSR) concerns the rating of a building at the design and construction phases, based on its features and attributes. The National Australian Built Environment Rating System (NABERS) gives a rating based on the actual (measured) environmental performance and impact of a building irrespective of its green design features.

Green Star Rating

With regard to delivering environmental improvements in the building/property industry, the GBCA (www.gbcaus.org) was set up in 2002 to promote sustainable development and the transition of the property industry by supporting green building programs, technologies, design practices, and operations. In 2003 the GBCA instituted the Green Star environmental rating system, the aim of which is to assist the building industry in its transition to sustainable development by establishing environmental measurement criteria appropriate for the Australian marketplace and environmental context. The system sets a standard of measurement for green buildings in their design and construction phases, and considers building life-cycle impacts. The rating can be applied to new buildings or to existing buildings undergoing refurbishment. The ratings establish how the premises are likely to perform under ideal circumstances based on design information and management processes. The rating system promotes reduced energy consumption, and stricter criteria for a wide range of environmental impacts, including greenhouse effects, water conservation, material selection, waste management, ventilation, air quality, lighting, and noise levels. Green Star differs from other overseas systems such as BREEAM and LEED in several respects including its categories of assessment criteria and the weightings given to them (Reed et al., 2009).

For commercial office design and construction, projects are evaluated against eight environmental impact categories and an innovation category. The categories include indoor environmental quality, transport, energy, materials, water, emissions, and ecology. Within each category, points are awarded for specific sub-categories (e.g. for emissions, the subcategories include refrigerants, insulation materials, water discharges, and light pollution) that demonstrate a project has met the overall objectives of Green Star and the specific criteria of the relevant rating tool. Points are weighted and an overall rating is calculated for the project. As of 2009, there were 107 buildings that had been Green Star rated and operating for at least one year in Australia; and 11% of Australia's CBD commercial office buildings are Green Star certified (GBCA, 2010).

Although the rating scale ranges from 1 to 6, the GBCA certifies only buildings that achieve a rating of 4, 5, or 6 Stars. A 4 Star Green Star Certified Rating signifies "Best Practice." A 5 Star

Rating signifies “Australian Excellence.” A 6 Star Rating signifies “World Leadership.” Green Star certification requires a formal process; however, any individual or organisation can freely download and use the Green Star tools (including Xcel™ spreadsheets for assessing ratings) from the GBCA website to examine its own building/project environmental features and characteristics.

National Australian Built Environment Rating System (NABERS)

NABERS (www.nabers.com.au) is administered by the New South Wales Office of Environment and Heritage. The system provides a rating based on the actual environmental performance and impacts of an existing building irrespective of its green design features. It therefore contrasts with the AGBR scheme which rates feature-based environmental aspects/elements of building design and construction.

The predecessor of the NABERS energy tool was the Australian Building Greenhouse Rating, an energy rating tool set up in 1998 and administered nationally by the Department of Energy, Utilities and Sustainability. The tool rates a building according to its measured performance using 12 months of energy supply-use data, with a view to helping commercial buildings minimise energy use, minimise greenhouse emissions, and to gain competitive and marketing advantages for energy-efficient, low-emission buildings. The scheme to 2011 has rated buildings from 1 to 5 stars with 4 stars representing excellent energy/emissions performance and 5 stars representing exceptional performance.

The NABERS scheme incorporates the “NABERS Energy” component in a suite of components that currently also include NABERS Water, NABERS Waste, and NABERS Indoor Environment, each of which is graded from least efficient (one star) to best practice (5 stars). A 5 star building for energy use and emissions (emissions of $<135 \text{ kg CO}_2/\text{m}^2$) is exceptional due to integrated design, operation, management, and fuel choice. A new building or lease should meet this 5 star standard to ensure its long term competitiveness and also to benefit the environment.

There are several separate rating systems available, including one for office buildings (“base building rating” covering the environmental impacts of the activities and services supplied/controlled by the landlords/operators of the buildings) and one for office tenancy (“tenancy rating” covering environmental impacts of the activities that are under the control of the office occupants (tenants)). Other systems cover hotels, shopping centres, and homes. Using online tools, owners or occupants of premises can input data and obtain their own rating for any component; however, an official rating for a building can only be obtained via an accredited assessor. Overall, as of late 2011, 60% of Australian office space has been rated with NABERS energy, with about 5% of rated buildings achieving a 5 star rating.

Recently, the NSW Office of Environment and Heritage and has been consulting with industry regarding several issues. The national administrator has sought submissions on a proposal to “future-proof” the NABERS Energy for Offices rating tool, by modifying its traditional

five-star rating scale in order to encourage innovation and improving standards of best practice. A NABERS position paper (NSW Office of Environment and Heritage, 2011) canvassed three options: recalibrate the current 5 star rating scale to make 5 stars equal zero net emissions; extend to 6 stars in early 2011 and 7 subsequently if/as needed; and extend to 7 stars (zero net emissions) in early 2011. Twenty-four submissions were received from various stakeholders including city councils, the GBCA, large corporates, lawyer firms, property managers and leasing groups, and sustainability organisations. A perusal of the individual submissions (NSW Office of Environment and Heritage, 2011a) indicates several areas of criticism, including the lack of a clear policy objective behind the re-grading, the possible loss of public confidence in the accuracy of the NABERS energy rating tool, problems with inter-State differences in the amount of energy reduction needed to achieve Star ratings beyond 5 Stars, and how/if other rating tools (e.g. for water, waste) would be adjusted to align with the energy tool. As of November 2011, the rating tools for energy and water have been extended to 6 stars. A 6 star rating represents a 50% reduction in greenhouse gas emissions or water use from a 5 star rating. The rating scales for NABERS Waste and Indoor Environment will be extended by mid-2012.

Green Leases and their Importance

A green lease is a legally enforceable agreement between the landlord and tenant of a green building which ensures that the operation of the building is ecologically sustainable and minimises environmental impacts. Green leases originated in Australia as a basis for monitoring and improving energy performance and incorporate ecologically sustainable development principles. Green leases are being promoted by the federal government because it involves commitments from both building owners and tenants. In the national green lease policy (final draft), MCE (2010) states that “a green lease, in addition to setting out the usual rights and obligations found in leases, provides a management framework for shared environmental commitment and places obligations on a building owner and government tenant to ensure that the environmental impact of the building is reduced, through improved operational performance” (p.5). Thus, the government is leading by example in the adoption of green leases (detailed further below).

One issue for green leases has concerned the higher up-front costs in developing a green building compared with a conventional commercial building. The owner needs either to bear the extra up-front costs, or pass them on to tenants through higher rents. In the latter case, the prospective tenant may be deterred from occupying a green building and favour leasing a conventional building. Although developers and building owners have traditionally been unwilling to invest added up-front costs of innovation, technology, and construction to meet voluntary environmental standards, government authorities in Australia report that building owners are increasingly adopting a longer life cycle view when evaluating the commercial benefits of building green.

Green leases assume central importance in sustainability in the commercial property industry, for several reasons. First, the rating tools discussed above are essentially dependent on green leases for the achievement and maintenance of the environmental performance expected for the rating. New green buildings are designed and built to achieve a star rating, but unless the building is operated efficiently, it may operate below its expected level of efficiency. In addition, existing building stock can also operate at similarly inefficient levels compared with their potential efficiencies. Although a NABERS assessment can be made on a building, the contractual device to maintain and improve environmental efficiencies is the green lease, which makes it central to the achievement of environmental targets. Second, green leases are producing a new relationship between landlord and tenant, one that is moving away from the traditionally adversarial framework to one based on a cooperative spirit regarding environmental matters. The green lease ensures that targets are met and offers solutions if not. Third, green leases, by controlling the achievement of environmental performance targets, are starting to provide feedback into property parameters including investment aspects such as valuations, return, and price.

Discussion: Current Issues and Developments in Green Leasing

Rating Tool Harmonisation and Consistency

With regard to green leases, there are several issues regarding the rating tools used to assess the environmental aspects of buildings. These are: (1) Matching of green lease targets/benchmarks to the ratings and component parameters. (2) Matching between green star (design, features) and NABERS (monitored performance). (3) Consistency of ratings across buildings for both schemes.

Matching green lease provisions with rating tools

The Green Star rating scheme run by the AGBC has several different categories and subcategories for ratings, and a points scoring system means that there are different weightings for each category. The categories include indoor environmental quality, transport, energy, materials, water, emissions, and ecology. The overall star rating corresponds to the summation of the category scores. In such a way, a building may obtain a good overall rating by scoring highly in some categories but poorly in others, or scoring reasonably across all/most of them. This information should tie in with the content of a green lease for a new building or retrofit refurbishment.

Similarly, the environmental performance standards specified in the green lease should match with the measured data under NABERS. In some situations where there is no record of e.g. energy use or water use, flexibility will be needed until an amount of data are measured, e.g. one year. At that point, a better constraint can be put on the performance targets. Consideration may need to be given to rating tool internal consistency (see further below), in that a particular NABERS rating is a classification that covers a certain range of energy/emission/water efficiencies; the benchmarks of the lease will need to be identified in terms of a rating or in terms of a range of

efficiencies, and whether any reference need be made in the lease to performance achievements that are consistently at the bottom of the required value range.

The typical energy consumption break-up within commercial properties in Australia (Hilderson, 2004) shows that ventilation and cooling constitute 50% of energy use, in-building lights and power 20%, elevators (lifts) 15%, and heating and hot water 15%. Therefore, green lease targets would most usefully be made with respect to such data, with ventilation and cooling being the most obvious feature for the largest energy savings. With regard to water use, amenities (e.g. toilets, washbasins) take 37% of commercial building water, cooling towers (for air conditioning systems) 31%, and leakage 26%. Again, it is clear which uses have most potential for reducing water use, and these should be matched in lease targets.

There will be a need in the future to more fully develop and apply the NABERS components other than energy and water, e.g. indoor environment, and waste, to office buildings. The indoor environment component could be particularly important given that small productivity gains from occupant workers based on improved comfort and health translate into large dollar savings for tenant businesses, as discussed. Targets and conditions applying to these components would need to be included in future green leases.

Matching Green Star and NABERS

The operational performance data established by NABERS ratings are expected to complement Green Star ratings. Once sufficient measured data are available from a variety of types of office buildings via the NABERS scheme, a feedback loop should be able to provide valuable information to building designers, developers, tenants and owners, regarding building design features and elements, potential performance, actual performance, and the possible reasons for disparities (both positive and negative differentials) between potential and actual environmental performances. Green Star is a different type of rating tool to NABERS. It takes into consideration a wide range of aspects regarding the environment, including: Management, Indoor Environment Quality, Energy, Transport, Water, Materials, Land Use & Ecology, Emissions, and innovation. Some of these parameters are not measured by the NABERS scheme (e.g. materials, land use, transport, innovation), and in fact only the energy and water components of NABERS are currently actively being used.

Some recent (2010) data shows that there is a reasonable correspondence between Green Star rated buildings (operational for at least one year) and the NABERS ratings (GBCA, 2010). The results show that for NABERS energy, the average rating for Green Star buildings is 4.8 stars compared with the average Australian office at 2.5 stars. Regarding design performance versus measured operational performance, it was found that 50% of Green Star buildings are performing better than expected on the basis of design and features, 16% on target, and 34% less energy-efficient than initially estimated. The 34% comprise mainly those with expected energy efficiencies

equivalent to or exceeding a NABERS energy rating of 5, i.e. the buildings with very high efficiency expectations. Regarding water ratings, Green Star rated buildings had an average NABERS water rating of 4 stars compared with the Australian office average of 2.5.

Although Green Star and NABERS are probably complementary (focusing on sustainable design and actual building performance, respectively), it would appear that most property owners and occupiers of commercial office buildings would prefer a single rating system, although this opinion may represent an incomplete understanding of what each scheme actually measures. The differences and complementarity of the two schemes are likely to persist into the future.

Rating Tool Internal Consistency

In an informative study, Newsham et al. (2009) analysed energy use data from 100 LEED-certified commercial and institutional buildings and compared the results with general building stock by considering the particular characteristics of the buildings to ensure good matching. Although on average the LEED buildings used 18-39% less energy per unit area of floor (depending on the level of rating), around a third of LEED buildings used more energy than their conventional counterparts. In addition, the measured energy performance of LEED buildings was found to have little correlation with the rating level of the building, or with the particular energy rating achieved by the building at design time. These results highlight the need for building rating schemes to be refined to ensure more consistent grading at the individual building level, and to ensure there is a greater correlation between rating (based on design and features) and subsequent performance (as measured during the building's operation). They also reflect the fact that building ratings involve various categories, with different weightings, and that two buildings with equivalent overall ratings may differ substantially in their (for example) energy efficiency rating.

As yet, no such similar detailed assessment has been made with respect to the Green Star building rating system, but discrepancies no doubt exist. However, green leases are dependent on ratings systems to provide benchmarking tools and performance targets, and to give transparency. Therefore, MGE (2010) recommends "Improving the availability of tools and information to facilitate the integration of Green Leases into building management activities in order to ensure buildings are operated and maintained as designed." As rating systems evolve and improve in their ability to assess such aspects as building productivity, energy consumption, and life cycle costings (e.g. Sebake, 2009), the market's ability to "price" green will get better, as will the ability of the rating systems to become more consistently accurate at the individual building level (Newsham et al., 2009).

Regarding NABERS, the consistency of its ratings has recently been criticised (Lend Lease, 2011) including regarding aspects of its methodology for assessing energy and emissions ratings. The data presented in the criticism were from two assessment studies (performed in 2006 and 2008) and show that, for a series of tenants spread across the country using the same amount of

energy, the NABERS energy rating of the buildings used ranged from 0.7 to 3 stars, and between 1.3 and 5.6 stars for the base building rating. In addition, for 5 star buildings or higher, the energy ratings penalise (i.e. give lower ratings to) equivalent buildings outside the states of New South Wales and Australian Capital Territory. Clearly issues remain in the accuracy and consistency of ratings in the scheme. These need to be addressed because the ratings provide a basis for the setting of environmental performance targets in green leases.

The Government's Role

Government (Federal, State, and Local) has a strong influence on the sustainability agenda, including through green leases, through policy, regulation, incentive programmes, leadership by example, and through its large amount of building space owned/occupied. Federal, State, and Territory Governments lease approximately 30% of the Australian commercial office market. Policies and regulations that currently encourage environmental target-setting and performance for buildings are likely to turn increasingly toward mandatory requirements. In addition, Federal and State governments are taking a strong leadership role by demanding their own activities as either building owner or tenant are performed with green leases in place. However, it is not yet clear to what extent a leadership role is influencing lease trends in the private/corporate commercial property market.

Environmental Efficiency in Australian Government Operations

The Energy Efficiency in Government Operations (EEGO) was announced by the Australian Government on 6th September 2006 as a replacement for the predeceasing 1997 policy whose purpose was to reduce the energy consumption of government operations as part of the broader climate change strategy. The 2006 policy strengthened the 1997 policy by facilitating greater cooperation between building owners and tenants in reducing their energy consumption. The new policy established best practice energy targets for Government office buildings and a commitment to the development of similar targets for other Government buildings.

For office buildings, the key objectives of the EEGO policy to be targeted by June 2011 are: (1) 7500 MJ/person annum for tenant light and power; and (2) 400 MJ/m² annum for central ("base") services. To achieve these targets, the minimum energy performance standard for government office buildings include: (1) >4.5 Green Star building or equivalent for the whole of the building including the Base Building and Tenanted Area; and (2) Building must include a Green Lease.

The EEGO policy requires each government agency to report its energy consumption against core performance indicators. This ensures that agencies are aware of how much energy they use and the relative efficiency of their energy use. Given that government departments and agencies are now required to use green leases, these energy performance standards will be

contained in such leases.

Compulsory Energy Efficiency Disclosure

Under the Building Energy Efficiency Disclosure (BEED) Act 2010, and as part of Stage 1 of the Federal Governments' national framework for energy efficiency, all commercial office buildings >2000m² have until November 2011 to obtain an energy efficiency certificate. This has come about partly because of an identified information asymmetry between lessors and potential tenants concerning the energy performance of tenanted buildings, which could lead to highly-specified premises being either under-supplied or driven from the market because potential tenants cannot differentiate them from inferior premises (Christensen and Duncan, 2010).

The 2010 Act represents only the first stage in regulating energy efficiency, and governments (both federal and state) will in the future place more forceful demands for energy saving both upon the owners and occupiers of commercial buildings (Christensen and Duncan, 2010). To achieve such outcomes, it is envisaged that, rather than incentive-based measures for achieving such outcomes will move to compulsion, and such an evolution will need to be reflected in the lease, with leases currently in place needing to have the flexibility to accommodate the changing regulatory environment.

National Green Leasing Policy

The National Green Leasing Policy (final draft) was completed in August 2010. The policy "facilitates environmentally beneficial practices and outcomes associated with the leasing of buildings, through the use of a Green Lease Schedule... [and] provides guidance and information for a collaborative approach to improve operational performance...[and] sets performance targets ... and it outlines the requirements of building owners and government tenants." (MCE, 2010, p.2).

The policy is intended to direct Australian, State, and Territory governments, as tenants of buildings, to drive a reduction in the environmental impact of buildings through improved operational performance (MCE, 2010). The policy covers building energy use and associated greenhouse gas emissions, and has provisions also for water performance and management approaches and, in the future, anticipates addressing other aspects such as waste and indoor environmental quality. Part of the aim of the policy is to "assist the acceleration of private sector uptake of green leases" and to "improve building owners' and government tenants' understanding of sustainable building operation, and in doing so generate benefits for both parties" (MCE, 2010, p.2).

The policy addresses both base building and tenancy performance and proposes using the NABERS rating tools to assess and monitor environmental performance. "Overall, this Policy encourages building owners and government tenants to prepare their properties and tenancies for a future of higher energy and water costs and greater environmental performance expectations

from the market and required by regulation. “ (MCE, 2010, p.6). The regulatory changes that will drive these changed circumstances for property include the introduction of: The National Greenhouse and Energy Reporting scheme; higher renewable energy targets under the Renewable Energy (Electricity) Act; and the Building Energy Efficiency Disclosure Act 2010.

In June 2005, the South Australian State Government announced that all new offices leased (or built) by the government must achieve a Green Star rating of 5 stars. In July 2006, the Victorian State government announced a 4 star rating for such buildings. Most governments (Federal and State departments) are now requiring that the buildings they occupy achieve a NABERS energy base building rating of 4.5 (building owner responsible), a NABERS energy tenancy rating of 4.5 (government tenant responsible), and a NABERS water rating of 4 (building owner responsible). A green lease is required in all cases. Given also that large companies are demanding similar standards, it is likely that a two-tier office market will emerge, one with green leases, and one without.

In this respect, there may be ramifications for the property market. Previously, government agencies could apply for an exception (avoid green lease), but this can no longer occur unless the building owner makes a commitment to raising the energy rating on the building to a minimum NABERS 4.5 stars. This is forcing building owners having to rethink their buildings and take one of two actions. The first option is to sell the building, but may not find a buyer or its value is very low due to the fact that no government and some other non-government agencies will not lease the building; in addition, there is no rental income due to vacancies or a lower rental as non-green may soon be viewed as sub-prime. The second option is to refurbish the building in relationship to replacing the ventilation system, lighting, etc, but it is costly to raise a building from 0 stars to 4.5 stars.

Green Lease Schedules

The Australian government has recently started to use its own green lease schedules (GLSs) for environmental target-setting, monitoring, management, and building maintenance. The series currently includes eight green lease schedules, each designed for a particular type of tenancy depending primarily on whether the lease is net or gross and what proportion of the available building floor area the tenant occupies (Department of Climate Change and Energy Efficiency, 2011). The schedules are intended to be an additional schedule to the tenancy lease document that defines the agreed environmental and energy performance outcomes between the landlord and tenant, i.e. is the ‘green’ part of the lease. The schedule is designed to be attached to a commercial lease (‘base lease’) that specifies the usual key areas, such as rent, term of lease, area and standard of accommodation.

GLSs were developed in order to provide a legal mechanism to manage building energy efficiency outcomes. The issues addressed included annual assessment of energy performance,

mismatches between building design/construction and actual performance, split incentives between owners and tenants, and supply chain issues (e.g., who is responsible for what in terms of property management, technical/consultation advice, supply contracts, maintenance services). The GLS is a leasing template that contains mutual obligations for owners and occupiers of office buildings to achieve efficiency targets. The minimum energy performance standard is a NABERS energy rating of 4.5 stars. Optional clauses regarding water, waste, and other issues can be incorporated, as can variations regarding such aspects as occupational health and safety.

Currently, the GLSs are being used with a focus on energy, to ensure that buildings are operated at the required level of energy efficiency and cover five essential elements. Each schedule sets out the main provisions concerning an agreed energy efficiency rating of a building, the construction and application of an energy management plan, separate digital metering of tenants' premises and of central services (as applicable), energy reporting, auditing, and remedial action and dispute resolution process which involves referral to an independent expert. There is a mutual obligation between the building owner and tenant to achieve and maintain the agreed green star rating (to be validated annually by an independent assessor). The development of an energy management plan (EMP) involves outlining minimum procedures required to maintain the relevant performance standard. The schedule includes the establishment of a building management committee (comprising building owner and tenant representative) responsible for reviewing energy data on a least a quarterly basis and implementing the EMP.

Although the schedule templates will be available for broader industry adoption, they are designed primarily to support the objectives of government operations, specifically as outlined in the National Green Lease Policy. GLS is a new area of contract/lease property law, and are starting to be used by major private sector building owners for their own tenants. This is starting to transform commercial office market.

As an example of what is contained in the schedules, GLS D1 (Department of Climate Change and Energy Efficiency, 2011a) for use in a situation of a gross lease where the premises are less than 2000 m², contains Annexure B which will identify performance standards (to be decided in individual situations). Section 3 states that the landlord will provide lighting in the premises to consume not more than 10 watts/m² of the lettable area. Section 1 of the same schedule highlights the leadership role of the government and the cooperative spirit being engendered between landlord and tenant:

1.1 B "The Green Lease Schedule reflects the Parties' desire to improve and be accountable for energy efficiency in the Premises and the Building wherever possible..."

1.1 C "As part of the Parties' commitment to improve energy efficiency the Landlord and the Tenant wish to promote the reduction of greenhouse emission and ensure the environmental sustainability of the Building resources by implementing the measures in this Green Lease Schedule."

1.1 D "The parties have agreed that they will act in good faith and take a co-operative attitude to

issues and initiatives arising under the Green Lease Schedule.”

Landlord-Tenant Relationships

As noted above, the Government is leading by example in the landlord-tenant relationship regarding green leases. However, the situation is more complex in the private commercial sector and there is a need to better understand the drivers influencing the landlord-tenant relationship regarding environmental matters in that sector. Christensen and Duncan (2007) noted that conventional commercial leases at the time tended to create adversarial, rather than cooperative, relationships between landlords and tenants, and that such a situation would need to change in a “new era of green leases”. Their analysis found that conventional leases “did not require a lessor of a multi-tenanted building to make information available to the lessee regarding the overall operational costs of the building. Additionally, these leases did not provide the transparency which would be required for the maintenance of a ‘green’ building and to facilitate satisfactory communication between lessor and lessee, and between lessees themselves if common goals to reduce energy usage were to be realised.”

In the case where the tenant occupies a building with a Building Energy Efficiency Certificate (BEEC) under the BEED Act 2010, which indicates a certain rating at the commencement of the lease, the expectation would be that the rating would be maintained and even improved during the period of the lease. In addition, there would also be an expectation that the energy use of all parties involved in the building’s operation would be monitored. In the case where there is failure in the building meeting its energy efficiency rating during a particular lease, the lease would need to contain clauses for either coercion through the mandating of targets or for negotiating and cooperating in order to meet shared goals. In shared tenancies, lessees that fail to meet their requirements may be required to contribute to a compensation fund, the proceeds of which would be used to benefit the owners and occupiers of the building by maintaining or upgrading efficient equipment and systems (Christensen and Duncan, 2010).

The tenant’s role in improving operational energy efficiency is reflected in such programmes as “CitySwitch Green Office”, which is a tenant energy management programme run in the cities of Sydney, Melbourne, Adelaide, Brisbane, and Perth, in partnership with the NSW Department of Environment and Climate Change and Sustainability Victoria. As part of the program, at least 80 organisations have pledged to achieving/maintaining a NABERS tenancy rating for energy of 4 stars or higher (Taylor, 2009). As the uptake of NABERS ratings increases in the private commercial sector, it should be noted that the NABERS Energy base building rating and the NABERS Energy tenancy rating are mutually exclusive. As such, the rating achieved by one party, whether high or low, cannot be used by the other party as a reason for non-performance in their rating. This independence helps remove a possible source of conflict between tenant and landlord under a green lease situation referenced to NABERS benchmarks.

A green lease requires a balancing exercise between the rights of the tenant and of the landlord. The landlord must be able to actively monitor the building's environmental performance. This goes beyond the traditional rights of a commercial landlord, because the lease has to allow the landlord to influence the tenant's behaviour not only within the common areas but also in the tenancy area (Wheeler, 2008). Green leases represent a paradigm shift in the obligations of the parties. The traditional relationship between landlord and tenant constitutes each party having exclusive regard for its own interests. Under a green lease, however, the obligations are two-way, creating a relationship of mutual dependency so that environmental benchmarks can be attained. Without cooperation between parties, it is doubtful that any meaningful target could be achieved. Under a green lease, the landlord can be obliged to have efficient building management systems in place to measure the building's performance, such as the use of electricity, gas, water, lighting and air-conditioning. The tenant's fitout obligations can be related to design, natural ventilation, sunlight and the use of recycled or recyclable building materials.

In a green lease, a dispute resolution mechanism is essential for determining responsibility for failure to meet targets, and consequences of that failure. A 'hard' green lease would contain not only dispute resolution procedures and consultation between parties, but also real consequences for non-compliance including damages, rent abatement, indemnities, recovery of costs and even termination (Wheeler, 2008).

Conclusion

Australia has an advanced environmental sustainability programme underway, driven by prospective water shortages, rising energy costs, and obligations regarding greenhouse emissions and climate change. Part of the programme includes the environmental efficiencies of green buildings. With respect to commercial office buildings, green leases (an Australian invention) are of central importance in the maintenance and improvement of buildings' environmental performance, as they: (i) Depend on environmental rating tools to establish targets for environmental importance; (ii) Provide the mechanism by which a level of environmental efficiency may be established; (iii) Protect both the landlord and tenant by ensuring attainment of the targets or remedial measures; and (iv) Protect property values and returns for investors.

The government is leading by example by demanding all government agencies/departments use green leases in either a landlord or tenant situation in office buildings (comprising 30% of the office market). Although it is not yet clear whether government example is "rubbing off" on the private sector, additional drivers for the uptake of green leases in the private commercial sector include relevant policies and regulations, and stakeholder demands for environmental accountability. Also, recent quantitative data show that green buildings, especially those rated more highly, have higher capital returns and rents than do zero- or low-rated buildings;

in such a context, green leases can be seen as protecting the investments made by property investors. These drivers emphasise the central importance of green leases and suggest that the adoption of green leases in the private commercial sector should grow rapidly.

Some issues are apparent regarding green leases. They constitute a relatively new area of law, and to date there have been no publicised tests of green lease disputes in court. Lessons may be learned on the path toward the movement of the green lease into the legal mainstream. In addition, green leases need to be closely tied to building environmental rating tools, as these tools provide the basis for target-setting regarding environmental performance. Mis-matches between building characteristics and ratings, or between ratings and green lease targets, will cause problems with leases. In that respect, there is a need to ensure that the current rating tools, Green Star and NABERS, are methodologically sound and consistent in their ratings of buildings. There is evidence to suggest that improvements can be made in the NABERS scheme; unexplained/undesired variations in ratings will feed into variation/uncertainty in environmental targets, thus affecting aspects of green leasing. Also, there will be a need to introduce components of environmental performance other than those relating to energy, emissions, and water, into green leases as the measurement systems become more available. Such components could include waste production/reduction and indoor environmental quality. Finally, it is becoming clear that a two-tier commercial building sector is emerging: one tier with green ratings and green leases, and one without. Given the identified drivers of the uptake of green leases, owners of low-rated buildings will need to invest heavily in retrofitting to bring their buildings up to environmental standards, or suffer declining returns. Given also that recent data support the financial viability of building green, green leases are not only contributing to environmental sustainability but also rapidly becoming equivalent to 'green money.'

References Cited

- Chegut, A., Eichholtz, P., Kok, N., and Quigley, J.M. (2010). "The value of green buildings – new evidence from the United Kingdom", Proceedings of the 17th Annual European Real Estate Society Conference.
- Christensen, S. and Duncan, W.D. (2007). "Green leases - a new era in landlord and tenant cooperation?", *Australian Property Law Journal*, Vol. 15, pp. 54-65.
- Christensen, S. and Duncan, W.D. 2010. Green leases - becoming a reality. *Australian Property Law Journal*, Vol. 19, pp. 1-11.
- Davis Langdon (2007), "*The cost and benefit of achieving green buildings*", Davis Langdon report, 7 pp, available at: <http://www.davislangdon.com/ANZ/Research/Research-Finder/Info-Data-Publications/Info-Data-Green-Buildings/>, accessed 27 February 2011.
- Department of Climate Change and Energy Efficiency (2011). <http://www.climatechange.gov.au/government/initiatives/eego/forms-and-templates.aspx>, accessed 15 January, 2011.
- Department of Climate Change and Energy Efficiency (2011a). http://www.climatechange.gov.au/government/initiatives/eego/~/_media/publications/eego/gls-schedule-d1.doc, accessed 15 January 2011.
- Fisk, W.J. "Health and productivity gains from better indoor environments and their relationship

- with building energy efficiency.” *Annual Review of Energy and the Environment*, Vol. 25, No. 1, pp.1-30.
- Green Building Council Of Australia (GBCA) (2006). “*Dollars and sense of green buildings 2006: Building the business case for green commercial buildings in Australia*”, informal report, available at: <http://www.gbca.org.au/uploads/234/1002/Dollars%20and%20Sense%20of%20Green%20Buildings%202006.pdf>, accessed 14 February 2011.
- Green Building Council of Australia (GBCA) (2010). *Performance and perceptions of green buildings*. 2010. Informal Report, available at: http://www.gbca.org.au/uploads/PERFORMANCE_AND_PERCEPTIONS_OF_GREEN_BUILDINGS.pdf, accessed 2 March, 2011.
- Henderson, H. (2006), “Wanted for lease: 6 star office”, *ECOS magazine*, June-July, pp. 8-11.
- Hilderson, P. (2004), “*Commercial property going green*”, Jones Lang LaSalle Report, April, 11 pp.
- IPD (2011), “Green cities 2011: Introducing the PCA/IPD green investment index”, available at: <http://www.ipd.com/LinkClick.aspx?fileticket=e48fKnS8DKQ%3d&tabid=427&mid=10392>, accessed 19 March, 2011.
- Leaman, A. and Bordass, B. (1999), “Productivity in buildings: the ‘killer’ variables.” *Building Research and Information*, Vol. 27. No. 1, pp. 4-19.
- Lend Lease (2011), “NABERS energy for offices rating scale update”, submission document by Lend Lease to the Department of Environment, Climate Change and Water, available at: www.abgr.com.au/downloadFile.aspx?file_id=346, accessed 8 March 2011.
- MCE (Ministerial Council on Energy) (2010), National Green Leasing Policy, Final Draft, 19 pp.
- Miller, N. and Pogue, D. (2009), “Do green buildings make dollars and sense?”, USD-BMC working paper 09-11.
- Miller, N., Spivey, J. and Florance, A. (2008), “Does green pay off?” *Journal of Real Estate Portfolio Management*, Vol. 14, No. 4, 384-399.
- Newsham, G.R. Mancini, S. and Birt, B. (2009), “Do LEED-certified buildings saving energy? Yes, but...”, *Energy and Buildings*, Vol. 41. No. 8, pp. 897-905.
- NSW Office of Environment and Heritage (2011), “Position Paper: NABERS Energy for Offices - Future proofing the rating scale”, available at: http://www.abgr.com.au/downloadFile.aspx?file_id=311 (accessed 7 March 2011).
- NSW Office of Environment and Heritage (2011a), “Consideration of submissions received in response to position paper NABERS energy for offices – future proofing the rating scale”, available at: http://www.abgr.com.au/downloadFile.aspx?file_id=364 (accessed 7 March 2011).
- Property Council of Australia. (2009), “The missing link”, available at: <http://www.propertyoz.com.au/Article/NewsDetail.aspx?p=56&mid=1554>, accessed 3 March, 2011.
- Reed, R. Bilos, A. Wilkinson, S. and Schulte, K. (2009), “International comparison of sustainable rating tools”, *JOSRE*, Vol. 1, No. 1, pp.1-22.
- Ries, R. and Bilec, M.M. (2006), “The economic benefits of green buildings: a comprehensive case study”, *The Engineering Economist*, Vol. 51, pp. 259-295. DOI: 10.1080/00137910600865469
- Sebake, T.N. (2009). “An overview of green building rating tools”, CSIR Built Environment (Pretoria) internal report, 6 pp.
- Taylor, R. (2009), “Old buildings take the green lead”, *Ecos Magazine*, 148, Apr-May, pp. 24-27.
- Wheeler, C. (2008) “Choosing your shade of Green”, available at: <http://www.propertyoz.com.au/Article/NewsDetail.aspx?p=56&mid=1600>, accessed 15 March 2011.