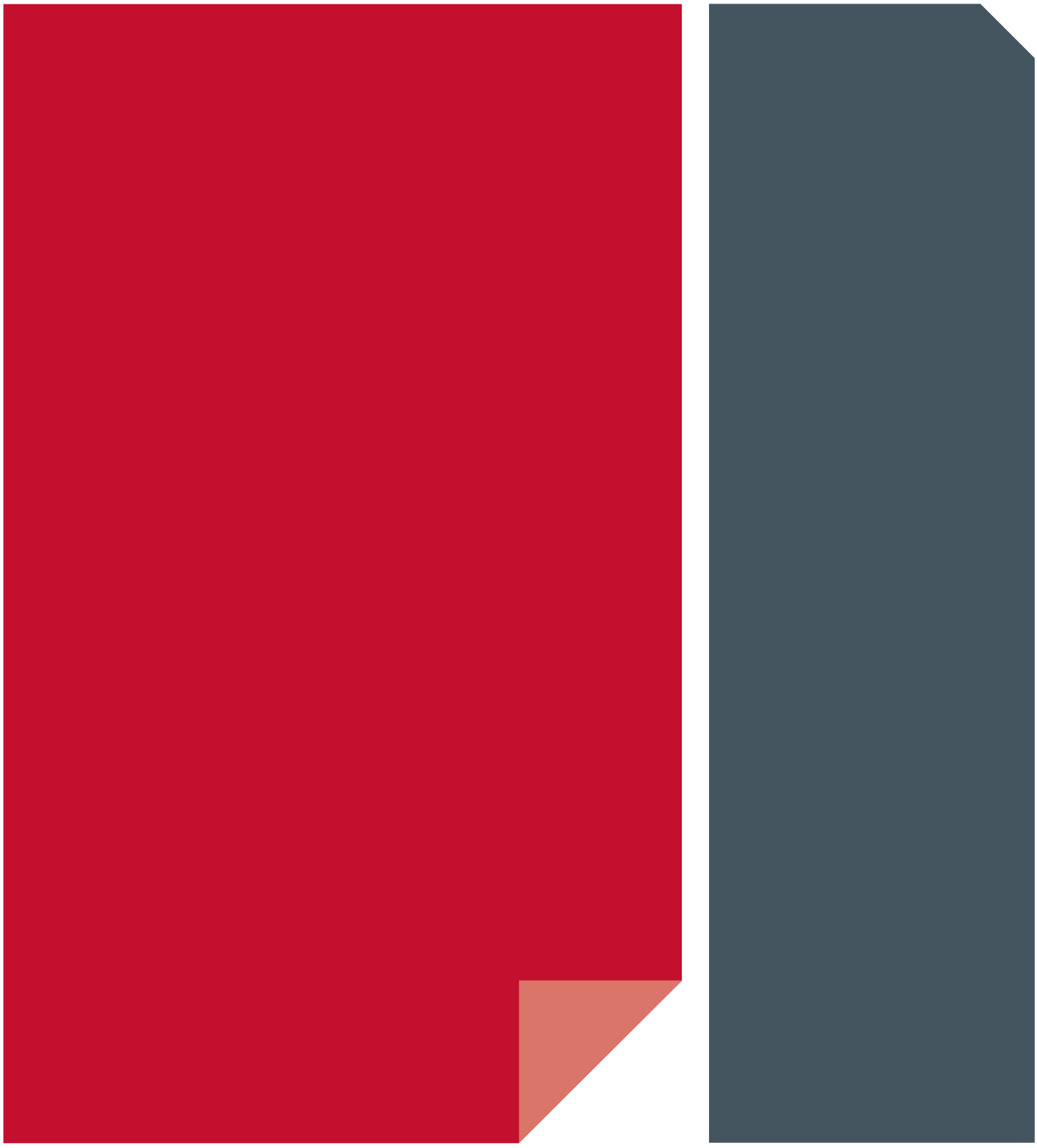
Valuation Information Paper 13

Sustainability and commercial property valuation



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RICS Valuation Information Papers

This is a Valuation Information Paper. Valuation Information Papers are intended to outline current valuation practice and issues for RICS members. Their function is to discuss valuation approaches and methods and where relevant the regulatory context. They provide an indication on the approach to issues that may arise in the subject to which it relates.

Valuation Information Papers are relevant to professional competence and in order to keep up to date valuers should have informed themselves of their content within a reasonable time of their issue where their subject matter relates to the area in which a valuer is practising.

1 Introduction

1.1 This Valuation Information Paper (VIP) discusses some of the key issues that may be or may become relevant when undertaking valuations of commercial buildings. The issues include the assessment of whether properties are resilient to environmental risks (such as potential loss of energy sources and flooding) and recognition of the changing needs of occupiers as the adoption of Corporate Social Responsibility (CSR) policies becomes more prevalent.

1.2 Although many of the issues discussed in this VIP apply to domestic properties (including those held for investment purposes, specialised properties, and non-commercial properties such as heritage assets), these are not specifically addressed. This VIP relates primarily to those properties that have a wider commercial use and are either owner-occupied or comprise part of an investment portfolio. It has been prepared for global application but local market conditions and the extent of the local recognition of the issues have to be taken into account.

1.3 Part of RICS' commitment to sustainability has been through participation in the Vancouver Valuation Accord. This Accord, adopted in 2007 by RICS and a number of other professional bodies, aims towards the establishment of standardised approaches to reflecting sustainability within valuation process and practice. This VIP has been prepared with these intentions in mind.

2 The role of the valuer

2.1 One role of the valuer is to reflect the behaviour of markets. In arriving at an opinion of Market Value, the valuer seeks to reflect the market's assessment of how the asset may perform in the future in terms of its ability to maintain rental income and benefit from rental growth. If sustainability characteristics are recognised as having an impact, these are to be built into the calculation to the extent that an informed and well-advised purchaser would account for such matters.

2.2 Whilst some participants in the market have advanced knowledge of sustainability matters and have adopted stringent corporate social responsibility (CSR) policies that include property investment and occupation matters, others have not. Hence, in forming a judgment as to the extent to which sustainability factors will impact on valuation, the attitudes of those likely to be in the market for the subject property, both as occupier and owner, are relevant. Often it may be difficult for such factors to be quantified; nevertheless it may fall within the remit of the valuer to provide some qualitative comments.

2.3 Valuers will need to develop knowledge of such possible implications in order to advise building owners and occupiers, particularly as governments introduce legislation aimed at mitigating the impacts of climate change and reducing carbon emissions. Indeed, it is the responsibility of the valuer to be aware of these trends and be knowledgeable about how they feed through to rental and capital values.

2.4 The approach adopted, and issues considered, in preparing any valuation will depend, in part, on the purpose, which in turn dictates the basis of value. The extent to which sustainability issues are specifically referred to in the report will depend upon the instructions (not all valuation reports are required to include a comprehensive summary of all matters considered in arriving at an opinion of value). Subject to the reporting requirements, where emerging issues may impact on the future value of a property, it may be appropriate to refer to them, even if they cannot be fully quantified.

2.5 Where so instructed, a commentary as to the property's likely performance against sustainability criteria, using metrics where available, can be provided. The question of criteria is developed in section 5 below, but the valuer will need to consult with the client as to the applicability and use of various benchmarks available.

3 A background to sustainability

3.1 Over the past two decades the issue of sustainability and sustainable development has become widely recognised, most notably following the publication of the Brundtland Commission report (World Commission on Environment and Development, *Our Common Future: the report of the Brundtland Commission*, Oxford University Press, Oxford, 1987). Policy makers and legislators at all levels now recognise the importance of, and increasingly implement, measures that seek to provide environmental protection and social equity whilst still pursuing economic growth and stability. These three principles, often collectively referred to as the triple bottom line (TBL) principles, have been widely embraced by both public and private sector institutions and organisations, including RICS.

3.2 There are several fundamental aspects of sustainability that affect property and potentially its value. Not only does property itself have an impact on the environment though its whole life cycle, but environmental and social aspects of sustainability impact on property performance. The key concerns for property performance are:

- climate change: the impact of water, wind, temperature and other environmental factors on an asset;
- resource depletion: the impact of energy demand and reducing supplies of fossil fuel on materials and energy consumed by buildings;
- broader attributes: the effect of social, health and other attributes on buildings, their occupancy and demand.

3.3 This VIP does not discuss the full range of environmental and social issues that have given rise to the global sustainability agenda, but it is relevant to highlight the issue of climate change as this is forecast to impact on the built environment across the globe (but in different ways). The science of climate change is still disputed in respect of its possible impacts and uncertain in terms of scale. However, it is sufficiently widely accepted that it is now prudent to recognise this as a real risk. Among the predicted consequences, all of which will affect some regions more than others, are:

- more extreme weather patterns, leading to a need for buildings to be more able to withstand hurricanes and for better storm water run-off provision to prevent or minimise localised flooding (particularly in river basins);
- rising sea levels, leading to risk of flooding in low lying areas;
- increased temperatures in some areas, changing the overall economic potential of some countries and leading to a greater need for climate control in buildings (particularly high rise city centre buildings).

3.4 As climate change and resource impacts deepen, it is expected that the effect on asset value will increase. The Stern Review (Stern, N., *The Economics of Climate Change: The Stern Review*, Cambridge University Press, Cambridge, 2006) identified the effects of sea-level rise, storm impact, population displacement

and other factors as presenting increasing risks of potential severity. These may, especially in some exposed locations, affect property values. In time this may make more secure locations desirable. What is important is that the dynamics within the locality in which the subject property is situated are recognised.

3.5 Investor and occupational decisions are increasingly being informed by a range of sustainability-related metrics that are beginning to be developed and that can provide measures of some aspects of a property's sustainability characteristics.

3.6 Although sustainability principles may be embedded in the policies of property owners and occupiers, translating them to their property decisions has been difficult. An important contributory reason for this is that not all aspects of sustainability translate easily or demonstrably into market value, yet they nevertheless exist. However, currently little is known about their impacts on value and it is important, therefore, that claims of relationships that cannot be evidenced are considered cautiously.

4 Defining sustainable buildings

4.1 There is no universally agreed definition of a sustainable building. However, as the market evolves and as new metrics and regulations are developed and implemented, so a consensus may emerge. There is a general expectation that buildings that minimise environmental impact through all parts of the building life cycle and focus on improved health for their occupiers may retain value over a longer term than those that do not. Sustainable buildings should optimise utility for their owners and occupiers and the wider public, whilst minimising the use of natural resources and presenting low environmental impact, including their impact on biodiversity. Definitions of sustainability address both social equity, for example, indigenous and affordable aspects, and environmental impacts, including energy use, both within and 'upstream' from the building itself, in terms of the resources consumed in creating and operating it.

4.2 Throughout the globe various measures have been developed that seek to define sustainable buildings in terms of their new build characteristics, but few currently address existing buildings. Among the best known sustainability assessment tools are:

- BREEAM (Building Research Establishment Environmental Assessment Method), developed in the UK;
- LEED (Leadership in Energy and Environmental Design) developed in the US and Canada; and
- Green Star and NABERS (National Australian Built Environment Rating System), developed in Australia.

Although there are recurrent aspects in these schemes, they do not measure the same characteristics and all are reviewed and updated from time to time. Importantly, they often use prescriptive measurement standards in contrast with valuation standards, which are principles based. As time goes by more metrics are being developed and increasingly used as indicators of sustainability. This means that a building that, for example, achieved a top score at the time it was constructed may within a very short space of time fall behind extant standards. Nonetheless, assessment tools do represent mechanisms to provide sector-wide comparisons.

4.3 However, for the most part, valuers are dealing with existing buildings, the majority of which have no formal ratings. It would be very helpful if information about the subject property and any comparables in terms of their characteristics compared against best practice as at the date of valuation was available. Metrics for measuring the sustainability of existing buildings are less plentiful, but are beginning to emerge. Example of rating systems that specifically address existing investments include the Go Green and Go Green Plus rating systems, developed by the Building Owners and Managers Association in the US.

4.4 Some metrics are being developed in response to market initiatives. Others are responses to legislation and regulations, such as Energy Performance Certificates which have been introduced throughout the European Union (EU) in response to the *Energy Performance of Buildings Directive* (EPBD). Similarly, the US is starting to expand the Energy Star rating system used for appliances and Canadian Federal Government is looking at implementing building energy labelling systems.

4.5 There are inconsistencies between the currently available metrics. For example, although the EPBD is one Directive its implementation mechanism varies considerably across member states; hence buildings cannot be compared in terms of energy efficiency across Europe in any consistent way. Also, European approaches do not necessarily compare with North American approaches. These differences may also have implications for valuing international property portfolios.

5 Assessing a building's sustainability characteristics

5.1 The perception of what is a sustainable building will change over time and between locations. Additionally, there are varying interpretations of the concept of sustainability: each stakeholder in a building will have a different perception as to what are the critical issues. Buildings are complex structures and every element, from design to construction materials to location, is likely to have an impact on the building's performance against sustainability criteria. Therefore, it has to be acknowledged that assessing a building's sustainability characteristics is a complex activity and that it is not a precise science. It follows that the considerations detailed below are only an indication of the matters that may impact on value.

Collecting evidence: inspection and other investigations

5.2 A full survey of the building may not be necessary for the valuer to carry out the valuation. However, to comply with PS 5, valuers should be satisfied that they are in possession of sufficient information, either through their own due diligence and verification or through having been provided with information upon which they may rely, to enable them to make informed judgments and properly advise the client. This may involve desk research in addition to collecting inspection data.

5.3 The issues discussed in the following paragraphs are:

- land use;
- design and configuration;
- construction materials and services;
- location and accessibility considerations;
- fiscal and legislative considerations; and
- management and leasing issues.

Land use

5.4 Many sustainable building rating systems take into account land use. Where buildings are constructed on brownfield land, watercourse setbacks, site water management, site development and other aspects need to be taken into account.

5.5 Whilst these may largely be important at the point of development, they mostly have limited relevance to the valuation of a standing building except insofar as:

- a building constructed on previously developed land may raise issues of potential contamination and through this may bear a risk of outlay in terms of cost and/or insurance against potential problems in the future; and

- land may be exposed to increasing impact of climate change through soil erosion, flood (tidal, fluvial and surface water), wind and other climatic action, with the increasing cost of addressing these impacts thereby affecting net income.

5.6 The impact of possible incentives for brownfield development, the value of which offset increased costs and risks of addressing contamination, may be relevant. Different management approaches to meeting applicable contaminated sites regulations can vary, as will the regulations in different jurisdictions. It will also be important to consider whether any future liabilities may arise from any contamination.

Design and configuration

5.7 Sustainable buildings will generally include several key components. Usually they will have been designed or refurbished to achieve longer life cycles, will have different resource utilisation or ecological footprints (that have been considered over their life cycle) or will have design features that impact factors such as heat island effect, internal natural light distribution, water and storm water management, and so on. These are complex factors that can positively or negatively impact on the building's finances and investment profile, as well as the building's resilience to climate change and resource depletion.

5.8 Design aspects include:

5.8.1 *Build quality and life cycle*

Whilst high specification is not always necessary as a hallmark of sustainability, build quality should be appropriate to the market, the building use (including end of life use and adaptation), the nature of the building and its location. A building with structural integrity and using durable, reusable or recyclable materials will be less likely to suffer premature obsolescence. The build quality should also reflect the need to design for potential environmental hazards, such as flood and storm where the building is located in a medium to high risk area. Consideration of component deconstruction and the value of recycled or reusable materials may act as a 'credit' in building renewal and value by, for example, placing less pressure on landfill.

5.8.2 *Floor area efficiency*

Efficiency in terms of design is normally factored into valuations in terms of gross to net ratios. As energy costs increase, so a building's efficiency in terms of usability will impact on the overall running costs on an area basis.

5.8.3 *Resource efficiency*

Newly constructed or refurbished buildings designed for enhanced sustainability will, typically, have features aimed at good resource efficiency and revenue cost savings achieved through innovative technology. However, some properties may achieve resource efficiency through traditional technologies. For example, office occupant comfort without the use of air conditioning has proved to be possible even in extreme climates, using older adaptive approaches.

5.8.4 *Flexibility*

Flexibility in use potential is a key design consideration, particularly for offices, where the pattern of working practices has changed considerably over recent years and is subject to likely future change. A building with a low flexibility score will be less likely to maintain occupancy and net income into the future. The building's flexibility or lack thereof is a major factor in the rate of value depreciation likely to be experienced. The impact of flexibility will vary from country to country and, in particular, on whether local building design is predominantly for simple or complex structures.

5.8.5 *Adaptability*

Over time the optimal use and value for a parcel of land or building is likely to change. A building that is adaptable both within its own use categorisation and beyond is likely to suffer less obsolescence and be more sustainable. Therefore buildings that have the structural design to allow for change of user and/or change of use are inherently better 'future proofed' and hence more sustainable. The ability to recycle land, buildings or their components acts as a residual value and credit that improves net asset value. Adaptability to alternative use will tend to enhance this residual.

5.8.6 *Health and human performance*

Components of a building may contribute to occupant health and well being. Items such as light shelves (which reflect light to interior areas of buildings) reduce reliance on non-natural light and studies (Commission for Architecture and the Built Environment (CABE), *The Value of Good Design: how buildings and space create economic and social value*, CABE, London, 2002; Royal Institution of Chartered Surveyors (RICS), *Green Value*, RICS, London, 2005) have shown these to improve human health. Other attributes such as increased light in retail areas have demonstrated increases in financial performance through increased sales. These factors are thus direct and indirect, and may be recognised where the market understands the benefits they provide and occupants are demanding these benefits.

In many countries there is government-led encouragement of the promotion of cycling and walking as preferred forms of urban transport since this improves taxpayer health and reduces medical care costs, as well as improving employee performance. Therefore, for commercial buildings, especially offices, the presence of facilities such as showers, clothes lockers and secure cycle stores has been identified in several research studies as factors that increase a building's sustainability. Where the configuration of a building or the site constraints makes the provision of such facilities impossible, sustainability is compromised.

Construction materials and services

Prospective market participants may have regard to which materials and services in a building are sustainable in the future. Although a full survey may not be undertaken as part of a valuation, the following issues may be relevant.

5.8.7 *Type of building materials*

With the rise in awareness of sustainability issues, over time the sustainability of construction materials has become a concern with some occupiers. Whilst all materials in an existing building are 'embedded' and therefore their history

in terms of how materials were won and transported is of no intrinsic relevance to current and ongoing sustainability, the type of material may in some cases have an impact on demand. Examples of building materials that might increase a building's attractiveness to occupiers who espouse ecological principles include accredited timber, local stone and reflective glass, whereas imported hardwoods and stones, such as marbles, and non-biodegradable, non-reuseable or non-recyclable products and materials can deter such occupiers. Additionally, where a building or its components are approaching the end of their economic life, the nature of the construction materials, particularly where they have been identified as being hazardous, will have a direct bearing on the ability of the materials to be reused or recycled. This in turn has direct and quantifiable environmental and economic consequences.

5.8.8 *Servicing and replacement of building materials*

Building materials such as cladding, ceiling and floor panels, carpets and walling are important sustainability considerations. As noted above, the ability to reuse, repair and replace materials will tend to improve their life cycle and life cycle value. Embedding this as part of building use and design can potentially improve rental value by permitting more frequent refreshing or gradual replacement of materials.

Life cycle value, especially of important material components, could be considered. Simplistically this is the cost or value of the material divided by its useful life, adjusted for any value as a recyclable asset, and adjusted for its waste value and carbon footprint. Since the life cycle cost or revenue of, or from, a building component can easily exceed its capital cost, the life cycle value can be a significant consideration.

5.8.9 *Building services (air-conditioning and heating installations)*

Whilst climate change is widely accepted to be happening, the actual impacts may be difficult to determine. Global rising temperatures may be the obvious result of climate change, but it is also giving rise to less predictable weather patterns. Therefore the ability of a building to continue to be used efficiently in high temperatures and to withstand storms is important. Whilst natural cooling may be the preferred option on sustainability grounds, many properties could become unusable in extreme heat without appropriate climate control which directly affects tenant comfort. Such buildings are likely to be vulnerable to rapid obsolescence and may need retrofitting. Without it they may be environmentally preferable, but if they are not useable they are not sustainable and this will lead potentially to a reduction in value.

5.8.10 *Energy efficiency*

Low energy costs in many countries, and particularly in the US and the UK, have in the past meant that a business case for energy efficient property has been a 'non-starter'. However, this is changing and high energy costs (especially for fossil fuels) are likely to be sustained into the foreseeable future. Fossil fuels are increasingly a focus for potential or actual taxation in some jurisdictions (for example, the EU and Canada).

Consumer energy costs have risen steeply and this will, in time, impact on rental values. Additionally, the acknowledged relationship between carbon-emitting energy use and climate change has made energy efficiency a matter of legislative compliance and of CSR policy for building owners and occupiers.

For tenanted property the net-rent system has traditionally protected the investor owner, but the introduction of energy labelling for buildings, changing landlord-tenant relationships and the drive to more flexible and shorter leases, lead to this being a real sustainability issue. It follows that energy inefficient buildings will suffer a premature need for refurbishment and thus will increasingly be regarded as unsustainable. In some countries and sub-markets, the price of outgoings, for example, energy, is now such that tenants are inclined to take a whole cost approach when deciding on the rental level that they are prepared to accept. The rental impact of occupational costs in use may need to be compared with other buildings in the locality.

5.8.11 *Energy sourcing*

The issue of energy efficiency has been much publicised. However, of more importance in the longer term and in the face of climate change is the source of energy used within a building. The source of energy is important in two respects:

- firstly, whether it is from a carbon-free source or not; and
- secondly, whether the source is secure in terms of continuity.

In relation to the first point, the installation of renewable technologies such as wind generators, solar panels and ground source heat pumps may be indicators of a more sustainable building. However, it is noted that the technology for some micro-generation systems may be insufficiently developed so that whole life carbon savings may not necessarily result from their installation. Notwithstanding, some occupiers with a CSR objective may place greater value on such components, thereby potentially affecting demand and markets.

The second consideration, energy security, may potentially be of equal or greater importance. If the supply of energy to a building cannot be secured (for example, due to inadequate grid capacity), a building may be rendered unusable. Buildings in locations of extreme weather conditions or that are used for high energy activities are particularly vulnerable to potential interruptions of supply.

5.8.12 *Water efficiency*

In the past, water has been regarded as of little significance to property sustainability, except in countries of scarce water supply. In many countries it has been both plentiful and cheap, and the water systems in buildings have been low cost relative to other occupational items. However, as an increasingly scarce and depleting resource, consequent on increased demand and climate change, water is targeted for conservation, particularly in areas where the local supply infrastructure is reaching capacity. Additionally, CSR policies are driving an increasing interest in equipment designed to reduce consumption, such as spray taps, and the use of grey water, particularly for maintenance of landscaped areas. To encourage conservation of supply, metering and sub-metering has already become part of a standard specification in some countries; as supply of water becomes more of a concern, so others will follow. Properties that lack such facilities may require upgrading in order to satisfy user requirements and hence be regarded as deficient in sustainability terms.

The degree to which a building is designed for water conservation is relevant. The majority of water consumption in commercial premises is not for drinking purposes, so the benefits of water recycling and reuse is potentially important

in locations facing water challenges. The ability to capture, use and recycle water can be sufficiently important in some locations to determine whether or not development is viable.

5.8.13 *Waste management provision*

Waste is of increasing environmental and economic significance. The rising cost of landfill taxes and increasing regulatory pressure is making waste management a significant cost issue for many organisations. This is particularly the case for those operating major developments, whether commercial, industrial or residential. It is not a matter simply for consideration during the construction phase; it is important in how buildings are capable of being operated on a day-by-day basis. The provision of an effective centrally controlled recycling system with appropriate access and storage will become increasingly important in determining a building's sustainability performance, as premises that do not support effective waste management will inevitably suffer higher revenue costs.

Conversely, waste-to-energy is increasingly understood to be potentially profitable. This uses liquid and solid waste materials to recover gas, heat and electrical energy, water, fertiliser and inert materials. Large scale developments, that lever these waste materials and use district energy loops, geo-exchange and other approaches, can be profitable, and may impact on development appraisals. Instances exist of owners creating utility companies and increasing investment value while reducing carbon emissions and creating local energy generation. The ability for this to be implemented collaboratively in urban locations with transfer pricing to reduce operations and maintenance costs and improve net investment value can be considered.

Location and accessibility considerations

5.9 Location is normally factored into the valuation. One characteristic of location is accessibility, an important factor where the impact of sustainability issues may not be explicitly included – yet this matters to all property types. It affects both those who operate from the building and those who visit it. Changes in fiscal and regulatory transport policies make it crucial to environmental, social and economic performance that property is accessible via a range of transport forms, especially public and mass transportation both for people and materials. Such policies may result in a counter-intuitive approach to transport provisions.

5.10 It is often assumed that for a property to be sustainable it should shun cars and be close to public transport. However, such an approach denies the requirement to satisfy the needs of both employees and visitors. A property that is wholly or primarily dependent on public transport may simply fail on economic or use efficiency grounds; ideally, it should have accessibility via a variety of means of transport and have sufficient parking provision to maintain value. The definition of what is sufficient will vary from city to city and country to country, and national and local transport policies will be relevant. Where premises lack accessibility it can lead to higher stress and staff turnover among those working there and it impedes the social role of assets designed for visits by members of the public. In operational terms, asset managers can ensure that their operational management plans do not simply seek to penalise car users (for example, by the introduction of car parking

charges), but that, as far as possible, access by all transport modes is enhanced (for example, by the installation of secure cycle storage, changing facilities and showers).

5.11 In terms of locational attributes, the impact of a building and site development can have positive or negative impacts on the ecosystem, or be harmed by the ecosystem. Setbacks from water courses will be a consideration, especially with increased flood and sea rise implications (for example, some assets are below river or sea level and while protected by barriers are increasingly susceptible to barrier failure). Hard surface areas reliant on drainage systems or in locations of excessive groundwater drinking usage may be at risk of settlement and increased fire risk may be a consideration in forested areas impacted by climate change. For example, the Mountain Pine Beetle Epidemic contributes to increased fire risk in North America.

Fiscal and legislative considerations

5.12 *Impact of regulation, tax and financial incentives*

The regulatory and fiscal framework, and impending changes, that relates to the subject property may have an impact on value, particularly where a calculation of investment worth is being provided. It may be appropriate to discuss with the client the advisability of engaging other professionals in the assessment of certain legal and tax matters, such as validation and enumeration of emissions and the impact of taxes or credits, as these may require specialist knowledge.

5.13 Making progress towards achieving sustainability is a high government priority in many countries and accordingly such goals are increasingly linked to fiscal initiatives including tax breaks and incentives. In most jurisdictions, increased government regulation affects the process and requirements for compliance across the entire range of asset ownership and sectors.

5.14 These impacts exist at international, national, regional and local levels and may vary substantially:

- In certain instances the regulations are intended to ensure increased sustainability and act as barriers to non-sustainable buildings, improvement, renovation and retrofit, construction or use. Non-compliant assets may lose value.
- Taxes levied on emissions or unsustainable aspects of buildings may detract from value.
- In some jurisdictions, fiscal and planning incentives exist to encourage sustainability – where this is the case these could enhance asset value.
- Credits from validated and (usually) registered carbon emissions reductions could potentially add to value.

Management and leasing issues

5.15 *Impact of lease terms*

The practice of adopting lease arrangements which either encourage or require landlords and tenants to manage the asset in accordance with sustainability principles (so-called green leases) is growing. Such leases may have an impact on cash flow in the case of internal repairing leases or on the refurbishment cycle and/or depreciation in the case of net leases. The presence of a green lease

is to be evaluated as it could mark a risk reduction factor within the appraisal or, conversely, it could result in a lower rental bid if it contains onerous terms.

5.16 There is normally little that a building owner or occupier can do to change the asset characteristics of a property in relation to its inherent sustainability, with the exception of refurbishing to sustainability standards. However, in terms of management there is great potential and even the 'greenest' building, if inappropriately managed, will not perform to its specification standards. Some owner-occupiers are leading the practice with sustainable property management systems enshrined within, for example, Environmental Management Systems, such as ISO 14001 in the UK.

5.17 A special consideration is that sustainable attributes may need different construction and ongoing management approaches. Failure to adequately maintain the attributes built in to improve sustainability performance may harm them, increasing cost and risk. This may affect insurance as well as capital and operating costs. In some instances it may also cause sustainable building certifications to be lost, thereby losing the attributes that attracted tenants, subsequently leading to increased vacancy, turnover and cost of tenant inducements, and to reduced rent.

5.18 Within the investment sector, there is an emergent movement towards the implementation of landlord and tenant arrangements which encourage, or even contractually impose, standards of sustainable asset management on either or both the landlord and the tenant. Some such leases aim to address the inequities of investment and return inherent in traditional leases, in which the landlord has responsibility for capital investment but the beneficiary is the tenant. The concept in these green leases is to share the tenant's savings with the landlord so that both benefit and there is an incentive for the landlord to undertake sustainable investment. Where such arrangements exist they may have an impact on rental value or yield.

5.19 The inability of some assets to perform against increasingly stringent environmental and social standards or to physically withstand the impact of, for example, flood and storm present additional risks to the building owner and/or occupier. Such risks, where they can be quantified, may be insurable. A market valuation does not normally factor in the costs of insurance, but these may be a cost to the owner. However, where additional risks are identified that require special cover, the costs of additional insurance premiums related to these specific items can be factored into the valuation, either as a one-off cost or as a revenue outgoing.

5.20 The impact of upgrading premises to meet sustainability standards may result in an environmental trade-off which reduces the future lifespan of the building. As regulatory building standards increase, building life may be compromised as refurbishment expenditure becomes both more expensive and more frequent, thus changing the economics of the decision whether to refurbish or redevelop.

6 Reflecting sustainability characteristics in the valuation

6.1 The value of any commercial property reflects many factors; sustainability is just one.

6.2 If, at the date of valuation, the market does not differentiate, in terms of either occupier or investor demand, between a building that displays strong sustainability credentials and one that does not, there will be no impact on value. In common with certain other building characteristics, it may often be the case that, when a market is very strong and supply is constrained, there will be little, if any, discernible difference between rents and yields achieved for low sustainability buildings and those which score highly. However, within the UK, the US and other mature and transparent markets, there are signs that, increasingly, sustainability criteria matter to property owners (be they owner-occupiers or investors) and to tenants. Where this can be demonstrated as affecting pricing through analysis of comparable transactions, the valuation can be adjusted accordingly.

6.3 It may be appropriate, particularly where the instruction is to prepare an investment worth valuation, to incorporate a more detailed analysis in order to advise the particular investor. Sustainability issues could impact future performance and if this is anticipated, they may be incorporated into any discounted cash flow appraisal, with due consideration given for aspects of uncertainty. An explicit cash flow will also take account of all outgoings and management costs likely to be encountered by the investor where the property is let on other than net terms. For example, it is reasonably certain that energy prices will continue to rise and the impact of this on net revenues for an energy-inefficient building may need to be considered.

6.4 The following questions may be relevant in considering the impact of the various sustainability issues.

- To what extent do the building's sustainability features compare with a building within the locality displaying best practice and with those being used as comparable evidence?
  - Does it meet best practice and can it be regarded currently as sustainable?
  - Does it fall just short of the concept of a sustainable building? or
  - Does it fail significantly to meet best practice and if so, can such deficiencies be rectified by retrofitting or is that difficult due to the building's configuration?
- To what extent do the sustainability factors of the building impact upon current occupational demand?
- Are any claimed sustainable characteristics such as green certification awards, or meeting greenhouse gas reduction targets, recognised and

valued by tenants in the immediate market? Do they add realisable value and is this a temporary or longer-term benefit?

- Is the building in an area where the effect of heat, fire and drought impacts may affect insurance or operations?
- When assessed for sustainability, does the building display features that will be likely to impact upon investor demand, both now and in the foreseeable future?
- What impact will the building's sustainability criteria have upon rental growth and rent obtainable at current levels of value?
- Is the building likely to attract a tenant prepared to sign up to either a longer lease or one that places sustainability responsibilities on either or both the landlord and the tenant and will tenants be more likely to be retained at the end of the initial period?
- Are the building's sustainability characteristics such that it is likely to suffer more or less voids and delays on lettings than comparables?
- Will the building be economic to run in terms of outgoings both from an occupier perspective and, in the case of multi-let buildings, in terms of service charges?
- Is the building made more or less susceptible to depreciation and obsolescence by reason of its sustainability characteristics, or will it require greater allowance for refurbishment costs within the projected cash flows?
- Do sustainable attributes and internal flexibility and adaptability reduce tenant changes and costs (i.e. improved internal fit-out and churn adaptability) that may increase absorption (lease-up, vacancy, etc.)?
- Are there any proposals for regulation or legislative changes that could impact on rental or investor demand?
- Does the building represent increased or decreased overall risks to the investor, other than those set out above, due to its sustainability features? If so, should the risk premium in the discount rate be adjusted?
- What impact will the building's sustainability criteria be likely to have upon the period of time taken to achieve a sale?

Some of the issues raised by these questions are discussed in the following paragraphs.

Analysing comparable rental evidence in light of sustainability issues

6.5 In analysing rental evidence, trends in occupational requirements are relevant. Occupiers generally view property as a resource from which to operate. It follows that their concerns focus upon the ability of the building to perform to their current and emergent needs, including meeting environmental targets. Therefore to the occupier the specific sustainability characteristics that are most likely to influence value relate to:

- items that impact on operational business costs;
- layout and flexibility; and
- accessibility.

6.6 Additionally, potential tenants may be concerned with issues connected with their organisational stance on sustainability concerns. These may lead them to have concerns not just with the normal decision-making criteria but also their relationships with the community and with the environmental characteristics

of the building and its social and environmental facilities (for example, cycle racks, crèche facilities, etc.). These issues may be relevant to corporate reputations and branding positions relating to sustainability issues and could impact on their buildings' requirements. If a building fails to meet their CSR criteria, they may either reject it or reflect it negatively within their rental bid.

6.7 Adjusting comparables for differential characteristics presented by sustainable attributes either in the comparables or the subject property will also require careful consideration. It will not always be sufficient to adjust for the different cost savings, or the life cycle or value benefits, but to also consider whether the market is prepared to pay for them: for example, a cost saving to a tenant may or may not be reflected in any adjustment to rental bid.

Assessing yield: investor considerations

6.8 Yields on comparable transactions may have been affected by purchasers' stances towards sustainability. As more investors develop sustainability policies, buildings which do not measure up well against sustainability criteria may be less attractive and hence suffer value decline. Where a property has been assessed as indicated in paragraph 4.2 above this may have an impact on yields.

6.9 Within the international equities investment markets, the development of metrics, such as the Dow Jones Sustainability Index and the FTSE4Good, has provided the means whereby investors can clearly measure the costs and returns of investing in companies with high CSR (Corporate Social Responsibility) credentials. Although a parallel index does not yet exist for property, the drive towards the adoption of significant sustainability policies may impact on overall investor behaviour in certain locations and in particular market conditions.

6.10 The sustainability aspects that are most likely to impact on investor considerations are:

- the impact of increasing operational costs, including energy, on rental growth and net income;
- the ability of the building to retain tenant demand and the likelihood of voids;
- the failure to meet changing environmental and social standards meaning shorter refurbishment and/or redevelopment cycles and faster obsolescence; and
- for some specialist investors, the ability of the property to provide external benefits.

6.11 *The impact of sustainability on rental growth*

On a simple business cost basis, the escalating costs associated with energy, water and waste management all feed into the ability to pay. Put simply, a building which is energy inefficient, is metered for water use and has no water conservation provisions (such as sprinkler taps and water reuse systems) and has no provisions for waste sorting on site may well cost more to operate currently and will cost more as resources and energy become progressively more expensive. Whilst the costs of energy and water have been low for many years, globally this position is changing and the impact of resource efficiency can be expected to be of increasing significance to the rental bid. At its worst,

properties without good resource efficiency will suffer from lower rental growth that offsets, at least in part, the increased cost to the occupier. It is highly unlikely that the rent trade-off will be a one for one, but even a one to three would have an impact on the rental bid and, more importantly, levels of rental growth.

6.12 Whilst the rising costs of high environmental impact buildings will be likely to be the chief driver of differential rental growth between buildings that could be regarded as sustainable and those which are not, other factors may also have an impact, notably those that could impact on an occupier's CSR performance.

6.13 Therefore, when considering patterns of likely future rental growth, the occupational cost profile of the tenant and the extent to which this does now or may in the future impact on rental growth may be relevant.

6.14 *Obsolescence and depreciation*

Many sustainability factors will impact on obsolescence and hence on value depreciation. Some deficiencies, such as energy efficiency, may be capable of retrofitting, but in general terms it can be expected that buildings with poor sustainability will suffer from higher rates of depreciation and obsolescence and thus will require more costly and/or earlier refurbishments.

6.15 *Risk and sustainability*

Buildings that do not display good sustainability characteristics may have lesser occupational demand. It follows that they represent a higher investment risk and the risk premium may need adjustment. Sensitivity analyses or other risk assessment modelling may be used to measure the potential impact of sustainability characteristics of the building. Where a discount rate based on a risk-adjusted rate is used, it is recommended that an explicit explanation regarding the risk factors that have been built into the capitalisation or discount rate is provided. In so doing it is important that the sources of risk are appropriately identified to ensure that no double counting takes place.

6.16 *Exit yield and residual value*

The growth of awareness of sustainability issues has been rapid and awareness of the impact that buildings have on the drive for carbon reduction, for example, is well known. However, their relationship to property occupation and purchase decisions and a property's sustainability credentials is in its infancy. This is not expected to continue and it may be appropriate to adjust the exit yield to reflect the likely increasing impact of sustainability concerns on investment yields.

6.17 *Duration to sale and to let*

The period that a property takes to let or to sell will always relate to market conditions. When the demand for property outstrips supply considerably, the intrinsic quality of certain characteristics of the property may not have a large impact on the period to sell or let. However, during periods of low activity when supply outstrips demand, the reverse is true.

An increasing supply of sustainable buildings may also have an impact on demand. Where such supply can be anticipated it may render those which do not display sustainability features less attractive to occupiers and purchasers.

7 Conclusion

7.1 The valuer has a responsibility to the client to ensure that a valuation reflects the material factors that may influence value. Markets appear to be moving towards a requirement for greater recognition of sustainability issues. Accordingly, as sustainability issues grow in relevance to the market place, it becomes increasingly important that the valuer is aware of them and can reflect them in the advice given.

Appendix A: Glossary of terms

Term	Definition
Building Research Establishment Environmental Assessment Method (BREEAM)	The BREEAM family of assessment methods and tools are designed to help construction professionals understand and mitigate the environmental impacts of the developments they design and build. All the BREEAM products are regularly updated to take advantage of new research and technology to reflect changing priorities in regulations and to ensure that BREEAM continues to represent best practice.
Brownfield land	Land that was developed but is now vacant or derelict, and land currently in use with known potential for redevelopment.
Certified Building	A building which has achieved a certification under a recognised rating system (e.g. LEED) as displaying sustainability characteristics. It should be recognised that these schemes may not be directly comparable with one another and most have differing grades of certification.
Corporate Social Responsibility (CSR)	Corporate Social Responsibility broadly relates to the commitment by business organisations to behave ethically and seek to improve social conditions, not only for their own stakeholders but for society. Companies which adopt CSR policies – or CR as it is sometimes known – demonstrate an explicit commitment to triple bottom line sustainability and it is normally enshrined within company policy documents.
Display Energy Certificate (DEC)	Display Energy Certificates (DECs) have been introduced within EU member states as part of the commitment to lower carbon emissions under the European *Energy Performance of Buildings Directive* (EPBD). A DEC, currently required for only some buildings, shows the actual energy usage of a building and thereby helps the public see the energy efficiency of a building. A DEC should be clearly displayed at all times and clearly visible to the public. A DEC is always accompanied by an Advisory Report that lists cost effective measures to improve the energy rating of the building.

Energy Performance Certificate (EPC)	The Energy Performance Certificate (EPC) is a measure introduced across EU member states under the European *Energy Performance of Buildings Directive* (EPBD) (Directive 2002/91/EC) to help improve the energy efficiency of our buildings. It measures the asset rating of a building in terms of its energy performance and must be produced the first time that a building is let or sold from the date of implementation of the Directive. The EPC is accompanied by an Advisory Report which sets out recommendations for improving the building's energy rating.
Energy Star	Energy Star is an international standard for energy efficient products. It has been adopted by several countries, including US, Australia and Canada, and by the European Union.
Green Star	An energy rating accreditation system for buildings developed by the Australian Green Building Council.
Leadership in Energy and Environmental Design (LEED)	The LEED Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria.
NABERS Energy	NABERS (National Australian Built Environment Rating System) is an Australian rating system that measures a existing building on the basis of its measured operational impacts on the environment, and provides an indication of how well the building is being managed in terms of environmental impacts.
Responsible Property Investment (RPI)	This is a new movement, promoted by some vanguard investment companies, under which investors seek to limit the negative effects of property and enhance its positive effects. They therefore build into their criteria consideration for third party impacts.
Socially Responsible Investment (SRI)	Socially responsible investing has no universally accepted definition. Generally it is taken to mean investment practices which seek to maximise financial returns whilst balancing this with the need for promoting social good. Some SRI investors exercise policies under which they will not invest in some sectors (e.g. arms, tobacco products or polluting industries); others seek to invest in such concerns and work towards social improvement through a process of engagement; others take a best-in-class approach to their stock picks; and still others take a theme approach and only invest in environmental technology, for example.
Sustainable Communities	Sustainable communities have been variously defined but generally are taken to be 'places where people would wish to work, live and play.' Increasingly the concept of sustainable communities is driving land use policies.

Sustainable development: Brundtland definition	The Brundtland commission (1987) defined sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. Whilst not universally accepted, this definition is widely adopted and used as the basis for the development of national and international policy.
Triple Bottom Line	The Triple Bottom Line (TBL) developed from ideas contained within the Brundtland Report's definition of sustainable development, which recognises that sustainability comprises the need for balancing environmental protection, with promoting social justice and equity, and with the pursuit of economic growth.
Vancouver Valuation Accord	The Vancouver Valuation Accord takes its name from an international Accord signed in Vancouver in 2007 by several leading professional bodies who each entered into a commitment to work towards embedding sustainability within valuation practices and thereby 'mainstreaming' sustainability.

For further information please consult www.rics.org/sustainability