



# **A Study into the Viability of Articles for Energy Efficiency in a Commercial Building Lease**

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## Executive Summary

PHH ARC Environmental Ltd. was retained by Building Owners and Managers Association (BOMA) BC to complete a study into the creation of a green lease. The original terms of reference were outlined in a Request for Proposal issued by the BC Ministry of Energy Mines and Petroleum Resources and Alberta Climate Change Central.

The scope of the study asked for an assessment of energy saving strategies to create an instrument which induced landlords and tenants to co-invest in more energy efficient building occupancy through a creative leasing structure. However, our discussions with the real estate industry and subsequent research lead us to conclude that the industry in Canada is not currently investing in extensive sustainable strategies in the absence of some form of financial inducement or clear vision of risk. There is clearly an emerging perception that sustainable real estate will be the preferred option for investors and tenants in the future, however the premiums and risks associated with sustainable real estate are not currently measurable or compelling enough to encourage further investment.

Subsequent discussions with Mr Andrew Pape Salmon of the BC Ministry of Energy Mines and Petroleum Resources directed us to focus our report on a lease instrument that could induce a private landlord to further invest in sustainable strategies when leasing to provincial government (and hopefully more progressive private sector) tenants. Our research has uncovered many areas of benefit to the building asset, the tenant and other occupants by following certain sustainable strategies. These strategies have been inventoried in Appendix I and Appendix II

Our key recommendations are listed below:

1. Establish a schedule of consensual tenant strategies, based on prioritised measures that lessees commit to pursuing as part of a green lease; energy conservation and efficiency taking precedence with the inclusion of an energy management strategy and plan.
2. Draft a set of model clauses, kept as simple and transparent as possible. Despite the relative complexities of green leasing arrangements inherent in a nascent and newly developing context, tenant and owner clauses should provide confidence in the agreement, based on equitable outcomes and jointly adhered to obligations
3. Establish a schedule of landlord strategy options (including no, low, medium and high cost measures, dependent on building type and usage) that the landlord may choose from to create a minimum carbon emission reduction of X Tonnes/square foot of carbon per year and Y kilowatt hours/square foot of energy per year. Alternatively the landlord could commit to meeting absolute and regularly updated targets of carbon emissions and energy consumption per square foot; in

## Executive Summary Cont.

essence a building energy and carbon performance rating. Any targets could be derived from international best practice, for example US EPA Energy Star.

4. Establish a current building performance baseline, including energy consumption and water use metrics to assist in substantiating improvement levels and thresholds made through the implementation of sustainable/green measures outlined in a lease arrangement
5. Put in place an educational programme to be attended by all building stakeholders and occupants encouraging sustainable principles and practices in the building and in their homes and communities. The programme would highlight the specific strategies in their own building, with the potential to embed those practices into building owner and user guides/manuals.
6. Put in place a public relations strategy and marketing campaign to enhance the profile of green lease partnerships in the participating buildings, including the potential for market differentiation and transformation effects. These strategies could include labelling the participating buildings with an environmental partnership designation and environmental performance rating. In a European context, the introduction of an Energy Performance Directive now requires buildings over a certain size (1000m<sup>2</sup>) and visited regularly by the public to include energy performance certificates.
7. Investigate comparable inducements for private sector landlords to partner with tenants in green lease arrangements outside the government setting. This could include an investment or recycling/revolving fund to offset increased capital cost outlay, or third-party financing and performance contracting via an energy service provider(s).

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## 1.0 SYNOPSIS OF STUDY

### 1.1 Initial Outline

This report has been compiled by John Holland, P. Eng., of PHH ARC Environmental Ltd supported by Chris Corps of Asset Strategics and Robert Greenwald, P. Eng, of Prism Engineering in response to a Request for Proposals issued by the BC Ministry of Energy Mines and Petroleum Resources and Alberta Climate Change Central. Provincial governments are collectively following climate change strategies in the building design, management and energy management areas.

The 2002 BC Energy Plan states that, “The Province will update and expand its Energy Efficiency Act and will work with the building industry, governments and others to improve energy efficiency in new and existing buildings”. On September 16, 2005, the BC Government released its strategy, “Energy Efficient Buildings: A Plan for BC”. The voluntary target for new commercial, institutional & industrial (ICI) buildings , as well as multi-unit residential buildings (MURB), is to achieve energy performance of 25% better than the Model National Energy Code for Buildings by 2010<sup>1</sup>, reducing average ICI energy consumption by 20% (37% for MURB) compared to typical buildings constructed in the Vancouver marketplace. BC’s Climate Action Team will soon establish an evolving set of indicators for integrated environmental design, including those for greenhouse gas emissions, energy use and efficiency, water, building materials and transportation.

The 2000 – 2010 Alberta Climate Change Central Strategic Plan states as one of its missions to “identify and implement strategies to remove obstacles and barriers to change, to adapt to climate change effects, and to improve energy efficiencies.”

The requested work-plan is outlined below:

1. Develop potential energy billing options for commercial buildings as a function of energy services supplied, such as gigajoules/ft<sup>2</sup>, kilowatt-hours/ ft<sup>2</sup>, lighting lumens/ ft<sup>2</sup> (for example, a landlord could provide 50% lower general lighting levels for computer stations, optional task lighting for non-computer stations, adjustable lumens for reception areas, meeting rooms, occupancy sensors/switching/dimmers, etc.); or possible options of variable rates for range of energy intensity levels delivered; green energy rates; consult industry association standards, i.e. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Illuminating Engineering Society of North America (IESNA), etc. for delivery of energy units to meet minimum requirements.

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<sup>1</sup> National Research Council Canada, *The Model National Energy Code of Canada for Buildings* (MNECB) 1997, Retrieved from: [http://www.nationalcodes.ca/mnecb/index\\_e.shtml](http://www.nationalcodes.ca/mnecb/index_e.shtml)

2. Solicit input from a cross section of property managers/landlords, on potential energy billing options, as suggested in item #1 above, and/or solicit other options which would benefit them.
3. Develop a lease article that incorporates options developed in # 1 above.
4. Develop said article in a manner that provides for the landlord to increase net operating income by increasing energy efficiency initiatives.
5. Determine practicality, barriers and drivers to this article.

This report aims to establish a framework where conventional lease terms and innovative energy metrics can be modified and enhanced to achieve building management and occupancy practices that benefit the environment, the landlord and the tenant.

## **2.0 THE CANADIAN LEASING CONTEXT**

Today most leases exceed 30 pages. The modern commercial lease includes clauses covering a large number of issues which were not present or which were not a concern such as:

1. environmental issues;
2. use restrictions;
3. insurance;
4. restrictions on assignment, subletting or change of control;
5. repair and maintenance of the premises; and
6. “dispute resolution provisions”<sup>2</sup>

A lease is a legal contract in which both the owner and tenants have rights and responsibilities. Historically, the lease evolved from property law<sup>2</sup>. As the process typically works, a potential tenant will evaluate several properties before signing a lease. There are three common types of lease in Canada which are differentiated by how certain costs are passed through from the landlord to the tenant: 1) flat rent (gross); 2) base rent plus heat and maintenance (net); and 3) base rent and a proportionate share of common area operating costs (triple net).

In a gross lease, the tenant pays one sum and this covers all the landlord’s costs and profit margin. In a net lease, the base rent for space rental is separated from three standard operational costs: taxes; insurance; and operating and maintenance costs, which includes

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<sup>2</sup> Olson, Richard J., *Commercial Leases and the 21st Century*, 2007, The Continuing Legal Education Society of British Columbia, Retrieved from: <http://www.cle.bc.ca/CLE/Analysis/Collection/07-commlease>

energy. The tenant is thus responsible for these costs. The triple net lease is one where a tenant pays the full operating costs of their own space and a percentage of the building's common areas, based on percentage of the building occupied.

The objective of any landlord is to increase net operating income (NOI) by either increasing revenue or reducing expenses, while maintaining or increasing the leased property value. In a market that favours the landlord, i.e. low vacancy rates, energy efficiency presents a significant challenge as all costs including energy are easily passed on to the tenant. In a market that favours the tenant, i.e. high vacancy rates, there may be more incentive for a landlord to have a more efficient building to keep costs down and retain or attract tenants and reduce his own commitment to heat a vacant space. In such a market environment the landlord is less likely to incur capital expenditures because of decreased revenue.

The challenge is to design a leasing arrangement that provides for shared benefits to both landlord and tenant through energy efficiency initiatives in both markets. For the landlord this means increasing the net operating income through capital improvement recovery being recognized in the marketplace. For the tenant, this means flow through benefits such as lower energy costs, improved air quality and resulting employee productivity with a reasonable extra triple net cost.

With green leases as with green buildings, governments will likely take the lead and demonstrate sustainable instruments by example. Governments typically sign gross leases. The challenge for private landlords and tenants is how to work with interested parties and differing interest groups to achieve the best energy saving and green house gas (GHG) reduction. Basing energy retrofits on simple financial payback overlooks the future impact of carbon taxation, building performance indicators, escalating energy prices and possible negative stigma in the market place.

The net or triple net lease arose from the energy price escalation of the 1970s where landlords chose to shed some of their operating cost risk to tenants. A commercial or residential rented building is a business, and the value of that business is based upon its ability to produce a desired return on investment through increasing lease rates, occupancy and building capital value through other improvements.

Since capitalization rates are a function of the financial market, there is only one way for a landlord to directly increase a building's value; increase NOI. This can be done two ways: increase income or decrease the operating costs.

When the movement from gross lease to net lease structures took place, landlords started incorporating rent escalation clauses linked to the consumer price index into their lease documents to protect the landlord from inflation. However, energy costs, property taxes and the costs of complying with government mandates began to rise faster than the

consumer price index, landlords responded by adding clauses to leases to pass through any increase in operating costs to tenants using the base year or expense stop method.

Currently most Class A and B Canadian landlords adopt the net lease structure. A tenant pays a base rent plus a separate charge for all operating costs, i.e. utilities, maintenance, amortised capital improvements, insurance and taxes. Proponents of the net lease say this creates a more transparent lease arrangement, and creates an incentive for tenants to use less energy. The main benefit to a landlord is that a net lease effectively transfers all risks for building operating costs to the tenant, however establishes a less than meaningful discourse between building owners and tenants regarding what is of mutual benefit. The downside is that the landlord gets none of the benefits from reducing operating costs, since this has no impact on the building's NOI. Clearly the green lease requires additional inducements in the net lease setting. Net leases create an unnecessary hurdle for green buildings.

### **3.0 SUSTAINABLE BUILDING IN CANADA**

There is a strong movement towards sustainable building practices in the developed world. In North America each year an increasing number of green buildings are being designed, built, improved or renovated to green standards. In British Columbia the Premier has made two significant commitments to place the province in a leadership position with regard to sustainability:

- BC government operations to be carbon neutral by 2010;
- BC is projected to achieve 30% lower carbon emissions than 2007 levels by 2020.

The building sector is responsible for 40% of greenhouse gas emissions in North America hence any impact on the construction and operations of buildings will have a profound affect on achieving those goals.

Buildings are constructed over a one to three year period and operated for a 50 to 100 year period. The characteristics of living green in a building and operating green will have a significant impact on reducing the lifecycle carbon impact.

#### **3.1 Green Building Rating Systems**

There are currently two significant green building rating systems in Canada. Leadership in Energy and Environmental Design New Construction (LEED NC) relates to design and construction of buildings. BOMA Go Green assesses the operation of existing (mostly non-LEED) buildings. Most buildings in Canada (more than 95%) were built long before LEED became available. Both systems have two key components; environmental protection and occupant health and comfort. Most of the strategies defined in LEED and BOMA Go Green have financial paybacks which will escalate when increased energy costs and carbon incentives are considered.

For a new building, the capital cost of energy efficient design is borne by the developer and the benefit accrues to the tenant or subsequent purchaser paying lower operating costs. A typical commercial office lease rate in 2008 is \$20.00 per square foot (/sf). Energy costs are approximately \$2.00/sf. The cost of employees to the tenant costs around \$200/sf. Human health and well being through better indoor air quality, more natural light and better thermal comfort therefore also accrues to the tenant substantially.

### **3.2 Trends in Energy Efficient Building Design and Maintenance**

The voluntary target for new commercial, institutional & industrial (ICI) buildings, and multi-unit residential buildings (MURB), is to achieve energy performance of 25% better than the Model National Energy Code for Buildings<sup>3</sup> by 2010, reducing average ICI energy consumption by 20% (37% for MURB) compared to typical buildings constructed in the Vancouver marketplace.<sup>4</sup>

The 2000 – 2010 Alberta Climate Change Central Strategic Plan states as one of its missions is to “identify and implement strategies to remove obstacles and barriers to change, to adapt to climate change effects, and to improve energy efficiencies.”<sup>5</sup>

### **3.3 Strategies for a Green Lease**

A lease is a contract. In return for rent, a landlord grants the right to occupy part or all of its land or building to a tenant. By entering into a lease, a landlord aims to maximise rental returns and occupancy rates, ensure its asset (the building) is maintained in reasonable condition, and minimise costs for maintaining the building.

A tenant acquires a right to exclusive possession of a part of the building or land to which the lease relates. Before deciding whether or not to enter into a lease, a tenant must satisfy itself that the building is fit for its intended purpose; will provide a safe and productive work environment, is appropriately located to suit its public image, and minimises operating costs, outgoings and rent. Prior to committing to a lease, a prospective tenant will typically compare a number of potential properties, weighing up each of these matters carefully before deciding upon its preferred property. In the current commercial property market, some of the existing buildings a prospective tenant will examine may be “green buildings”, but most will not. On the other hand, new properties on the market are more likely to incorporate sustainable attributes.

These commercial and legal practicalities underpin the cost-benefit analysis for both landlord and tenant in deciding whether or not to enter into a commercial lease of a

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<sup>3</sup> National Research Council Canada, *The Model National Energy Code of Canada for Buildings* (MNECB) 1997, Retrieved from: [http://www.nationalcodes.ca/mnecb/index\\_e.shtml](http://www.nationalcodes.ca/mnecb/index_e.shtml)

<sup>4</sup> *Energy Efficient Buildings: A Plan for BC*, Government of British Columbia, Retrieved from: [http://www.empr.gov.bc.ca/AlternativeEnergy/EnergyEfficiency/Energy\\_efficient.pdf](http://www.empr.gov.bc.ca/AlternativeEnergy/EnergyEfficiency/Energy_efficient.pdf)

<sup>5</sup> *Strategic Plan*, Climate Change Central, Retrieved from: [http://www.climatechangecentral.com/files/C3\\_Strategic\\_Plan\\_2000-10.pdf](http://www.climatechangecentral.com/files/C3_Strategic_Plan_2000-10.pdf)

building. The implications for a green lease of a building fall into the following categories:

- if the upfront costs in developing a green building are higher than a conventional commercial building of similar type and size within the same marketplace, then the owner will either need to bear those additional upfront costs itself, or recoup some or all of those additional costs from tenants through imposing a higher rent, and;
- if additional upfront costs are proposed to be passed on to tenants, or the tenant's management and fit-out obligations are onerous, then prospective tenants will compare the quality and type of premises, rent and outgoings with other commercial properties in the marketplace.

In the current Canadian leasing marketplace most tenants will not commit to a lease if the costs associated with occupying a green building pursuant to a green lease are greater than occupying a conventional (non-green) commercial building pursuant to a standard commercial lease.

It is true that some participants in the commercial property marketplace, in particular government departments and agencies or corporations which have a high profile corporate social responsibility (CSR) and triple bottom line commitment, may be prepared to absorb additional costs associated with owning or occupying a green building. Indeed, these organisations have been at the forefront of the development of the green commercial property market. However, even for these organisations the value proposition of green buildings for both landlord and tenant must not only be commercially viable, but positively commercially attractive for both parties when compared to non-green alternatives.

There are green strategies that have been used in non inducement based green leases. They are listed below;

1. Gross lease format with appropriate escalation clause and expense stop clause to reward landlord for operating a high-performance building.
2. Appropriate operational procedures and building control/ management systems for charging tenants for after hours/ excess energy usage, supported by appropriate lease language.
3. A comprehensive and equitable definition of building operating costs in the lease to protect the interest of both the landlord and tenant.
4. As part of the definition of building operating costs, the lease may contain language that allows the landlord to amortize the cost of projects that will reduce operating costs and treat those amortization costs as operating costs, as long as they do not exceed savings.

5. Right to Audit – This lease clause protects the tenant from overcharges and defines the audit process to protect the landlord from frivolous audits.
6. Hazardous Materials – A clause that defines what it is and that neither the landlord nor any tenant violates laws or regulations regarding the hazardous materials.
7. Green Cleaning Specifications – This lease exhibit should define the materials, procedures and protocols for cleaning the building in a sustainable manner.
8. Building Rules and Regulations – This lease exhibit stipulates a building-wide recycling program.
9. Tenant Construction Agreement – This lease exhibit defines sustainable product requirements and construction practices.
10. Tenant Manual & Development Guidelines – A guide to explain the building’s sustainable features and benefits, procedures and operating parameters, that should provide insights into how to maximize the building’s features to create a sustainable workplace.

While green lease models have been researched and used in several settings there does not appear to be a commercial model where landlord and tenant extract benefit from green strategies. Accordingly this document has researched a series of incentives that a government tenant could offer to a private landlord. In return for these incentives (based on an equitable payback period) the tenant is required to commit to collateral green initiatives to provide a compound effect of environmental mitigation.

#### **4.0 SUSTAINIBILITY IN REAL ESTATE**

Green is generally used to describe doing something in a more sustainable way that has less impact on energy and resources use. Many new buildings are now being built to be more sustainable and some of those are built to meet the standards of a rating system such as LEED (Leadership in Energy and Environmental Design), a building rating system developed by the US Green Building Council.

The seeds of the green building movement can probably be traced to events that happened in the 1970s and early 1980s. As a result of the oil crises of the 1970s and escalating energy prices, many commercial building operators reduced the amount of fresh air that was supplied to occupied spaces. North Americans spend approximately 90% of their time indoors. Over the past thirty years occupant complaints arising out of poor indoor air quality increased and the term sick building syndrome was born. Some of the factors contributing to poor indoor air quality are:

- low ventilation rates;

- poor heating, ventilation and air conditioning system (HVAC) maintenance and contamination with mould;
- off-gassing from interior materials and furniture; and
- tobacco smoke.

In addition, the early 1980s saw the introduction of desktop computers to many workplaces, resulting in an escalation of workers' complaints about lighting and ergonomics. All these concerns indicated the importance of what we now call indoor environmental quality. We now realize the significant impact of good indoor environmental quality on occupant well-being and productivity.

The idea of sustainability is really an offshoot of the term "sustainable development", coined by the UN's World Commission on Environment and Development, also known as the Brundtland Commission after Norway's Gro Harlem Brundtland. Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"<sup>6</sup>.

The 1980 and 1990s also saw work begin on two international environmental treaties. The Montreal Protocol on Substances That Deplete the Ozone Layer which came into force at the beginning of 1989, set out a timetable for the reduction in use of ozone-depleting substances.<sup>7</sup> The ozone depleting substances of interest to building owners are refrigerants, and fire suppressants. Reducing emissions of greenhouse gases linked to climate change was the goal of the Framework Convention on Climate Change and its Kyoto Protocol, signed in late 1997.<sup>8</sup>

All these concerns garnered attention among design professionals around the world. They sought support from institutions and government to put the ideas of sustainability into practice in a new generation of buildings<sup>9</sup>. In B.C., the University of British Columbia's C.K.Choi building, completed in 1996, is still a landmark project.<sup>10</sup>

World wide, the green building movement was probably formally launched with the Green Building Challenge held in Vancouver in 1998. Different organizations in every country have considered how to make buildings more sustainable. Fowler and Rauch's

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<sup>6</sup> 96th plenary meeting 11 December 1987, *Report of the World Commission on Environment and Development*, United Nations General Assembly, Retrieved from: <http://www.un.org/documents/ga/res/42/ares42-187.htm>

<sup>7</sup> United Nations Environment Programme (UNEP), *Brief primer on the Montreal Protocol*, Retrieved from: [http://ozone.unep.org/Publications/MP\\_Brief\\_Primer\\_on\\_MP-E.pdf](http://ozone.unep.org/Publications/MP_Brief_Primer_on_MP-E.pdf)

<sup>8</sup> United Nations Framework Convention on Climate Change (UNFCCC), 1997, *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, Retrieved from: <http://unfccc.int/resource/docs/convkp/kpeng.html>

<sup>9</sup> Raymond J. Cole, *Green Buildings: In Transit to a Sustainable World*, Canadian Architect, July 1996, Volume 41, No. 7, pp. 12-13., Retrieved from: <http://www.iar.ubc.ca/choibuilding/rcole.html>

<sup>10</sup> Bronwen Ledger, *Swooping for Air*, Canadian Architect. July 1996, Retrieved from <http://www.iar.ubc.ca/choibuilding/ledger.html>

paper<sup>11</sup> lists a huge range of efforts in this regard. Such rating systems concern new construction, major renovations, interior refits or ongoing building operations. In comparing sustainable building rating systems, they focused on five of the better known ones:

- the US Green Building Council's LEED;
- BREEAM, the UK's Building Research Establishment's Environmental Assessment Method;
- Japan's Comprehensive Assessment System for Building Environmental Efficiency (CASBEE);
- GBTool, developed by the International Framework Committee for the GreenBuilding Challenge; and
- Green Globes™ US was adapted from the Green Globes Canada

Of these rating systems, LEED has probably been the most widely used and publicized for new buildings and major renovations in North America. The LEED rating system developed through consensus-based committee work. It is intended to provide a standard definition of a green building. There are a number of prerequisites which must be met. Beyond that it does not require specific design features or technologies, but offers a menu of areas where a design can earn points to contribute to four different levels of certification (in Canada, Certified, Silver, Gold and Platinum). The five key areas are: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. The additional category is for design innovation.

On the existing building side, LEED has Existing Building (EB) and BOMA has Go Green, a program developed here in BC. Go Green exists in two forms: Go Green and Go Green Plus, sometimes called Go Green Comprehensive, which incorporates the Green Globes web-based assessment tool.

Under the leadership of the US Green Building Council, LEED has expanded beyond the NC system to now include<sup>12</sup>:

- LEED for New Construction and Major Renovations;
- LEED for Existing Buildings: Operations & Maintenance;
- LEED for Commercial Interiors (CI);

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<sup>11</sup> K.M. Fowler & E.M. Rauch, *Sustainable Building Rating Systems: Summary*, July 2006, Completed by the Pacific Northwest National Laboratory, operated for the U.S. Department of Energy by Battelle., PNNL-15858,  
<http://www.aia.org/SiteObjects/files/COTENotes%20fall%2006%2022%20GSA%20Green%20Rating%20Systems.pdf>

<sup>12</sup> U.S. Green Building Council (USGBC), 2007, *LEED Rating Systems*, Retrieved from:  
<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=222>

- LEED for Core & Shell;
- LEED for Homes;
- LEED for Neighbourhood Development;
- LEED Application Guides;
- LEED for Schools;
- LEED for Retail;
- LEED for Healthcare.

LEED has also established a professional credential, the LEED Accredited Professional (AP), earned by writing an exam. In the US, there are accreditations available for NC, CI and EB. In Canada, NC (November 1, 2004) and CI (March 1, 2007) are available. There are 2155 people listed in the Canada Green Building Council LEED AP directory, reflecting the number of LEED APs who wish to be publicly listed. There are 605 LEED APs in BC. In Canada, 83 LEED projects have been certified and 597 building projects have been registered with the Canada Green Building Council. In BC, 30 LEED projects have been certified and 187 are underway to be added.

The green building movement is relatively young, but as the design and building industry gain experience with this new paradigm, the cost premium for construction of a green building has dropped to a very small percentage (2–8%). In some cases, there is no additional cost. On the operating side of the equation, the green building will cost significantly less to operate over its useful life. This is essentially a life cycle approach, looking at building and operation and maintenance cost over the life of the building.

The public sector has pushed the green building movement and this makes sense because they will operate the building for its useful life. The private sector has different financial criteria, but many private developers are moving to some form of green building to enhance their market position. Examples on the residential side include Victoria's Dockside Green development which is targeting LEED Platinum<sup>13</sup> and projects such as Millennium Water in Southeast False Creek's Olympic Village are seeking LEED Gold certification.<sup>14</sup>

There are established programs in North America for greening existing buildings and their operations, such as BOMA's Go Green and Go Green Plus and LEED Existing Building (EB). Go Green was developed by BOMA British Columbia and addresses ten areas grouped into five categories:

- Resource Consumption

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<sup>13</sup> Dockside Green, *Project Sustainability Overview*, 2007– Webpage:  
<http://docksidegreen.com/sustainability/overview/overview.html>

<sup>14</sup> Michael Sasges, 'Legacy' Living, Vancouver Sun, Saturday, October 20, 2007 P.K2

- Energy Conservation
- Water Conservation
- Waste Reduction & Recycling
  - Construction Waste
  - Recycling
- Building Materials
  - Hazardous Materials
  - Materials Selection
  - Ozone Depleting Substances
- Interior Environment
  - Indoor Air Quality
  - HVAC Maintenance
- Tenant Awareness
  - Communication Program

Go Green can be seen as a first step to greening a building, with Go Green Comprehensive being a more rigorous energy and environmental management program which allows for third party certification through the Green Globes Canada. LEED EB has not been officially launched in Canada, but the documents are available for download at the US Green Building Council website. Currently, over 500 buildings in Canada have been certified as meeting the Go Green or Go Green Comprehensive requirements, including 103 buildings in BC.<sup>15</sup>

## **5.0 LEASE INDUCEMENTS**

For new leases, the landlord typically offers a tenant inducement in the form of an interior refit or renovations. The landlord wants to keep space occupied and maximize the net operating income for the space. The tenant wants space that meets their criteria and their budget. The simplicity of this equation changes when you bring in the idea of a green lease, one that would bring in concerns about sustainability and environmental benefit.

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<sup>15</sup> The Building Owners and Managers Association (BOMA), *Certified Buildings in British Columbia*, 2007, Retrieved from [http://bomagogreen.ca/buildings\\_bc.html](http://bomagogreen.ca/buildings_bc.html)

A lease or tenant inducement is essentially a marketing tool, which eases the financial burden for a tenant moving into a building or renewing in the same space. Commonly used inducements are a rent-free period, a reduction of rent, cash payment (less common in a strong market) and leasehold improvements. A re-fit or renovation of the space which normally happens with a new tenant presents an opportunity for the landlord to invest in greening the space.

For example, for a five year lease at \$45.00 per square foot per annum (sfpa), a landlord might offer a lease inducement of \$25.00/sf to 'fit out' the space to the tenant's requirements. That means the net rent from the tenant's perspective is \$40.00/sfpa over a five year term.

A renovation or refit of the interior space to suit the tenant's needs is a typical lease inducement. Such a refit can have energy and greenhouse gas implications because of the materials required and issues such as material selection and construction waste disposal. This whole area is addressed by the LEED for Commercial Interiors rating system which was introduced in March of 2007. The Port of Vancouver building re-fit in Vancouver achieved LEED Gold for its interior renovation.

## **6.0 THE VALUE PROPOSITION**

A developer or building owner in North America, aiming to maximise cash flow and minimise costs would typically be unwilling to invest additional capital, construction or innovation costs in order to certify that a building's performance meets sustainable standards. However, reports from a number of government authorities throughout Australia suggest that building owners are increasingly adopting a life-cycle perspective in evaluating the commercial benefits of higher up-front constructions costs of a green building. For example, the use of materials which are designed to endure for the life of the building and beyond, despite initially high upfront costs, may result in lower building maintenance costs and expenses. Whilst it is common sense for a building owner to consider the benefits of lower building maintenance costs throughout the life of the building, the cash flow implications of higher upfront costs for developing a new building, or retrofitting an existing building, need to be understood and managed.

The irony is that the beneficiaries of implementing sustainable measures are often tenants, who benefit from lower utility outgoings due to design and construction features that reduce energy and water consumption. It is counter-intuitive for a building owner to invest additional capital in the development or fit out of a green building unless those costs can be recouped through higher rental payments. Whilst this may present the commercially optimal position for a landlord by enabling the higher upfront costs to be recovered relatively quickly, that rent will still need to be commercially competitive in the marketplace. If it is not, then it will be very difficult for the owner or property

developer to achieve the pre-commitments required to secure funding for the building in the first place.

Of course, if the market demands green buildings and is willing to pay the premium for them, or sustainable design costs become level with conventional building costs, then the problem is obviously alleviated. The majority of green buildings in Australia either involve government or institutional occupiers, or are occupied by a single tenant.

The value proposition for landlord and tenant therefore appears to be as follows:

- the cost differential between a proposed/refitted green building and a conventional building of similar size and location must be kept to a minimum. While it is true that the higher upfront costs associated with developing a green building may result in net savings for the building owner over the life of the building, this benefit is tempered by two key considerations. The first consideration is that the developer and initial owner of the building may not own that building for its entire lifecycle. In such a case, the party who has met the initial upfront costs will bear much of the onus of those costs unless it can be passed on to tenants or the purchaser of the building. This consideration will be particularly relevant to a speculative property developer, though perhaps less so for long-term property owners. Second, the cash flow considerations and the profitability of the building for the developer and initial owner need to be maximised in order to provide an incentive to develop such a building in the first place, and
- rental and outgoing costs must be competitive, obligations regarding fit-out, waste management and the like must be reasonable. Excessive rental payments are obviously un-commercial, but a balance between rental payments on the one hand, and possible savings in outgoings and waste disposal costs and hopefully greater worker comfort (and hence productivity) on the other, needs to be part of the 'pitch' to prospective tenants.

## **7.0 GREEN BUILDING STRATEGIES AND ISSUES**

The goals of a green building can be generally summarized as follows:

- reduce electricity and natural gas use and related greenhouse gas emissions and increase onsite renewable energy generation
- reduce water use and embodied energy for purification, distribution and treatment
- use of natural day-lighting where possible, lower overall light levels and use of task lighting

- use ventilation strategies that enhance indoor air quality whilst limiting energy usage
- provide greater individual control of workspaces (in-particular lighting, ventilation and possibly heating and cooling)
- use of interior materials that do not emit volatile organic compounds (VOCs) or off-gas harmful substances
- recycle construction wastes
- carry out construction activities to maintain high indoor environmental quality
- encourage transportation alternatives such as bicycling, electric scooters, alternate fuel vehicles, public transit.
- promote and facilitate recycling and waste reduction
- promote environmentally-friendly operations, maintenance and cleaning practices.

While the primary goal of sustainability retrofits is to reduce energy and water use, benefits to productivity attributed to green buildings are difficult to factor in. The reductions in utility bills carry the weight in conventional decision-making. When it comes to criteria for making decisions on retrofits, a number of approaches can be used: simple payback, measured in years; internal rate of return (IRR), expressed in percent; net present value (NPV), where the investment is discounted at a set rate over a fixed period. In general, the private sector uses the simple payback method and is looking at payback periods that are a maximum of five years, however the public sector is increasingly using more lifecycle adjusted costing techniques.

The initial decision to invest in a building or other major project would not be done by a simplistic measure such as simple payback. Zeeg and Wilson (2007) argue for a more sophisticated approach for energy retrofits that “will more accurately reflect the benefit of the investment”.<sup>16</sup> Further, they state, “although some buildings may have had some efficiency upgrades in the past, there is almost always room for improvement. New technologies, increased awareness and changing energy prices often mean that measures rejected in the past as not being cost-effective are viable today. The rationale for an energy retrofit can go far beyond just the energy savings. Energy retrofits often introduce new technologies or operating controls that can improve occupant comfort and health. New, energy efficient T8 lighting is a good example of this, providing reduced flicker and hum with improved light quality that can reduce occupant eye strain. Energy

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<sup>16</sup> Taylor Zeeg and Michael Wilson, *Energy Efficiency and Buildings: A Resource for BC's Local Governments* (2007), Fraser Basin Council and Community Energy Association, Retrieved from: [http://www.communityenergy.bc.ca/sites/default/files/Policy\\_Manual\\_final.pdf](http://www.communityenergy.bc.ca/sites/default/files/Policy_Manual_final.pdf)

retrofits also provide an opportunity to replace aging equipment, and repair or upgrade old systems, while using the energy savings to cover the cost.”<sup>17</sup>

The issue of the desire for rapid payback has been a challenge since the earliest demand side management program. Typically, rebates were used to influence buyer behaviour by reducing the cost differential between a standard and a high-efficiency model. With the desire for rapid payback, many utility programs emphasized the “low hanging fruit”, going after the measures that provided a fast, substantial dollar return. Zeeg and Wilson (2007), speaking to a local government audience, advocate a comprehensive set of energy efficiency measures evaluated by a more sophisticated metric.<sup>17</sup>

Depending on the age of the building and the state of its mechanical systems, capital renewal of equipment such as an HVAC system’s chiller may make sense. Such equipment typically has a working life of 20 years. The standard unit of today will be more energy efficient and there will be options of even greater energy efficiency. In some cases, utility demand side management (DSM) programs have targeted this capital renewal program, offering incentives to renew capital equipment ahead of schedule with high-efficiency units.

DSM programs such as BC Hydro’s Power Smart program launched in 1989 have become the most common energy inducement currently available. Activity of the program in terms of incentives has varied over the years due to a combination of corporate leadership, political direction, and provincial energy efficiency standards for products and use of cost tests by the regulator, the BC Utilities Commission.

According to Michael Wilson<sup>18</sup> (2008) the Green Buildings BC program’s approach would translate into a maximum of an eight year payback based on total cost. Actual cost of the efficiency measure would be equivalent to a six year payback, studies, design and implementation would add another two years.

Part of what is involved with a green lease is the idea that a tenant may wish to see improvements done that are beyond the cost criteria of the owner. In this case, the green lease must spell out how these costs and benefits are allocated. Clearly, each building is unique and a green lease will have to be flexible to accommodate the needs and objectives of both the landlord and the tenant in the context of the building.

## **7.1 Carbon Neutrality**

Another word frequently heard and seen these days is “carbon neutral”. In fact, it was the New Oxford American Dictionary's Word of the Year for 2006. “Being carbon

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<sup>17</sup> Taylor Zeeg and Michael Wilson, *Energy Efficiency and Buildings: A Resource for BC’s Local Governments* (2007), Fraser Basin Council and Community Energy Association, Retrieved from: [http://www.communityenergy.bc.ca/sites/default/files/Policy\\_Manual\\_final.pdf](http://www.communityenergy.bc.ca/sites/default/files/Policy_Manual_final.pdf)

<sup>18</sup> Michael Wilson, Senior Energy Planner, Community Energy Association, January 16, 2008, Personal Communication.

neutral involves calculating your total climate-damaging carbon emissions, reducing them where possible, and then balancing your remaining emissions, often by purchasing a carbon offset: paying to plant new trees or investing in ‘green’ technologies such as solar and wind power.”<sup>19</sup> In the fall of 2007, BC Premier Gordon Campbell announced that BC government operations and those of services they fund, such as education and health care, must be carbon neutral by 2010. Under the Climate Action Charter, BC municipalities can commit to the goal of becoming carbon neutral by 2012. What is not yet clear is the structure and operation of a system of carbon offsets that will be required to compensate for carbon emissions remaining after attaining the maximum practical efficiency of energy use.

These commitments to carbon neutrality make it clear that from the perspective of a private sector commercial building owner, the definition of a green building from a practical and marketing perspective will constantly be evolving. Any process for developing a green lease must be flexible enough to allow for this evolution.

## **8.0 EVOLVING FINANCIAL BENEFITS OF GREEN BUILDINGS**

This more comprehensive approach to buildings includes many characteristics formerly considered intangible and difficult to quantify, such as occupant and environmental well-being. However, a number of studies have established that there are benefits which we can start to quantify. A well-known example involves higher sales in a new Wal-Mart store with natural day-lighting. On the well-being side, a McGill University study of UV air purification found that occupant sickness dropped by 20% and respiratory symptoms were reduced by 40%. This study is notable because it was a double blind study conducted over two years. Better indoor environmental quality will have financial benefits. The recent Green Value and other studies affirm the value of the benefits not traditionally considered in a leasing decision.

## **9.0 EVOLUTION OF THE GREEN LEASE IDEA**

What is emerging is the idea of a green lease, where certain tenants would be willing to pay a higher rent to rent space in a green building and would be willing to contribute to the additional cost of undertaking measures that have a payback greater than five years. The challenge is how to fairly incorporate the costs of greening the building in the lease. The tenant would see a benefit to employee attendance and productivity.

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<sup>19</sup> OUP Blog - *Carbon Neutral: Oxford Word of the Year*, Nov 13, 2006, Oxford University Press USA, Retrieved from: [http://blog.oup.com/2006/11/carbon\\_neutral/](http://blog.oup.com/2006/11/carbon_neutral/)

## **10.0 VALUATION AND FINANCIAL ISSUES**

### **10.1 Carbon Neutrality**

This section considers the nature of lease structure that might best support sustainable arrangements between a landlord and tenant. Increasing industry interest in a more sustainable approach to buildings arises from a variety of factors mostly related to climate change or an emphasis on corporate social responsibility. Whatever the reason for this rise in interest, efforts to be more sustainable sit within a framework of existing leases, landlord and tenant relationships, finance and a range of other factors.

The problem with many sustainable approaches to buildings is that they can change the nature of capital investment and return, so much so that the relationship between landlord and tenant can act as a disincentive to sustainable investment. In short, the contractual relationship between landlord and tenant can affect taking sustainable decisions, yet a different contractual relationship could support sustainable investment to both parties benefit.

The question arises, and this document therefore starts to address, what the impediments to more sustainable approaches to leases are, and how these might change to produce a “green lease”.

It is unlikely that this document will solve all the problems of implementing a green lease. Neither budget nor scope has been sufficient. However, there is hope that this report will start to illustrate how lease structures can change to be more sustainable.

It should also be noted that some observers consider “green leases” to solely refer to energy or water savings. Since clearly “green lease” is not a well-defined term, in the current context it is defined as follows, adapted and simplified from a definition proposed by RealPac:

“A Green Lease encourages reduced usage of resources by both landlord and tenant, by sharing sustainable investment and benefits between lease signatories.”

### **10.2 Problem Statement**

Arrangements between landlords and tenants vary widely. At one end of the spectrum in North America, the “Triple Net Lease” is typically an arrangement where the tenant repays the landlord's operating costs. This usually excludes structural items, but may include items as large as roof replacement and certain other components, often with a phased recovery where the capital investment is significant.

At the other end of the spectrum, the "Gross Lease" is an arrangement where the landlord pays all costs of operating and managing the building and does not recover these from the tenant directly, but instead receives them via a rent.

Internationally, some lease arrangements go further than this, for example the Full Repairing and Insuring (FRI) usually includes structural items, i.e. beyond the Triple Net Lease. This concept explains an important point; lease arrangements can be considered a compromise between landlords and tenants, which usually diverge from the landlord's frequently preferred lease structure, which transfers all costs (and thus risks) to the tenant, so the lease creates an income stream that most closely resembles alternative investments.

These different lease structures only scratch the surface of the problem, however. A wide range of other factors affect the potential to implement a green lease and need to be considered. We start by considering whether there is an underlying benefit in having green lease clauses and then, what the problems are.

### **10.2.1 Underlying Benefit**

The reason to consider a green lease arguably started being driven by CSR, however profit and benefit are increasing reasons to consider a green lease.

Investors and tenants are starting to consider that buildings should be sustainable and governments in particular wish to occupy sustainable buildings. While there remains healthy scepticism on the incremental financial value of green buildings, there is little doubt about the increasing demand. Additionally, increasing energy costs and the potential to achieve savings through sustainability means that an appropriate structure is needed to secure these sustainable savings.

While the debate continues on whether sustainable buildings produce better rents or increase the investment value, there are already indications that pension funds, their managers and advisers, will tend to prefer a sustainable building in preference to a closely similar traditional building. In the long term, this means that investments will likely move towards sustainability, if only as a hedge against risk and climate change.

“Green Value”, a 2005 international study led by RICS Canada<sup>20</sup> with a number of other distinguished sponsors (BC Government, BC Hydro, English Partnership, Metro Vancouver, Green Buildings BC, Canada Green Buildings Council, Natural Resources Canada and RealPac.) into the benefit of sustainable aspects of buildings, concluded that there is a benefit in sustainability, but pointed out that work is needed on leases since they can act as an impediment to sustainable investment. This has also been picked up in other green building reviews, such as Green Building Council of Australia's “The Dollars and Sense of Green Buildings.”

Most studies concluded that moving to a more sustainable lease approach could yield extra value in investments, both for the landlord and tenant. But opinions differ on whether there should be a variant on a net lease, or a gross lease.

Some have started to implement green leases. Investa, one of Australia's larger property investment companies, has looked at this and started to implement a "Green Lease Guide." Vancouver Island Technology Park in Victoria BC used relatively standard lease templates, but incorporated tenancy guidance so the ongoing management and operations of the building would remain sustainable.<sup>21</sup> The target was optimising sustainability and thereby, net revenue.<sup>22</sup> In the housing arena, green loans are slowly developing impetus in helping offset capital risk profile.

It is not conclusively and demonstrably proven that increased value is obtained directly through rent or yield, the primary financial indicators. Green value pointed out, and Australian and Japanese analyses have concurred, that current lease mechanisms may not enhance these direct financial indicators. However other indicators; savings in energy, tenant inducements and other indicators, more clearly show the potential benefit of a green lease. These indirectly have a net benefit on the income stream and thus, investment value.

For reasons of risk, rent, yield, absorption, turnover and many other aspects that translate to a profitable advantage, there is therefore a reason to reconsider lease mechanisms and some mainstream investment associations and organisations are starting to consider this, such as RealPac<sup>23</sup>, the association representing Canada's largest real estate owners.

Whether the landlord or tenant seeks to improve the sustainability of a building, the implications of paying for and recovering what can often be substantial capital expenses are affected by the lease structure. However, investments in sustainable building attributes are starting to trigger a need for a different contractual relationship than most leases contemplate. Some examples may help illustrate this.

The first few examples consider the impact of replacing a traditional roof with a green roof, which while they often cost more to build than a traditional roof and require careful installation, have offsetting reductions in heating and cooling, because green roofs generally improve thermal insulation. Generally speaking, the problem is that a tenant may dispute the benefit of the extra cost. Additionally, reduced heating and cooling expenses will benefit the tenant and not necessarily the landlord, depending on the lease structure.

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<sup>20</sup> *Green Value - Green Buildings Good for Business*, 2005, The Royal Institution of Chartered Surveyors, Retrieved from: <http://www.rics.org/greenvalue>

<sup>21</sup> *Green Lease Guide for Commercial Office Tenants*, 2006, Investa Property Group, Retrieved from: <http://www.investa.com.au/Common/Pdf/Green-Lease-Guide.pdf>

<sup>22</sup> Source, original Director responsible for initiating and managing the development, Sandy Beaman. The project was implemented by Joe van Belleghem, who is better known for Dockside Green, which he undertook subsequently to the Tech Park.

<sup>23</sup> *Green Leasing, RealLeasing Conference October 4<sup>th</sup>, 2007*, S. Michael Brooks of RealPac, Retrieved from: [http://designersi.com/users/12415/images/RealLeasing\\_Green%20Lease%20Presentation\\_REALpac%20Website\\_04Oct07.pdf](http://designersi.com/users/12415/images/RealLeasing_Green%20Lease%20Presentation_REALpac%20Website_04Oct07.pdf).

Example 1: The landlord wishes to replace an existing roof with a green roof. The lease is triple net.

The landlord would normally pay for the new roof and recover the cost from the tenant. However, the larger capital expense represented by a green roof is unlikely to be offset by operating cost reductions during the tenant of the lease. There is therefore little benefit for the tenant agreeing to the larger capital expenditure. The landlord has no incentive to make the investment since the primary beneficiary is the tenant. As a result, the landlord chooses the cheaper traditional roof.

Example 2: As example 1, but with a gross lease arrangement between landlord and tenant.

With a gross lease arrangement, the landlord pays the cost of the new roof, but also receives the benefit in reduced operating expenses. However, there is no incentive for the tenant to reduce their energy consumption; and the longer payback for the original green roof investment would be deemed risky by the landlord. Again, the landlord would likely choose a traditional roof replacement.

Example 3: As example 1, but the lease has two years remaining, with no renewal options.

Tenants will be unwilling to support payments for a large capital investment where the life cycle of the improvements exceeds the remaining term of the lease. This can tend to deter the tenant from supporting longer life cycle investments since they benefit of the capital value but not the tenants occupancy, and the need for a short term return on investment will tend to discourage the landlord from making sustainable investments.

Example 4: The air conditioning system requires replacement and the landlord proposes a sustainable approach, replacing the existing lighting system with LED lighting and downsizing the power consumption of all other building components to reduce heat generation, thus reducing air conditioning plant needs.

LED lighting is capital intensive but the considerably lower power requirements, combined with lower heat output, mean that the payback is received in reduced air handling and lower energy costs. These returns on investment may be split between the landlord and tenant, and without a mechanism to combine the benefits each individual return may be insufficient to justify the capital investment.

Example 5: Reduction in air conditioning plant size reduces VAV ducting requirements, recovering and increasing the amount of usable floor space.

BOMA measurement standards provide no benefit from this change, whereas by comparison European (RICS) measurement standards increase the investment value. In North America, the tenant would probably benefit but the landlord would probably not: in Europe both landlord and tenant benefit.

### 10.2.2 Factors

Several main factors can impact creating, adopting, implementing and maintaining sustainable leases:

- **Market & negotiating conditions.** One party may be able to force the other to agree to lease terms that preclude sustainable investment. This may often be driven by the business needs of the occupant or the landlord, but can conflict with sustainable objectives. Sustainable lease terms therefore have to be adapted for business needs and for individual bargaining conditions.
- **Homogeneity of application.** Not only are no two buildings entirely identical and the needs of landlord and tenant differ, but sustainable approaches need to be adaptable, for example for climatic conditions between one part of the country and another all one part of the world and another. Thus, solutions that work in one location may not work in another, which may affect the ability to have standardised lease terms across portfolios. Sustainable lease terms will therefore benefit from being generic and thus adaptable to building and locational circumstances.
- **Risk.** The owner and tenant probably have different perspectives on the amount of risk they are willing to accept in implementing a sustainable retrofit or construction. A green lease mechanism therefore has to adapt. This may make it more difficult to implement certain sustainability upgrades to existing buildings and implement recovery causes the share of the risk and rewards. However, any risk could be taken on by a third-party, for example an Energy Services Company.
- **Investment comparison.** Real estate investment performance is compared with alternative investments. Any lease mechanism that goes away from a "fully net" investment model all results in a variety of different lease structures across a portfolio may face challenges from the institutional investor. It may also increase the complexities and costs of management.
- **Incentive.** Some landlords will see it as a threatening position to share benefits with a tenant because this might open their financial position to tenant scrutiny, which is often jealously guarded. Equally, some tenants will be unwilling to share some of their business benefit with landlords, especially if this means declaring and sharing productivity improvement, for example in an office building.<sup>24</sup>
- **Change.** Undoubtedly some landlords (and even some tenants) will not wish to enter a green lease because it differs from traditional lease structures: they won't

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<sup>24</sup> There has been a well-established link between natural light and productivity, for example the Hescong Mahone group's studies of day lighting benefits.

want to change and it may be difficult to secure executive support for a different lease format because of operations and maintenance costs and implications. In all probability therefore, it will take time to green leases to be adopted. Companies signing green leases (both landlords and tenants) may wish to share their experiences, so models can be further refined. However, this runs contrary to most experiences with leases, which are tightly held confidential documents whose terms are not made public except arguably through mass investment databases.

- Cash flow horizon. Modern real estate economics, especially in North America, require a rapid return on investment.<sup>25</sup> The longer life cycle and payback periods of some sustainable investments can conflict with the shorter required returns. This has impacts both for financing and accounting. Although accounting standards are due to change towards international accounting standards, which include “marked to market” or market value principles, these still dominantly focus on cost approaches, which may not properly reflect on the return on investment profile of sustainable attributes.
- DCF. Traditional discounted cash flow methods and financial reporting indicators are dominantly focused on a “cost of money” principle, which in effect discounts future value or cost. The extent of discounting increases depending on how far from the start of the cash flow the cost or revenue occurs.

Since sustainable investments typically have higher initial cost but longer life cycles, the deferred value of sustainable investments are quite literally discounted. Thus, the benefit of a sustainable attribute may not be fully reflected in a DCF-based business case, which also implies that the green lease needs to be adapted to correctly report and recover/repay the long-term benefits of sustainable investment. This will especially be true when comparing traditional building fixtures and fittings to their sustainable equivalents:

- Measuring the cost and benefit of sustainable improvements should likely consider using non-DCF indicators such as total cost and total revenue over the life cycle of the sustainable attribute.
- Mechanisms to share the costs and revenues of sustainable attributes and improvements will generally benefit from being generic and independent of discounting method and choice of discount rate.
- Duration & life cycle. The remainder life of a building or a lease can be in conflict with the life cycle of a sustainable investment. This needs to be taken into account. In addition, the longer life cycle of sustainable investments can cause difficulty with recovering the value from tenants. This is especially true

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<sup>25</sup> Note that many European and Asian owners have considerably longer perspectives on their investment horizon.

with larger capital investment and will tend to encourage a move towards longer amortisation periods for sustainable investments, so the total costs of occupancy remain attractive to tenants. This will differ depending on the nature of lease. A forward thinking public sector tenant may take into consideration the effects of climate change on the building.

- **Building use & market sector.** A sustainable approach that works for an office building may not work for an industrial building. An approach that works in retail probably will not work in residential. It also means that certain green lease clauses are unlikely to work in all sectors. Green lease terms need to be flexible and adaptable for the building use and market sector.
- **Investment tier.** Primary well located and well leased investments in major urban centres such as Toronto, London or New York are guaranteed to have a different approach to green leasing than poorly located off-pitch investments that are poorly leased and mostly vacant in tertiary markets. One size will not fit all, and, the speed of acceptance of green lease will differ by investment tier. Additionally, it will also likely vary by investor themselves, since certain investors may be "rabidly green" and thus early adopters, whereas more conservative and slow-moving funds will likely wish to test green lease clauses before broadening them across an entire portfolio.
- **Affordability & practicality.** Not every sustainable improvement to a building is affordable, practical, available on the market, or the skills available to implement them. A green lease mechanism therefore needs to be adaptable to what can be achieved physically and within budget. In all probability green lease clauses will have to evolve over time as their practicality and acceptance improves in pace with affordability.
- **Profit-sharing.** Certain leases (such as retail leases) include profit-sharing clauses, so that the landlord shares in the tenant's business. Green leases must adapt to this, but more importantly, this may be a possible method to share appropriately the costs and revenues from sustainable investments. This may take time to be adopted in sectors that are not used to profit-sharing clauses.
- **Commit waste.** Most leases include "waste" clauses and require tenants not to commit waste. Although intended to deal with damage to the investment and its value as well as non-compliance with statute, bylaws etc, the concept can be extended to deal with harming or supporting sustainable aspects of the building. From a preliminary review of available texts, it remains to be proven whether a tenant or landlord able to make more sustainable investments and who fails to do so, is committing waste.

- Acceptance within portfolios. Some question whether different lease structures should be accepted. The principles behind this are in effect established in the "Freshfields Report" undertaken for the United Nations<sup>26</sup>. This concluded that adoption of environmental, social and governance (ESG) characteristics within portfolios is desirable and permitted. This goes beyond simply sharing financial aspects of ESG, to a broader context. In short, fiduciary duties of care are no longer the sole limitation to investment decisions, although they may be the driving force. This opens the door to a more sustainable approach, which is consistent with many tenants' CSR commitments.
- Maintenance. It is one thing to create a sustainable building and lease, and to rent space to a tenant who commits to sustainability, the question is whether it can be maintained in the long term. This raises the issue of whether landlord/tenant "building manuals" desirable, similarly to the owner's manual for a car. There is evidence that even when you have these documents, either the landlord or the tenant fails to read or implement them. Canada Green Building Council is adapting LEED® for this exact reason. Maintenance is embedded in the concept behind BOMA Go Green. However, a sustainable building approach to energy and electrical services may add to the qualitative improvement in asset maintainability.
- Management. Even with a green lease and/ or "building manual" in place, there will invariably be a time when the janitor replaces a compact fluorescent light with an incandescent light, or pours cleaning fluid down a waterless urinal, potentially creating far greater damage than if more traditional building equipment had been installed.
- Inflation and interest carry. The real world is subject to inflation, and typically and investor's capital contributions to an investment are adjusted by adding compound interest to the initial investment until the capital is repaid. In the case of a sustainable investment, a green lease clause should contemplate the impacts of inflation and interest carry. This may be more difficult to achieve in adjusting for inflation than it is for interest carry on the original capital investment but should be considered.
- Measuring the benefits. Work undertaken by universities (such as Carnegie Mellon) on productivity do not yet appear to have revealed a simple standard method for measuring benefits of sustainable attributes, especially benefits such as productivity improvement. However studies such as Green Value suggest that productivity is a key benefit from sustainability:

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<sup>26</sup> *A legal framework for the integration of environmental, social and governance issues into institutional investment*, 2005, United Nations Environment Programme Finance Initiative, Retrieved from: [http://www.unepfi.org/fileadmin/documents/freshfields\\_legal\\_resp\\_20051123.pdf](http://www.unepfi.org/fileadmin/documents/freshfields_legal_resp_20051123.pdf).

- A challenge for green leases will be the agreement of “performance metrics” and their measurement, and to make these relevant to the tenant and their business;
- Assignment or subletting could substantially change metrics/measurement, if the tenant business changes completely. The flexibility to adapt metrics/measurement over the term of the lease and depending on the tenant may be desirable but could considerably complicated lease administration for both landlord and tenant;
- Tracking green lease benefit measurement and attributes through rating systems such as Go Green may over time create evidence to persuade more landlords and tenants to enter green leases, for their mutual benefit. Additionally, it may help encourage improved sustainability (which is the intent behind both Go Green and LEED®);
- In measuring productivity, the general conclusion appears to be to measure the productivity benefits in terms that the tenant uses within their own business. For example, increased lines of software code written by a software author as a result of increased day lighting or improved air quality could be an indicator. Clearly, these will have to be discussed and agreed by the use signatories to a lease, unless associations and professions can determine standard productivity indicators for different business sectors, acceptable to those businesses. Work would be needed on this.
- Market pricing failure, and transfer pricing. Some improvements such as water conservation can be expensive to implement but due to the low price of water the payback can be small, thus either extending the payback period or affecting the return on investment risk. This is arguably a market pricing failure, or a failure of government or water authorities to properly reward conservation and sustainable resource management. A green lease could correct this imbalance by disproportionately rewarding sustainable behaviour. For example, replacement of traditional urinals with waterless urinals may be expensive but could be recovered more quickly if the lease signatories agree to accelerated or disproportionate repayment of the original capital investment. The level of the lease signatories’ CSR commitments may affect whether this could be implemented.
- Detail. Experience in Australia is oriented towards documenting each sustainable attribute. While this certainly has merit in clarifying any uncertainties, it also adds to complexity. Available indications are that it has been successfully implemented however, and the concept appears somewhat similar to the dominantly British concept of a schedule of condition and interim/ final schedules of dilapidations. Dilapidation law in the UK has become quite advanced, and is

based on a combination of common law and precedent. The author considers it has application to a green lease structure.

- Rent reviews and renewals. Green lease clauses will need to contemplate and adapt for the impact of rent reviews and lease renewals. For example, if capital investment in a sustainable attribute has been shared between landlord and tenant and the returns are also shared, the question arises as to who owns the attribute at the point of rent review or lease renewal, since this affects the lease rate and adjustment from comparable rental indicators. This will need to be carefully contemplated in the lease terms and especially in the investment repayment clauses:
- Adoption of a standardised payment and repayment schedule, or mechanism to calculate these, should help solve any issues;
- Care will be needed to document the condition of the demise at commencement of the lease and reconcile sustainable improvement repayment schedules with interim and final dilapidation assessment. In other (simpler) words, care will be needed to clearly identify any outstanding interest and entitlement at rent review or lease renewal, and document the extent to which the sustainable attribute may have depreciated;
- It will no longer be sufficient (and arguably never was sufficient) to determine that a tenant improvement became the landlord's fixture or fitting at the end of the lease. It may be necessary to include payout clauses for any unamortized capital payment or returns due at cessation of the lease. Equally, tenant abandonment of an improvement may need to be specially addressed in the lease if there are any remaining debts or revenues relative to a sustainable improvement.
- Legal. It will be important to invest appropriately in legal advisers (both the landlord and tenant) capable of drafting, communicating, negotiating and completing a green lease. If legal counsel does not understand sustainability or the reason to reflect it in a changed lease structure, and the least may not properly reflect the landlord or tenant intent, identifying clearly each party's obligations. Care will be needed to oversee the lease clause and ensure it reflects the parties' intent both initially and during the term of the lease and any renewal.
- Marketing. If the landlord is to go to the extent of creating and implementing a green lease, it will be worth bearing in mind that certain tenants are increasingly seeking out landlords and accommodation with a sustainable component or commitment. If the landlord fails to communicate this advantage, or the agent fails to communicate or explain the benefit, the advantage of implementing a green lease may not succeed. Worse, it could result in reduced absorption or

possible dispute. Landlord and tenant engagement with real estate agents will be important to the success of implementing a green lease strategy.

Clearly, this is not a complete list but hints at the complexity behind the concept of a green lease. The results of different market leases, different buildings, different tenancies and the above range of circumstances mean that the challenge to be sustainable and embed this in a green lease is not simple.

### **10.2.3 Framework**

In a simple world, this section would provide template clauses able to be used by landlords and tenants. In reality however, and due to the complexities outlined in Section 10.2.2, no single clause or clauses might be as helpful as describing a process for creating a green lease. This may change over time, with more knowledge and experience, or with more funding and input to research what has been done in other countries such as Australia. This goes beyond the current scope.

By contrast, outlining a process to consider and form green lease clauses from first principles may be more helpful and flexible, and this is considered below. It comprises:

- Considering how the costs and returns should be shared;
- A suggested process to adapt the lease for the factors noted previously.

### **10.2.4 Sharing Costs and Returns**

Some of the basic principles used to evaluate partnership structures may assist in understanding how to form an appropriate green lease clause between landlord and tenant. How the costs and returns are shared will be a fundamental consideration to forming the lease clauses.

The concept of priority debt and repayment, combined with considering how partners invest and share in returns in an enterprise considered informative. In a priority situation such as a mortgage, the lender requires to be paid out for their investment before the equity partner receives their return. This can be termed a "top slice" arrangement, because the "bottom slice" is paid off in priority, with the "top slice" being paid off last, after the priority debt is retired.

The companion concept to "top slice" is "side-by-side" where the signatories to a green lease contribute to the original capital investment and share in the rewards in equal proportion. Thus, with one partner contributing 60% of the capital and the other partner contributing 40%, repayment from savings would be shared 60/40 as the repayments are received.

More complex arrangements (e.g. "side-by-side with top slice") are common in the business world and thus possible in a sustainable lease.

Example 1: A landlord and tenant agree to a 10-year lease with a green lease clause. This includes a 60/40 investment in a sustainable attribute which should be paid off from savings in five years. The sustainable attribute has a 12 year projected life, with a recovery value at the end of the lease of \$10,000 and a recovery value at the end of its life cycle of \$200.

Under a green lease clause, both parties would share 60/40 in the capital cost of a sustainable attribute. If the tenant is receiving the benefit of the investment, they would pay the entire saving into the joint-venture partnership, which would pay the investors in proportion to their investment, i.e. 60/40 (landlord/ tenant). This is a standard side-by-side arrangement.

After repayment of the investment, the partners would continue to share 60/40 in the savings until the end of the lease. At that point, the recovery value of \$10,000 would commonly become the landlord's property. The tenant would in essence abandon their \$4,000 recovery value assuming the lease contains a provision for the improvement to become the landlord's chattel (which is the most common position).

A more equitable (but unusual) approach would be to continue to treat the lease as a partnership, i.e. be consistent with CSR and principles of sustainability. If the attribute is bought out by the landlord, their share would be \$6,000 and the tenant's share would be \$4,000 and the landlord would remunerate the tenant for his invested value at the end of the lease.

The \$10,000 recovery value could be determined by using a depreciated cost calculation included and predetermined in the original lease, which would be a standard accounting approach. An alternative approach would be to use a market value method, assess the market value at termination of the lease and the landlord would pay out the balance to the tenant.

Should the lease include a renewal clause, the question exists whether the savings should change during the renewal term. It will probably be in the landlord's interests to continue the arrangement: by doing so, the tenant will continue to pay the landlord 60% of the savings for no additional investment. Alternatively and with the chattels becoming the landlord's property, in theory the rent should rise by an amount equivalent to the savings from the sustainable attribute (in practice however, the landlord probably would not obtain all of the savings benefit).

Once the capital investment has been fully amortised, it will likely benefit the landlord in a competitive market to pass a percentage of the savings to the tenant rather than try and recoup them. This will encourage the tenant to renew their lease and thus reduced turnover and voids, as well as reduce re-leasing costs and inducements, including refitting costs. Thus, a proactive approach in a sustainable building and sharing of

benefits can affect the net investment value positively by capturing cost savings and expenditure avoidance.

Example 2: As example 1, but this time the landlord makes 100% of the capital investment and the tenant agrees to pay 100% of the savings.

In a top slice arrangement, once the initial investment has been repaid the question is the amount that the tenant would pay to the landlord. This might be determined by negotiation at inception of the lease, and have some proportion where the tenant also benefits from the savings. The problem with this arrangement is that it probably does not incent the tenant to enter into the agreement if they pay 100% of the savings to the landlord. In all likelihood, the tenant would pay something less than 100% of the savings and the percentage they keep provides encouragement for them to sign the lease in the first place.

Again, sharing these savings should assist with tenant retention and thus improve the net asset value.

Comment: Both examples are relatively theoretical and highly simplified, to illustrate the thought process that might be undertaken in sharing investment and rewards between landlord and tenant. In reality, the Factors noted in this report will fundamentally alter what might be agreed as the principles noted above illustrate the concept of sharing investment and rewards and may help structure an agreement.

## **11.0 WORLD GREEN LEASE EXAMPLES**

Australia has moved ahead on this issue, with property and assets manager INVESTA using a green lease that includes a guarantee based on the Australian Building Greenhouse Rating (ABGR) system, which is based on energy intensity. 90% of Australia's electricity is coal fired so an electricity reduction is a reduction in greenhouse gas emissions. This document is included in Appendix IV.

## **12.0 LANDLORD AND TENANT GREEN STRATEGIES**

A list of potential strategies is listed below. It is anticipated that any green lease structure will involve an inducement for the landlord to follow green strategies and a commitment by the tenant to reciprocate by fulfilling their own green management practices. Note that for energy and water saving strategies, each building or situation must be specifically assessed to determine suitable technologies and payback periods.

Examples of tenant strategies:

More energy efficient office equipment (computers, monitors, printers, copiers, white goods)

- Occupancy sensing power-shutoffs for employee workstations
- Education programs aimed at promoting sustainability
- Specify non-ozone depleting refrigerant for appliances
- Video-conferencing and tele-conferencing capacity
- Purchase energy efficient audio-visual equipment
- Ensure shut-off switches for devices with standby consumption
- Promote public transit through bus pass subsidies
- Provide co-op cars for work vehicle use

Example of landlord strategies, used in conjunction with benchmarks, targets and indicators:

- Fluorescent lighting
- Background & Task lighting
- Retrofit insulation
- Lighting controls and occupancy
- Increase planes of glass
- Use light shelves and other means to enhance natural day-lighting
- Light level sensors to enhance day-lighting
- Exterior lighting issues (avoid over-lighting and light pollution, use sensors)
- Re-commissioning
- Appropriate summer and winter temperature settings
- Apply shading to areas with high solar gain
- HVAC controls
- HVAC modifications including occupancy (CO<sub>2</sub>) sensor where return air is re-circulated
- Modify ventilation system to displacement (where feasible)
- UV sterilization of air
- Boiler upgrade and modifications
- Chiller upgrades and modifications
- Use of variable speed drives

- Use of window film to reduce incoming solar radiation to reduce cooling load
- Use light shelves and other means to enhance natural day-lighting
- Water efficiency measures (rainwater capture, landscaping changes to reduce irrigation, recirculation of cooling water, low water toilets, faucets and urinals)
- Promote bicycling (secure storage, locker-change room and shower facilities)
- Promote alternative transportation (, electric scooters, electric vehicles, alternate fuel vehicles, car pooling, public transit, shuttles to rapid transit)
- Promote public transit through bus pass subsidies
- Provide reserved spaces for co-op/car share cars
- Telecommuting
- Waste reduction, recycling and not toxic cleaning supplies
- Information: Monitoring and reporting of base building and tenancy energy use and greenhouse gas emissions; water use; separate metering of tenant energy and water use; waste going to landfill; material recycled;

### **13.0 A SUGGESTED MODEL FOR LANDLORD INDUCEMENTS AND TENANT COMMITMENTS WITHIN A GREEN LEASE**

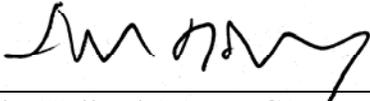
On the basis that government is to lead the green lease arena by offering landlords inducements to more readily follow green strategies then a lease instrument that allows landlords to pick from a menu of green strategies with associated payments appears to offer the best proposition for the marketplace and the environment. It is recommended that a lease addendum be created that commits the tenant to a suite of green strategies listed in Appendix I. Since the tenant will be philosophically motivated to pursue sustainable practices it is not recommended to induce or otherwise reward this strategy.

The landlord alternately will be expected to select from a number of strategies listed in Appendix 1 with the proviso that the strategies selected and paid for will commit to a minimum performance of carbon reduction.

Authored by:

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Per:



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**APPENDIX I**  
**DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR**  
**POTENTIAL BENEFIT**

# DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

## SECTION 1. RESOURCE CONSUMPTION

### LANDLORD STRATEGIES:

1.0	ENERGY USE	DESCRIPTION
1.1	Installing High Frequency Electronic Ballasts (T8 Lights)	The combination of luminaire, lamp and ballast determines the type of light produced. Selecting the right combination starts with knowing what the task is and where it will be performed. After determining the required lighting levels and selecting the appropriate luminaire, the proper lamp and ballast must be chosen. Standard T-8 lamps combined with an electronic ballast produces approximately 90 lumens of light output per watt input, whereas the T-12 system using standard magnetic ballasts produces only 53 lumens per watt. The maximum efficiency can be achieved by using both premium efficiency lamps in combination with premium efficiency ballasts. This combination produces close to 100 lumens of light per watt.
1.2	Upgrading HVAC Controls	Control of building heating, ventilation and air-conditioning (HVAC) systems to match occupant needs is critical to energy conservation. Retrofitting manual and electro-mechanical controls with direct digital control (DDC) systems that have the ability to easily and accurately perform all the operations required to achieve optimal control of building HVAC systems. For example, controlling air systems to minimize energy for fans as well as preheating or cooling of ventilation air. The key strategies include: 1) Controlling ventilation air quantities based on demand using CO <sub>2</sub> and occupancy sensors; 2) Reducing reheat energy by automatically resetting supply air temperature; and, 3) Employing optimal start-up routines to bring space to temperature after a setback period. The types of strategies put in place will depend on the type of HVAC system in the building. However, a common approach to all systems will be to match the requirement for occupancy (time control) and comfort (temperature and humidity control).

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

<b>1.3</b>	Use of Displacement Ventilation System to Improved IAQ, Acoustics and Reduce Energy Use vs. Overhead Mixing Ventilation	In a displacement ventilation system, supply air is introduced to the space at or near the floor level, at a low velocity, at a temperature only slightly below the desired room temperature. The cooler supply air "displaces" the warmer room air, creating a zone of cooler air at the occupied level. Heat produced in the space moves air, including contaminants, to ceiling level where it is exhausted from the space. Displacement ventilation systems are typically more energy efficient, with lower fan horsepower, and quieter than conventional overhead systems.
<b>1.4</b>	Adding Low-Emissivity (Low-E) Window Films	A window film with low emissivity minimizes the transfer of thermal energy through window glass by thermal radiation between a temperature controlled interior environment and a uncontrolled exterior environment. The film is comprised of a transparent flexible polymeric substrate with various transparent thin film layers of coating materials, including a highly reflective metal. The film provides high visual light transmission of up to 50% or more while maintaining a very low emissivity of 0.30 or less. The film is especially suited for retrofitting existing plain glass windows.

<b>2.0</b>	<b>WATER USE</b>	<b>DESCRIPTION</b>
<b>2.1</b>	Use of Rain Water Recovery – Eco Roof to Reduce Rain Water Run-off	Rainwater collection and re-use is considered a central theme in water conservation in many jurisdictions. Modern materials, engineering, and technology are required to integrate the collection of rainwater into commercial and domestic water systems. Without chemical treatment, collected rainwater is typically suitable for all non-potable (non-human-contact) uses including: Outdoor lawn and garden watering/irrigation, Vehicle and power washing, Air conditioner make-up water, General non-potable outdoor usage, Cold water toilet flushing <u>subject to local ordinances</u> .

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

2.2	Drip System Landscape Irrigation vs. Sprinkler System	<p>Drip irrigation is a combination of several types of low-pressure, low-volume water delivery systems. Some of these systems deliver water literally one drop at a time. By keeping the plant's roots moist (but not to the point of saturation) you actually use less water than with conventional watering techniques. Made from flexible vinyl or polyethylene pipe, drip systems are commonly installed in the subsoil. The list of the benefits of using drip irrigation over hand watering applies both to plants and gardeners. A drip system:</p> <ul style="list-style-type: none"> <li>• Saves water — you could experience up to a 50% reduction when using a properly installed and maintained drip irrigation system.</li> <li>• Connects directly to the hose bib and doesn't require cutting water supply lines.</li> <li>• Avoids randomly watering your plants (and the weeds).</li> <li>• Targets the exact area where you want the water (for example, the roots) and allows you to deliver it at the exact time you wish (using a timer).</li> <li>• Installs easily, plus the system components are relatively inexpensive. Kits are available or you can purchase individual components to customize and expand your system.</li> <li>• Delivers water without creating an overly moist environment that promotes fungal diseases.</li> <li>• Adapts easily to changes in landscape. Systems can be used for containers, raised beds, vegetable rows or balconies. Drip irrigation can circle a tree or shrub at the drip line.</li> </ul>
2.3	Recirculation of Water to Cool Equipment vs. Use of Fresh Water	<p>Air conditioning units used to cool server rooms and other dedicated tenant areas often utilize domestic water for cooling. This water is cycled through the air conditioning unit to remove heat and inefficiently discharged into the city drainage system. A cooling upgrade can be undertaken to recycle cooling water through an existing or new cooling tower. This will eliminate the use of city water “once through” the air conditioning use and will instead see the water reused over and over again. Vertical piping risers need to be in place throughout the building. The environmental benefits are the elimination of city water now wasted (used only once and sent to drain, wasted energy to pump, filter, and clean).</p>

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

<b>2.4</b>	Water Efficient 6LPF Toilets vs. Conventional 19LPF Toilets	<p>Low-flush toilets are designed to use six litres of water per flush, significantly less water than conventional toilets use. Although a 6-L toilet looks like a conventional toilet, it has several unique features. Most 6-L toilets use gravity to speed the course of water through the bowl and trap. The rim wash comes through an open slot rather than small holes. The bowl may have steep sides and a narrow trap opening. Six-litre flush toilets generally have a smaller pool or "water spot" than that in conventional toilets. Six-litre toilets should contain the CSA or Warnock Hersey label. This ensures that the toilet has passed primary performance and maintenance tests. European countries have used these toilets for many years, and the building codes in many European countries require the use of 6-L toilets.</p>
<b>2.5</b>	Water Efficient 6LPF Toilets Combined with Faucet Aerators	<p>Faucet Aerators are small devices that attach to the faucet to reduce water flow to 2.0, 1.5 or 1.0 gallons per minute at normal pressures. While they reduce the amount of water used, they also often make the flow more forceful and provide more effective wetting and rinsing. Aerators simply screw onto the faucet head, usually after removing the existing screen. You can buy them at most hardware stores, home improvement centers, online, or at energy-conservation outlets.</p>

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

### SECTION 1. RESOURCE CONSUMPTION

#### TENANT STRATEGIES:

1.0	ENERGY USE	DESCRIPTION
1.5	Replacing Conventional Computer Power Supply with 80 Plus Computer Power Supply	Power supplies are the devices that power computers and servers. They convert AC power from electric utilities into DC power used in most electronics. 80 PLUS is a specification for computer power supply. With 80 PLUS, your computer power supply is at least 80 per cent efficient and will on average save 88 kWh per year in a computer and 280 kWh per year in a server over standard power supplies (from BChydro web site). This makes an 80 PLUS certified power supply substantially more efficient than typical power supplies. BC Hydro is a sponsor of the 80 PLUS Program which encourages computer manufacturers to recommend and install the more efficient power supply by providing funding to manufacturers to offset the slightly higher initial cost.
1.6	LCD Screens vs. CRT Screens	<p>There are two types of computer monitors: CRT (cathode-ray tube) and liquid crystal display (LCD). CRT monitors are the traditional monitors we have used for years and are typically heavy and bulky in size. A CRT monitor uses cathode-ray technology found in televisions. A cathode shoots electron beams through a vacuum tube, exciting phosphors, which create a glow at the front of the screen. As a continuous source of energy is needed to activate the phosphors, the electricity consumption of a CRT monitor remains steady.</p> <p>A typical LCD monitor is thin, compact, lightweight, and sometimes referred to as a flat-panel display screen. LCD monitors use similar technology to that of digital watches. In LCD monitors, transistors charge liquid crystals between two glass plates. Fluorescent tubes provide the light source, which passes through a layer of crystals. Varying the electrical charge to the crystals creates images. An LCD monitor uses less electricity than a CRT monitor because it needs no energy, other than the fluorescent light source, to produce the white background that makes up most screen images. LCD monitors are the energy-efficient choice.</p>

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

<b>1.7</b>	Implementing PC Turn Off Program	<p>Conserving energy by configuring your computer to turn itself off after a period of inactivity is easy. Configuring computers to turn off components automatically is more reliable as an energy saving strategy than relying on users manually to switch off their computers and/or monitors. Modern computers have a built-in feature termed Energy Star® that enables them to be configured to turn off the monitor, the hard disks and the system. Power savings are cumulative when multiple components are turned off. Thus, if both the monitor and hard disk are turned off, the power savings could be as high as 80 percent.</p>
<b>1.8</b>	Purchasing an Energy Star Photocopier	<p>Photocopiers are by far the most energy-intensive type of office machine. To qualify for the ENERGY STAR symbol, photocopiers must go into a low-power mode and then an off mode of 5 to 20 watts after 30 to 90 minutes of inactivity, depending on the copier's speed. When purchasing a new photocopier, make sure it is equipped with an energy-saver feature. This power management capability is mandatory for a copier to meet ENERGY STAR technical specifications. Electricity consumption in the energy-saver mode should be at least 50 percent less than in idle mode. Different machines using the same technology may have substantially different energy requirements. The power ratings on photocopiers do provide an accurate means of comparing energy consumption.</p> <p>Heat and pressure fusing is the most common photocopying technology, especially for high-quality and high-volume copying. However, it also consumes the most energy. Other photocopying technologies may be suitable for less demanding needs and certainly will consume less energy (particularly inkjet systems).</p>
<b>1.9</b>	Purchasing an Energy Efficient Printer	<p>To qualify for the ENERGY STAR symbol, printers must automatically enter a low-power mode of 10 to 75 watts or less, depending on the size and capacity (pages per minute output) of the unit, after a period of inactivity.</p> <p>Matching your needs with the most appropriate printing technologies and capabilities will help reduce energy consumption. If you do not require the highest quality or speed, you may not need a printer that uses light and heat in its imaging process – lasers and colour inkjet machines. A regular inkjet printer is an excellent alternative, as it produces near-laser quality (but at a slower speed) and uses less energy. For printing draft documents, a dot matrix or impact printer does the job at much less cost than a laser.</p>

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

		When purchasing a printer, look for a model that has an energy-saver feature that significantly reduces the machine's energy consumption in standby mode. This is important, since printers are often idle for long periods but continue to consume energy unless manually turned off. Although a short delay will occur before a print job begins from standby mode, this minor inconvenience is more than offset through energy savings.
1.10	Purchasing an Energy Efficient Refrigerator	A ten-year-old refrigerator or freezer can cost considerably more to operate than a new energy-efficient model of the same size. Improvements in the design of compressors and cooling coils, better insulation, tighter door seals, and other design improvements all contribute to the higher efficiencies of newer models. Compare EnerGuide labels to find the model with the features you want that uses the least energy. The ENERGY STAR® mark is your assurance of a model that will be Power Smart to operate.
1.11	Purchasing an Energy Efficient Dish Washer	Dishwashers that display the ENERGY STAR mark achieve energy efficiency levels that are at least 41 percent higher than the minimum regulated standard in Canada. ENERGY STAR qualified dishwashers save energy by using improved technology and less hot water. These appliances feature sensors that calculate the required length of washing cycles and the appropriate water temperatures needed to clean each load. Some models feature built-in heating elements that save water-heating costs. On January 1, 2007, the ENERGY STAR criteria for dishwashers were strengthened to keep pace with changing technology. The goal of ENERGY STAR is to identify products that are among the top 25 percent of energy performers on the market. As well, for the first time, compact dishwashers can now qualify for the ENERGY STAR symbol.

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

### SECTION 2. WASTE REDUCTION AND RECYCLING

#### LANDLORD STRATEGIES:

3.0	CONSTRUCTION WASTE	DESCRIPTION
3.1	Construction Waste Recycling During Renovation	Reusing building materials by utilizing the building materials left behind by previous tenant or purchase from building material recycling business such as Habitat for Humanity’s ReStore can reduce costs for the new tenant’s renovation and reduce airborne pollutants such as volatile organic compounds. This will also prevent the amount of waste entering land fills.

4.0	RECYCLING	DESCRIPTION
4.1	Fiber Recycling	Recycling 1 tonne of paper can save 13 trees, 2.5 barrels of oil, 4100 KWH of electricity, 4 cubic meter of landfill and 31,780 litres of water.

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

### SECTION 3. BUILDING MATERIALS

#### LANDLORD STRATEGIES:

5.0	HAZARDOUS MATERIALS	DESCRIPTION
5.1	Use of Biodegradable All Purpose Cleaning Supply	Use of biodegradable all purpose cleaning supply can reduce human health impacts and also reduce impacts on the environment during disposal of the product.

6.0	MATERIAL SELECTION	DESCRIPTION
6.1	Use of Biodegradable Garbage Bags	Biodegradable or compostable bags are bags that will breakdown much faster compared to the conventional plastic bags which takes up hundreds of years to breakdown in a landfill. BioBags used by Mountain Equipment Co-op can be put into house hold compost bins and break down in as short as 12 to 24 months.

7.0	OZONE DEPLETING SUBSTANCES	DESCRIPTION
7.1	Use of R407C Refrigerant (non-ozone depleting)	R407C is a non-ozone depleting refrigerant used as a replacement for R-22 which is ozone-depleting. The R407C can be used in new air conditioning systems but also in older models that used to use R-22 refrigerants.

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

### SECTION 4. INTERIOR ENVIRONMENT

#### LANDLORD STRATEGIES:

8.0	INDOOR AIR QUALITY	DESCRIPTION
8.1	Use of Operable Windows	Operable windows will allow tenants to have increased control of fresh air circulation without changing settings on the HVAC system. This will also increase control over temperature preferences.
8.2	Use of Low-Emission Paint, Adhesives, Sealants and Finishes	Paint, adhesives, sealants and carpets are sources that emit indoor air pollutants such as volatile organic compounds. By using low-emission or zero-emission paint, adhesive and sealant during renovations, there will be less indoor air quality complaints. Composite wood products may also be a source of indoor air pollutants as it can contain formaldehyde glue or varnish.

9.0	HVAC MAINTENANCE	DESCRIPTION
9.1	Upgrading & Maintaining HVAC System	Set maintenance strategies for HVAC systems will ensure the units are operating efficiently. To reduce indoor air quality complaints schedule units for cleaning, filter changes and annual duct cleaning. Recommissioning of the system every 5 years is favored.

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

### SECTION 5. TENANT AWARENESS

#### LANDLORD STRATEGIES:

R10.0	COMMUNICATION PROGRAM	DESCRIPTION
R10.1	Communication System/ Newsletters	A communication system can allow the landlord and the tenant to discuss any on-going green projects and/ or work towards future projects. Frequent communications will allow the tenant and the landlord to be on the same page in terms of benefits derived from current green features. A good example by the Metrotower Office Complex is a bi-monthly online newsletter that keeps the tenants updated on new environmental programs and their achievements in current programs.

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

### SECTION 6. OTHERS

#### LANDLORD STRATEGIES:

11.0	OTHERS	DESCRIPTION
11.1	Installing Secure Bike Storage	Providing secure bike parking area for the tenant may increase the number of workers to bike to work instead of driving. This in turn will reduce the overall company carbon footprint.
11.2	Providing Shower Facilities, Change Room & Lockers	This provides convenience for the employees who bike or walk to work and attract more employees to change their mode of transportation which will reduce car use and the overall company carbon footprint.

## DESCRIPTION OF SUSTAINABLE BUILDING STRATEGIES AND THEIR POTENTIAL BENEFIT

### SECTION 6. OTHERS

#### TENANT STRATEGIES:

11.0	OTHERS	DESCRIPTION
11.3	Initiating Car Pooling Programs	Average Canadian vehicle costs \$1,200 to \$1,400 to fuel each year (2005) and with the fuel costs rising, employees who have to commute long distances to work may find it beneficial to car pool. This will not only reduce employee traveling cost but also reduce CO2 emissions.
11.4	Signing Up of Corporate Public Transit Passes	Translink BC provides corporate transit passes and a cheaper rate to promote more public transit use by the employees.

**APPENDIX II**  
**SUMMARY OF SOURCES OF FINANCIAL AND CARBON EMISSIONS**  
**STRATEGIES AND THEIR POTENTIAL BENEFITS**

# SUMMARY OF SOURCES OF FINANCIAL & CARBON EMISSIONS STRATEGIES AND THEIR POTENTIAL BENEFITS

## SECTION 1. RESOURCE CONSUMPTION

### LANDLORD STRATEGIES:

1.0	ENERGY USE	SOURCES
1.1	Installing High Frequency Electronic Ballasts (T8 Lights)	BC Hydro: <a href="http://www.bchydro.com/business/investigate/investigate750.html">http://www.bchydro.com/business/investigate/investigate750.html</a>
		GVRD Case Study - Metrotower Office Complex: <a href="http://www.gvrd.bc.ca/smartsteps/pdfs/casestudycommblldgmetrotower.pdf">http://www.gvrd.bc.ca/smartsteps/pdfs/casestudycommblldgmetrotower.pdf</a>
		Natural Resources Canada Case Study - University of New Brunswick Fredericton Campus: <a href="http://oee.nrcan.gc.ca/infosource/pdfs/UN_Brunswick_e.pdf">http://oee.nrcan.gc.ca/infosource/pdfs/UN_Brunswick_e.pdf</a>
1.2	Upgrading HVAC Controls	Natural Resources Canada Case Study - University of New Brunswick Fredericton Campus: <a href="http://oee.nrcan.gc.ca/infosource/pdfs/UN_Brunswick_e.pdf">http://oee.nrcan.gc.ca/infosource/pdfs/UN_Brunswick_e.pdf</a>
1.3	Use of Displacement Ventilation System to Improved IAQ, Acoustics and Reduce Energy Use vs. Overhead Mixing Ventilation	California Displacement Ventilation Design Guide K-12 Schools: <a href="http://www.archenergy.com/ieq-k12/Public/Proj2_Deliverables/D2.9c_FinalDVDesignGuide_2006-0630.pdf">http://www.archenergy.com/ieq-k12/Public/Proj2_Deliverables/D2.9c_FinalDVDesignGuide_2006-0630.pdf</a>
1.4	Adding Low-Emissivity (Low-E) Window Films	LOWE's: <a href="http://www.lowes.com/lowes/lkn?action=productDetail&amp;productId=44606-74130-LES481&amp;lpage=none">http://www.lowes.com/lowes/lkn?action=productDetail&amp;productId=44606-74130-LES481&amp;lpage=none</a>
		BC Hydro: <a href="http://www.bchydro.com/powersmart/elibrary/elibrary644.html">http://www.bchydro.com/powersmart/elibrary/elibrary644.html</a>

## SUMMARY OF SOURCES OF FINANCIAL & CARBON EMISSIONS STRATEGIES AND THEIR POTENTIAL BENEFITS

2.0	WATER USE	SOURCES
2.1	Use of Rain Water Recovery – Eco Roof to Reduce Rain Water Run-off	Use of Rain Water Recovery – Eco Roof to Reduce Rain Water Run-off
2.2	Drip System Landscape Irrigation vs. Sprinkler System	Drip System Landscape Irrigation vs. Sprinkler System
2.3	Recirculation of Water to Cool Equipment vs. Use of Fresh Water	Recirculation of Water to Cool Equipment vs. Use of Fresh Water
2.4	Water Efficient 6LPF Toilets vs. Conventional 19LPF Toilets	GVRD Regional Utility Planning: <a href="http://www.gvrd.bc.ca/smartsteps/pdfs/gvrdstandardizedicewaterauditprocessfinalreport09jun2006.pdf">http://www.gvrd.bc.ca/smartsteps/pdfs/gvrdstandardizedicewaterauditprocessfinalreport09jun2006.pdf</a>
		USA Environmental Protection Agency: <a href="http://epa.gov/ogwdw/sdwa/30th/factsheets/pdfs/fs_30ann_dwsrf_web.pdf">http://epa.gov/ogwdw/sdwa/30th/factsheets/pdfs/fs_30ann_dwsrf_web.pdf</a>
		City of Toronto: <a href="http://www.toronto.ca/water/kids/story_of_water/html/costs.htm">http://www.toronto.ca/water/kids/story_of_water/html/costs.htm</a> <a href="http://www.toronto.ca/watereff/flush/install.htm">http://www.toronto.ca/watereff/flush/install.htm</a> <a href="http://www.toronto.ca/watereff/flush/list.htm">http://www.toronto.ca/watereff/flush/list.htm</a>
2.5	Water Efficient 6LPF Toilets Combined with Faucet Aerators	GVRD Case Study - Capers Community Markets' Robson Store <a href="http://www.gvrd.bc.ca/smartsteps/pdfs/CaseStudy-Restaurants.pdf">http://www.gvrd.bc.ca/smartsteps/pdfs/CaseStudy-Restaurants.pdf</a>

## SUMMARY OF SOURCES OF FINANCIAL & CARBON EMISSIONS STRATEGIES AND THEIR POTENTIAL BENEFITS

### SECTION 1. RESOURCE CONSUMPTION

#### TENANT STRATEGIES:

1.0	ENERGY USE	SOURCES
1.5	Replacing Conventional Computer Power Supply with 80 Plus Computer Power Supply	BC Hydro: <a href="http://www.bchydro.com/business/identify/identify51295.html">http://www.bchydro.com/business/identify/identify51295.html</a> , <a href="http://www.bchydro.com/news/2007/mar/release51557.html">http://www.bchydro.com/news/2007/mar/release51557.html</a>
		Alden Associates Computer Sales: <a href="http://www.aldenassociates.net/asp/product.asp?product=2974&amp;cat=59&amp;ph=&amp;keywords=&amp;recor=&amp;SearchFor=&amp;PT_ID=">http://www.aldenassociates.net/asp/product.asp?product=2974&amp;cat=59&amp;ph=&amp;keywords=&amp;recor=&amp;SearchFor=&amp;PT_ID=</a>
1.6	LCD Screens vs. CRT Screens	BC Hydro: <a href="http://www.bchydro.com/powersmart/elibrary/elibrary707.html">http://www.bchydro.com/powersmart/elibrary/elibrary707.html</a>
1.7	Implementing PC Turn Off Program	University of Wisconsin – Madison: <a href="http://www.doit.wisc.edu/news/story.asp?filename=598">http://www.doit.wisc.edu/news/story.asp?filename=598</a>

## SUMMARY OF SOURCES OF FINANCIAL & CARBON EMISSIONS STRATEGIES AND THEIR POTENTIAL BENEFITS

1.0	ENERGY USE	SOURCES
1.8	Purchasing an Energy Star Photocopier	<a href="http://www.greenhouse.gov.au/lgmodules/wep/office/training/training3.html">Australian Government Dept of Environment and Water Resources:  http://www.greenhouse.gov.au/lgmodules/wep/office/training/training3.html</a>
		Xerox: <a href="http://www.office.xerox.com/latest/W55BR-01.PDF">http://www.office.xerox.com/latest/W55BR-01.PDF</a> , <a href="http://www.office.xerox.com/multifunction-printer/enus.html">http://www.office.xerox.com/multifunction-printer/enus.html</a> <a href="http://www.office.xerox.com/multifunction-printer/multifunction-over-30ppm/workcentre-5665-5675-5687/spec-enus.html">http://www.office.xerox.com/multifunction-printer/multifunction-over-30ppm/workcentre-5665-5675-5687/spec-enus.html</a>
		Energy Star: <a href="http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&amp;pgw_code=CX">http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&amp;pgw_code=CX</a>
1.9	Purchasing an Energy Efficient Printer	BC Hydro: <a href="http://www.bchydro.com/powersmart/elibrary/elibrary707.html">http://www.bchydro.com/powersmart/elibrary/elibrary707.html</a>
1.10	Purchasing an Energy Efficient Refrigerator	BC Hydro: <a href="http://www.bchydro.com/powersmart/elibrary/elibrary707.html">http://www.bchydro.com/powersmart/elibrary/elibrary707.html</a>
1.11	Purchasing an Energy Efficient Dish Washer	BC Hydro: <a href="http://www.bchydro.com/powersmart/elibrary/elibrary707.html">http://www.bchydro.com/powersmart/elibrary/elibrary707.html</a>

## SUMMARY OF SOURCES OF FINANCIAL & CARBON EMISSIONS STRATEGIES AND THEIR POTENTIAL BENEFITS

### SECTION 2. WASTE REDUCTION AND RECYCLING

#### LANDLORD STRATEGIES:

3.0	CONSTRUCTION WASTE	SOURCES
3.1	Construction Waste Recycling During Renovation	<ul style="list-style-type: none"> <li>• Natural Resources Canada (580 Booth Street, Ottawa, ON)</li> <li>• Green Lease Guide – Investa Group</li> </ul>

4.0	RECYCLING	SOURCES
4.1	Fiber Recycling	<ul style="list-style-type: none"> <li>• GVRD Case Study - Metrotower Office Complex:  <a href="http://www.gvrd.bc.ca/smartsteps/pdfs/casestudycommblldgmetrotower.pdf">http://www.gvrd.bc.ca/smartsteps/pdfs/casestudycommblldgmetrotower.pdf</a></li> <li>• Green Lease Guide – Investa Group</li> </ul>

## SUMMARY OF SOURCES OF FINANCIAL & CARBON EMISSIONS STRATEGIES AND THEIR POTENTIAL BENEFITS

### SECTION 3. BUILDING MATERIALS

#### LANDLORD STRATEGIES:

5.0	HAZARDOUS MATERIALS	SOURCES
5.1	Use of Biodegradable All Purpose Cleaning Supply	Cloverdale All Purpose Cleaner: <a href="http://www.cloverdaleinc.com/">http://www.cloverdaleinc.com/</a> Green Home Environmental Store: <a href="http://www.greenhome.com/products/housekeeping/all_purpose_cleaners/clg000010/">http://www.greenhome.com/products/housekeeping/all_purpose_cleaners/clg000010/</a> EPA Environmentally Preferable Purchasing Program, Cleaning Product Pilot Project: <a href="http://www.epa.gov/epp/pubs/cleaner.pdf">http://www.epa.gov/epp/pubs/cleaner.pdf</a>

6.0	MATERIAL SELECTION	SOURCES
6.1	Use of Biodegradable Garbage Bags	Green Home Environmental Store: <a href="http://www.greenhome.com/products/housekeeping/trash_bags/109802/">http://www.greenhome.com/products/housekeeping/trash_bags/109802/</a>

7.0	OZONE DEPLETING SUBSTANCES	SOURCES
7.1	Use of R407C Refrigerant (non-ozone depleting)	Honeywell: <a href="http://www51.honeywell.com/sm/genetron/prod-apps/refrigeration/gen-407c.html?c=24">http://www51.honeywell.com/sm/genetron/prod-apps/refrigeration/gen-407c.html?c=24</a> <b>EPA:</b> <a href="http://www.epa.gov/ozone/title6/608/608fact.html">http://www.epa.gov/ozone/title6/608/608fact.html</a>

## SUMMARY OF SOURCES OF FINANCIAL & CARBON EMISSIONS STRATEGIES AND THEIR POTENTIAL BENEFITS

### SECTION 4. INTERIOR ENVIRONMENT

#### LANDLORD STRATEGIES:

8.0	INDOOR AIR QUALITY	SOURCES
8.1	Use of Operable Windows, Low-Emission Paints and Finishes, and Recycled Construction Materials	<ul style="list-style-type: none"> <li>• The Green Institute - Philips Eco-Enterprise Centre: <a href="http://www.greeninstitute.org/buildings/">http://www.greeninstitute.org/buildings/</a></li> <li>• <a href="http://www.windmilldevelopments.com/">http://www.windmilldevelopments.com/</a></li> </ul>

9.0	HVAC MAINTENANCE	SOURCES
9.1	Upgrading & Maintaining HVAC System	<ul style="list-style-type: none"> <li>• Natural Resources Canada Case Study - University of New Brunswick Fredericton Campus: <a href="http://oee.nrcan.gc.ca/infosource/pdfs/UN_Brunswick_e.pdf">http://oee.nrcan.gc.ca/infosource/pdfs/UN_Brunswick_e.pdf</a></li> <li>• BOMA Go-Green Application Guide</li> </ul>

# SUMMARY OF SOURCES OF FINANCIAL & CARBON EMISSIONS STRATEGIES AND THEIR POTENTIAL BENEFITS

## SECTION 5. TENANT AWARENESS

### LANDLORD STRATEGIES:

R10.0	COMMUNICATION PROGRAM	SOURCES
R10.1	Communication System/ Newsletters	<ul style="list-style-type: none"> <li>• GVRD Case Study - Metrotower Office Complex:  <a href="http://www.gvrd.bc.ca/smartsteps/pdfs/casestudycommbldgmetrotower.pdf">http://www.gvrd.bc.ca/smartsteps/pdfs/casestudycommbldgmetrotower.pdf</a> </li> </ul>

## SUMMARY OF SOURCES OF FINANCIAL & CARBON EMISSIONS STRATEGIES AND THEIR POTENTIAL BENEFITS

### SECTION 6. OTHERS

#### LANDLORD STRATEGIES:

11.0	OTHERS	SOURCES
11.1	Installing Secure Bike Storage	Wishbone Industries Ltd: <a href="http://www.wishboneltd.com/">http://www.wishboneltd.com/</a>
11.2	Providing Shower Facilities, Change Room & Lockers	Shower Anywhere: <a href="http://www.shower-anywhere.com/Office_Shower_Stalls/office_shower_stalls.html">http://www.shower-anywhere.com/Office_Shower_Stalls/office_shower_stalls.html</a>

# SUMMARY OF SOURCES OF FINANCIAL & CARBON EMISSIONS STRATEGIES AND THEIR POTENTIAL BENEFITS

## SECTION 6. OTHERS

### TENANT STRATEGIES:

11.0	OTHERS	SOURCES
11.3	Initiating Car Pooling Programs	Energy Star Facts: <a href="http://www.energystar.gov/index.cfm?c=energy_awareness.bus_energy_use">http://www.energystar.gov/index.cfm?c=energy_awareness.bus_energy_use</a>
		GVRD Case Study - Toyota Canada Parts Distribution Centre: <a href="http://www.gvrd.bc.ca/smartsteps/pdfs/CaseStudy-Warehousing.pdf">http://www.gvrd.bc.ca/smartsteps/pdfs/CaseStudy-Warehousing.pdf</a>
11.4	Signing Up of Corporate Public Transit Passes	TransLink: <a href="http://www.translink.bc.ca/Transportation_Services/Fares_Passes/employers_pass/faq.asp">http://www.translink.bc.ca/Transportation_Services/Fares_Passes/employers_pass/faq.asp</a>

**APPENDIX III**  
**CO2 REDUCTION, SAVINGS, COSTS AND PAYBACK**  
**OF SUSTAINABLE BUILDING STRATEGIES**

**Tenant Strategies**

1	Energy use	Savings (kW)	Savings (kWh)		Savings (\$)	Cost (\$)	Area (sqft)	CO <sub>2</sub> Reduction	Savings	Costs	Payback	Examples, Source, Notes
1.5	Replacing Conventional Computer Power Supply with 80 Plus Computer Power Supply							0.22 kg CO <sub>2</sub> / sf	\$0.02/sf	\$0.17/sf	8.5 yrs	BC Hydro
1.5	Replacing Conventional Computer Power Supply with 80 Plus Computer Power Supply (incremental)		88		\$2.99	\$20	150		\$0.020	\$0.13	6.7	Analysis Carried out in 2007 by Prism
1.6	LCD Screens vs. CRT Screens							-	\$0.04/sf	\$0.47/sf	11.75 yrs	BC Hydro
1.6	LCD Screens vs. CRT Screens (incremental)	0.066	137		\$10.16	\$100	150		\$0.068	\$0.67	9.8	Analysis Carried out in 2007 by Prism
1.6	LCD Screens vs. CRT Screens	0.066	137		\$10.16	\$200	150		\$0.068	\$1.33	19.7	Analysis Carried out in 2007 by Prism
1.7	Implementing PC Turn Off Program							-	\$0.11/sf	\$0/sf	NA	University of Wisconsin
1.7	Implementing PC Turn Off Program		233		\$7.93	\$0	150		\$0.053	\$0.00	0.0	Analysis Carried out in 2007 by Prism
1.8	Purchasing an Energy Star Photocopier							-	-	\$0.74/sf	-	-
1.8	Purchasing an Energy Star Photocopier (for 6 copiers)(incremental)	0.9	624		\$99.11	\$0	30,000		\$0.003	\$0.00	0.0	NRCan OEE
1.9	Purchasing an Energy Efficient Printer							-	-	-	-	-
1.9	Purchasing an Energy Efficient Printer (for 18 printers)(incremental)	4.9	3241		\$514.42	\$0	150		\$3.429	\$0.00	0.0	Analysis Carried out in 2007 by Prism
1.10	Purchasing an Energy Efficient Refrigerator							-	-	-	-	-
1.10	Purchasing an Energy Efficient Refrigerator (incremental)		74		\$2.52	\$600	5,000		\$0.001	\$0.120	238	Analysis Carried out in 2006 by Prism
1.10	Purchasing an Energy Efficient Refrigerator (replace 1984)		1017		\$34.58	\$1,350	5,000		\$0.007	\$0.270	39	Analysis Carried out in 2006 by Prism
1.11	Purchasing an Energy Efficient Dish Washer											Energy Star – ENERGY STAR qualified dishwashers use at least 41 percent less energy than the federal minimum standard for energy consumption.
1.11	Purchasing an Energy Efficient Dish Washer (incremental)		100		\$3.40	\$200	5,000		\$0.001	\$0.040	59	Analysis Carried out in 2006 by Prism
1.11	Purchasing an Energy Efficient Dish Washer (replace 1984)		721		\$24.51	\$600	5,000		\$0.005	\$0.120	24	Analysis Carried out in 2006 by Prism

**Landlord Strategies**

1	Energy USE	Savings (kW)	Savings (kWh)	Savings (GJ)	Savings (\$)	Cost (\$)	Area (sqft)	CO <sub>2</sub> Reduction	Savings	Costs	Payback	Examples, Source, Notes
								3.28 Kg CO <sub>2</sub> /sf	\$0.25/sf	\$1.83/sf	7.3 yrs	Metrotower Office Complex
1.1	Installing High Frequency Electronic Ballasts (T8 Lights)							1.88 Kg CO <sub>2</sub> / sf	\$0.06/sf	\$0.22/sf	~3.7 yrs	University of New Brunswick Fredericton Campus: details of upgrades in case study by Natural Resources Canada attached.
1.1	Installing High Frequency Electronic Ballasts (T8 Lights)	425	2,169,176		\$109,095	\$715,000	613,662	1.27	\$0.18	\$1.17	6.6	Metrotower Office Complex (Prism as-built numbers) University of New Brunswick Fredericton Campus: details of upgrades in case study by Natural Resources Canada attached.
1.2	Upgrading HVAC Controls							0.13 Kg CO <sub>2</sub> / sf	\$0.04/sf	\$0.14/sf	~3.5 yrs	University of New Brunswick Fredericton Campus: details of upgrades in case study by Natural Resources Canada attached.
1.2	Upgrading HVAC Controls (install DDC)										~4.0 yrs	Prism Experience
1.2	Upgrading HVAC Controls											
1.3	Use of Displacement Ventilation System to Improved IAQ, Acoustics and Reduce Energy Use vs. Overhead Mixing Ventilation							-	-	\$2.00/sf	-	California Displacement Ventilation Design Guide K-12 Schools
1.4	Adding Low-Emissivity (Low-E) Window Films							-	-	\$0.87/sf	-	LOWE's: Reflect up to 70% of summer heat, retain up to 55% of winter heating, reduce up to 99% of UV rays
New	Adding Low-Emissivity (Low-E) Window Films			1,250	\$12,500	\$80,200	140,000	0.45	\$0.09	\$0.57	6.4	Prism Audit for BC Housing
New	Boiler Upgrade			820	\$8,200	\$313,000	500,555	0.08	\$0.02	\$0.63	38.2	Prism Audit for Bentall
New	Chiller Upgrade (with air side free cooling)	96	326,500		\$19,084	\$943,000	500,555	0.23	\$0.04	\$1.88	49.4	Prism Audit for Bentall
New	Chiller Upgrade (no air side free cooling)	300	2,000,000		\$92,948	\$1,800,000	450,000	1.60	\$0.21	\$4.00	19.4	Prism Audit for GWL
New	VSD for Floor Fans		524,000		\$17,816	\$142,000	385,700	0.49	\$0.05	\$0.37	8.0	Prism Audit for GWL

2	Water Use		Savings (m3)		Savings (\$)	Cost (\$)	Area (sqft)	CO <sub>2</sub> Reduction	Savings	Costs	Payback	Examples, Source, Notes
2.1	Use of Rain Water Recovery – Eco Roof to Reduce Rain Water Run-off							-	~\$0.06/sf	~\$1.00/sf	~16 yrs	City of Portland, Oregon
2.2	Drip System Landscape Irrigation vs. Sprinkler System							-	-	~\$0.12/sf	-	Irrigo - Efficient Irrigo® systems operate continuously for a month with the same volume of water that a garden sprinkler uses in 10 hours
2.3	Recirculation of Water to Cool Equipment vs. Use of Fresh Water								\$0.02/sf	\$0.08/sf	~4 yrs	University of New Brunswick Fredericton Campus: details of upgrades in case study by Natural Resources Canada attached.
2.3	Recirculation of Water to Cool Equipment vs. Use of Fresh Water (assuming condenser loop exists)		1,700		\$1,700	\$20,000	10,000	-	\$0.17	\$2.00	11.8	Calculated by Prism based on a typical 2-ton unit serving a server room for a 10,000 ft2
	Water Efficient 6 LPF Toilets vs. Conventional 19 LPF Toilets							-	~\$0.01/flush	~\$250/toilet	-	86¢ for 1,000 litres; saving 13 litres per flush
2.4	Water Efficient 6 LPF Toilets vs. Conventional 22.3 LPF Toilets (6 GPF) (5 toilets)		571		\$571	\$2,500	10,000	-	\$0.06	\$0.25	4.4	Calculated by Prism based on 66 Persons, 50% Women, 50% Men, 3 flushes/day Women, 1 flush/day Men, 260 working days
	Water Efficient 6LPF Toilets Combined with Faucet Aerators							-	\$163,400/yr	~\$250/toilet and ~\$22/aerator	-	Capers Community Markets' Robson Store – saved 190,000 liters of water annually
2.5	Water Efficient 6LPF Toilets Combined with Faucet Aerators		610		\$610	\$2,700	10,000	-	\$0.06	\$0.27	4.4	Calculated by Prism based on 8 lavatory and kitchen sinks (aerators of 1.5 gpm)

3	Construction Waste				Savings (\$)	Cost (\$)	Area (sqft)	CO <sub>2</sub> Reduction	Savings	Costs	Payback	Examples, Source, Notes
3.1	Construction Waste Recycling During Renovation							-	\$0.48/sf	\$0.51/sf	~1 yr	Natural Resources Canada (580 Booth Street, Ottawa, ON)

4	Recycling		Savings (kg)		Savings (\$)	Cost (\$)	Area (sqft)	CO <sub>2</sub> Reduction	Savings	Costs	Payback	Examples, Source, Notes
4.1	Fiber Recycling							-	-	-	-	Metrotower Office Complex (recycles all office paper, cardboard, magazines and telephone books)

**APPENDIX IV**  
**GLOSSARY OF TERMS**

## GLOSSARY OF TERMS

**Base Year:** Actual operating expenses for a specific base year, most often the year in which the lease commences. Once the base year expenses are known, the lease essentially becomes an expense stop lease.

**Capitalization:** A method of determining the value of real property by dividing the net operating income by a predetermined annual rate of return. Also called “Income Capitalization” method. See Capitalization Rate.

**Capitalization Rate:** The rate that is considered a reasonable return on investment (on the basis of both the investor’s alternative investment possibilities and the risk of the investment.) used to determine the value of real estate through the capitalization process. Also called “Cap Rate” or “Free and Clear Return.” See Capitalization.

**Escalation Clause:** A lease clause that provides for the rent to be increased. This may be accomplished by several means such as fixed periodic increases, increases tied to the consumer price index or adjustments based on changes in expenses paid by the landlord in relation to any expense stop or base year reference.

**Expense Stop:** An agreed dollar amount for operating expenses (expressed for the building as a whole or on a square foot basis) over which the tenant will pay its pro-rated share of increases. May be applied to specific expenses (ie. Property taxes or insurance). Also called “Dollar Stop.”

**Net Operating Income:** The cash available from collected rental income after deducting all operating expenses for which the landlord is obligated for under the lease. Also called “NOI.”

**Operating Expenses:** The cost of operating an office building, such as utilities, janitorial, management fees, taxes, insurance and similar day-to-day expenses. Operating expenses should not include financial expenses like debt service, ground leases, depreciation and income taxes; capital expenses such as roof replacement; any expense associate with the production of income such as leasing commissions and legal fees. A well-crafted lease will contain a section that clearly states what is included and excluded from the operating expenses for the building.

**Right to Audit:** A lease clause that gives the tenant the right to audit the lease and defines the process for doing so. The goal of a lease audit is to determine whether charges assessed by the landlord under a tenant’s lease are correct and proper, and refund any overcharges by the landlord to the tenant. A lease audit is also called a “Rent Audit”, “Cam Audit”, “Lease Review” or “Escalation Expense Audit.”

**APPENDIX V**  
**AUSTRALIA GOVERNMENT GREEN LEASE SCHEDULE**

## **GREEN LEASE SCHEDULE**

### **SCHEDULE A1**

FOR USE IN A GROSS LEASE WHERE THE PREMISES ARE 2,000 SQUARE METRES  
OR MORE AND THE TENANT OCCUPIES 100% OF THE BUILDING



### **AUSTRALIAN GOVERNMENT**

Commonwealth of Australia  
represented by the Department of the Environment and Heritage  
[www.deh.gov.au](http://www.deh.gov.au)



**Commonwealth of Australia**  
**represented by**  
**the Department of the Environment and**  
**Heritage**



*Australian Government Solicitor*

The template Green Lease Schedules have been prepared by the Australian Government Solicitor for the Commonwealth of Australia represented by the Department of the Environment and Heritage.

More information regarding the Green Lease Schedules can be obtained from [www.greenhouse.gov.au/government](http://www.greenhouse.gov.au/government) or [www.ags.gov.au](http://www.ags.gov.au)

#### **Note on use of Green Lease Schedule**

This Green Lease Schedule (GLS) is a general template for use in lease transactions involving Commonwealth agencies or bodies. It does not replace the need to fully consider the implications of the base lease clauses and the GLS and the need to check the interaction of the base lease with the GLS to ensure consistency and compatibility and to give efficacy to the circumstances of individual transactions. Apart from use by Commonwealth agencies or bodies in lease transactions or for educational purposes the GLS should not be reproduced in whole or in part without permission.

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## GREEN LEASE SCHEDULE

This Green Lease Schedule applies where the rent is gross, the net lettable area of the Premises is 2,000 square metres or more and where the Tenant occupies 100% of the net lettable area of the Building.

### PART 1 - INTRODUCTION

#### 1. Context

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##### 1.1. Background

- A. This Green Lease Schedule is incorporated into and forms part of the Lease.
- 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. It is part of the wider policy of the Commonwealth of Australia reflected in the Australian Government Operations Energy Efficiency Policy to reduce the environmental impact of Government operations, and by so doing, lead the community by example.
- 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.
- 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.

##### 1.2. Interpretation and Operational Provisions

1.2.1. In this Green Lease Schedule unless the contrary intention appears

- |                    |   |
|--------------------|---|
| <b>ABGR Rating</b> | means a rating certified by the Regional Certification Body or if there is no Regional Certification Body by the National Administrator under the ABGR Scheme   |
| <b>ABGR Scheme</b> | means the Australian Building Greenhouse Rating Scheme (administered by the Department of Energy Utilities and Sustainability (New South Wales) or by any successor or other body administering the Australian Building Greenhouse Rating Scheme from time to time) in the form in which it applies at the Commencement Date <sup>^</sup> or insert other date which fixes the version of the ABGR Scheme applicable for term of the lease <sup>^</sup> |

<b>Accredited Assessor</b>	means an Accredited Assessor under the ABGR Scheme
<b>Adjusted ABGR Rating</b>	means <ul style="list-style-type: none"> <li>a. in the case of the Target ABGR Rating, a whole building rating under the ABGR Scheme; or</li> <li>b. in the case of the Tenancy ABGR Standard, a standard consistent with a tenancy rating under the ABGR Scheme</li> </ul> <p>determined by the Expert in accordance with clause 9.2.2 and being an adjustment to the Target ABGR Rating or the Tenancy ABGR Standard or both</p>
<b>Australian Government Operations Energy Efficiency Policy</b>	means the Policy entitled “Energy Efficiency in Government Operations” as amended from time to time
<b>Building</b>	means the building in which the Premises are located as described in the Lease and includes the Premises
<b>Building Management Committee</b>	means the Building Management Committee established under Part 2 of this Green Lease Schedule which comprises the Tenant’s Energy Representative and the Landlord’s Energy Representative from time to time
<b>Commencement Date</b>	means the commencement date of the Lease
<b>day</b>	means calendar day
<b>Energy Intensity</b>	means megajoules of energy consumed per square metre of the net lettable area of the Building or the Premises (as the case may be)
<b>Energy Intensity Improvements</b>	means any act, matter or thing which has the effect of reducing Energy Intensity (as expressed in megajoules) or which will result in the ABGR Rating (on a whole building rating basis) being higher than the Target ABGR Rating
<b>Energy Management Plan</b>	means the plan implemented under clause 6 of this Green Lease Schedule
<b>Expert</b>	means an expert who is appointed in accordance with clause 10 of this Green Lease Schedule
<b>Green Lease Schedule</b>	means this Schedule and includes any attachments to this Green Lease Schedule
<b>Improved ABGR Rating</b>	means <ul style="list-style-type: none"> <li>a. a rating under the ABGR Scheme which is higher</li> </ul>

	than the Target ABGR Rating; or
	b. a standard which is higher than the Tenancy ABGR Standard
<b>Landlord</b>	means the Party described as Landlord or Lessor or other equivalent word under the Lease
<b>Landlord's Energy Representative</b>	means the person appointed by the Landlord and notified to the Tenant under clause 3.1.6
<b>Lease</b>	means the lease for the Premises made between the Parties
<b>Major Refurbishment</b>	means any refurbishment, renovation or restoration involving any replacement, upgrade or repair of a material nature which involves the base building services and which affects the base building services in or servicing 50% or more of <ul style="list-style-type: none"> <li>a. the net lettable area of the Premises, or</li> <li>b. the net lettable area of the Building, or</li> <li>c. the common areas</li> </ul>
<b>month</b>	means calendar month
<b>Parties</b>	means the parties to the Lease
<b>Premises</b>	means the premises leased to the Tenant under the Lease and as described in the Lease
<b>Remedial Notice</b>	means a notice given under clause 9 by a Party where the other Party has breached an obligation under the Green Lease Schedule
<b>Remedial Plan</b>	means a plan agreed or determined under clause 9
<b>Requirements</b>	means the common law, all statutes, ordinances and by-laws and any requirement, notice, order or direction of a competent authority
<b>Target ABGR Rating</b>	means a 4.5 star whole building ABGR Rating certified by the Regional Certification Body or where there is no Regional Certification Body by the National Administrator under the ABGR Scheme
<b>Tenancy ABGR Standard</b>	means a standard consistent with a 4.5 star tenancy rating under the ABGR Scheme
<b>Tenant</b>	means the Party described as Tenant or Lessee or other equivalent word under the Lease
<b>Tenant's Energy Representative</b>	means the person appointed by the Tenant and notified to the Landlord under clause 3.1.6
<b>Working Day</b>	means a day other than a Saturday, Sunday or public holiday in the state or territory where the Premises are

located

- 1.2.2. The singular includes the plural and vice versa.
- 1.2.3. Unless otherwise provided references to clauses are a reference to clauses of this Green Lease Schedule.
- 1.2.4. Unless otherwise defined or provided for in this Green Lease Schedule words and phrases used in this Green Lease Schedule will have the meaning ascribed to them in the Lease.
- 1.2.5. Unless the context otherwise requires the phrase “Lease term” or “term of the Lease” will be interpreted to include any renewal or extension of or overholding under the Lease.
- 1.2.6. Reference to a right includes a remedy, authority or power.
- 1.2.7. Headings are for convenience only and do not form part of this Green Lease Schedule or affect its interpretation.
- 1.2.8. As far as possible all provisions must be construed so as not to be invalid, illegal or unenforceable.
- 1.2.9. If anything in this Green Lease Schedule is unenforceable, illegal or void then it is severed and the rest of this Green Lease Schedule remains in force.
- 1.2.10. If a provision cannot be read down, that provision will be void and severable.
- 1.2.11. Words of inclusion are not words of limitation.
- 1.2.12. No rule of construction will apply to disadvantage a Party on the basis that it put forward this Green Lease Schedule.
- 1.2.13. Reference to a thing is a reference to all or part of that thing.
- 1.2.14. Unless the context requires or is otherwise stated in this Green Lease Schedule a Party’s obligations under this Green Lease Schedule:
  - a. will be performed at its cost;
  - b. will be performed throughout the term of the Lease;
  - c. where the cost is incurred by the Landlord must not be passed on directly or indirectly to the Tenant; and
  - d. where the cost is incurred by the Tenant must not be passed on directly or indirectly to the Landlord.

- 1.2.15. Unless otherwise stated, if a Party's consent or approval is required under this Green Lease Schedule:
- a. the requested Party will consider and respond to the request promptly;
  - b. the consent or approval will not be unreasonably withheld;
  - c. the requested Party may require the requesting Party to comply with reasonable conditions before giving its consent provided that
    - A. the requested Party is not entitled to require the requesting Party to pay its costs in connection with the request;
    - B. if the requested Party is the Landlord it will not pass on any cost incurred in connection with the request or consent directly or indirectly to the Tenant;
    - C. if the requested Party is the Tenant it will not pass on any cost incurred in connection with the request or consent directly or indirectly to the Landlord; and
    - D. all reasonable conditions accompanying or otherwise related to the consent or approval must be in writing; and
  - d. the consent or approval is not effective unless in writing.
- 1.2.16. If any conflict arises between the terms and conditions contained in the Lease and any clauses or parts of the clauses of the Green Lease Schedule, then unless the terms and conditions contained in the Lease expressly provide that they prevail over the Green Lease Schedule, the clauses (or the relevant parts of the clauses) of the Green Lease Schedule prevail to the extent necessary to resolve the conflict.
- 1.2.17. If any conflict arises between any part of the Green Lease Schedule and any part of an attachment to it, the part of the Green Lease Schedule which does not comprise an attachment prevails.
- 1.2.18. A reference to the Green Lease Schedule or any provision of it includes the Green Lease Schedule or any of its provisions as amended or replaced from time to time by agreement in writing between the parties.

## **2. Green Lease Schedule forms Part of Lease**

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### **2.1. Green Lease Schedule incorporated into Lease**

- 2.1.1. This Green Lease Schedule is incorporated into and forms part of the Lease.

## **PART 2 - BUILDING MANAGEMENT COMMITTEE**

### **3. Building Management Committee**

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#### **3.1. Building Management Committee**

- 3.1.1. Within 10 Working Days of the Commencement Date the Landlord and the Tenant will establish the Building Management Committee which will operate for the term of the Lease.
- 3.1.2. The Building Management Committee will comprise the Landlord's Energy Representative and the Tenant's Energy Representative as notified under clause 3.1.6.
- 3.1.3. The Landlord's Energy Representative and the Tenant's Energy Representative do not need to be accredited experts or hold specialist qualifications but will have the competence and the authority of the respective Parties to
- a. properly and effectively administer the respective obligations of the Landlord's Energy Representative and the Tenant's Energy Representative as they relate to the Building Management Committee;
  - b. make decisions on behalf of the relevant Party within the scope of the Building Management Committee's functions and responsibilities;
  - c. issue information and notices and communicate on behalf of the relevant Party in the context of the Building Management Committee; and
  - d. take action on behalf of the relevant Party to facilitate performance by the Building Management Committee of its functions and responsibilities.
- 3.1.4. For the avoidance of doubt, the Parties agree that the role of the Building Management Committee is one of discussion, consultation and recommendation. The Landlord's Energy Representative and the Tenant's Energy Representative are not entitled to exercise any legal rights or remedies of the Parties under this Green Lease Schedule including, but not limited to:
- a. any approval or variation of the Energy Management Plan;
  - b. any alteration to the Target ABGR Rating or the Tenancy ABGR Standard;
  - c. enforcing the rights and remedies of the relevant Party;
  - d. binding the relevant Party to doing or refraining from doing anything;
  - e. engaging in any remedial action under clause 9 of this Green Lease Schedule, including issuing a Remedial Notice or agreeing a Remedial Plan; or
  - f. determining the position of a Party in relation to any difference or dispute which may arise under this Green Lease Schedule.

- 3.1.5. Nothing in clause 3.1.3 is to be construed as entitling the persons performing the role of the Tenant's Energy Representative and the Landlord's Energy Representative to bind the respective Parties unless those persons
- a. are also the nominated representatives of the respective Parties under the Lease in a capacity other than as the Landlord's Energy Representative and the Tenant's Energy Representative; and
  - b. are empowered to bind the respective Parties by virtue of other provisions of the Lease.
- 3.1.6. Each Party will notify
- a. the other Party within 10 Working Days of the Commencement Date of the name and contact details of the Landlord's Energy Representative and the Tenant's Energy Representative; and
  - b. the other Party of the name and contact details of any replacement of the Landlord's Energy Representative or the Tenant's Energy Representative from time to time.
- 3.1.7. The Building Management Committee will meet quarterly or as otherwise recommended by the Landlord's Energy Representative and the Tenant's Energy Representative and approved by both Parties for the purposes of addressing any matters or issues which arise under the Green Lease Schedule. A preliminary protocol for the Building Management Committee appears at Annexure A and this will apply until it is otherwise varied by agreement between the Landlord's Energy Representative and the Tenant's Energy Representative.
- 3.1.8. The Building Management Committee will produce and maintain for the term of the Lease, written minutes of each meeting which will be approved and signed by the Landlord's Energy Representative and the Tenant's Energy Representative within 10 Working Days of each meeting.
- 3.1.9. The Parties agree that it is essential to maintain all information, including energy data for the Premises and Building (which for the avoidance of doubt includes the base building services), plans, documents, maintenance contracts, specifications, maintenance reports and maintenance schedules necessary to
- a. enable an Accredited Assessor to assess, report on and authorise the issuing of a Target ABGR Rating certificate by the Regional Certification Body or where there is no Regional Certification Body by the National Administrator under the ABGR Scheme;
  - b. as far as reasonably practicable, enable a Expert appointed under clause 10 of this Green Lease Schedule to carry out any and all of his functions and obligations in accordance with the terms of this Green Lease Schedule; and

- c. establish the extent of compliance by the Landlord and the Tenant with their respective obligations under this Green Lease Schedule.

3.1.10. The Landlord and the Tenant

- a. will be aware of and approve the location for the storage of the reports and other information held by the Building Management Committee;
- b. will take all necessary steps to ensure the security of those reports and information; and
- c. will keep the reports and information confidential except to extent necessary
  - A. to comply with a Requirement, Commonwealth policy or Commonwealth direction (including the direction of a Minister or any officer or employee with appropriate authority of a relevant Commonwealth department, agency, corporation or other Commonwealth body);
  - B. to enable the Parties to perform their roles and obligations under the Lease; or
  - C. to enable an Expert to exercise his powers and perform his role and obligations under this Green Lease Schedule.

3.1.11. The Landlord and Tenant will provide to the Building Management Committee and give the Building Management Committee unfettered access to the information required by clause 3.1.9.a and clause 3.1.9.b which they hold or should hold according to their respective roles and responsibilities under the Lease (including this Green Lease Schedule). This clause does not require the Parties to disclose information which would otherwise be confidential. In the case of the Tenant this clause does not require the Tenant to disclose information which is not to be disclosed because of a Requirement, Commonwealth policy or Commonwealth direction (including the direction of a Minister or any officer or employee with appropriate authority of a relevant Commonwealth department, agency, corporation or other Commonwealth body).

3.1.12. The Parties will provide to the Building Management Committee the information pertaining to their respective obligations under this Green Lease Schedule as required by clause 3.1.9.c to the extent that it is practicable for each Party to do so. This clause does not require the Parties to disclose information which would otherwise be confidential. In the case of the Tenant this clause does not require the Tenant to disclose information which is not to be disclosed because of a Requirement, Commonwealth policy or Commonwealth direction (including the direction of a Minister or any officer or employee with appropriate authority of a relevant Commonwealth department, agency, corporation or other Commonwealth body).

- 3.1.13. The Parties will provide copies of all reports required by this Green Lease Schedule to the Building Management Committee. An indicative list of the reports typically required to be provided to the Building Management Committee is included in the Building Management Committee Protocol annexed to this Green Lease Schedule at Annexure A.
- 3.1.14. In addition to the specific functions specified in this Green Lease Schedule, the Building Management Committee may act as a vehicle for considering Energy Intensity Improvements and consultation on other issues arising from this Green Lease Schedule, and for proposing recommendations and solutions to the Parties on matters arising from or relevant to this Green Lease Schedule.
- 3.1.15. The Landlord and the Tenant will bear their own costs in connection with the establishment and operation of the Building Management Committee and will not pass on to each other directly or indirectly the costs for which they are each responsible under this clause 3.

### **PART 3 - GREEN LEASE PERFORMANCE**

#### **4. Australian Building Greenhouse Rating**

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##### **4.1. ABGR Rating**

- 4.1.1. The Parties agree that
- a. the Landlord will ensure that the Target ABGR Rating is achieved within 3 months of the first anniversary of the Commencement Date and maintained for the term of the Lease; and
  - b. subject to the Landlord complying with its obligations under the Lease (including this Green Lease Schedule) and to the Tenant's obligations and rights under the Lease (including this Green Lease Schedule), the Tenant will manage its energy consumption in the Premises at a level which is the same as a Tenancy ABGR Standard so as to support the Landlord to achieve and maintain the Target ABGR Rating. The Tenant is not required to obtain an ABGR Rating certificate to evidence compliance with its obligations under this Green Lease Schedule, but the Tenant will provide the necessary data and will co-operate with the Accredited Assessor undertaking the assessment of the Building needed to enable the Landlord to obtain the accredited rating certificate evidencing the Target ABGR Rating.
- 4.1.2. Within 3 months of each anniversary of the Commencement Date occurring during the term of the Lease the Landlord will deliver to the Tenant an accredited rating certificate issued by the Regional Certification Body or if there is no Regional Certification Body by the National Administrator under the ABGR Scheme evidencing achievement of the Target ABGR Rating.

- 4.1.3. The Landlord will arrange for the assessment of the Building to enable the accredited rating certificate required by clause 4.1.2 to be issued. The cost of the Accredited Assessor in assessing the Building for the purpose of obtaining the accredited rating certificate referred to in clause 4.1.2 will be borne by the Parties in equal shares.
- 4.1.4. If a Party
- a. reasonably considers that there are circumstances which warrant the other Party providing evidence of the other Party's compliance with its obligations relating to or impacting on the achievement and maintenance of the Target ABGR Rating or the Tenancy ABGR Standard (as the case may be); and
  - b. requests the other Party in writing to provide this evidence
- then the other Party will provide the evidence sought within 20 Working Days of the requesting Party's request (or within such other period agreed by the Parties). This clause 4.1.4 does not limit any other rights of the Parties relating to any failure of either Party to comply with its obligations under this Green Lease Schedule.
- 4.1.5. If the information provided under clause 4.1.4 demonstrates that there is a genuine possibility that the Target ABGR Rating or the Tenancy ABGR Standard (as the case may be) will not be achieved or maintained, or if the relevant Party fails to supply the evidence sought within the time required by clause 4.1.4, then either party may request an audit of the Energy Intensity of the Building.
- 4.1.6. The audit under clause 4.1.5 may not be requested more than once every 12 months and the Party requesting the audit will act reasonably and in good faith in making that request.
- 4.1.7. The audit under clause 4.1.5 will be undertaken by an Expert and the request for appointment of the Expert will be made by the Party requesting the audit.
- 4.1.8. The Expert
- a. will identify any non compliance with the requirements necessary for the achievement or maintaining of the Target ABGR Rating or the Tenancy ABGR Standard by either Party, having regard to their respective obligations under the Lease (including this Green Lease Schedule);
  - b. advise who or what is responsible for the non compliance;
  - c. advise what needs to be done to rectify non compliance;
  - d. advise which Party is responsible for rectifying non compliance and who will bear the costs of rectification (or if both the Landlord and the Tenant in what proportions); and

- e. if a Party is responsible for non compliance, will determine the costs (if any) which that Party is to reimburse to the other Party in respect of any additional costs incurred by the other Party as a result of the non compliance.
- 4.1.9. The conclusions of the Expert under clause 4.1.8 will be final and binding on the Parties.
- 4.1.10. The cost of the audit is to be shared equally between the Parties or as determined by the Expert.
- 4.1.11. If the Expert determines that a Party is responsible for non compliance then
- a. that Party will rectify the non compliance within the time specified by the Expert; and
  - b. if costs are payable under clause 4.1.8.e the relevant Party will pay the cost determined within 20 Working Days of receiving the Expert's written notice of determination.
- 4.1.12. The Parties agree that
- a. not later than 3 months after each anniversary of the Commencement Date; and
  - b. on any Major Refurbishment occurring during the term of the Lease
- the Parties will meet and will consider in a reasonable and cooperative manner whether an Improved ABGR Rating can be achieved which is consistent with the Australian Government Operation Energy Efficiency Policy targets for new leases and Major Refurbishments applicable at that time.
- 4.1.13. If the Parties agree under clause 4.1.12 that an Improved ABGR Rating is to be achieved, the Parties
- a. will take the relevant steps within their respective areas of responsibility to ensure that the Building and/or the Premises satisfies the Improved ABGR Rating requirements, and that (in so far as the Improved ABGR Rating relates to the Target ABGR Rating) a new ABGR rating certificate evidencing the Improved ABGR Rating is issued by the Regional Certification Body or if there is no Regional Certification Body by the National Administrator under the ABGR Scheme; and
  - b. will effect a written variation of this Green Lease Schedule reflecting the Improved ABGR Rating.

## **5. Energy Intensity Provisions**

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### **5.1. Improvements and Maintenance**

5.1.1. The Landlord will ensure that all maintenance contracts for the Building services include

- a. requirements that the Building services must perform in a way which will enable the Target ABGR Rating (and where appropriate the Tenancy ABGR Standard) to be achieved and maintained including that energy consumption of the base building services does not exceed that required to meet the Target ABGR Rating (and where appropriate the Tenancy ABGR Standard);
- b. reasonable warranties by the contractor and supplier which provide suitable rights to ensure the Target ABGR Rating (and where appropriate the Tenancy ABGR Standard) is maintained;
- c. a requirement that maintenance contractors at all times maintain and provide to the Landlord manuals and other information relevant to the maintenance and performance of the Building services; and
- d. a requirement that on any change of contractor the outgoing contractor must assign to the Landlord all warranties (which have not already been assigned to the Landlord) relating to the Building services and provide all manuals and other information relevant to the maintenance and performance of the Building services to the incoming contractor and/or to the Landlord.

5.1.2. If at the Commencement Date the Landlord demonstrates to the Tenant

- a. that it already has in place maintenance contracts which do not comply with clause 5.1.1 (Non Compliant Contracts); and
- b. that is not feasible for it to amend the Non Compliant Contracts so that they comply with clause 5.1.1 (taking into account the remainder of the term of the relevant Non Compliant Contracts and the costs associated with seeking to amend them)

then the Landlord is relieved of its obligations under clause 5.1.1 (but only to the extent that the Non Compliant Contracts do not comply). Once the Non Compliant Contracts have expired the Landlord will ensure that any new maintenance contracts or any extension or renewal of the Non Compliant Contracts comply with clause 5.1.1.

5.1.3. The Landlord

- a. within 3 months after each anniversary of the Commencement Date; or
- b. at other times within 10 Working Days of a request by the Tenant

will produce to the Tenant copies of all maintenance contracts in place for the Building services including evidence of compliance with clause 5.1.1.

- 5.1.4. The Parties will not pass on to each other any costs (directly or indirectly) incurred by them in performance of this clause 5.

## **5.2. Energy Data Reports**

- 5.2.1. By the tenth Working Day after the end of each quarter occurring during the term of the Lease the Landlord will provide to the Tenant quarterly energy data information (which show consumption data and cost) for the Building and common areas.
- 5.2.2. By the tenth Working Day after the end of each quarter occurring during the term of the Lease the Tenant will provide to the Landlord quarterly energy data information (which shows consumption data and cost) for the Premises.
- 5.2.3. The energy data information required by this clause will be in a form agreed by the Parties and if the Parties do not agree then the form will be determined by an Expert appointed under clause 10.

## **6. Energy Management Plan**

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### **6.1. Energy Management Plan Development and Implementation**

- 6.1.1. Without limiting any other obligation of the parties the following provisions apply to the development and implementation of an Energy Management Plan.
- 6.1.2. Within 3 months of the Commencement Date the Landlord and Tenant will use their best endeavours to agree on and sign an Energy Management Plan which will support the achievement of the requirements and objectives of the Australian Government Operations Energy Efficiency Policy at the time and this Green Lease Schedule.
- 6.1.3. The Energy Management Plan will be consistent with the terms and conditions of this Green Lease Schedule and as a minimum will include (but need not be limited to)
- a. the strategies to be employed by the Landlord in achieving and maintaining the Target ABGR Rating through the term of the Lease;
  - b. the strategies for maintaining and upgrading the Building (including services, systems, plant and equipment) so as to effectively manage the Energy Intensity of the Building and achieve Energy Intensity Improvements in the Building;
  - c. the strategies to be employed by the Tenant in managing its energy consumption in the Premises at a level which is the same as a Tenancy ABGR Standard through the term of the Lease.

- 6.1.4. The Parties acknowledge that the Energy Management Plan is an important tool for achieving the objectives of this Green Lease Schedule and to this end the Parties will use their best endeavours to agree the Energy Management Plan. If the Parties are unable to agree on all or any components of the Energy Management Plan in time for it to be signed within 3 months of the Commencement Date they agree that either or both may refer the issue (or the entire Energy Management Plan if the Parties have not agreed any of it) for determination under clause 10.
- 6.1.5. Subject to clause 6.1.7 the Energy Management Plan applies from the date it is signed by the Parties.
- 6.1.6. The Parties will not unreasonably delay the signing of the Energy Management Plan. If any component of the Energy Management Plan has not been agreed or has been referred for determination under clause 10 and the issue has not been agreed or determined within 3 months of the Commencement Date the Parties agree to sign the Energy Management Plan so that it contains the agreed components and to vary it in writing once any outstanding component has been agreed or determined.
- 6.1.7. A sample Energy Management Plan appears at Annexure B and if the Energy Management Plan is not agreed or not referred and determined under clause 10, the sample Energy Management Plan will be treated as the agreed Energy Management Plan with effect from the date which is 3 months after the Commencement Date until the Parties agree on an alternative Energy Management Plan or until an alternative Energy Management Plan or a variation to the sample Energy Management Plan is determined by the Expert under clause 10.
- 6.1.8. The Parties will provide
- a. a signed copy of the Energy Management Plan; or
  - b. where the sample Energy Management Plan applies under clause 6.1.7, a copy of that sample Energy Management Plan
- to the Building Management Committee.
- 6.1.9. The Landlord and the Tenant will bear their own costs in connection with the cost of producing, reviewing and implementing the Energy Management Plan and their respective obligations under the Energy Management Plan. The Parties will not pass on to each other their costs directly or indirectly.
- 6.1.10. The Building Management Committee will review the Energy Management Plan from time to time but not less than once every 2 years and will refer any recommendations for amendment to the Landlord and the Tenant.

- 6.1.11. The Parties will act in good faith and use their best endeavours to reach agreement on the recommendations of the Building Management Committee and they will
- a. record in writing any amendment to the Energy Management Plan agreed by the Parties from time to time; and
  - b. provide a signed copy of the Energy Management Plan incorporating any agreed amendments from time to time to the Building Management Committee.
- 6.1.12. The Parties will comply with their respective obligations under the Energy Management Plan.
- 6.1.13. Each Party will monitor its performance of the Energy Management Plan and within 3 months of each anniversary of the Commencement Date will report to the other Party on its performance against the Energy Management Plan.

## **7. Metering**

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### **7.1. Separate Metering**

- 7.1.1. The Landlord
- a. will ensure that from the Commencement Date the Premises are separately metered for electricity (with the meters being digital 30 minute on market status electricity meters), gas and water services (both hot and cold);
  - b. will ensure that the meters have an accuracy class suitable for customer billing and the meter register is readily accessible for billing;
  - c. agrees that if the Tenant requires, management of the meters will reside with the Tenant on installation; and
  - d. agrees that the Tenant is entitled to purchase its own electricity.
- 7.1.2. The Landlord
- a. will ensure that from the Commencement Date there is separate metering for electricity (with the meters being digital 30 minute on market status electricity meters), gas and water services (both hot and cold) for
    - A. central services in the Building including common areas; and
    - B. without limiting clause 7.1.1, all tenancy areas if this is required to achieve the Target ABGR Standard.
- 7.1.3. The Landlord will not pass on any costs incurred under this clause 7 to the Tenant directly or indirectly.

**8. Reporting**

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**8.1. Reporting**

- 8.1.1. All reports provided in accordance with the provisions of this Green Lease Schedule will include the following information as a minimum
- a. a reasonably detailed assessment or description of the progress and performance of the Party/Parties against the relevant target, strategy or plan arising from the respective obligations under this Green Lease Schedule;
  - b. how the progress and performance was monitored over the relevant reporting period;
  - c. if progress or performance has not met the target, strategy or plan (or it appears that the annual target, strategy or plan will not be met), reasons for this failure, and detailed explanation of how this will be rectified and progress and performance improved;
  - d. measures to be taken during the next reporting period to ensure targets, strategies and plans are achieved;
  - e. if the target, strategy or plan is due to be revised a suggested new target, strategy or plan that where feasible and practicable improves on the previous target, strategy or plan, if possible drawing on experience detailed in the report and previous reports;
  - f. any cost savings that have been achieved for that reporting period; and
  - g. any other information relevant to the Parties' performance against the target, strategy or plan.
- 8.1.2. All reports will be written reports and a complete copy will be provided to
- a. the Landlord (where the report is prepared by or for the Tenant);
  - b. the Tenant (where the report is prepared by or for the Landlord); and
  - c. the Building Management Committee (where the report is prepared by or for the Tenant or the Landlord or otherwise for the purpose of this Green Lease Schedule).
- 8.1.3. The costs of preparing the reports will be borne by the Party responsible under this Green Lease Schedule for preparing them and will not be passed on to the other Party directly or indirectly.

## **9. Remedial Action**

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### **9.1. Remedial Action**

9.1.1. If

- a. a Party has breached an obligation under this Green Lease Schedule; or
- b. a Party repeatedly breaches its obligations under this Green Lease Schedule;

the other Party (Initiator) may give the defaulting Party (Recipient) a Remedial Notice. The Remedial Notice will be in writing and will request the commencement of dialogue or remedial action.

9.1.2. The Landlord and the Tenant will meet within 15 Working Days of the date of the Remedial Notice and will use their best endeavours to agree a Remedial Plan which

- a. sets out remedial action; and
- b. contains a timetable for completion of the remedial action.

9.1.3. If the Parties fail to meet within 15 Working days and or fail to agree on a Remedial Plan, then subject to clause 9.3.2.a the Remedial Plan (or any parts of it which have not been agreed by the Parties) will be determined by an Expert in accordance with clause 10 on the application of either Party.

### **9.2. Adjusted ABGR Rating**

9.2.1. If a Party reasonably believes that the Target ABGR Rating or the Tenancy ABGR Standard (as the case may be) cannot be achieved (taking into account the matters in clause 9.2.2.a to clause 9.2.2.d) and that it should be reviewed then it may give written notice to the other Party specifying the reasons why the Target ABGR Rating or the Tenancy ABGR Standard (as the case may be) cannot be achieved and requesting an Adjusted ABGR Rating. Once this notice is given, the request for an Adjusted ABGR Rating must be referred by either or both Parties for determination by an Expert appointed under clause 10. The Expert must take into account the matters in clause 9.2.2.a to clause 9.2.2.d in making his determination.

9.2.2. If in considering a Remedial Plan or a referral under clause 9.2.1 the Expert determines that:

- a. the Landlord and the Tenant have taken all proper measures to achieve the Target ABGR Rating and/or the Tenancy ABGR Standard (as the case may be);
- b. the Landlord or the Tenant, or both as the case may be, has or have exhausted all reasonable avenues for Remedial Action in accordance with clause 9 of this Green Lease Schedule;

- c. the Landlord or the Tenant, or both as the case may be, has or have used best endeavours to comply with their respective obligations under the Lease (including all obligations under this Green Lease Schedule) which may in any way impact on or be relevant to the achievement of the Target ABGR Rating and/or the Tenancy ABGR Standard; and
- d. the inability to achieve the Target ABGR Rating or the Tenancy ABGR Standard is not due to any misrepresentation regarding the condition or capacity or the Building, the base building services or the Premises or deterioration in or failure of relevant parts of the Building, the base building services or the Premises or to activities in the Building or the Premises

then, the Expert may make a determination that there will be an Adjusted ABGR Rating for the Target ABGR Rating and/or the Tenancy ABGR Standard provided that the Adjusted ABGR Rating must be not less than a 4 star whole building ABGR Rating (in the case of the Target ABGR Rating) and/or a standard which is consistent with a 4 star tenancy rating under the ABGR Scheme (in the case of the Tenancy ABGR Standard) (as the case requires).

9.2.3. On and from the date of the determination by the Expert under clause 9.2.2, the Adjusted ABGR Rating, as it applies to the Landlord or the Tenant, or both, will become the Target ABGR Rating or the Tenancy ABGR Standard (as the case may be) under this Green Lease Schedule for such time as the Expert may determine. The Parties will effect a written variation of this Green Lease Schedule reflecting the Adjusted ABGR Rating.

9.2.4. At any time which is no less than 12 months after an Expert has made a determination and issued an Adjusted ABGR Rating, either Party may seek to have the original Target ABGR Rating or the original Tenancy ABGR Standard reinstated by requesting an Improved ABGR Rating. A Party will act reasonably in making a request for an Improved ABGR Rating. If a request is made the Parties will meet within 15 Working Days of the request and will consider in a reasonable and cooperative manner whether an Improved ABGR Rating can be achieved.

9.2.5. If the Parties cannot agree whether an Improved ABGR Rating can be achieved or if the Parties fail to meet within the time specified in clause 9.2.4 then either Party may apply to have the issue determined by an Expert in accordance with the procedure set out at clause 10 of this Green Lease Schedule.

9.2.6. If the Parties agree under clause 9.2.4 that an Improved ABGR Rating is to be achieved or an Expert determines under clause 9.2.5 that an Improved ABGR Rating is to be achieved, the Parties

- a. will take the relevant steps within their respective areas of responsibility to ensure that the base building and/or the Premises satisfies the Improved ABGR Rating requirements, and that a new ABGR rating certificate evidencing the Improved ABGR Rating (where the Improved ABGR Rating

relates to the Target ABGR Rating) is issued by the Regional Certification Body or if there is no Regional Certification Body by the National Administrator under the ABGR Scheme; and

- b. will effect a written variation of this Green Lease Schedule reflecting the Improved ABGR Rating.

### **9.3. Compliance with Remedial Plan**

9.3.1. The Parties will comply with the Remedial Plan.

9.3.2. If the Recipient does not comply with a Remedial Notice under clause 9.1.1 or with clause 9.3.1, the Initiator

- a. may notify the Recipient in writing that it extends the period for remedial action; or
- b. may give written notice (Enforcement Notice) to the Recipient notifying it that the failure to comply with the Remedial Notice and/or the Remedial Plan is a breach of the Lease (including this Green Lease Schedule); and
  - A. if the breach is capable of rectification, that unless the breach is rectified within the period specified in the Enforcement Notice (which period will be reasonable in the circumstances), the Initiator will be entitled to rectify the breach and claim its reasonable costs of rectification;  
  
or
  - B. if the breach is not capable of rectification, that the Initiator claims compensation for loss or damage incurred by the Initiator as a direct result of the breach (and the Enforcement Notice in this case will specify in reasonable detail how the amount claimed has been computed).

9.3.3. If clause 9.3.2.b.A applies and the breach is not rectified in the time specified in the Enforcement Notice

- a. the Initiator may rectify the breach;
- b. the Recipient will allow the Initiator or its contractors access to the relevant parts of the Building or Premises (subject to any prior notice requirements for access contained in the Lease) for the purpose of rectifying the breach; and
- c. the reasonable cost of rectification will be a cost due and payable by the Recipient to the Initiator following written demand from the Initiator specifying the amount claimed and reasonable detail on how the amount claimed has been computed.

9.3.4. Despite the Initiator's right to rectify the Recipient's breach under clause 9.3.3, if

- a. the Initiator is hindered in doing so by the Recipient or any other person, or
- b. the Initiator decides that it is not practicable for it to rectify the Recipient's breach

the Initiator may demand compensation for loss or damage incurred by the Initiator as a direct result of the breach (including the cost of any reasonable endeavours in seeking to rectify the breach). The claim for compensation under this clause will specify in reasonable detail how the amount claimed has been computed.

9.3.5. If

- a. an amount is claimed by the Initiator under clause 9.3.2.b.B, and
- b. the Recipient has not objected in writing to the amount claimed within 10 Working Days of the giving of the demand

the Recipient will pay the amount claimed within 40 Working Days of written demand. If the Initiator is the Tenant and the amount is not paid by the Landlord within the 40 Working Day period the Tenant, without prejudice to any other rights and remedies, may set off the amount against payments due under the Lease until the debt has been satisfied in full.

9.3.6. If

- a. an amount is demanded under clause 9.3.3.c or clause 9.3.4 and
- b. the Recipient has not objected in writing to the amount claimed within 10 Working Days of the giving of the Enforcement Notice

the Recipient will pay the amount claimed within 40 Working Days of written demand. If the Initiator is the Tenant and the amount is not paid by the Landlord within the 40 Working Day period the Tenant, without prejudice to any other rights and remedies, may set off the amount against payments due under the Lease until the debt has been satisfied in full.

9.3.7. If the Recipient objects to an amount claimed by the Initiator under clause 9.3.2.b.B, clause 9.3.3.c or clause 9.3.4 within the prescribed time then the dispute will be referred for resolution under clause 10 and any amount determined by the Expert will be paid within 40 Working Days of the Expert's determination. If the amount determined is payable by the Landlord and is not paid within 40 Working Days of the Expert's determination the Tenant, without prejudice to any other rights and remedies, may set off the amount against payments due under the Lease until the debt has been satisfied in full.

9.3.8. If

- a. an amount is payable and has not been paid by the time required by Clause 9.3.5 or clause 9.3.6; or
- b. an amount payable has been referred for resolution in accordance with clause 9.3.7 and has not been paid by the time required by clause 9.3.7

then the Party to whom the amount is due may institute proceedings in a court of competent jurisdiction to recover the amount. This clause 9.3.8 does not limit the Tenant's rights of set off under clause 9.3.5, clause 9.3.6 and clause 9.3.7.

- 9.3.9. The rights in clause 9 are in lieu of any of the rights which the Parties may have under the Lease for breach of this Green Lease Schedule . Except for any remedies contained in this clause 9 or elsewhere in this Green Lease Schedule the Parties will not rely on any other remedies available under the Lease or otherwise for breach of this Green Lease Schedule.

## **10. Resolution of Green Lease Schedule Disputes**

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### **10.1. Dispute Resolution**

- 10.1.1. Any difference or dispute between the Parties arising under the provisions of this Green Lease Schedule which is not resolved within 10 Working Days after notice by one Party to the other of the nature of the difference or dispute may be referred by either Party for determination by an Expert who is an appropriate practising professional with the relevant expertise in the subject matter of the difference or dispute. For the avoidance of doubt any difference or dispute between the Landlord's Energy Representative or the Tenant's Energy Representative on the Building Management Committee and which needs to be resolved to give efficacy to this Green Lease Schedule is also covered by this clause 10.
- 10.1.2. The Expert will be appointed at the request of either Party by the President or senior official of the Australian Institute of Arbitrators and Mediators in the State or Territory where the Building is located. Production of this clause will be sufficient evidence of the right to make the request. The President or senior official will be asked to appoint the Expert within 10 Working Days of the request.
- 10.1.3. Each Party may make a submission either orally or in writing to the Expert within 10 Working Days after that appointment.
- 10.1.4. In making a determination the Expert will:
- a. act as an expert and not as an arbitrator;
  - b. consider any submission made to it by a Party;
  - c. deliver his determination within 10 Working Days after the last day on which the Parties are entitled to make submissions; and

- d. provide the Parties with a written statement of reasons for the determination.
- 10.1.5. The determination of the Expert is conclusive and binding on the Parties.
- 10.1.6. The costs of the Expert will be shared equally between the Parties.
- 10.1.7. If the Expert fails to deliver a determination within 10 Working Days after the last day on which the Parties are entitled to make submissions, either Party may require the appointment of a further Expert under clause 10.1.1 and clause 10.1.2 to determine the dispute.
- 10.1.8. This clause does prevent a Party from seeking urgent interlocutory relief in a court of competent jurisdiction.

## ANNEXURE A - BUILDING MANAGEMENT COMMITTEE PROTOCOLS

- 1 Meetings will be held on <sup>^insert day^</sup> of each month occurring during the term of the Lease.
- 2 The first meeting will be held 1 month after the Commencement Date.
- 3 Meetings will be held at <sup>^insert venue^</sup> or as otherwise agreed by the Landlord's Energy Representative and the Tenant's Energy Representative.
- 4 Written minutes of each meeting will be taken and the responsibility or this will rotate between the Landlord's Energy Representative and the Tenant's Energy Representative <sup>^or insert other agreed arrangement^</sup>.
- 5 <sup>^Insert agreed arrangements for chairing^</sup>
- 6 <sup>^Insert agreed arrangements for minute taking^</sup>
- 7 Any difference or dispute between the Landlord's Energy Representative and the Tenant's Energy Representative which needs to be resolved to give efficacy to this Green Lease Schedule may be referred for resolution under clause 10 by either Party.
- 8 Reports and other information held by the Building Management Committee will be stored at <sup>^insert address^</sup> and the Building Management Committee will take necessary steps to ensure the security and confidentiality of those reports and information in accordance with the Green Lease Schedule.
- 9 The Building Management Committee will provide to a Party on request any copies of any information or reports relating to the Building, Premises or the Lease (including this Green Lease Schedule) held by the Building Management Committee and will inform the other Party that it has done so.
- 10 <sup>^These will vary from case to case - the following are examples.</sup>

*Reports **typically required** : Several building reports are produced to manage the building such reports include: Engineering, mechanical, electrical lifts, hydraulics, fault , capital works, minor works, OH&S if applicable, service, energy accounts 30 minute data Tenant light and power and building services, mandatory maintenance and testing , BMS, planned maintenance,/out of hours operation log, fault reports and energy 30 minute data and accounts.*

*Identifying the key reports such as HVAC , maintenance and energy accounts that will need to be scrutinized. Building fault reports will also be a key indicator for energy efficiency issues^*

- 11 The Landlord's Energy Representative and the Tenant's Energy Representative must familiarise themselves, be aware of and comply with the Building Management Committee Protocols and the Energy Management Plan.
- 12 *^Insert any other protocols required^*

**ANNEXURE B -ENERGY MANAGEMENT PLAN**

**ANNEXURE C - OPTIONAL CLAUSES**

**ANNEXURE D - PERFORMANCE STANDARDS**