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Demand for Sustainable Offices in the UK




Research Findings

May 2009

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EXECUTIVE SUMMARY

Research overview

The overall aim of the research was to determine the nature and extent of demand for sustainable offices in the UK. Based on 87 telephone and face-to-face interviews with 50 major corporate occupiers, and detailed analyses of five case study buildings which were carried out from April to November 2008, the research examines the reasons behind actual office moves made within the previous two years, and assesses the extent to which sustainability played a role in the final choice of office building. The research is important because, for the first time, it analyses actual occupier moves and the choice of office made in relation to sustainability, rather than 'preferred' or 'hypothetical' choices. The research suggests that there is an emerging and increasing demand for sustainable offices, but location, availability of stock and other factors continue to remain more important in determining occupiers' final choice of office.

Research headlines

- Sustainability (as represented by explicit sustainability features in a building) is less important than location, availability of suitable stock, overall building quality and other factors in the final choice of office, but has become relatively more important in moves made over the last 12 months, or moves which were imminent.
- The most common sustainability features in office buildings are flexible space, efficient energy and utilities, effective monitoring systems, and sustainable waste and water systems.
- Occupiers who moved to a BREEAM-rated building[1], and were based in business sectors with strong environmental/corporate responsibility policies, place more emphasis on sustainability than other groups in the final choice of office, but location and availability remained paramount.
- Nearly one third of respondents had specified minimum levels of environmental performance in the agent's brief, but only three mentioned sustainability explicitly. The vast majority of those that had specified environmental standards tended to move to BREEAM-rated offices.
- Committed occupiers are likely to find and select office buildings with a greater number of sustainability features present, despite competition for such space, and a perception of market undersupply by occupiers.
- Some 42% of respondents suggested that they had assessed the business and financial case for sustainability in their choice of office, but the perceived, additional costs of sustainability remains a key barrier for occupiers.
- Organisational change is a key driver in the market for sustainable offices: occupiers want buildings which can help them achieve cultural change and encourage more sustainable practices, and the key benefits of such buildings include a better public image, improved client relations, and improved employee retention.

[1] BREEAM is a UK based environmental assessment scheme for buildings launched by the Building Research Establishment (BRE) in 1990

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Importance of sustainability in the final choice of office

Sustainability (as represented by sustainability features) is less important than location, availability of suitable stock, building quality, annual running costs and overall design in the final choice of office.

However, sustainability has become relatively more important in moves made over the last 12 months, compared with moves made longer ago. There is also evidence of a greater number of sustainable features present in a building in moves made more recently, or where moves were happening at the time of the survey. Nonetheless location and other factors were still found to be more important than sustainability as factors influencing the final choice of office in all groups within our sample.

The conclusion drawn is that sustainability in its own right has been a relatively low priority overall in office choice in comparison with other factors, although that is not to say it is unimportant, and its relative importance has increased in more recent moves.

Key features of the new/refurbished office

The most common sustainability features in office buildings are flexible space, efficient energy and utilities, and effective monitoring systems, followed by sustainable waste and water systems.

Nearly one third of respondents had specified minimum levels of environmental performance in the agent's brief, but only three had mentioned sustainability explicitly. The majority of those that had specified environmental standards tended to move to BREEAM-rated offices. Those who rated sustainability relatively more importantly also tended to move to buildings which had a greater number of 'sustainable features' present than the rest of the sample.

Building accreditation featured in 40% of cases, represented by the fact that there were 17 buildings which were BREEAM 'good' or above in the final 50 telephone-based interviews. This compares with the estimate in this research that BREEAM-rated stock is less than 7% of new build, which itself is 1-2% of total stock. In terms of the sample, this difference may be because the majority of the sample was based in London and the South East, but it is not possible to be categorical on this point because BREEAM data is not available regionally from BRE.

Assessing the business and financial case for sustainability

Although some 42% of respondents had assessed the business and financial case for sustainability in their overall choice of office, the rationale for assessing this is not simply about cost, but is also driven by company culture. Knowledge and understanding of the cost implications also varied widely, but practising what you preach was fundamental to maintaining credibility with customers and clients.

Factors influencing the importance of sustainability

Some sectors without a CSR policy in place (for example, Technology, Media and Telecommunications (TMT)) are more likely to consider sustainability as being even less important in the choice of an office than other sectors (for example, Financial and Business Services (F&BS) and Real Estate and Construction (REC)). However, it is important to note that only five respondents in the sample did not have a CSR policy and four of these were in the TMT sector.

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Those moving to a BREEAM office building tended to rate sustainability as being relatively more important than those moving to a non-BREEAM building, but location and availability are still the most important factors.

Drivers and barriers for a sustainable office market

Key drivers in the sustainable office sector are seen by occupiers as being organisational factors, increased demand from stakeholders (primarily customers, shareholders and employees) and legislation. Less important are direct publicity and marketing benefits, the use of accreditation schemes and green leases. The key drivers are seen as being more important overall than barriers in the sector, perhaps reflecting the fact that there is now an upward trajectory in market growth in this sector.

Sectoral change in relation to sustainability, particularly in the financial and business services and real estate and construction sectors, is also being driven by a need to 'walk the talk' for clients, customers and shareholders.

Key barriers in the sector are seen by occupiers as being lengthy payback periods, relatively high sustainability costs and a lack of sustainable office supply.

Sustainability and company policy

Companies vary in their measurement, systems and policies for environmental management and related activities. For example, some 62% of respondents measured the overall environmental performance of their company's buildings, and of these, 58% published the data.

At a company level, employees are the main drivers of change (82% of cases), followed by clients and customers (53%), and others in the supply chain (43%).

Conclusions

This research has shown that although there is evidence of an emerging and increasing demand for sustainable offices, other factors such as location, availability of stock and building quality remain more important in determining occupiers' final choice of office. This, however, must be seen in the context of a sample which is more highly BREEAM-focused than the UK office stock nationally.

Although lack of demand is not perceived to be a key barrier, occupiers generally believed that the additional costs of sustainability and undersupply were restricting market growth. Nonetheless the research also suggested that if occupiers look hard enough there is a supply of BREEAM-rated sustainable offices, although these may be restricted in terms of locational choice. We were not able to look at this latter point in detail in the UK as a whole because of the confidential nature of BREEAM certifications.

Landlords were not generally seen as being strong agents for change in the sector. In some instances there was some criticism of landlords, developers and agents from occupiers in terms of these groups' levels of engagement in the sustainability agenda.

There is clearly a step change needed if the sector is to supply more sustainable offices to satisfy an increasing demand in the UK. This can only be brought about through behavioural change, underpinned by legislation which is being strengthened, for example, with the Climate Change Act 2008, and other legislation nationally and internationally.

MAIN FINDINGS

In particular investors and developers need to understand occupier requirements more clearly and to engage more closely with other stakeholders to understand and agree what is meant by 'sustainability', and a 'sustainable building'.

In the same way agents and occupiers should also help ensure that the simple benefits of sustainability, such as energy efficiency, adequate ventilation, natural daylight and open, flexible space do not get lost in the detail of 'sustainability'.

This should also carry through into clearly communicating the sustainable outcomes/achievements of the building and its operations to employees.

Finally, the research has also shown that improved information on the costs of sustainability is needed to better inform key stakeholders.

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1 INTRODUCTION

1.1 Aims of research

Over the last few years the topic of sustainability has increasingly dominated discussion and debate in the commercial property sector. This has been largely fuelled by a growing understanding that commercial buildings are major contributors to increased carbon emissions, which most experts now acknowledge is a major cause of climate change, and that improving the energy efficiency of such buildings can help reduce emissions.

Given that carbon emissions from energy use in non-domestic buildings account for about 18% of total emissions in the UK, it is not surprising that energy efficiency and energy consumption have frequently been a primary focus in this sector. However, energy efficiency is just one of a number of characteristics of what are now described as 'sustainable' or 'green' buildings, which include commercial offices in their ambit.

There is a clear difference in the evolution of thinking on 'green' and 'sustainable buildings' partly created by cultural differences between North America and Australasia where the term 'green' is commonplace, and the UK and Europe, where the term 'sustainable' tends to be used. This is not an exclusive distinction, and the terms have frequently been used interchangeably. However, the main differences between the terms can partly be related to whether the focus is on new build ('green') or new build plus existing ('sustainable'). In this respect, the term, 'green' is taken by some to mean 'beyond compliance'. For the purposes of this research we adopt as our starting point Williams and Lindsay's (2007) definition of 'sustainable buildings' as:

'Any building that exhibit{s}, at a minimum, better environmental performance than buildings built to building regulation standards in England, and that, in addition, may or may not have any features that address social and economic sustainability principles'

But how important is sustainability in affecting the decision to move to a particular building? Previous research has shown that location tends to predominate as the most important factor in occupiers' final choices of commercial buildings, and although sustainability has been found to be important in other more recent research studies these have focused on 'preferred choice', or questions posed to occupiers which relate to 'hypothetical' moves, rather than actual moves.

The research therefore set out to examine the extent of demand for sustainable offices in the UK by examining actual moves made over a two year period, and, in addressing this key theme, posed a number of related questions which included:

- What has driven the decision to occupy a particular office property from drawing up the agent's brief through to final selection?
- What aspects of sustainability were most important in the final decision to occupy the choice of office?
- Which sustainability features tend to be most common in the final choice of office building?
- What might be influencing the importance of sustainability in the decision to make the final selection of the office (sector or timing of move, for example)?
- To what extent are occupiers assessing the business or financial case for sustainability, and what is the evidence on actual costs?
- What are the key drivers and barriers which are impacting on the overall market for sustainable office space?
- How is sustainability linked with company culture, corporate responsibility and environmental policy?
- What are the critical success factors which make for a successful and sustainable office project (from both the investment and occupier points of view)?

1.2 Methods

The research examined the reasons behind actual office moves made within the previous two years, and assesses the extent to which sustainability played a role in the final choice of office building. The research is important because, for the first time, it analyses actual occupier moves, or choices, in relation to sustainability, rather than 'preferred' or 'hypothetical' choices.

Some 50 interviews were conducted with senior decision makers in private sector companies in a range of business sectors. The total UK floorspace taken within office buildings in the telephone survey represents some 2.53m sq ft of floorspace (leased and owner occupied), equivalent to about 5% of the total UK floorspace held by respondents. The sample was split fairly evenly between new build and refurbished properties.

These interviews were then supported by a further 37 face-to-face interviews with key stakeholders (including members of the office project teams and employees) in five case study buildings which were also in the telephone sample, and were located in London (three buildings), Southampton (one building) and Coventry (one building).

All the interviews for the project were carried out between April and November 2008 and covered moves made within the previous two years or moves which were imminent.

1.3 Format of the report

The structure of the report is as follows:

- Section 2: Background and context
- Section 3: Telephone survey results
- Section 4: Case study results
- Section 5: Conclusions

2 BACKGROUND AND CONTEXT

2.1 Introduction

This section provides an overview of the background and context to the research by examining the various definitions and perspectives on 'sustainable' or 'green' buildings, and examining the growth in the market for sustainable offices. The section therefore comprises the following:

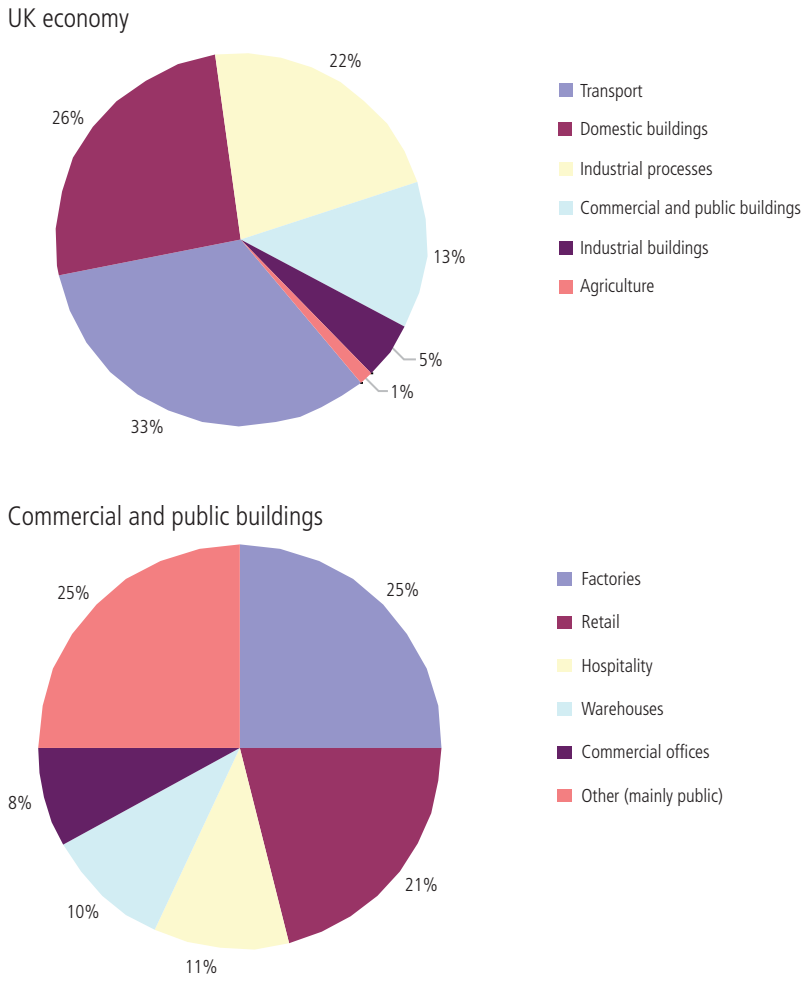
- The sustainable office–what does it mean?
- The current market for sustainable offices.
- Driving forces for sustainable offices:
  - Increasing importance of the sustainability agenda;
  - Legislation and related guidance; and,
  - Stakeholder demand (occupiers and investors).
- Barriers to sustainable offices:
  - Energy efficiency;
  - Poor knowledge or education; and
  - Costs and physical barriers.

2.2 The 'sustainable office'– what does it mean?

Over the last few years the topic of sustainability has increasingly dominated discussion and debate in the commercial property sector. This has been largely fuelled by a growing understanding that commercial buildings are major contributors to increased carbon emissions, which most experts now acknowledge is a major cause of climate change, and that improving the energy efficiency of such buildings can help reduce emissions.

Given that carbon emissions from energy use in non-domestic buildings account for about 18% of total emissions in the UK (Figure 2.1), it is not surprising that energy efficiency and energy consumption have frequently been a primary focus in this sector. However, energy efficiency is just one of a number of characteristics of what are now described as 'sustainable' or 'green' buildings, which include commercial offices.

Figure 2.1: UK carbon emissions (2003) for whole economy and non-domestic building type (BRE, 2006 and Carbon Trust, 2008)



Although some literature has tended to treat both 'sustainable' and 'green' buildings synonymously (see Kats, 2003, cited by Sayce et al, 2007), the majority of the literature on the subject can be divided into two separate, but also linked, strands of thought, which map (although not exclusively so) onto a difference in emphasis between 'sustainable' thinking in the UK and Europe and 'green' thinking in North America and Australasia.

The differences between the terms can also partly be related to whether the focus is on new build ('green') or new build plus existing, including refurbishment ('sustainable'). In this respect, the terms, 'green' and 'sustainable' are taken by some to mean 'beyond 'compliance'. In a UK context one possible definition of a 'sustainable building' which can be applied to new build and refurbishment projects is:

'Any building that exhibit{s}, at a minimum, better environmental performance than buildings built to building regulation standards in England, and that, in addition, may or may not have any features that address social and economic sustainability principles' (Williams and Lindsay, 2007)[2].

[2] This could include BREEAM-rated buildings, but a non-BREEAM building could also be considered 'sustainable' by assessing the building's performance against other sustainable criteria suggested by Sayce et al (2004) and Sayce at al (2007).

More recently the UK Green Building Council has developed a broader working definition of 'sustainable buildings' as (UKGBC, 2008a):

'Buildings which (1) are resource efficient (physical resources, energy, water, etc); (2) have zero or very low emissions, (CO2, other greenhouse gases, etc); (3) contribute positively to societal development and well being; and (4) contribute positively to the economic performance of their owners/beneficiaries and to national economic development more generally'.

There are numerous definitions of 'sustainable buildings', but little agreement on the term, and there are also different emphases on different stages of the building life cycle, often with a variation in focus on different stakeholders and different factors under the umbrella term of sustainability. For example, the Green Building Council of Australia (2006) includes design, construction and operational practices within its definition. The US Office of Federal Energy Management (2003) adds to this, including; '*siting, design, construction, operation, maintenance and removal – the complete building cycle' in their definition.* The World Resources Institute (2007) also advocates a life cycle approach taking into account the performance of the property throughout its lifespan, from construction to use to demolition.

Although definitions have frequently been concerned exclusively with environmental impacts, this is changing as broader social and economic impacts are increasingly recognised (Kremers, 2006). According to Williams and Lindsay (2007), sustainable buildings are now also measured by their ability to provide a *'healthy environment for occupants'*; which supports *'sustainable travel patterns'*; provides *'flexible'* spaces, which can adapt to changing occupier needs and contributes to *'sustainable patterns of urban and rural development'* (see also Edwards and Marsh, 2001).

Sayce et al (2004) developed a list of six criteria for existing commercial property to assess redevelopment options (in terms of sustainable buildings) which comprised:

- Longevity, in order to reduce embodied energy;
- Loose-fit, or adaptable workspace;
- Low energy and low carbon;
- Locationally appropriate (including accessibility);
- Liked by occupiers; and,
- Loveable with an aesthetic appeal and in terms of occupier satisfaction.

These criteria were developed into a more measurable set of criteria by Sayce et al (2007), and included:

- Operational energy efficiency;
- Climate control;
- Physical adaptability of space;
- Water management;
- Waste management;
- Accessibility; and,
- Pollution.

As such, their work placed an emphasis on existing stock and implies that building beyond a regulatory compliance does not necessarily constitute a 'sustainable building'. In this sense, therefore Sayce et al (2007) argue that 'sustainable buildings' do not equate with 'green buildings', the latter being focused on new stock with a prerequisite for 'beyond compliance'.

Moreover, perceptions vary as to what constitutes a 'sustainable building', depending on the stakeholder group. For example, in a GVA Grimley survey (2007a) investors were asked to rate eight potential attributes of a sustainable building. The eight factors (all rated 3.0 or more on scale of 1 – 5) were:

- High energy efficiency;
- Low levels of pollution;
- Good access to public transport;
- Effective monitoring of the building's systems;
- Use of sustainable materials in construction;
- Working environment promotes staff health and well-being;
- Brownfield or eco friendly site; and,
- High water efficiency.

In terms of a 'green' building, many of the available definitions (shown in Appendix 1) highlight the importance of environmental impact and a more sustainable end result than 'current practice'. For example, Straube (2005: 6) suggests a 'green building' is one:

'…that uses energy and material more effectively both in production and operation while polluting and damaging natural systems as little as possible'.

For Straube (2005), the key questions to ask therefore are those that would determine whether a green building is significantly better than similar or average buildings of the same size, type and location in terms of:

- The use of non-renewable energy;
- The use of construction materials;
- The durability of the building; and
- Emissions and impact on the natural environment.

To summarise, there is a clear difference in the evolution of thinking on green and sustainable buildings partly created by cultural differences between North or America / Australasia where the term 'green' is commonplace, and the UK and Europe, where the term 'sustainable' tends to be used. This is not an exclusive distinction, and the terms have frequently been used interchangeably. However the main differences between the terms can partly be related to whether the focus is on new build ('green') or new build plus existing ('sustainable'). In this respect, the term, 'green' is taken by some to mean 'beyond compliance'.

As a starting point therefore for this project we adopt Williams and Lindsay's (2007) definition as:

'Any building that exhibit{s}, at a minimum, better environmental performance than buildings built to building regulation standards in England, and that, in addition, may or may not have any features that address social and economic sustainability principles'

However, distinctions will be made in the methodology between sustainable new build and sustainable existing buildings (to include retrofit and refurbished properties), and additionally this may also include BREEAM buildings.

2.3 Current market for sustainable offices: demand and supply

Recent studies attempt to scope out the relative size of market for 'green' commercial buildings globally and point to the top markets as being North America and Europe with significant opportunities in South East Asia (Nelson (2008) and McGraw Hill (2008)).

More specifically and closer to home, a number of recent reports have pointed to the increasing demand for UK sustainable offices by occupiers (see, for example, GVA Grimley (2007a, 2007b, 2008)). Overall, the power relationship between landlords and tenants has been changing due to shortening leases, increased break clauses and a greater number of rent free periods. Supply and demand imbalances in certain sectors have meant oversupply, and landlords have had to engage increasingly with tenants in order to maximise occupier satisfaction and retention, and minimise building depreciation. Nonetheless, in terms of the supply of sustainable commercial buildings there is not enough real estate available to satisfy occupier demand, according to Nelson (2007), and Eurosif (2007), in its *Real Estate Sector Report*, stated that one of the five material sustainability issues for the European Real Estate sector for the coming five to 10 years was satisfying the increasing occupier demand for sustainable buildings. Its also fair to say that generally the growth in green buildings has tended to be led from within the government and corporate owner-occupier sectors (Nelson, 2008).

As a starting point for assessing the current size of the potential UK market for sustainable offices, the BREEAM standard for commercial property, despite the lack of 'official' designation, is widely recognised as an industry standard and a simple way of identifying an office's sustainability credentials, and therefore as a way of assessing at least, in part, the extent of the supply of sustainable offices.

According to BRE (2008a), BREEAM is *'the world's most widely used means of reviewing and improving the environmental performance of office buildings'*. In general terms BREEAM currently assesses building performance in terms of:

- Management - overall policy, commissioning site management and procedural issues.
- Energy use – operational energy and carbon dioxide emissions .
- Health and well-being – externally and internally.
- Pollution - including air and water.
- Transport – including carbon emissions and location-related factors.
- Land use – Greenfield or brownfield.
- Ecology – including ecological value and enhancement of the site.
- Materials – including the environmental impacts.
- Water – including consumption and efficiency.

Credits are awarded for each area, which are combined and weighted, giving rise to a standard of either 'Pass', 'Good', 'Very Good' or 'Excellent'. Criticisms of BREEAM, including the lack of a minimum threshold for each category of 'score', have led to tighter standards in the re-launched BREEAM 2008 and a new 'Outstanding' category.

Data from BRE (2008b) shows that from 1998 to the end of 2007, more than 1,000 offices had been assessed under the standard in the UK (Figure 2.2). This includes both new build and refurbished property, although the majority of BREEAM assessments apply to new build[3]. Of these, some 84% were assessed as being 'Excellent' or 'Very Good'. Figure 2.2 also shows the growth in numbers of BREEAM accreditations from 1999 to 2008[4].

However, to put the figures in some perspective, there were approximately 1,592 new commercial offices built in 2006 (Faber Maunsell, 2007), which represented a little less than 1% of total offices in England and Wales. The 128 BRE assessments of 'Excellent', 'very good' and 'good' in the same year (BRE 2008b) apply to the UK, so this means about 7% of new offices in the UK are rated BREEAM 'good' or above annually[5]. The numbers reaching certification is currently lower still because of regulatory backlogs.

That is not to say that refurbishments are not an important way sustainable offices can be created. As a recent Carbon Trust (2008) report points out, all scales of refurbishment offer opportunities to deliver reductions in operational carbon emissions by improving the building envelope and reducing energy use for lighting, heating, cooling, ventilation and equipment. Very often, however, there are perceived or actual constraints for this type of project, in contrast to the blank canvas of a new building.

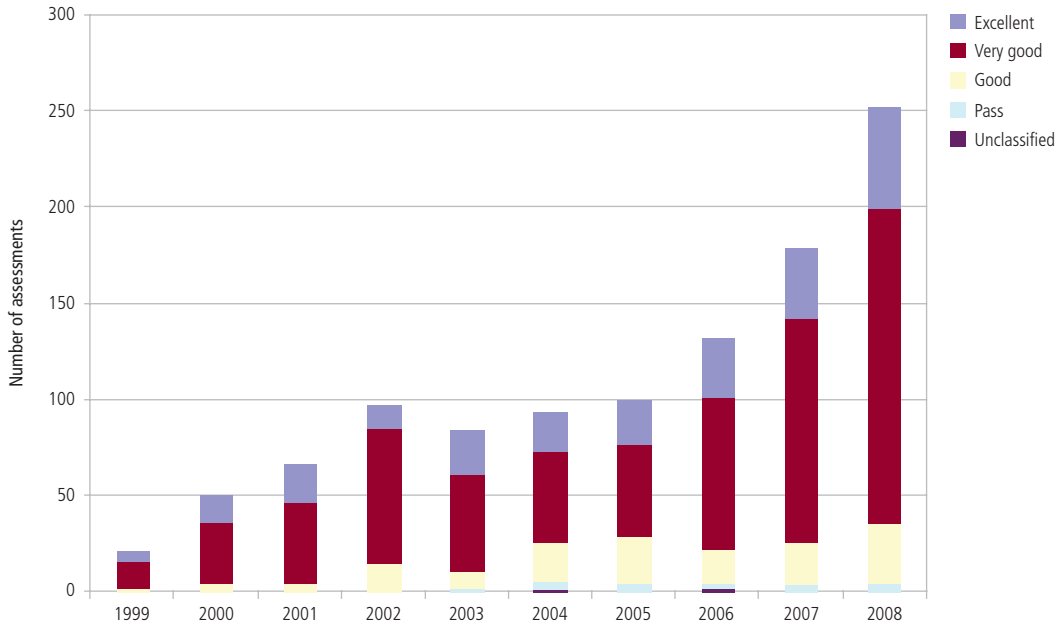
In the private sector an increasing number of UK property companies and developers such as British Land, Stanhope and Land Securities, are adopting BREEAM standards for new projects. For example, Land Securities set a target for the years 2005–06 for all their major office developments to possess a BREEAM standard of 'very good', with an ideal of 'excellent', and British Land have committed to being carbon neutral from the 2008/09 financial year onwards. In the retail sector, there has been considerable activity towards promoting sustainable practices, and Marks & Spencer, for example, have introduced 'Plan A', a five year 'eco' plan which strives to provide a continuous assessment of environmental performance in its buildings.

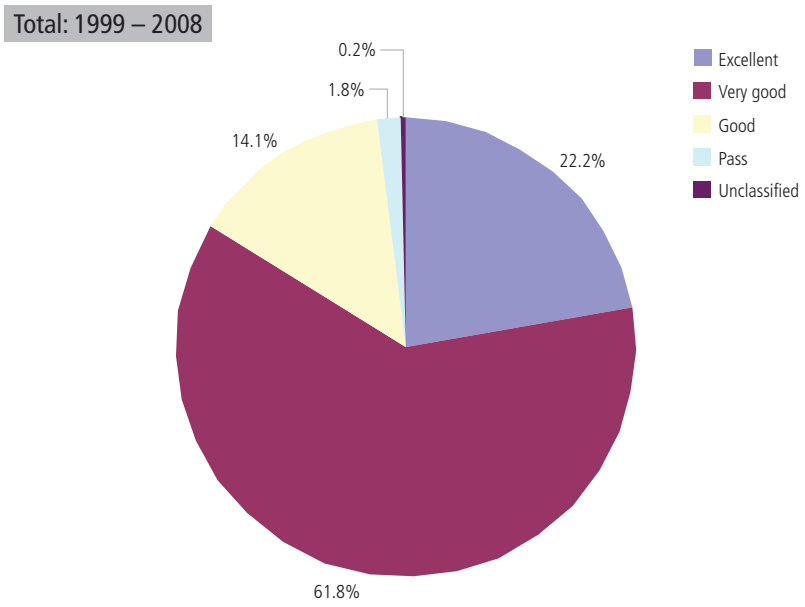
[3] An estimate from BRE (private communication to the project team) suggested that 80–85% of assessments related to new build projects.

[4] As at October 2008.

[5] There were some 1592 new office units developed in England and Wales in 2006 (Faber Maunsell, 2007). The estimate for the UK therefore assumes Scotland and Northern Ireland each had approximately 100 new office units built in 2006 and that the majority of BREEAM assessments are for new build property (the BRE figures contain both new and refurbished assessments but the latter forms a relatively small (15%) proportion of the total: see note 2 above).

Figure 2.2: BREEAM office assessments (BRE, 2008b)





Many large firms have announced energy or carbon reduction policies that will effectively require them to build or acquire high performance or sustainability accredited (e.g. BREEAM or LEED[6]) buildings. The UK Government is one of the largest tenants in the UK and occupies over 12.5 million m^2 of office space within England, Scotland, and Wales, accommodating some 570000 civil servants. As a sustainable occupier it now requires all new or

[6] LEED is the US-based building assessment scheme which is also used in other countries under the aegis of the World Green Building Council.

refurbishment construction projects to carry out a BREEAM (or equivalent) assessment. Where BREEAM is used, all new projects have to achieve an 'excellent' rating and all refurbishment projects have to achieve at least 'very good' rating (unless site constraints or project objectives mean that this requirement conflicts with the obligation to achieve value for money). This requirement covers all central Government departments and their executive agencies, including buildings and all land managed. It also applies to non-departmental public bodies on a case-by-case basis[7].

2.4 Driving forces for sustainable offices

The growth in interest and activity in the sustainable offices sector, and the wider commercial property sector, has been driven by a number of factors which are now examined. These include:

- Increasing importance of sustainability agenda;
- Legislation and related guidance; and,
- Stakeholder demand (occupiers and investors).

2.4.1 Increasing importance of sustainability agenda

In recent years, there has been a key change in corporate attitudes towards environmental issues and sustainability. These issues have made the move into mainstream businesses, with many companies now recognising the benefits of sustainable businesses practices and processes. According to Nelson (2007, 2008), the last year has seen an increased emphasis on climate change in the property sector globally, with leading firms competing to be seen as 'the greenest'. This change is seen as a response to government mandates aimed at reducing carbon footprints; public pressure; new business opportunities; and the shift towards greater corporate accountability, as companies start to recognise the benefits of 'going green'.

Although energy still represents a relatively small proportion of overall business costs (about 1–6%), more recently, rising energy prices have focused attention in the property sector on how to improve the energy efficiency of buildings. Moreover, recent research (JLL, 2007) shows that energy, security and machinery and equipment (M&E) services make up over half the costs (energy being about 13%) within a typical annual service charge for air-conditioned space.

A recent report from the CBI (2007) has also highlighted the need to reduce carbon emissions on all fronts, including buildings, where one third of the abatement potential rests with commercial property, for example, through better energy management systems, and heating and cooling technologies.

The growing importance of sustainability in the property sector has also been evidenced by a growing focus on responsible property investment (RPI) by investors. For example, recent work by the United Nations Environment Programme (Finance Initiative) (UNEPFI, 2008) presents 10 strategies for responsible property investment (including a focus on sustainable buildings), each demonstrated by a collection of international case studies which explain the financial and environmental value of responsible property investment.

As a result of these trends, in the last five years sustainability and 'green' issues have risen dramatically up the agenda in many parts of the property sector, covering all sectors engaged in the building life cycle, from design and construction, through operation and use, to demolition.

[7] www.sustainable-development.gov.uk

2.4.2 Legislation and related guidance

A further driver for sustainable offices and sustainable commercial property generally has been a changing legislative landscape underpinned by new and emerging guidance.

In the UK and elsewhere governments have been especially keen to focus the business community's attention on reducing carbon emissions. In 2008, for example, the recent Climate Change Act called for an 80% reduction in 1990 UK carbon emission levels by 2050, a target which is now legally binding. The Act also introduces an interim target of a 21% to 31% reduction by 2020 (below 2005 levels), as well as five year 'carbon budgets', and the Climate Change Committee has recently set specific targets for non-domestic buildings in the expectation that there is technical potential to reduce emissions by 11 $MtCO^2$ through zero or negative cost energy improvements . Any government failing to operate within the five year budgets will have to report to parliament to explain its failure and could be subject to judicial review. This forms a triumvirate of new legislation (alongside the Energy Act 2008 and Planning Act 2008), which is also designed to strengthen the drive towards renewables in the UK.

The Climate Change Levy (CCL), introduced in 2001, is a tax on the energy delivered to non-domestic users in the UK. The overall aims of the CCL are to provide an incentive for increasing energy efficiency, and to reduce carbon emissions, although there have been continuing calls to replace the levy with a carbon tax. Introduced under the Finance Act, the levy applies to most energy users, with the exception of the domestic and transport sectors. Electricity generated from new renewables and approved co-generation schemes is not taxed. The CCL was also accompanied by Climate Change Agreements (CCAs) which provide a discount on the CCL for energy-intensive industries which improve their energy efficiency or performance.

Another important piece of legislation which is likely to have a major impact on the construction market and behaviour of occupiers, both directly and indirectly, is the EU Energy Performance of Buildings Directive (Box 1). Previous research for IPF (IPF, 2007) suggests that investors who are currently unprepared for the EPBD are likely to face difficulties as *'the recommendations contained within the EPC could be used for 'price chipping', negatively impacting on the capital or rental value of the property'*[8]. As a result, major investors such as PRUPIM have been investigating low-cost and no-cost improvements to their existing portfolios in order to upgrade their buildings (ie PRUPIM's 'improver' portfolio).

[8] The Energy End-Use Efficiency and Energy Services Directive are also expected to have important indirect impacts on the sustainable building market. The first Energy Efficiency Action Plan was submitted to the European Commission in June 2007, while an initial consultation on obligations on energy suppliers/distributors and final consultation on billing and metering continues until October 2007 (DEFRA, 2007).

Box 1: The Energy Performance of Buildings Directive (EPBD) (Adapted from GVA Grimley, 2008)

The main objectives of the EPBD are:

- To promote the improvement of the energy performance of buildings
- To promote the convergence of building standards towards high common standards

It is estimated that the improved energy efficiency measures will save 1 million tonnes of carbon annually by 2010. Energy Performance Certificates (EPCs) demonstrate the energy efficiency of buildings on a scale of A to G, and measure the intrinsic energy performance of the building based on its design. They are renewable every 10 years and must be shown on points of construction, sale and letting for nearly every building.

Display Energy Certificates (DECs) show the actual annual energy usage of a building in a publicly visible certificate and are currently only required for buildings that are occupied either by a public authority or an institution providing a public service to a large number of people.

Timetable for the implementation of EPCs:

- 6 April 2008 – EPCs required for all new buildings over 10,000 sq m new to the market
- 1 July 2008 – EPCs required for all new buildings over 2,500 sq m new to the market
- 1 October 2008 – EPCs required for the remainder of buildings (with a lower limit of standalone 50 sq m buildings), including those already being marketed
- 4 January 2009 – First inspection of all existing air-conditioning systems over 250 kW must have occurred by this date
- 4 January 2011 – First inspection of all remaining air-conditioning systems over 12 kW must have occurred by this date

To underpin these related areas of legislation, the UK government announced in the Budget of March 2008 that its ambition is for all new non-domestic buildings to be 'zero carbon' from 2019. The Government is due to consult on the timeline for this ambition and its feasibility, and review progress in 2013.

Yet there is currently no consistent or agreed definition for the term, 'zero carbon'. In its recent eco-towns report, for example, (DCLG, 2008) the DCLG suggested zero carbon 'means that over a year, the net carbon emissions from all energy use within the buildings on the development are zero', and so the definition excludes the use of offsite renewables. However, a recent report by the UK Green Building Council (2008b) advocates the use of both off-site renewables and community scale technologies (through an energy fund) to enable the achievement of zero carbon homes. This report builds on an earlier report by the Council for DCLG (DCLG, 2007), which examined reducing carbon emissions in new commercial buildings and found that costs could be increased by between 5% and 30% over a conventional building. The government is therefore currently consulting on the zero carbon definition for both domestic and non-domestic property with its results expected by the end of 2008.

In response to this growing body of legislation there have been several UK initiatives which attempt to provide standards for the property industry. These include:

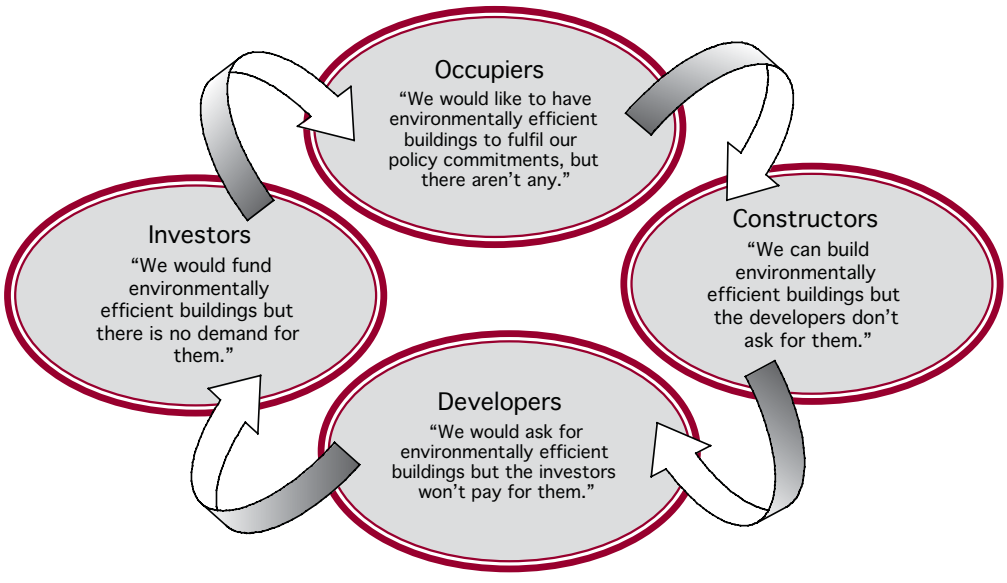
- **Investment Property Databank (IPD) Environment Code:** Launched in February 2008 (IPD, 2008a), the code is intended to provide a good practice global standard for measuring the environmental performance of corporate buildings. The code sets out a set of core measures (including energy, water and waste) and more qualitative measures for occupiers (see www.ipdoccupiers.com).
- **British Property Federation (BPF) LES-TER Initiative:** The Landlord's Energy Statement (LES) is a tool that enables landlords and managing agents to examine energy use and carbon emissions in providing communal services in commercial buildings. The Tenant's Energy Review (TER) allows tenants to measure, monitor and benchmark their energy use and the carbon dioxide emissions that it creates. (see www.les-ter.org).

Building on previous experience in Australia, New Zealand and North America, the concept of 'green leases' has also been increasingly explored in the UK, and is the subject of a separate IPF research study by Kingston University[9].

2.4.3 Stakeholder demand

Perhaps key to understanding the drivers for sustainable offices, however, is stakeholder demand, primarily from occupiers and investors. Historically, the 'circle of blame' (Figure 3) has been highlighted as a fundamental barrier to progress (Cadman (2000); ACE (2003)), highlighting the perceptions of investors, developers, occupiers and constructors. Although the circle of blame explanation for the low supply and demand of sustainable buildings focuses on these four groups, other stakeholders have also been identified as impeding sustainable buildings. For example, ACE (2003) found that, in addition to clients rarely demanding energy efficient buildings, architects also tended not to pursue it as an issue. Similarly work by RICS (2007) and WBCSD (2007) point to a lack of understanding and knowledge amongst building professionals in relation to sustainability.

Figure 3: The circle of blame (adapted from Cadman, 2000)



[9] See also Cardiff University's CRiBE project at www.greenleases-uk.co.uk

Increasingly, however, the advantages of occupying sustainable buildings are becoming clearer. In this sense, a key question is how important sustainability is in comparison with other factors which might influence an office occupier's final choice of building in the decision to relocate. The trigger for relocation is frequently a combination of the following factors (Experian, 2004):

- Changing premises requirements (eg Leases terminating; premises being too small or large for changing needs; premises being spread across too many locations; obsolescence in terms of working environment or suitability for new technology.
- Cost savings;
- Labour force availability;
- Catalyst for change (and changing business environment); and
- Wider 'organisation' objectives.

Historically, studies have shown that location is critical to the final choice of premises, followed by rental costs and overall flexibility (see for example Gibson, 2000). In many respects, evidence suggests that this continues to be the case. For example, in a recent survey of a range of corporate occupiers, (CBI/GVA Grimley, 2008), it was found that location and cost, in terms of both rent and total annual property cost, are still the most important drivers for businesses looking to occupy a property. This applies to most sizes and sectors, except the transport and communications sector which places a greater emphasis on energy efficiency and building sustainability.

However, some recent surveys show evidence of changing requirements, at least in terms of revealed preferences of occupiers. For example, GVA Grimley (2006) asked occupiers to rank, in order of importance, three key property-related environmental issues in relation to their accommodation strategy for the next five years. Some 64% rated 'occupying energy efficient buildings' as the most important followed by 'water efficient buildings'. Proximity to transport networks (including public transport) was ranked at a similar level of importance to water efficiency. Asked to predict key drivers in the future respondents said the two most significant factors were the increasing cost of energy and the Climate Change Levy.

A recent Occupier Satisfaction Index survey in the UK (IPD, 2008b) also suggested green issues are also becoming more important to occupiers and are playing a bigger part in choice of property. The survey found that although occupiers welcome the property industry's progress on environmental issues, they feel that there is potential for faster progress, and that the property industry needs to be more proactive in driving change. The report also found that, in practical terms, occupiers want the supply side to:

- Work together with occupiers to make sure that their environmental priorities are addressed;
- Continue to progress environmental initiatives throughout the industry;
- Address the issue of making existing stock more sustainable; and
- Create action plans and monitor progress.

In contrast, a more recent survey by Knight Frank (2008) of 100 directors responsible for real estate in Central London found that energy efficiency was the least important perceived factor in looking for new space were the company to move. Rental cost and retention of key staff were seen as being the most important factors.

Occupying sustainable offices can carry a number of benefits, however. Luzkendorf and Lorenz (2007) report that the ownership of sustainable buildings results in various direct and indirect financial benefits for investors, occupiers and other stakeholders, ranging from drastically lower operating costs to improved marketability, longer useful life spans, more stable cash flows, reduced exposure to increasingly stringent environmental legislation, and significantly increased occupant productivity and well-being. These benefits have been demonstrated through a number of studies and sample projects and they are well described in the literature (eg Heerwagen, 2000; Yates, 2001; Kats et al., 2003; Royal Institution of Chartered Surveyors (RICS), 2005, Sustainability Victoria, 2008).

Another key motivator for occupiers is the belief that sustainability initiatives can provide important competitive advantages though market differentiation. Nelson (2007) refers to this as 'doing the right thing' in a desire for occupiers (and indeed investors) to highlight their 'green' and corporate responsibility (CR) credentials, although generally CR is a more important driver in larger corporate players than in smaller companies (APUDG, 2008).

It has also been suggested that having a proactive corporate environmental policy is important in attracting and retaining staff, especially younger workers. For example, Browning and Romm (1995) report that sustainable design, associated with green technologies and design strategies, can enhance interior environmental quality and therefore be more conducive to human health and productivity than buildings which use standard practices. In further research, Heerwagen (2000) suggests that the potential connections between green buildings and overall organisational success can be divided into two dimensions: those that reduce costs and those that add value. An example of the former is improved overall resource efficiency, and examples of those relating to the latter include an increased capacity for innovation and employee retention.

Other recent studies from the USA indicate that the savings from occupying a green building compared to a conventional one amounts to around 30%, with LEED buildings at the Platinum Certified level reducing energy costs by as much as 60% (Compass Resource Management, 2007, Nelson, 2007).

But are office occupiers willing to pay more to occupy a sustainable office? A UK survey by GVA Grimley (2007b) found that financial and business service sector occupiers would generally be prepared to pay more to occupy a green building, with 69% stating 'marginally' more, and 10% 'moderately more'. However, 21% responded that they were not prepared to pay any more, and no respondents at all stated 'significantly more'. This is supported by a Gensler (2006) survey which found that occupiers would be willing to pay on average an extra 10% in rent for more efficiently designed and constructed buildings. However, it should be noted that these studies were examining 'hypothetical' moves in contrast to the current study which examined actual moves.

On the investment side demand recognises both 'push' and 'pull' factors; with the 'push' originating from the Responsible Property Investing (RPI) movement where there is a desire among an increasing share of investors to not only mitigate risk but also 'feel good' about the uses to which their capital are devoted, and the 'pull' side which is the increasingly attractive investment opportunities presented by green buildings (Nelson, 2007; 2008). This has been emphasised with the launch of several green property funds in the UK and USA (Dixon, 2009).

From the investment point of view, sustainable buildings might also be thought to have longer economic lives (due to less depreciation), and lower volatility (due to less environmental and marketing risks) which could lead to reduced risk premiums and higher valuations (Eichholtz et al, 2008).There have been several studies recently which have used LEED and Energy Star data in the USA to assess whether a price premium does exist, but the evidence is somewhat mixed[10]. Studies by CoStar (2008), Eichholtz et al (2008) (using CoStar data), Fuerst and McAllister

[10] This is partly because the studies use different occupancy rates for the same data.

(2008) and Miller et al (2008) (using CoStar data) suggest that certified buildings do have a rental premium. For example, according to the CoStar study, LEED buildings command rent premiums of $11.33 per square foot over their non-LEED peers and have 4.1 percent higher occupancy, but more recent work by Muldavin (2008) casts some doubts on findings of the CoStar study. Nonetheless, these studies suggest that rental premiums over conventional buildings are between 4.4% and 9.2% for LEED buildings and between 8.9% and 11.6% for Energy Star buildings. These price differentials reflect the relative shortage of green space relative to tenant demand (Nelson, 2008).

2.5 Barriers to sustainable offices

Recent work by Levine et al (2007) and the All Party Urban Development Group (APUDG) (2008) suggested there were a number of barriers which were preventing the move towards more sustainable property. These included:

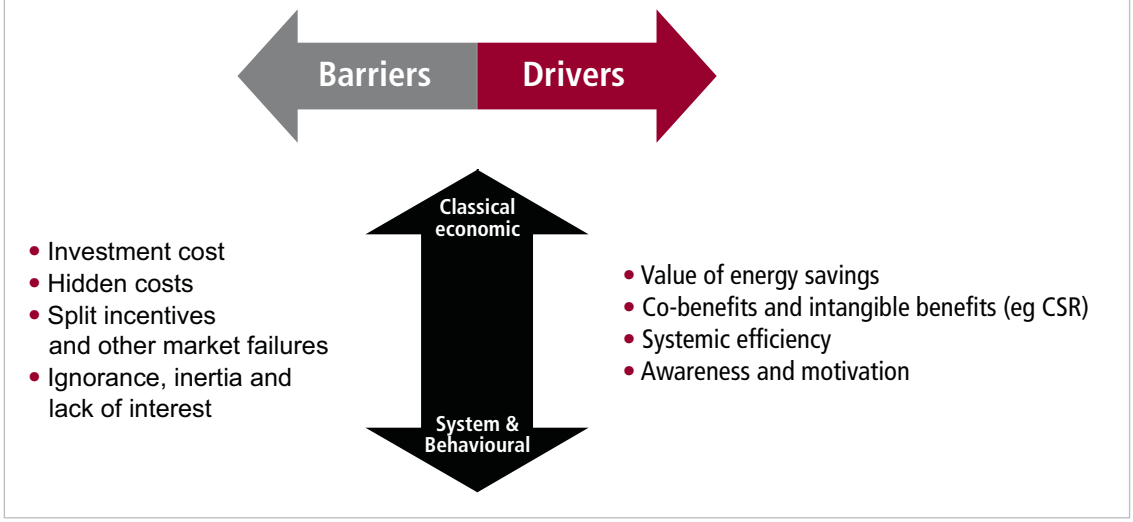
- Energy efficiency;
- Poor knowledge or education; and
- Costs and physical barriers.

2.5.1 Energy efficiency

The importance of energy efficiency should not be underestimated and research by the Carbon Trust (HM Treasury, 2005) suggests that there are a number of barriers to energy efficiency measures in both the public and business sectors (Figure 4). These fall into four main groups which include:

- Investment costs of new technology set against energy savings.
- Hidden costs from adopting more efficient energy equipment.
- Market failures from 'split incentives' (ie the landlord – tenant split where tenants pay energy bills but landlords control the properties).
- Organisational inconsistencies, where there is a misalignment of return within an organisation when differing parts of an organisation may place different values on different rates of return. This may derive from managerial inertia or key decision-makers lacking interest or motivation to improve energy efficiency.

Figure 4: Barriers and drivers for energy efficiency uptake (HM Treasury, 2005)



In order to address some of these barriers, particularly relating to the 'split incentive' issue, the concept of green leases has been mooted in the UK. A green lease is a lease between the landlord and tenant of a corporate building with an additional set of schedules compared to a normal lease contract (London Climate Change Agency (2008); Hinnells et al. (2008)). Green leases include a legal basis for monitoring and improving energy performance which provides mutual contractual lease obligations and incentives for tenants and owners to achieve resource efficiency targets (eg energy, water, waste), and to minimise the environmental impacts of an organisation's estate, and this is designed to ensure that a building operates at an agreed level through regular monitoring and addressing issues as they arise (London Climate Change Agency, 2008).

As APUDG (2008) point out, a pre-requisite for effective government policy to improve the energy efficiency of existing stock is a consistent and transparent system of collecting and measuring energy use data. Although the IPD Environment Code and LES-TER initiatives go some way towards helping establish a common code, there is as yet no universal code, nor is there a universal method of benchmarking (although the CIBSE Guide F is the most common benchmark currently used in the UK). In the UK, multi-tenanted buildings also pose particular challenges when it comes to measuring energy consumption, and different tenants often do not have access to sub-metering and hence control over their consumption (APUDG, 2008)

2.5.2 Poor knowledge and education

The lack of knowledge about the benefits of going green has been highlighted as one of the core barriers preventing sustainable commercial development, and this can operate at a number of levels. Nelson (2007) found that few professionals have the specialised knowledge and experience to design and operate green buildings successfully (see also RICS, 2007 and WBCSD, 2007).

A further recent survey found that there were also issues over work and lifestyles within buildings which were considered to be sustainable. For example, BDGworkfutures commissioned BMRB to conduct 1,600 face-to-face interviews for its green initiatives survey (BDGworkfutures, 2007) which found that of those people who have environmentally-friendly initiatives happening in their company, 70% felt it was not up to individuals themselves to be responsible; instead the responsibility lay with company directors (35%); facilities managers (15%); or office managers (10%). The same survey found that energy saving measures were easier for office workers to carry out at home. Therefore the conclusion from the research was that as consumers we are able to make our own ethical and socially responsible choices, but, as employees, power has to be relinquished to property and procurement experts.

Finally, in other instances there may be too much information available: for example, as APUDG (2008) point out, there are some 70 national and 96 regional bodies identified as delivering energy efficiency advice.

2.5.3 Costs and physical constraints

There are three ways that costs can act as a barrier to sustainable offices. The first relates directly to the energy costs of companies. Energy usually accounts for between 1% and 6% of business operating costs and therefore can create a reduced incentive for change, although as energy prices increase this effect is weakened. By contrast, staff costs can be as high as 85% which means that the potentially biggest return on investment can arise when green buildings improve business productivity (RICS, 2005).

Secondly, key stakeholders in the development process have often perceived the costs of sustainable construction as being relatively high, and in some instances research has shown that the costs of building sustainable property is higher than conventional buildings, although much depends on the nature of the technology used. For example, a recent US Green Building Council report (Galbraith, 2008) shows that the additional costs of going green are 2.5% (based on 150 commercial, and some residential, buildings). This is in contrast to research by Davis Langdon (2007) which showed that there is no significant difference in average costs for green buildings as compared to non-green buildings, although commercial offices were not part of this study .

The third way cost can act as a barrier to sustainability is through perceptions of payback periods. According to Nelson (2007), increased payback times may deter some investors, and he suggests that life-cycle costing, a central premise of the green building case, typically assumes a much longer amortisation period of 20 to 30 years more than the typical investor's holding period: longer payback periods can therefore create problems over shorter tenancies.

Similarly refurbishment can involve substantial costs upfront in terms of capital expenditure, as well as opportunity costs (eg lost rent) (APUDG, 2008). The physical constraints of refurbishment can also serve to act as a barrier to more sustainable offices. Certain buildings may not suit certain types of improvement, and listed buildings can pose further problems (APUDG, 2008).

2.6 Key research questions

It is clear from the background and context that preferred choice studies still predominate in the research field (ie were and occupier to move what would be important to them). But there is still much uncertainty over the extent to which occupiers are actually factoring sustainability into the selection process and ultimately into the actual decision to move and final choice of office. This study is unique so far therefore in its focus on occupiers who have actually moved over the last two years, or who were in the process of moving office rather than hypothetical moves or 'preferred choice' studies.

The research therefore set out to examine the extent of demand for sustainable offices in the UK and, in addressing this key theme, posed a number of related questions which included:

- What has driven the decision to occupy a particular office property from drawing up the agent's brief through to final selection?
- What aspects of sustainability were most important in the final decision to occupy the choice of office?
- Which sustainability features tend to be most common in the final choice of office building?
- What might be influencing the importance of sustainability in the decision to make the final selection of the office (ie sector, timing of move and so on)?
- To what extent are occupiers assessing the business or financial case for sustainability, and what is the evidence on actual costs?
- What are the key drivers and barriers impacting on the overall market for sustainable office space?
- How is sustainability linked with company culture, CSR and environmental policy?
- What are the critical success factors which make for a successful and sustainable office project (from both the investment and occupier points of view)?

The next section explores the results from the telephone survey of some 50 major occupiers conducted and April and August 2008.

3 TELEPHONE SURVEY RESULTS

3.1 Introduction

In setting out to address the main research question, which was to examine the extent of demand for sustainable offices in the UK, a telephone survey of major corporate occupiers was conducted from April to September 2008, which focused on questions relating to the following:

- The primary reasons behind the initial decision to move office;
- The relative importance of sustainability and other search criteria in the agent's brief;
- The relative importance of sustainability in comparison with other factors in the final choice of office;
- Drivers and barriers for a market in sustainable offices; and
- The relationship between sustainability and company policy.

The following sections therefore summarise the main findings from the telephone survey[11] in terms of:

- Background of respondents and their companies.
- Key characteristics of the new or refurbished office building.
- Importance of sustainability in the overall decision to relocate office.
- Key features of the new or refurbished office.
- What might be influencing the importance of sustainability?
- Drivers and barriers in the sustainable office sector.
- Sustainability and company policy.

3.2 Overall background of respondents and their companies

Key message:
The survey focused on key decision-makers in private sector corporate occupiers and actual moves made within the last two years. The sample was predominantly multi-let, leased space located in London and the South East, generally within the City or an urban location, and fairly evenly split between new build and refurbished space. The offices in the survey represented some 2.53m sq ft of floorspace, equivalent to about 5% of the total UK floorspace held by respondents. The property in the survey was fairly evenly divided between space which was less than 10 years old and space which was older. Some 40% of the sample was rated BREEAM 'good' or above.

3.2.1 Company sector

Fifty valid interviews were completed and the sample appears to be broadly representative, in comparison with other samples. For example: the overall balance of companies maps quite closely onto the breakdown of companies provided in King Sturge's known lettings data (King Sturge, 2007) (Table 3.1). However, the main exception is the Technology, Media and Telecommunications sector which has a proportionally higher representation in the IPF sample than the King Sturge sample. The focus of the survey was on private sector corporate occupiers and so no public sector organisations are included in the sample.

3 TELEPHONE SURVEY RESULTS

Table 3.1: Interviews secured by sector

Sector	IPF sample	King sturge sample
Financial and Business Services (including banking, legal and financial services)	36% (18)	66% (includes real estate and construction)
Real Estate and Construction Services	22% (11)	-
Technology, Media and Telecommunications	22% (11)	12%
Other (including retail)	20% (10)[12]	22%
Total	100% (50)	100% (209)

Note: Actual number of interviews shown in brackets

All respondents had moved over the last two years or were in the process of moving[13]. For further details on the respondents and the buildings in the sample, see Appendix 2.

3.3 Real estate strategy and the initial decision to move

Key message:
Only three respondents mentioned sustainability explicitly as a requirement in the brief. Location was the second most important factor in the decision to move after expansion and growth. The real estate strategies which underpinned this were primarily based on consolidation, changing business needs and expansion, and these requirements were generally reflected in the agent's brief. A minority of respondents had commissioned either a bespoke building, or engaged in the design and construction process at design or pre-planning.

3.3.1 Why move?

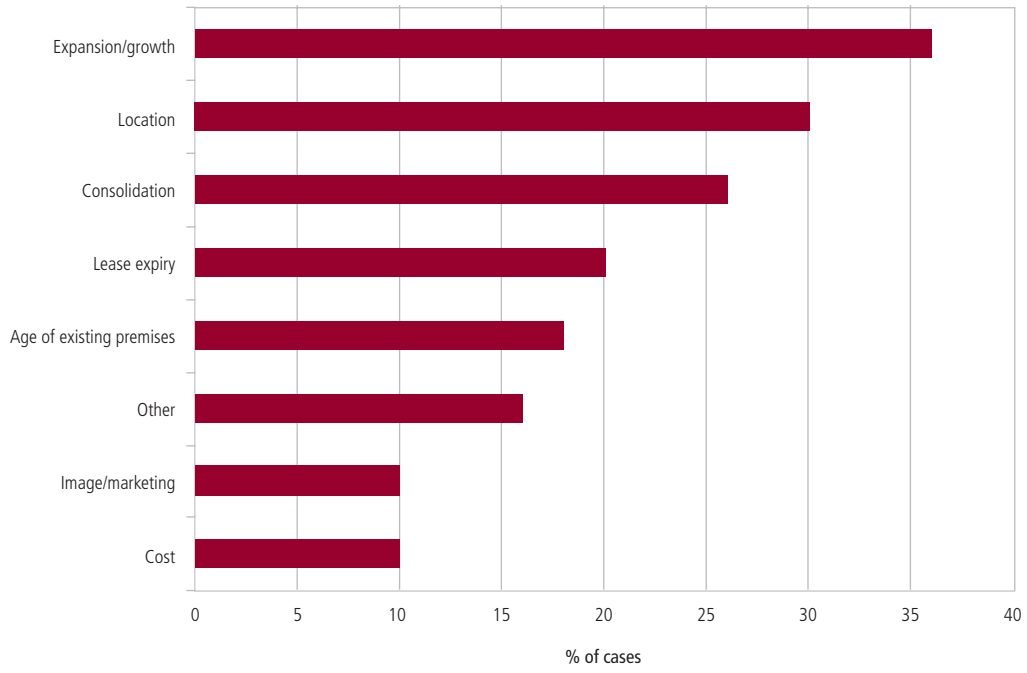
The reasons for moving were primarily growth (36% of cases), a desire for a new location (30%), together with the need for consolidation of offices (24%) (Figure 3.1). Other factors included the age of the existing premises, lease expiry, developing an improved marketing brand or image, and the cost of existing premises. Only one respondent (real estate and construction sector) mentioned the requirement for sustainability (ie a BREEAM rated building) as an explicit driving force. These findings are broadly consistent with the Experian (2004) findings regarding locational choice.

[12] This includes (besides retail) utilities, industrial and engineering.

[13] There were three respondents who had moved a little over two years ago at the time of survey, including one owner occupier, and these respondents were retained within the overall sample.

3 TELEPHONE SURVEY RESULTS

Figure 3.1: Reasons for moving (multiple response)



A deeper qualitative analysis of the transcribed telephone interviews (focusing on the factors driving decision to relocate) revealed that business growth (both UK and global) and consolidation of space and the associated work force was behind many of the decisions. Several companies felt that their businesses had outgrown the space they occupied and others were also planning for future growth. Many companies were looking to consolidate two or more buildings into one, to 'bring the people and the business together'. In two cases, this was due to company mergers.

Consolidation was considered important from a business perspective but also for the well-being and happiness of staff and the company culture. One interviewee suggested that:

'Our culture is about team work and people sharing opportunities and helping each out, it is very difficult to achieve this when operating across two buildings' (F&BS).

Several interviewees suggested that the decision to relocate was made for pragmatic reasons relating to the building itself; either the lease expiring (as was the case with four other interviewees) but also the suitability of the building for purpose.

In the case of one company, technical issues relating to the building, including improved fibre-links and IT connectivity, were the prime drivers, but this was specific to the TMT sector. Such building-related issues also reflect on the company itself and those employed in the company. It was noted by one interviewee that the building a company occupies 'says a lot about the image, reputation and standing of a company' (F&BS), with the building either adding to this standing or detracting from it. Several interviewees identified this issue as a primary reason behind the decision to relocate:

'We needed to move to accommodation that more suited the business – its reputation and standing' (F&BS).

'We stayed too long in the last property, 20 years rather than the expected five, the building was becoming very tired – it was starting to work against us. We always joked that our accommodation needed to scream modest and it absolutely did!' (F&BS).

Although the contribution of the building to a company's reputation was important for interviewees, there were also pragmatic reasons related to the building that were instrumental in the relocation decision.

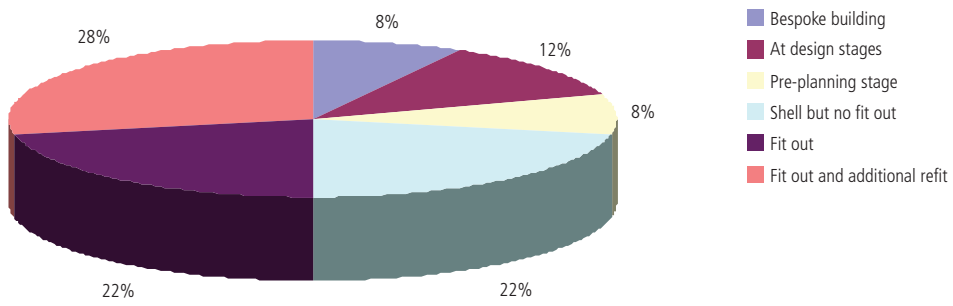
It was also suggested that this caused issues with staff, both in terms of current employees and potential future employees ie problems with recruitment of new staff. One interviewee said:

'We were having trouble recruiting people because they didn't want to work in that environment' (F&BS).

3.3.2 Stage of engagement in design and construction

Some 8% of the sample had commissioned a bespoke building, with 20% engaging early on in the process (at design or pre-planning stages). Of the remainder, 44% included 'shell but no fit out' or a 'fit out', with 28% requiring an additional 'refitting after a fit out' (Figure 3.2).

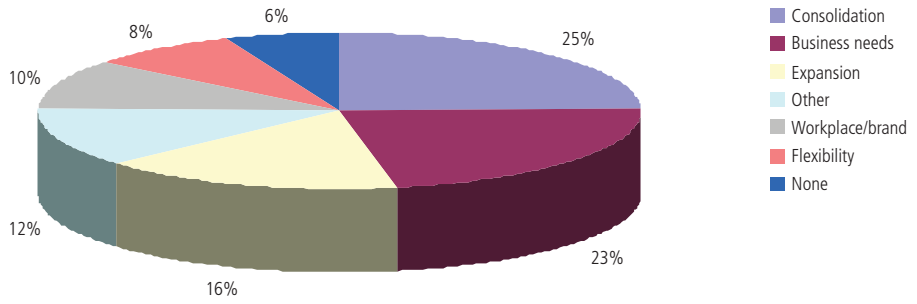
Figure 3.2: Stage of engagement of occupier



3.3.3 Real estate strategies

This pattern maps fairly closely onto the overall strategic focus of occupiers in the survey. For example, some 25% suggested their strategies were based on 'consolidation', with 23% based on 'business needs' and 16% on 'expansion or growth' (Figure 3.3). Other strategies were categorised as being 'workplace or brand' oriented in terms of improving workplace conditions and the overall image of the company or 'flexible', in terms of providing a balance between leased and owned space.

Figure 3.3: Real estate strategies



However, it should be noted that three respondents suggested they had no strategy for property acquisition.

Property acquisition strategies were primarily set at board or senior management level with each interviewee concerned having direct input into the decision to acquire space. However, the responsibility for managing the process of acquisitions fell either to external agents (with management input), or internally at different levels of the company, ranging from the board of directors to members of departmental teams.

3.3.4 Agent's brief

In terms of the brief provided to agents, there is a very clear hierarchy of factors that interviewees identified as being of primary importance. One interviewee summarised these issues succinctly saying:

'It's about location, it's about size, it's about things like floor space and things like general quality of building' (F&BS).

Interviewees identified the following as important aspects of the property brief:

- Location (Other, (owner occupier) and two TMT companies)
- Cost and the financial case for occupation (two F&BS companies)
- Availability and timescales (RE&C and TMT)
- Size (RE&C and two Other companies (one of which was an owner-occupier))
- Build quality (Other, owner occupier)
- Open plan (TMT).

Other aspects highlighted by interviewees were less quantifiable; one suggested that they wanted a property that was 'a bit different to the standard office block, a bit wow!' (RE&C)

It was also clear from respondents' descriptions of the briefs given to agents that sustainability was much less important than, for example, location and size of building. Only three respondents' mentioned sustainability explicitly in their description of the brief, although several said that this would be more important were they to consider a move today than it had been in their past decision. This should also be contrasted with the finding that 32% of respondents had specified minimum levels of environmental performance (section 3.5).

3 TELEPHONE SURVEY RESULTS

When discussing the sustainability elements of the building, several interviewees relayed their varying experiences of agents' knowledge and understanding of these issues. One interviewee said:

'We did encounter difficulties with levels of knowledge and also being able to find out what is actually out there and what constitutes best in class' (F&BS).

The same interviewee found that agents were quite open about their lack of knowledge and understanding of sustainability issues saying;

'Our agent made no bones about the fact that agencies don't understand this aspect of the property, they are behind other sectors in their understanding, they need education' (F&BS).

Several interviewees identified a need to alter their initial brief. The main reason given for this was the lack of supply of the particular type of property required by the company (RE&C and Other (owner occupier)). Most interviewees identified an issue with lack of supply of suitable buildings (in varying degrees depending on the brief given to agents). As one interviewee said:

'There is just a fundamental lack of buildings in that location (Other, (owner occupier)).

Another interviewee identified economic factors as being important in this context:

'It was very difficult to find property at that time and our choice was quite limited. Back in 2006 the economy was pretty strong then and there were a lot of hedge funds and private equity funds setting up in London which was driving up the cost of property at that point in time and reducing the supply' (TMT).

Interviewees experienced problems with supply for different reasons, in particular relating to the sheer size of building required (particularly in the case of headquarters buildings) (TMT) and others in terms of build quality and/or quality of finish (TMT).

One interviewee identified the stages involved in their property decision process as being:

'Initially there were four choices when looking at location choices, and we made our choices firstly based on the financial case that would be derived from being located in different areas. After that, other factors came into play and we had fewer options available to us – in the end there was only one that met our requirements. Once all our requirements were taken into account there was only one property that met all our needs' (F&BS).

Another interviewee suggested that timing was the overriding factor for their property decision in relation to a building where the additional cost may have reflected its sustainability characteristics, stating that:

'It was available, we needed to move quickly, we couldn't wait any longer, we were running out of space so it just ended up {being} three buildings we homed in on in the end. In the end we're actually paying for the most expensive one because we liked the whole message that came with the building' (RE&C).

3.4 The importance of sustainability in the overall decision to relocate office

Key message:
In terms of the final decision to take an office building, UK occupiers are driven primarily by the location of the building and the availability of a building, together with a building's overall quality. Less important are annual running costs (rent, rates and other costs), the building's overall design, and sustainability (in terms of specific features) was the least important factor relative to other factors.

Respondents were asked about the relative importance of the following factors in the decision to move:

- Location – physical and geographic location;
- Availability – available at the right time;
- Building quality – overall quality of building;
- Running costs – annual running costs (rent, rates and other costs, including service charges and energy costs);
- Design – the overall form and pattern of the building; and,
- Sustainability – the range of sustainability-related features in the building.

The most important factor in influencing occupiers to choose a particular building was location, followed by availability (ie the right property at the right time), and building quality (Figure 3.4). Running costs (covering all the costs of running a building, including service charges and energy costs) were considered less important, as was design, with sustainability (ie the sustainability features of the building) least important of all. Location did not receive any score lower than five on a scale of one to seven from respondents (Table 3.2).

This view was summed up by one interviewee:

'Yes, location and price are by far the two biggest things for us. If somebody had come along and said a number of these other factors are around there, and location was still okay, and the price was still okay, and we had a choice of two, I'm sure we would have chosen a different building, but it wasn't there' (TMT).

Indeed another interviewee in the retail sector suggested there was a process of choice operating through shortlisting:

'It was principally about location and affordability, and if you like, it was then a question of looking at the characteristics of the buildings once we'd homed in on a particular location or locations. That's how we came down to a short list of three in the end' (Other (Retail).

Nonetheless, location was used in several instances as part of an argument to suggest the office was 'sustainable' because of a central location close to good public transport links.. The importance of transport (mentioned by six respondents) was highlighted as an additional, explicit factor in the final decision by those who scored sustainability five or above.

Similarly, running costs include energy costs and other utilities, and so there is a strong implicit sustainability theme here, but generally speaking the focus from occupiers was much more on rental cost and other related costs in this category.

The overall conclusion drawn is that sustainability in its own right has been a low priority in relation to other factors.

Figure 3.4: Factors in decision to occupy

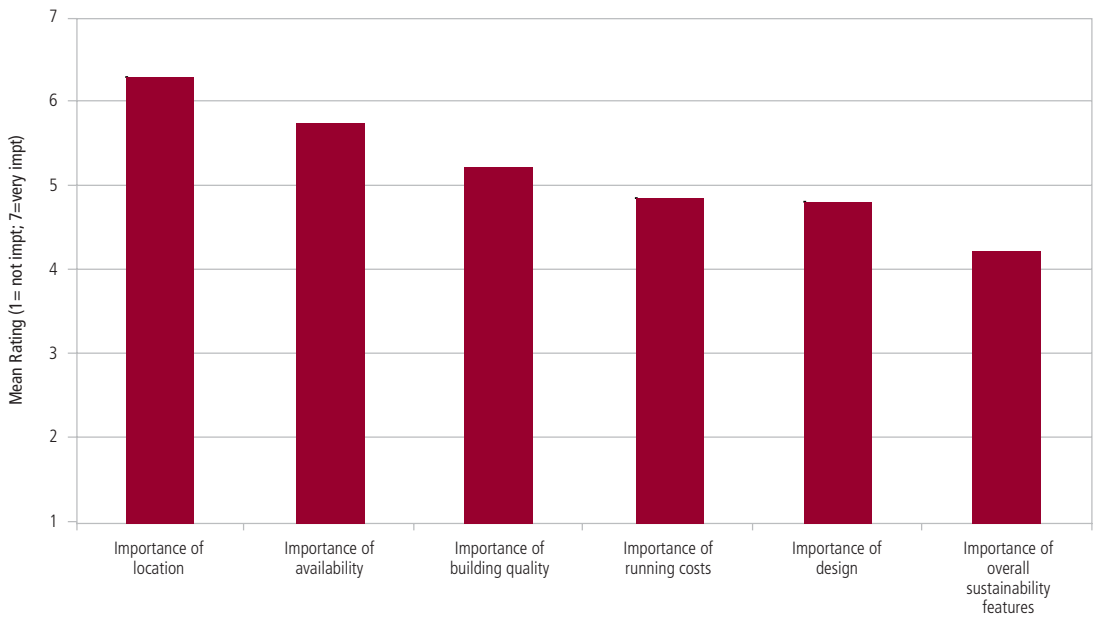


Table 3.2: Descriptive statistics for factors in decision to occupy

	Minimum	Maximum	Mean	Median	Std. deviation
Location	5.00	7.00	6.31	6.00	0.77
Availability	2.00	7.00	5.76	6.00	1.21
Building quality	1.00	7.00	5.22	5.00	1.33
Running costs	1.00	7.00	4.86	5.00	1.26
Design	1.00	7.00	4.82	5.00	1.41
Sustainability	1.00	7.00	4.22	5.00	1.71

However a number of related factors were also mentioned in the overall context of the decision to occupy. These are as follows, ranked according to the number of mentions by interviewees:

- Accessibility and amenities for staff and clients (two F&BS companies, two TMT companies, and two others).
- The fit of company values to the development and to the landlord (F&BS, RE&C, and Other).
- Security (TMTs and F&BS).
- Access routes to airports, motorways (Other).
- Physical surroundings (Other).
- Central running costs of the building which included service charges (F&BS).
- Prior knowledge of the location and the building itself (F&BS).
- Cost and business rates associated in that location (F&BS).

- IT infrastructure, ie fibre-links and telephone cabling (TMT).
- Suitable timescales of project (F&BS, TMT, REC).
- The finances need to work (F&BS, TMT).
- The role that the development can play in the wider community and regeneration (F&BS, TMT).

3.5 Key features of the new or refurbished office

Key message:
The most common sustainability features in the new building were adaptable (or flexible) space, energy efficiency, utilities efficiency and effective monitoring systems. Only about a third of respondents had specified minimum levels of environmental performance in their brief to agents. Possibly related to the timing of the survey and the fact that moves had occurred over a two year period, less than a fifth of respondents suggested that the EPBD had played a role in their decision to occupy.

The survey also asked respondents about the number and type of sustainability features which were present in the building to which they had moved or were moving. These features were derived from literature, and finalised with the expert steering group for the project.

In terms of the 'sustainability features' of the office buildings in this study, the following aspects of sustainability were most common; flexibility of space (in terms of space layout) (98% of cases), followed by energy (74%), utilities efficiency (73%) and effective monitoring of building performance (70%) (Figure 3.5). It is clear therefore that adaptability, or the ease which space can be adapted for different uses and changing needs through demountable partitions and other design features, is common throughout buildings whether they are considered to be sustainable or not. For a more detailed description of the sustainability features see Appendix 3.

Building accreditation features in 40% of cases, represented by the fact that there were 17 buildings which were BREEAM 'good' or above in the final 50 interviews. This is also related to the fact that only 32% of respondents specified minimum levels of environmental performance in their brief to agents, and about 50% of these used a BREEAM requirement to set the standard[14]. It was also the case that the majority of those who specified a minimum standard ended up choosing a BREEAM-rated office (Figure 3.6), although some who did not specify any standard also relocated to a BREEAM-rated office.

[14] This should be contrasted with the fact that only three respondents suggested they had specified 'sustainability' explicitly in the brief.

Figure 3.5: Key features of office buildings (multiple response)

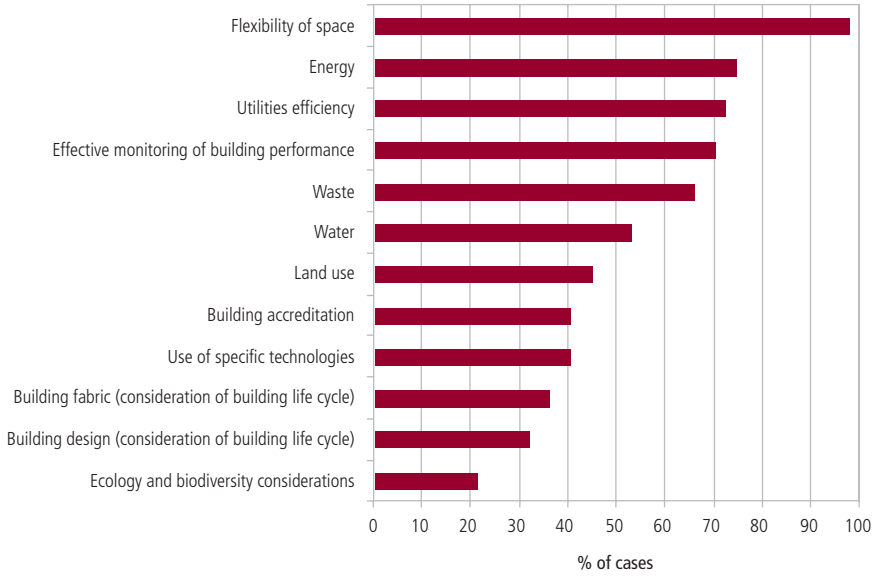
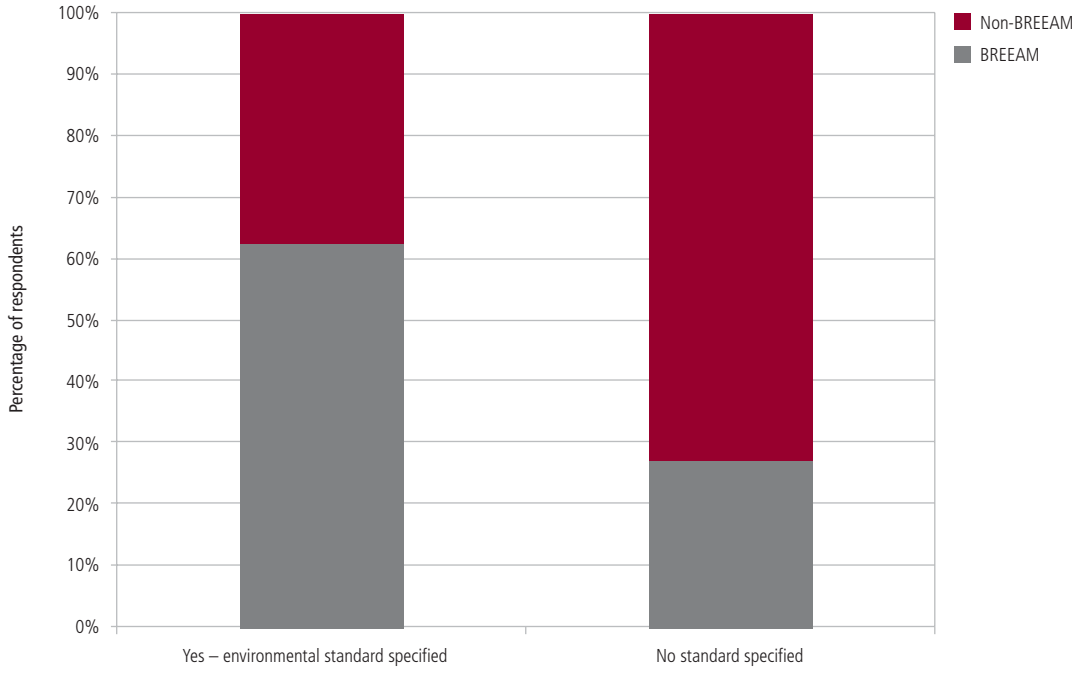


Figure 3.6: Minimum standard by BREEAM rating



3 TELEPHONE SURVEY RESULTS

In considering the role of the European Energy Performance of Buildings Directive (EPBD) in the property decision (and the overall part played by EPCs), 22% of respondents suggested that the EPBD had played a role in their decision to occupy, and this was mainly as part of the sustainability component in their decision to occupy a particular building. The most common reason given for the consideration of the EPBD was the reduced energy costs of highly rated buildings. One company identified that their aspirations in the property decision were not about compliance or certification but about 'best practice', stating that legislative compliance would be a minimum position (F&BS).

Two interviewees identified that the EPBD may play a role in their future property decisions but had not played a role in decisions made in the last two years (F&BS, TMT). One reason given for this was the current state of the EPBD and its requirements (F&BS). It was suggested that 'the whole thing is a bit of a mess at the moment' (F&BS) and another interviewee stated that:

'We are in a bit of a funny sort of situation at the moment where everyone knows about EPCs … but there is no actual requirement unless it is a very big building to actually provide those (TMT).

Another reason given for the lack of consideration of the EPBD was the lack of supply of buildings with suitable environmental credentials (F&BS). Quantitative analysis revealed no statistically significant relationship between the response to this question and geographical location, length of occupation or business sector.

As reported above, the majority of interviewees (68%) did not specify minimum levels of environmental performance in the initial brief, although it was stated by some that it would be considered in the future (RE&C, TMT). Two interviewees who specified minimum levels of environmental performance did so for 'business reasons': sustainability is central to the activities of these companies and each wanted to maximise the PR benefits of occupying a sustainable building and to provide a 'showcase' building for clients (two 'Other' companies, one of which was owner occupied)

A number of interviewees identified BREEAM accreditation (at varying levels) as the minimum level of environmental performance. One interviewee was very clear saying:

'On a new building we were looking for excellence. In a refurbished property we were looking for either good or very good; it's almost impossible for a refurbishment to achieve excellence' (F&BS).

The difference between specifications on refurbishments and new build was also highlighted. Interviewees were of the opinion that it is more feasible to expect new buildings to have good environmental performance. For example:

'We wanted to try and achieve the best we could out of this particular building by trying to get the landlord to install certain things and we will, in our own fit-up, try to include what we can. But with an existing product it is much more difficult to do that although the list of things you can do is far smaller than on a new build' (TMT)

3.6 Formal assessment of business or financial case for sustainability

Key message:
Although some 42% of respondents had assessed the business and financial case for sustainability in their overall choice of office, the rationale for doing this is not simply about cost, but is also driven by company culture. Knowledge and understanding of the cost implications also varied widely, but practising what you preach was fundamental to maintaining credibility with customers and clients.

Some 42% of respondents suggested that they had assessed the business and financial case for sustainability either formally or informally, but 58% of respondents were unsure of the exact costs with several not undertaking any formal costings (TMT, Other and two F&BS companies). Several interviewees mentioned that they would in future be examining the business case, and the associated costs and benefits more closely.

For a number of interviewees, the business case for sustainability appears to be about more than simply costs and payback periods. This comes down to the perception that the benefits of sustainability are about the company and the people, as much as economics. As one interviewee said:

'It's not about finances, it's about building in an ethical manner (F&BS).

Another said:

'If you take it in the mix it's more than self-financing. Whether it be energy efficiency in running a building, whether it is having these amenities and facilities, or having it close to transportation links, it's all {about the} positive aspects of the building that more than pay for themselves' (F&BS).

Others highlighted the marketing and branding benefits of sustainability for example, suggesting:

'Although we have needed to do and we are paying extra for some of these things; I know to get the right message and the right storyboard, I do need to spend more money. We've not had a strategic sit-down, looking specifically at costs but there are definitely benefits'. (RE&C).

This was a point picked up by an interviewee based in the retail sector:

'But certainly we present ourselves as being very environmentally aware and responsible as far as the environment is concerned. And so there was quite a good fit from that point of view'. (Other (Retail))

One owner occupier was very clear on the cost benefits of sustainability and actually used this as a driving force for their development by suggesting:

'Clearly we wanted to be able to show that we could build a building to the best possible low energy standards without having to spend too much extra money. That's a big issue with a lot of developers; first of all they won't build speculative sustainable buildings, because in the past they found it more difficult to let them because of people's attitudes to not having air conditioning. It's changing now. Secondly they say that they cost more money, but it is nonsense. We've got rid of the suspended ceilings completely and exposed the concrete structure, for example, so there's a saving in money there, but it increases the ability to use the body heat of the building' (RE&C, owner occupied)

Approaches to the question regarding length of payback period varied significantly from those to whom the costs of sustainability were not as important as other benefits for the company and the individuals, to those with more precise knowledge of the costs of each individual aspect of the project and specific payback periods. Of those with more knowledge of costs, payback periods ranged from one to five years, For example one interviewee said:

'We have a pay back period that we look for {which} is less than five years and if we can get three years then that's great. The history of these initiatives tends to be, they're either … 22% IRR in {a} four year pay back, or they're 4% IRR in {a} 22 year payback; obviously you have to be fairly selective' (Other)

Other interviewees (specifically two in the 'Other' sector) identified payback periods of 20 years or more. The former group held the belief that sustainability does not need to relate to economic payback; for example, one interviewee said:

'We as a company are taking a view for this building and for all that we're doing our bit for society, so we're not actually engaging in a true pay-back decision against it. We want to support society. To be honest, from the research I've read, I'm not convinced many will give true pay-back other than that they feel good about it' (RE&C)

Another interviewee identified an additional benefit as 'being seen to practice what you preach' (RE&C, owner occupied), and in this sense, the 'payback' was expected to happen quite quickly, with clients seeing the positive working environment and sustainability activities of the company and being attracted to the company because of that. The same interviewee went on to say:

'One could argue that they've already been paid back, because just building the building has resulted in us getting commissions from two clients, so we've had fees from clients to design similar buildings, and I think we've got four that are nearing completion, so very quickly, it's certainly paid back by now' (RE&C, owner occupied)

The key benefits were seen as being reduced energy bills, improved employee satisfaction and a better company image.

3.7 What might be influencing the importance of sustainability?

Key message:
Some sectors in the sample (for example, Technology, Media and Telecommunications (TMT)) are more likely to consider sustainability as being less important in the choice of an office than other sectors (for example, Financial and Business Services and Real Estate and Construction), particularly where the company within the particular sector did not have a CSR policy in place. Those moving to a BREEAM building tend to rate sustainability as being relatively more important than those moving to a non-BREEAM building. More recent (and imminent) office moves show an increasing importance attributed to sustainability and a relatively higher number of 'sustainable features' in an office building than moves more than one year ago. Committed occupiers who rate sustainability relatively higher are likely to find office buildings with more sustainability features, despite competition for such space, and perceived undersupply.

To investigate the factors which could be associated with (and therefore possibly influencing) the overall level of importance of sustainability, a number of cross-tabulations were carried out. Sustainability was examined at two levels:

- *'Sustainability Rating' in relation to other factors which influenced the final choice of office (eg location and availability of space). In this sense 'sustainability' is related to the 'sustainability features' of the building (energy, waste and water and design).*
- *Importance in terms of the total number of features found in the final office building (as represented by a simple score (or 'index') for sustainability, derived from totalling the number of sustainability characteristics in the building; 13 in total including the type of BREEAM accreditation: ie 'good' or above).*

Both measures were examined in relation to:

- Sector (eg financial and business services);
- Whether a building has a BREEAM (good or above rating)
- Presence of CSR policy;
- Presence of Environmental Management System;
- Length of occupation;
- Length of lease;
- Geographical location (ie London, South East, rest of England and other locations);
- Type of location (eg City, CBD)
- Company size (as represented by number of UK buildings);
- Refurbishment and new build;
- Stage of engagement in design and construction; and,
- Type of occupation (leased or owner-occupied).

The significance of differences between ratings were tested using non-parametric statistical tests (see Appendix 4).

3.7.1 Decision to occupy

3.7.1.1 Sector differences

As shown in Figure 3.7 the technology, media and telecommunications (TMT) sector tended to rate sustainability lower than other sectors (an overall rating of 2.82 compared with real estate and construction (REC) of 4.73, for example). Part of the reason for this may well be that the companies interviewed in the TMT sector tended not to have a CSR policy in place (80% of companies with no CSR policy were in this sector: ie four respondents out of five respondents without a policy were in the TMT sector)[15]. In contrast, the RE&C sector probably has more concern to get it right in terms of practising what it preaches to clients. We have also seen a growing awareness in the legal and financial sectors on sustainability and there has been a recent move to set up a Legal Sector Alliance for law firms seeking to make their practices more sustainable.[16]

The overall rating of sustainability in relation to other factors is significantly different at the 5% level[17]. The differences in rating for sustainability between sectors were also found to be significant at the 5% level. There were no significant differences between the rating of other factors by sector. So we can conclude that:

(1) Sustainability is consistently ranked lower than other factors; and

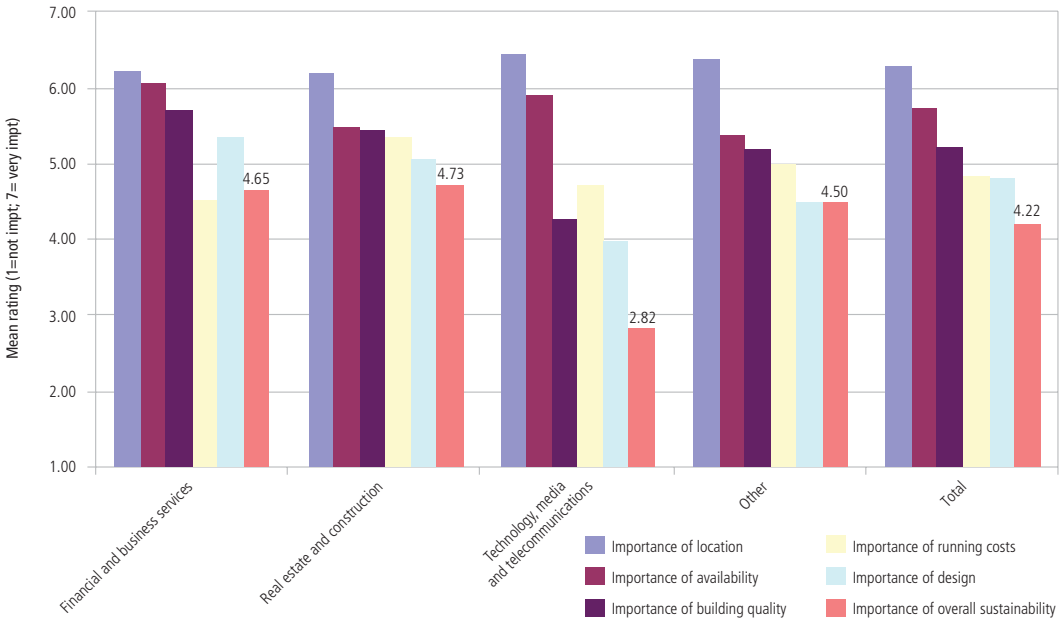
(2) The TMT sector is the sector with the lowest overall rating for sustainability.

[15] Recent evidence from RiskMetrics (2007) found that globally information technology companies were one of the groups least likely to have detailed policies and governance systems in place to deal with climate change and the environment. Variations between sectors in such policies and related dimensions in the corporate responsibility agenda have also been identified in other reports (see for example, BiTC, 2007 and CBI, 2007)

[16] See website at: http://www.legalsectoralliance.com/

[17] This means that we can be 95% confident the differences are not random.

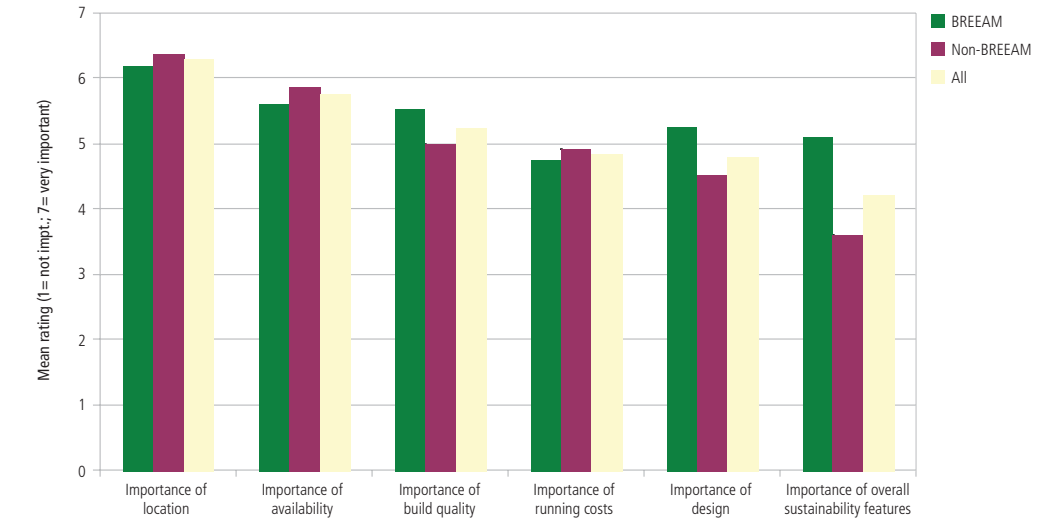
Figure 3.7: Importance of occupation factors by sector



BREEAM rating

Companies which chose BREEAM-rated buildings also considered sustainability to be relatively more important than those who moved to a non-BREEAM rated building. As Figure 3.8 shows, companies which selected a BREEAM-rated building rated sustainability as 5.1 in comparison with 3.8 for those selecting a building without a BREEAM-rating. These differences were significant at the 1% level. In fact those who moved to a BREEAM-rated building also rated running costs slightly lower in importance, although there were no significant differences between this and the other factors. Indeed location, availability and building quality remain the top three factors for both respondents acquiring BREEAM-rated buildings and those acquiring buildings without a BREEAM rating.

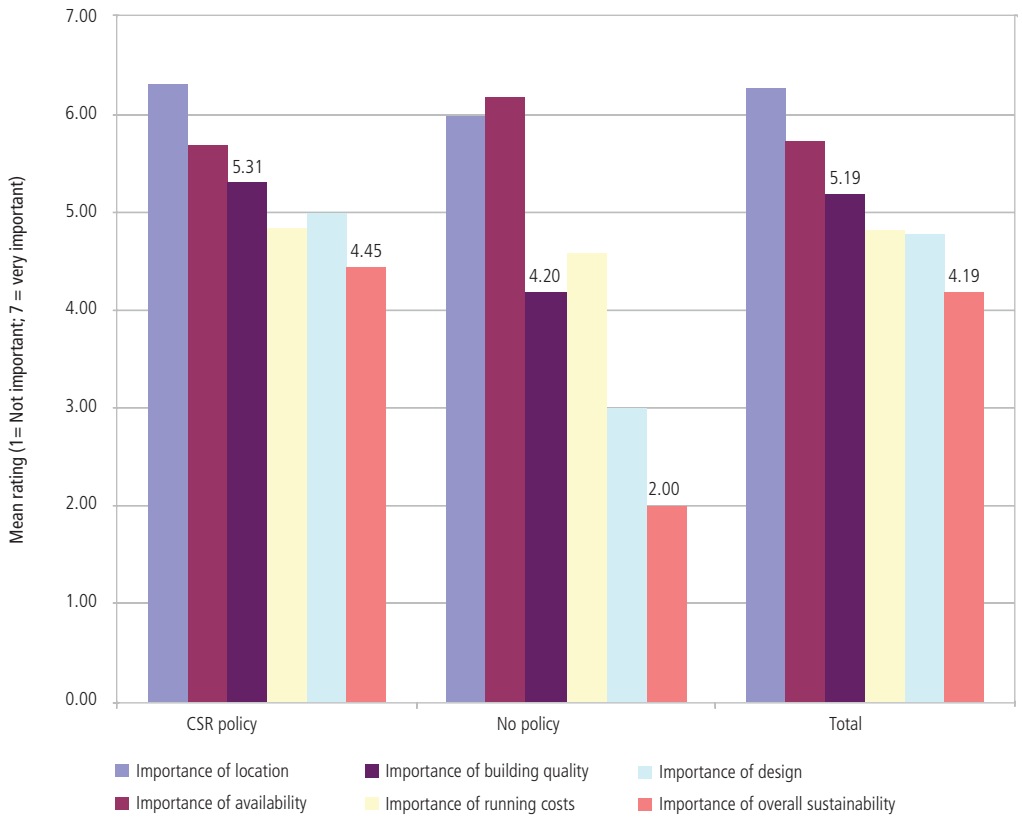
Figure 3.8: Importance of occupation factors by BREAAM rating



Presence of CSR policy

Companies with CSR policies also tend to treat sustainability more seriously in the decision to choose a particular office. As Figure 3.9 shows, companies without a CSR policy rated sustainability much lower than those with a CSR policy although the numbers in the former group are low (only five companies, with four of those based in the TMT sector). Such companies also rated building design much lower. In both cases the differences are significant at the 5% level. There were no significant differences between the ratings for other factors.

Figure 3.9: Importance of occupation factors by presence of CSR policy[18]



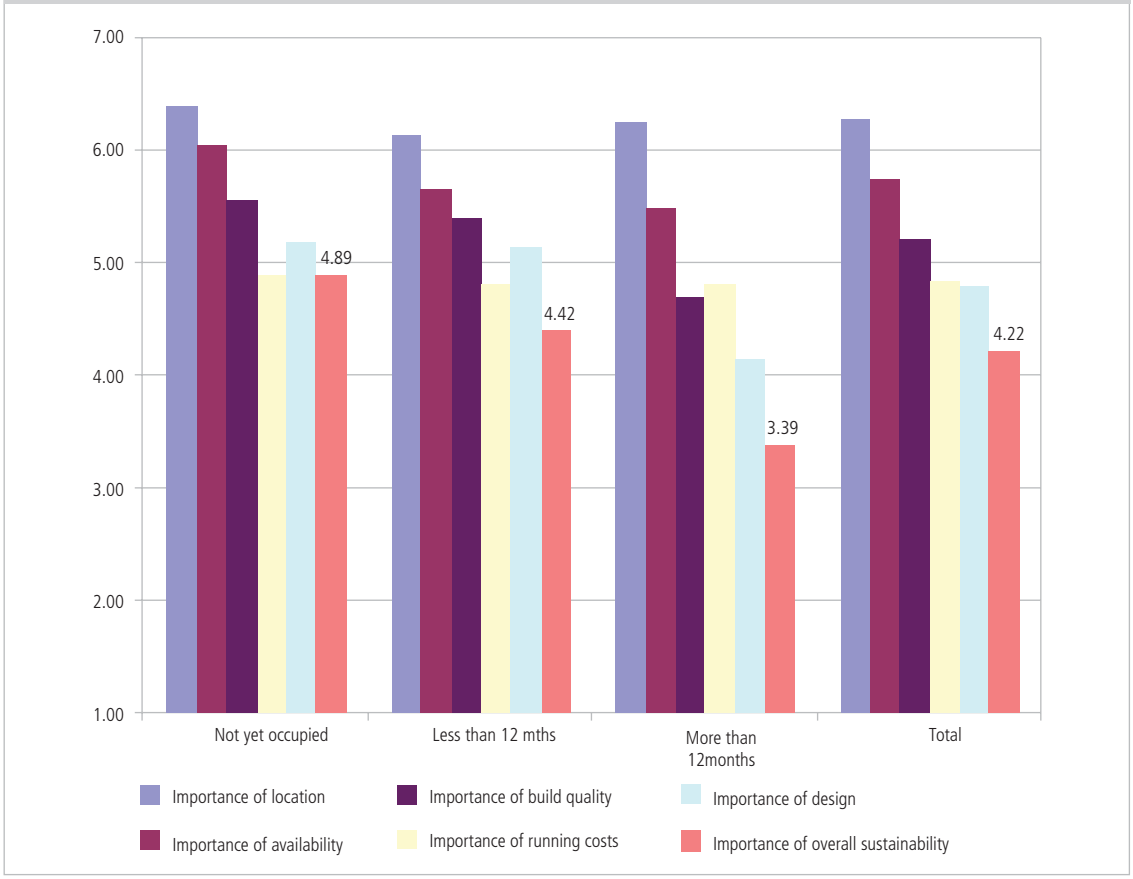
Length of occupation

A number of respondents suggested that sustainability was increasing in importance and would be even more important were the decision to move taken today. As Figure 3.10 shows, there is a clear tendency for respondents undertaking more recent moves (or imminent moves) to consider sustainability to be more important in relation to other factors than, say, those respondents who took relocation decisions more than 12 months ago[19]. There were smaller differences between other factors by length of occupation, including running costs. The differences for sustainability were found to be significant at the 5% level.

[18] Difference in overall rating of sustainability (4.19) from Figures 1.14 and 1.15 due to the fact that two respondents were unable to provide an answer for the CSR policy question.

[19] Note that here the 'more than 12 months' category includes 12–24 months and those slightly longer than 24 months (three cases).

Figure 3.10: Importance of occupation factors by length of occupation



Other factors

We also examined other factors including geographic location; location type; whether a property was refurbished or new build; stage of engagement in design and construction process; lease length; company size; presence or absence of an environmental management system; and whether an occupier was a tenant or owner occupier. No statistically significant differences could be found between the ratings attributed to sustainability (or indeed for any of the other factors influencing the decision to take a particular building) for each of these variables.

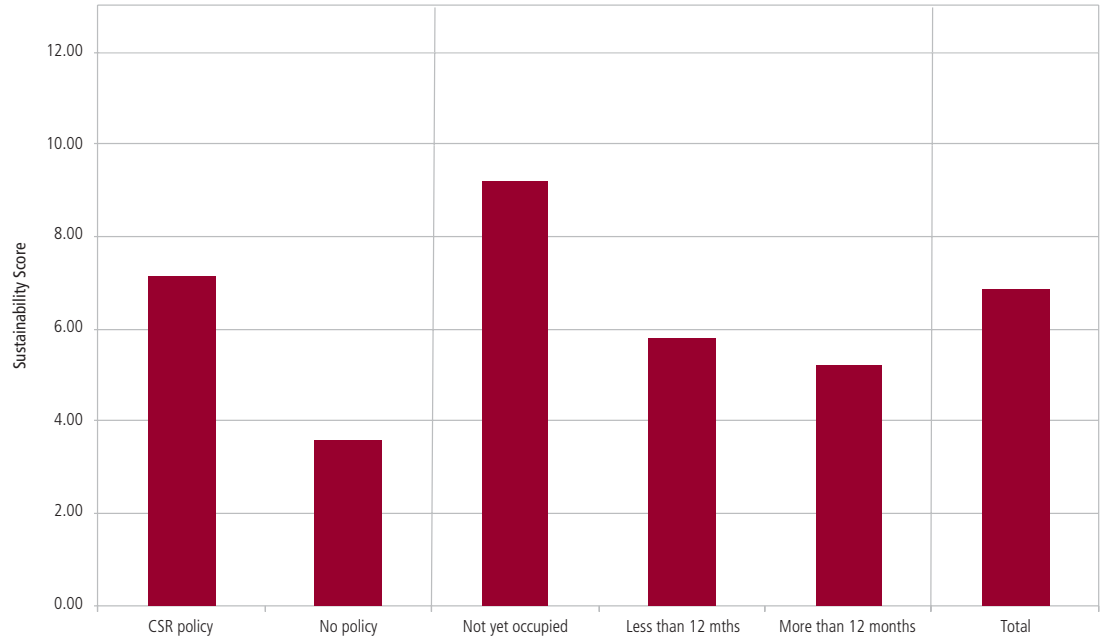
3.7.1.2 Sustainability characteristics in office building (using sustainability score)

Presence of CSR policy

As Figure 3.11 shows, a larger number of sustainability features (as represented by a sustainability score out of 13 points) in an office building is associated with the presence of a CSR policy. This difference was found to be statistically significant at the 5% level. This implies that company culture and business sector is playing a role in shaping the way occupiers engage in the market for sustainable offices.

[20] As represented by a simple score for sustainability, derived from totalling the number of sustainability characteristics in the building; 13 in total including the type of BREEAM accreditation: ie 'good' or above)

Figure 3.11: Sustainability score by CSR policy and by length of occupation



BREEAM rating

Not surprisingly we also found that BREEAM buildings scored higher (mean 9.0 out of 13) than non-BREEAM rated buildings (5.29) within our overall index. In other words BREEAM rated buildings had more sustainable features in them than non-BREEAM buildings.

Length of occupation

Figure 3.21 also shows that there is a clear tendency for more recent moves (or imminent moves) to be focused on more sustainable offices than, say, decisions taken more than 12 months ago, resulting in buildings with more sustainability features where the moves have been more recent or are yet to be occupied. This difference was also found to be significant at the 5% level. This ties in with the findings above which suggested sustainability was becoming more important in property decision-making as the market for sustainable offices evolves and develops.

Other factors

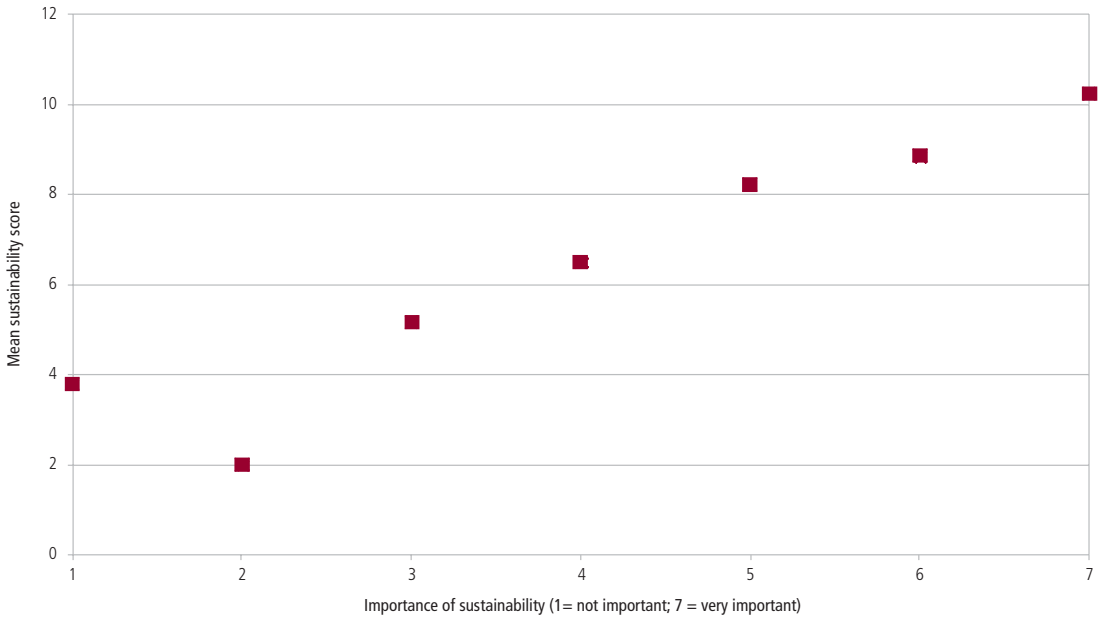
We also examined business sector; geographic location; location type; lease length; whether a property was refurbished or new build; company size; presence or absence of an environmental management system; and whether an occupier was a tenant or owner occupier. No statistically significant differences could be found between the sustainability scores for each of these variables.

3.7.2 Relationship between importance of sustainability and features in office building chosen

The relationship between how important sustainability was considered to be and ultimately the overall sustainability score (or 'index') for a building was examined. The graphical relationship is shown in Figure 3.12. This suggests that the more important sustainability is felt to be in an organisation's decision to choose a particular building, the more likely it is ultimately to have a larger number of 'sustainable features'. This suggests that despite

competition and relative lack of supply, committed occupiers were able to find office buildings that ultimately had a higher number of sustainability features. The differences in mean sustainability score were found to be significant at the 5% level using non-parametric testing. However, it is also clear from our earlier analysis that other factors are playing a role here, including CSR policy, business sector and length of occupation.

Figure 3.12: Relationship between mean sustainability score for an office building and the importance of sustainability in the overall decision to occupy



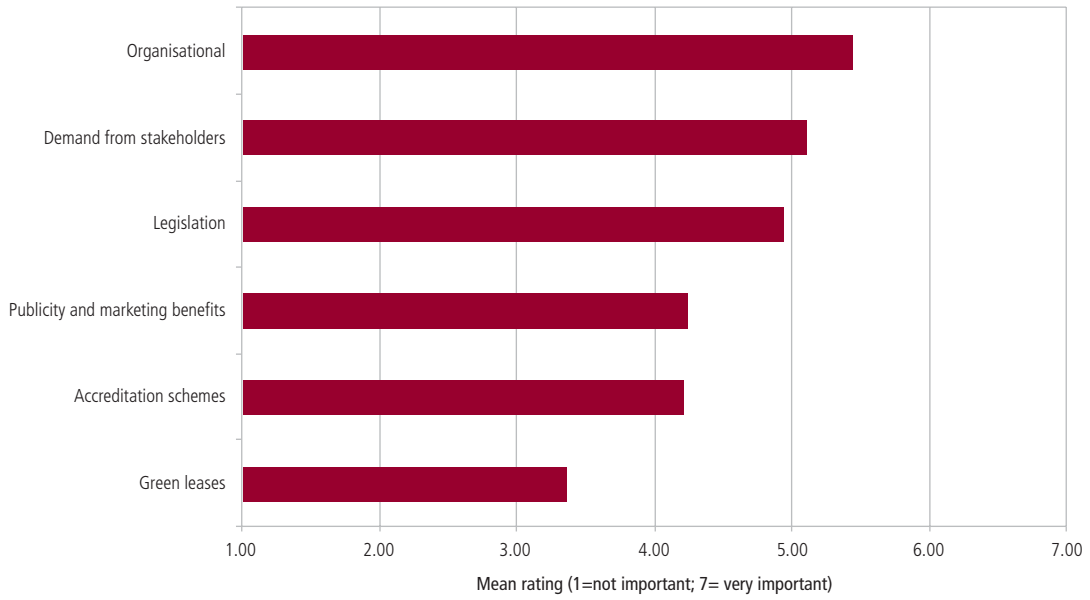
3.8 Drivers and barriers in the sustainable office sector

Key message:
Key drivers in the sustainable office sector are seen by occupiers as being organisational factors, increased demand from stakeholders (primarily customers, shareholders and employees) and legislation. Less important are direct publicity and marketing benefits, the use of accreditation schemes and green leases. The key drivers are seen as being more important overall than barriers in the sector. Sectoral change in relation to sustainability is also being driven by a need to 'walk the talk' for clients, customers and shareholders. Key barriers in the sector are seen as being payback period, investment costs and lack of relevant supply.

3.8.1 Drivers

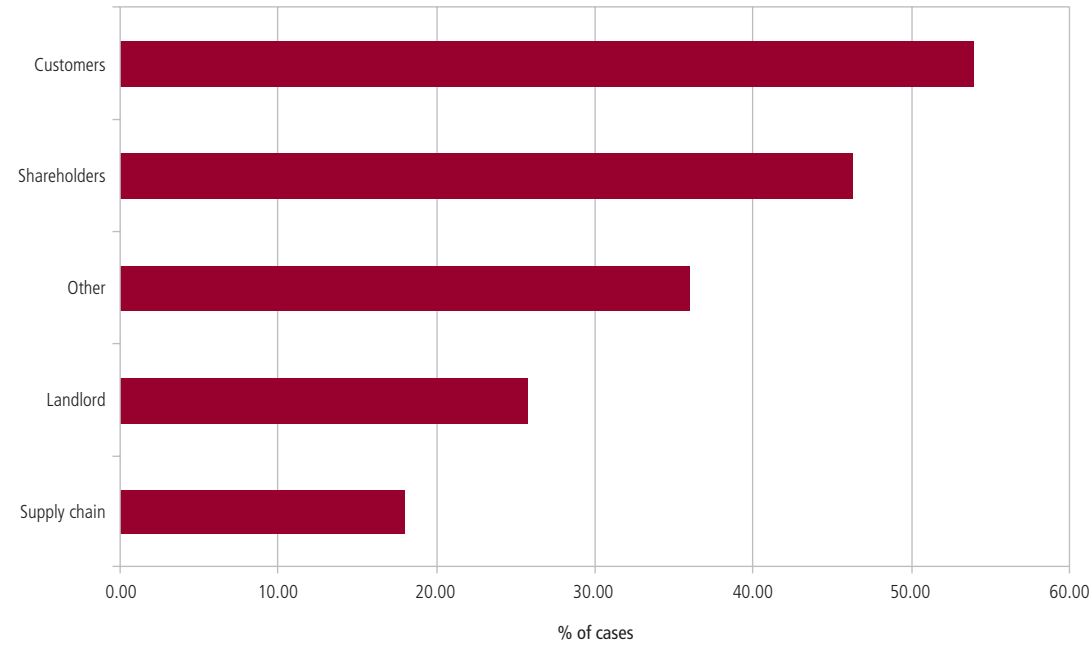
The main drivers which are creating a market for more sustainable offices are shown in Figure 3.13. Respondents believed the most important were organisational factors (a mean rating of 5.43) and demand from stakeholders (5.11), followed by legislative factors (4.94). Less important were the publicity and marketing benefits, accreditation schemes and green leases. Indeed there was general confusion from respondents over what the term 'green lease' meant in practice.

Figure 3.13: Key drivers (all respondents)



Customers (54% of cases) and shareholders (46%) were seen as the main stakeholders driving demand in the sustainable office sector as a whole (Figure 3.14)[21] with other groups (mainly employees) considered to be more important than landlords and others in the supply chain..

Figure 3.14: Key stakeholders driving demand (multiple response)



[21]The results here should be contrasted with those in Section 3.9 below, which examines the agents driving change at a company level.

Interviewees elaborated on the motivation behind different stakeholders expressing a desire for increasingly sustainable practices and the ways that companies have responded to this demand. Several interviewees suggested that shareholders are becoming more interested in sustainability for business reasons. For example:

'Shareholders recognise the business opportunity and climate change related financial services so the shareholders want us to take full value of those business opportunities' (F&BS).

Interviewees suggested that highlighting a company's sustainability credentials is also key to being able to attract clients. Several highlighted that clients are keen to ensure those companies that they work with are exercising the same care in the way they behave towards the environment and society. It is also considered important in the way that companies occupy and use real estate and the way that supplies are purchased. As one interviewee said:

'A lot of our clients now stipulate requirements and also ask questions around our environmental policy and our corporate and social responsibility, it is becoming quite key to tenders to clients' (F&BS).

This is particularly true in the financial and business services sector. As one interviewee suggested:

'When clients are looking for new products, particularly in finance and business services, if we are going to sell and advise on these products, we obviously have to walk the talk!' (F&BS)

Although these factors were considered important by interviewees, a number of other drivers, both internal to the company and externally, emerged in discussion with interviewees and were seen as being important drivers in the sector. These points are also picked up again in questions relating to company policy and include the following.

- **Company employees and their role in the workplace.** Typical responses from interviewees included:

'If they feel proud to be part of something sustainable, that makes for happy staff… It's all about them at the end of the day, it's all about making the environment right for the people to be comfortable working with you (RE&C).

Another interviewee highlighted young staff in particular as becoming more important:

'Certainly businesses like mine do recruit a number of young people, and they will, I think, start to have an increasing input into business decisions, particularly with regard to sustainability' (RE&C).

- **Leading clients and business partners by example.** Several interviewees highlighted this as a driver towards sustainability, stating that clients and partners are keen to understand that companies are behaving responsibly as well (RE&C and F&BS). This is also important when pitching for business, particularly consultancy and advisory work. One interviewee believed that clients and/or partners can drive sustainability credentials, and that includes the space that is taken (TMT).
- **Leading the way in the sector.** One interviewee summarised this by saying:

'It's about matching our aims and values as an organisation, which are very much along this route' (RE&C, owner occupied).

Further to this, there is a drive in particular sectors of the economy towards more sustainable practices. In relation to the F&BS sector, for example, one interviewee said:

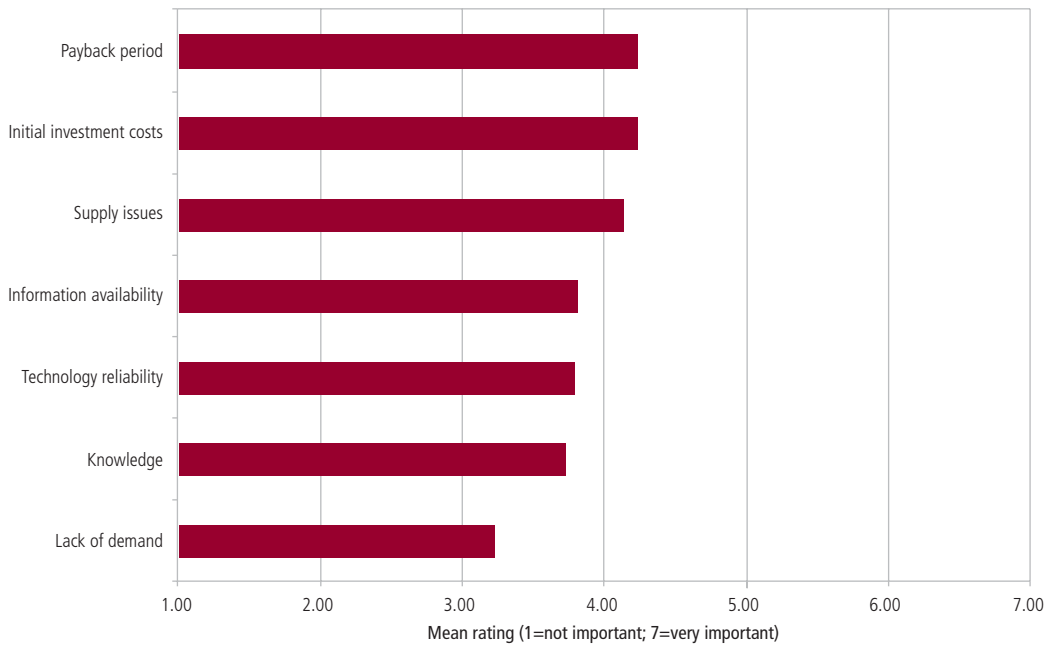
'In terms of the products and advice offered to clients, it is considered important that the company be {sic} seen to be behaving responsibly and as sustainably as possible. It would be wrong of us to be doing something else ourselves contrary to the advice we give' (F&BS).

In other instances there was strong evidence of some landlords and developers promoting sustainability in a development and occupiers selecting the office because of this.

3.8.2 Barriers

In terms of barriers to sustainability in the office sector, the most important were seen as being length of payback period (4.23), initial investment costs (4.23) and lack of supply (4.13) (Figure 3.15). Correspondingly, lack of demand was seen as being the least important barrier. However, these and other barriers are perceived as generally being less important (overall mean rating of 3.9) than the drivers identified above (overall mean of 4.5).

Figure 3.15: Key barriers in the office sector (all respondents)



The issue of cost as a perceived barrier was also highlighted by an interviewee who believed costs and profit motives currently outweighed the sustainability agenda but that this could change in the future:

'I think in the future where companies have to demonstrate their green credentials I think it will become more and more important for companies to show that they are carbon neutral companies and so forth. So I think it will become important in the future but in this point in time cost of profit are significantly more important than sustainability' (TMT)

Other barriers that were identified included the following.

- **The limitations of occupying a multi-tenanted building** were significant for one interviewee. Even occupiers who were keen to create a sustainable environment had been hampered by other tenants and other stakeholders (including landlords) who were less keen to engage with the same agenda. One interviewee identified that the difficulties of engaging with other tenants in a multi-tenanted building to achieve sustainability goals for the whole building had caused them to reduce their initial goal of BREEAM accreditation for the building to *'doing what we can, within our own space'* (F&BS).

- **The size of property project** was also considered to act as a barrier to sustainability particularly in the context of BREEAM. As one interviewee said:

  'As a company we have set ourselves a very high standard for BREEAM accreditation of all of our projects. However, for small fit-out projects like the one we now occupy, it isn't really appropriate. Because of all the other limitations of the building that you are moving into that are outside your control, it seemed that it was going to be impossible for us to get that excellent rating. Accreditation just doesn't fit with a fit-out project in a multi-occupied office building' (FB&S).

- **The age of company decision-makers and the management team** were identified as a potential barrier. One interviewee highlighted that 'older' management can act as a barrier to achieving sustainability due to a difference in approaches, with the older generation being more focused on finance issues rather than sustainability issues like younger staff (RE&C).

- **Company culture was also identified as a potential barrier.** For example one interviewee said:

  'The way in which the business has to work if it's going to preserve paper, minimise waste, minimise energy costs and that sort of thing can be quite alien to the way people work, so that whole cultural issue about how you plan that within business, can be quite difficult' (Other).

- **Different stakeholders and the nature of their interrelationships were considered in some instances to act as a barrier to sustainability.** For example, landlords and developers were identified in some instances as a barrier. One interviewee questioned the levels of knowledge of landlords when negotiating the inclusion of different elements of sustainability in a building. He said 'landlords don't understand our requirements' (F&BS). A real estate and construction sector interviewee suggested, in relation to a refurbishment project, that:

  'Some landlords they're really funny about you asking to do the whole building. They let you do your office but we want to try and find a whole message for the building, you know and recommend whether we change glass and all kinds of things, wonderful things you can do but landlords generally are very archaic and bland…. On commercial grounds, you really think, God, you're probably saving some money here, but it's still very negative on their part' (RE&C).

  Another interviewee added:

  'Developers acting with landlords do pose a barrier …. there's the question of them being pushed to provide more sustainable buildings because that's what people are demanding as opposed to them doing it of their own free will. And that I think depends on the type of developer you have; some are more enlightened than others' (RE&C, owner occupied).

  Other stakeholder relationships were also identified as acting as a potential barrier to sustainability:

  'I think it's perhaps quite often the breakdown of communication between landlords and tenants, as to what they need. We've talked for years about the circle of blame, everyone else blaming each other: "We would be sustainable, but for the investor or the landlord or the tenant or the consultant", or whatever. It's breaking out of that and saying, "Let's get on with it, let's get some sustainable schemes … that have been completed for a reasonable cost; everyone's going to get a very good return out of that, and that these will provide the blueprints for going forward" ' (F&BS).

- **Recession** could also turn out to be a major barrier. As one interviewee pointed out,

  'Once an economic downturn happens then priorities change for businesses, particularly when they are under severe pressure' (F&BS)

3.9 Sustainability and company policy

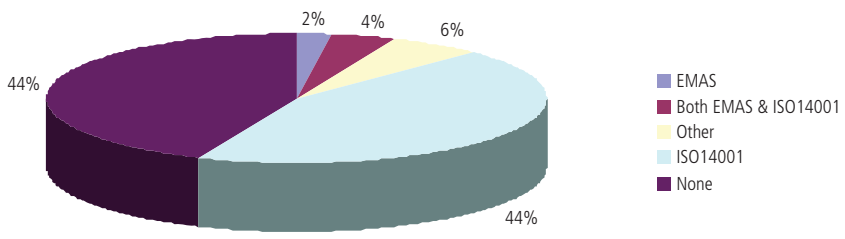
Key message:
The majority of respondents measured the overall environmental performance of their company's buildings and also had some form of Environmental Management System, primarily ISO14001, or EMAS, or both. A very large majority of companies also had a CSR policy. At a company level, employees are the main drivers of change followed by clients and customers, and others in the supply chain. Landlords were not generally seen as being strong agents for change in the sector, and there was some criticism of landlords, developers and agents from occupiers in terms of these groups' levels of engagement in the sustainability agenda.

3.9.1 Measurement and systems

Some 62% of respondents measured the overall environmental performance of their company's buildings, and of these, 58% published the data.

As Figure 3.16 also shows, 56% of respondents had some form of Environmental Management System, primarily ISO14001 or EMAS or both. Where companies had no system in place respondents mentioned costs, time, size of company (ie perceived as being too small) as being key barriers.

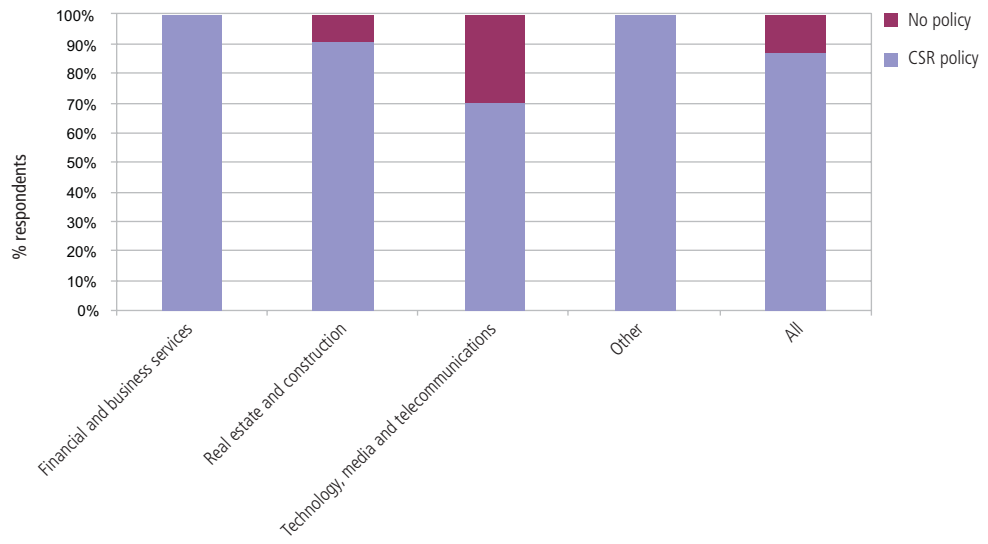
Figure 3.16: Environmental Management System



3.9.2 CSR policy

Some 90% of companies had a CSR policy, but where there was no policy in place (primarily in the TMT sector) again the key barriers were company size and cost. The business sector pattern is shown in Figure 3.17. The difference between sectors was found to be statistically significant at the 5% level using non-parametric testing (ie the TMT sector is much less likely to have a CSR policy in place). Some 70% of respondents also had a CSR co-ordinator.

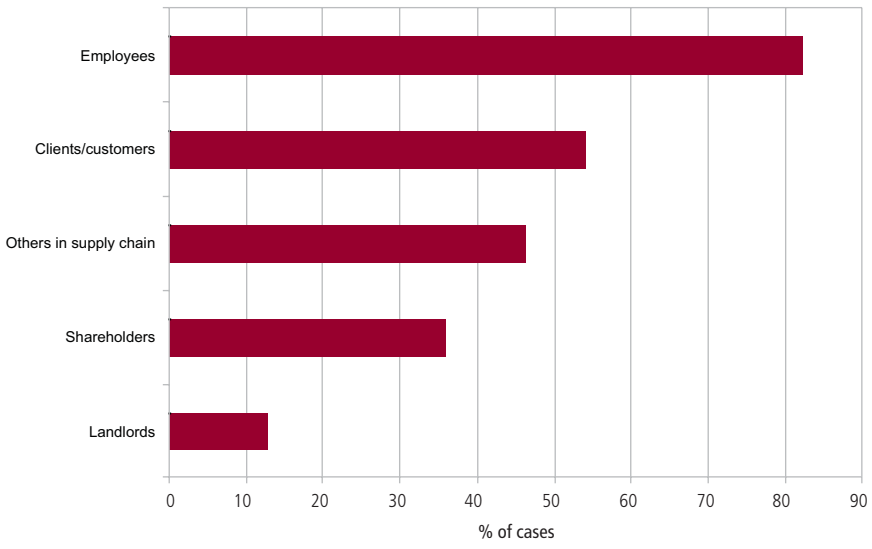
Figure 3.17: CSR policy by sector



3.9.3 Sustainability agenda at company level

As Figure 3.18 shows, employees are the main drivers of change at a company level (82% of cases), followed by clients and customers (53%), and others in the supply chain (46%). Shareholders, landlords and others were considered less important. This should be contrasted with Figure 1.20, where respondents believed the role of shareholders was more important in driving change in the sustainable office sector.

Figure 3.18: Who is driving the sustainability agenda at company level? (multiple response)



Externally the desire to become more sustainable goes both up and down the supply chain, and the evidence from the interviews suggests that there are strong drives from clients, customers and suppliers (F&BS). However, two interviewees highlighted that the supply chain would only engage 'if they are driven by others and will only engage if specific requirements are put to them' (RE&C, and F&BS). One interviewee suggested that suppliers:

'…are not proactive but they react very positively when you engage with them (F&BS)

Interviewees were divided over their experiences of landlords aspiring to sustainability. Two interviewees (two F&BS companies) suggested that they were driving landlords, rather than the landlords driving the company: as one interviewee put it:

'It's the other way round – we demand our landlords to be sustainable!' (F&BS)

Another suggested that the drive towards sustainability is related to the particular building that the company occupies:

'The landlord has really focused on sustainability with this large landmark building. It's a very large building with a particular regime, eg relating to recycling, which every tenant in the building must comply with to do with the BREEAM rating. There are lease obligations which clearly do represent a joint commitment between the landlord and the tenant' (F&BS).

Other interviewees management and identified employees as key drives towards sustainable practices through a desire for the company to operate more sustainably. It was considered that company action on sustainability can be instrumental in the ability of the company to attract new employees. As two interviewees suggested, it is important

'in the form of people joining the business; it seems to be of increasing relevance to them, in being able to attract the right people' (F&BS).

Another interviewee said,

'They come to us specifically because we have a good reputation in practicing what we preach' (Other)

Finally, several respondents believed that company culture was accepted as being a driving force and first mover advantage could act as a marketing tool, especially in the TMT sector:

'As an internal management team, {and} as a board of directors we have considered whether or not to play the 'green card' and become the first company in our sector to be the greenest player in our space and go down the green route. But that's just a marketing tool as opposed to, in an altruistic way, of being a green company. It's purely from a commercial perspective not wanting to be whiter than white as it were as a company, used purely for a commercial perspective to try and make more money'. (TMT)

4 CASE STUDY RESULTS

4.1 Introduction

This part of the research report presents the findings of a series of in depth face-to-face interviews with a variety of stakeholders in the office relocations of six different companies and five different buildings. The aims of the case studies are to:

- Identify and summarise the key features of different types of exemplar buildings;
- Explore the process of occupier decision-making, the role of different stakeholders in the process and the role that sustainability plays in the process; and
- Examine the post-occupancy perceptions and experiences of decision makers and occupiers of sustainable office buildings.

The five case studies are summarised in Table 4.1. All moves were made during the period late-2007 to mid-2008.

Table 4.1: Case study summary

Building case study code	Location	Company (occupier) code	Company sector	Leased?	New build?	BREEAM?
A	City Place House, London	A	Financial and Business Services	Leased	Refurbishment	No
B	2 New Street Square, London	B	Financial and Business Services	Leased	New	BREEAM Excellent
C	55 Baker Street, London	C1, C2	Real Estate and Construction (C1) Financial and Business Services (C2)[22]	Leased	Reconstruction	BREEAM Excellent
D	Carlton House Studios, Southampton	D	Other	Owner-occupied	New	BREEAM Very good
E	Friars House, Manor House Drive, Coventry	E	Other	Leased	New	No

Further details of Case Studies C, D and E can be found in Appendix 5. The case studies were selected to be as representative as possible of the overall telephone-based sample, and so include refurbished and new properties, and also buildings located in London and outside London.

In total, some 37 interviews were conducted for this phase of the research. A summary of the interviewees by job role is shown in Appendix 6.

[22]No employee interviews were carried out with this company.

4 CASE STUDY RESULTS

This section of the report presents the synthesised results of the research, illustrating particular points through the use of quotes from the interviewees and attempting to draw comparisons where this is possible and valid.
The section therefore covers the following areas:

- Background and context to the relocations.
- Factors influencing the initial decision to move.
- Overall importance of sustainability in the final choice of office.
- Technical aspects of sustainability and cost.
- Impacts of sustainability issues on space, people and resources.
- Employee perceptions of sustainability in the building.

Finally, the overall lessons learned from the five contrasting case studies are explored in terms of 'best practice'.

4.2 Background and overview of the buildings

4.2.1 Case study A

Case study building A, City Place House, is a multi-tenanted office building in the City of London built in 1988 that has recently undergone refurbishment. Company A took 30,000 sq ft of space in early 2008 in City Place House which equates to two floors of the whole building. Company A is a property investment management company which manages assets on behalf of multiple property investment funds, and the building occupied by Company A is one such asset. Company A engaged with the building after it had been refurbished by the landlord, undertaking its own fit out of the space. Effectively the decision to locate was driven by the requirement for two arms of the business to be relocated in separate buildings.

4.2.2 Case study B

In contrast, case study B (2 New Street Square, London) involved a move by Company B, which was designed to consolidate its London businesses into one central location. The project forms a 'campus' of five buildings in total; comprising of one large new-build project (actually two buildings) built on a brownfield site in close geographical proximity to three smaller buildings (all previously occupied by the company). The latter underwent a simultaneous but phased refurbishment whilst the buildings were fully occupied. The new build space is the primary focus of this case study, it is 225,000 sq ft of space.

4.2.3 Case study C

Case study C is 55 Baker Street, a major (930,000 sq ft) mixed use reconstruction by London and Regional of the former Marks & Spencer 1950s-built headquarters building in London, located between Marylebone and Oxford Street. Predominantly based on office space (but also with restaurant space and residential use), the building is split into a series of solidly designed stone-clad blocks and separated by sections of lattice-like glass with triangular forms, a pattern which is also carried through into the facade design, based on three glass 'masks' which span the voids between the existing blocks to create a unified and new façade. The building uses chilled beam technology instead of conventional fan coil air conditioning, and instead of demolishing the existing building, London and Regional and architecture firm, Make, decided to leave most of the building in place and only refurbish the interior, therefore saving energy and materials, with about 50% of the existing building fabric remaining. The foyer's 12 columns have been replaced with a sculptural 'tree-like' (or 'bridge-like') supporting structure made by Watts in Bolton, which is on castors, allowing it to move with the building. The building has a BREEAM 'excellent' rating. Companies C1 and C2 took space in the building over the period 2007 to 2008.

4.2.4 Case study D

Case study D is Carlton House Studios, a 17,513 sq ft new build office on two floors with an additional ground floor canteen. It is located in a rural location near Southampton at the headquarters campus of Company D, an engineering consultancy firm with a strong commitment to sustainability. Carlton House was completed in 2004 with a brief to create a sustainable office building with high design, given its National Park location and existing buildings, but at an equivalent costs to a standard office build.

The office floors are relatively column free and make use of exposed concrete for thermal storage. Where columns do occur, these are steel, and perimeter columns are concealed within external timber framed walls. Cooling is via a low pressure mechanical ventilation system attached to the exposed mass of the structural floor slabs. There are extensive north-lights to the upper floor allowing for good natural light. The entrance building which is double height is of load bearing masonry construction with steel frames.

The most significant aspect of the building is its highly insulated breathable wall construction. This also allowed for the use of horizontally banded windows that provide a connection to the surrounding countryside.

The building has a BREEAM 'very good' rating and has received two significant awards – the 2005 Building Services Award for Office Building of the Year and The David Alsop Award (Structural Engineers Institute Sustainability Award) 2005 for an outstanding structure demonstrating a commitment to sustainability and respect for the environment in which it is built.

4.2.5 Case study E

Case study E is one and a half floors of Friars House, a multi-tenanted office building situated on the ring road bordering Coventry city centre. Company E is the Coventry division of an international engineering consultancy firm. The move was designed to consolidate their Coventry based workforce into one location and provide sufficient additional space to enable expansion in the near future. The 10 storey office building was constructed in 1999. The owner-occupier completely refurbished their space which totals 10,533 sq ft, prior to taking up occupation in March 2008. Their commitment to sustainability has been constrained by the building and location. They have only introduced energy saving equipment in the form of motion sensor lighting and hot water heating systems in the kitchen to reduce their energy use.

4.3 Factors influencing the initial decision to move

In terms of the driving force for the relocations, as the telephone survey has already suggested, the impetus has frequently come from a desire to relocate in order to consolidate the business (Table 4.3). As one interviewee in case study B put it:

'It was an opportunity to consolidate our London businesses into one central location essentially. We have three large buildings in that area and another very large one about just under a mile away and it was a bit of a pain to split our business in two so we wanted to basically get it all together. So we have now got a campus of four buildings all within fifty yards of each other' (head of property)

Table 4.3: Summary of reasons for move (source: telephone survey and face to face interviews)

Building case study	Business reasons for move (company)
A	Lease expiry, need for superior space (due to changing business model and improving staff retention) and proximity to Cannon Street station (Company A)
B	Consolidate business into a campus of four buildings (Company B)
C	Business developed on piecemeal basis, leases on different offices expiring, good opportunity to consolidate space (Company C1) Old, dilapidated building and lease expiry. Consolidation and longstanding association with West End (Company C2)
D	Expansion of business. Changing way of operating by co-locating business teams. Looked at relocating but have occupied site for nearly 40 years. Purchase of freehold allowed for finance of new build office on site (Company D)
E	Expansion of business (Company E)

Space requirements were also very important in several of the decisions to move and their importance in the brief provided to agents. In case study A, for example, the operations manager of Company A was responsible for the relocation process from the outset, and suggested space requirements were a key consideration saying:

'We set new ideals for the space: our ideal was to have one very large floor or two very large floors so we could get the whole organisation together horizontally stacked rather than vertically stacked' (operations director).

The same company also wanted to occupy open plan space, which was felt to have a significant influence on company cohesion and communication and subsequently, effective working practices, and so these were the fundamental requirements of the brief. In the case of this company it was also considered important that the company met its sustainability target (as set out in its sustainability report) to:

'Ensure the Company's Head Office move to [Building A] implements sustainable fit-out options, thereby minimising the baseline footprint of own office occupation, (director of sustainability).

Ultimately because of a group decision to accommodate about a third of its staff at its head office the property search for Company A was scaled down from 40,000 sq ft to 30,000 sq ft, and the location limited to a 10 minute walking distance from Cannon Street Station. This decision was also taken for logistical, environmental and cost reasons and to reduce the potential for a feeling of disconnection between the two buildings. As one interviewee stated:

'We didn't want people having to make journeys that cost money; having taxis dodging around between two buildings would be daft for both the environment and for our bottom line'.

However, there were some perceived disadvantages with the location in case study A. As one interviewee said:

'In terms of commuting, because a lot of people come into Liverpool Street, Kings Cross, certainly a lot of our support staff comes in from Essex and Kent, so you can come into Canon Street and you can come into Liverpool Street. I think it works quite well. The only people losing are those coming in from the west, like Reading, where you come into Paddington and you have to 'hack' right over here' (director of asset management).

The space that Company A wanted to occupy had just undergone a Cat A fit out by the landlord. As the head of property development pointed out, the space had 'ceilings, air conditioning, flooring, carpets, all the basics were there, but no internal fit', which is a common level of fit out for office space in the City. It was therefore very important to find a building that fitted with company culture. In Company A one interviewee commented:

'Although the building [X] was not the greatest, we were really good at minimising our environmental impact. We worked really hard at this – we had a recycling rate of about 90 percent, and reduced our electricity and gas consumption too. The culture amongst staff was really good in terms of being environmentally aware. We didn't want to lose that in the move to building A; that was absolutely critical' (director of sustainability).

This served to highlight the already strong sustainability credentials of the company and a specialist firm of architects was chosen to oversee the sustainable fit-out and to help define the brief.

In contrast, case study building B was a new build, where the priorities were principally about integrating the company and although the building was a BREEAM excellent building sustainability had not been a primary focus in the original decision to take the building. As one interviewee put it in Company B:

'I think we were conscious, and certainly our landlords and the developers were conscious of the sustainability and the way the building was actually constructed and were sensitive to that. And we were certainly glad that we were able to achieve a fairly high BREEAM standard. Was it instrumental in the decision? To be honest, no, not at that time. It would be now and the buildings we are looking at now it definitely is'. (Partner)

As another interviewee in Company B put it there was an element of 'happenstance' in the opportunity to move to the particular building:

'It just happened to be perfect timing and perfect location. These were the principal things. The building was offered to us and we took the opportunity to integrate our company into one campus of buildings. It was also about flexibility of the space, it suited our client base, it is geographically better than the previous location'. (director of property)

Moving was also driven by a desire to move from what was a dilapidated building (Company C2, case study C), and in fact the initial approach came from the developer (London and Regional) for this particular building.

4.4 Developing the brief for the choice of office

In terms of scoping out the detail of the brief, consultation with a range of company stakeholders was important. For example, in defining the brief for Company B, consultation was considered to be very important: consultants were engaged and started a process of consultation with employees, through a formalised process, called 'Project X'. This was considered by one interviewee to be:

'…a very controlled and well informed internal structure which enabled the company to issue its own, comprehensive brief, (fit out manager).

Another interviewee in the same company said:

'Project X was all about internal consultation. We used a lot of the information that came out of feedback from the staff to then develop what they'd integrate in the buildings which I think has proven its dividends'.

This consultation process produced a briefing document which enabled the consultants to interpret and clarify the client's requirements.

Communication and consultation was also felt to be important in Company C1:

'But as part of the process, we had a communications plan and obviously we had communications representatives that sat on our project board as well. So in addition to the feedback that we would give normally…{there was} a formal communications process, sort of web-based messages, staff briefings, staff talks and things like that, (Partner).

Full consultation was also a feature of case study D As one interviewee put it:

'The design was …managed by a committee, {and} the committee was represented by a partner from each of the division units within C because the offices are split up into the various disciplines of an accounting firm in terms of; compliance, tax, corporate finance, PR', (head of workplace and projects).

Similarly, once Company E had chosen the building, consultation with staff on the design of their office space was an important feature in the refurbishment process. As the building engineer explained:

'A member from each team gave a wish list of what they would like to see, and the director went through it.' (building engineer).

For the architect representative in case study C, building an inclusive team was key to the project's success:

'I think any successful building, is {based on} that relationship between the whole team: the client, the architect, the design to the construction, and it's part of our responsibility to enthuse and to drive that. … And we created something different. … this building was 98 percent ..let before it was finished'.

Case study D (Company D) was very different from the other case studies because it was an owner-occupied property. In the other case studies (A, B and C) the key actors in the process were the architect, all groups on the occupier side (including working practice groups, client services, space planning group, director of property, operations manager), fit out consultant, M&E consultant and where appropriate, the landlord/developer. In case study D the owner-occupier were clients, owners, contractors/engineers and sole occupier, and because of this they were pivotal to directing the process. Employees (as occupants) were brought into the process at a later stage, and about half way through the construction process they were involved in detailed discussions about layout and other related factors. The owner/developer representative in case study D suggested that the importance of the building reflecting the company's values and way of working:

'Because we were an owner-developer, we owned the land, our priority was really to reflect the style of the business that we we're trying to operate. And at the time we were growing the business and changing the way we were operating so it was really important to get across in this building a sense of good quality design, as much of the research elements as possible that we could incorporate into the building because we were the designers as well.'

The issue of demonstrating that sustainable buildings are not necessarily more expensive than conventional buildings was also important. This was particularly an issue to the agents when Company D was considering a move as the owner/developer representative in case study D explains:

'The agents valued this development … at the beginning of the process and they valued it based on the rental at about £12 a square foot, something like that… By the time we came through to completing this building and moving in we had rented the speculative office as well for £16 a square foot. And on completion they valued this at £16.50 a square foot. So during the course of the construction period their comprehension of what we were doing had changed and now this building is used fairly regularly by agents that bring people round'.

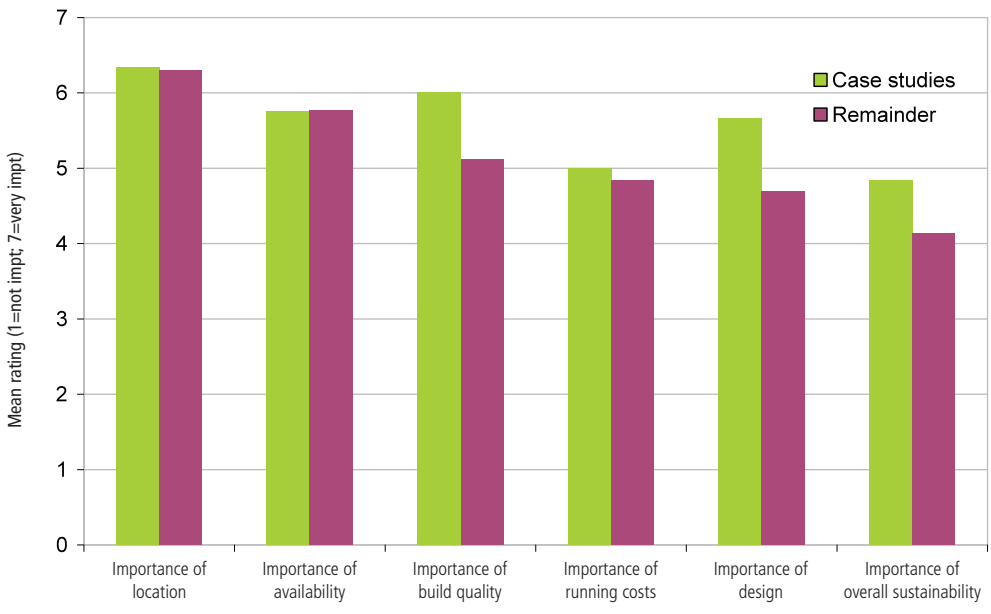
Company E's (case study E) decision to relocate was driven partly by the need to consolidate their Coventry based workforce under one roof and therefore space was a key driver in their decision to relocate. The space planner involved in their relocation explained:

'The main brief for us was to maintain the growth of the Coventry office. To incorporate the numbers of staff that they wanted in here…and tied to that obviously I think was the link to staying close to the key client. So that was the two main drivers basically, the location and the size of the building available. Obviously tied to that was to meet the budget we were set as well' (space planner).

4.5 Overall importance of sustainability in the final choice of office

The data from the telephone survey suggests that in the case study group (five buildings with six occupiers in total) sustainability was relatively more important in the final decision to take a particular building than it was for other respondents in the remainder of the full telephone sample. This is illustrated in Figure 4.1, which shows the case study buildings in comparison with the other properties in the telephone sample. Although location, availability and building quality are still the three most important factors, running costs, design and overall sustainability are all relatively more important for the case studies than in the rest of the full sample.

Figure 4.1: Relative importance of sustainability in case studies compared with other buildings ('remainder') in full telephone survey.



4.6 Technical and operational aspects of sustainability and their cost

4.6.1 Building certification and level of engagement

In case study A there was a strong desire to gain a BREEAM rating for the building. It is a matter of policy for this company that all property investments have a target of at least BREEAM 'very good' or 'excellent' and these assessments are carried out as a matter of course. However these attempts were thwarted because BREEAM did not operate a rating scheme for part-buildings (or multi-tenanted building). It was considered disappointing that the company were unable to see this through to achieve an official rating in the building they actually occupy, although this was felt to be due to a lack of availability of a suitable tool rather than a lack of motivation on behalf of the company.

An informal BREEAM assessment was therefore undertaken on the space, and the building achieved a 'good' rating: the problem being the nature of the building fabric and its efficiency rather than the fit out itself. The operations director suggested that to:

'…have gone to the next level, and ideally to have gone to 'excellent' would have meant ripping out most of the kit in the building, which clearly would have been impossible in a multi-tenanted building. But, given the space, I think we went as far as we sensibly could'.

Similarly in Company C2 (case study C) the organisation was keen to obtain a BREEAM accreditation for its fit out, but this was not possible.

Both companies A and B were constrained by the stage at which they engaged with the building: Company A engaged post Cat. A refurbishment, so were only able to influence the fit out, and Company B also identified a limited ability to influence the sustainability aspects of the building itself. This was because the building had already gone through the initial design stages and had already achieved planning permission when the company became engaged with the building. In this sense the point at which engagement with the building occurs is vital if a sustainable end result is to be produced. The director of property in Company A suggested that:

'There are things that we did influence… but we were coming in quite late in the process, the designs were done and out to tender…to try and unravel some of that is quite difficult'.

As described earlier, Company A sought to achieve sustainability through the fit out. For example, the inclusion of staff changing facilities and showers in the fit out, although expensive, was considered very important in order to encourage sustainable behaviour and help staff cycling to and from work.

4.6.2 Sustainable features and costs

As to the more technical aspects of the sustainable fit out, the company is also pleased with the outcome in sustainability terms. The director for sustainability suggested that:

'The lights are sensors, taps are on sensors, the wood is all from sustainable sources, and our electricity comes from Scottish and Southern, it's all green electricity... it's a combined heat and power system, so it's not completely renewable, but it's green under the terms of government'.

However, one area highlighted by the architect as a trade off between 'greenness' and pragmatism was the paint used in the fit out, suggesting:

'The paint was an interesting one; the eco paints that are around at the moment are just not sustainable. Environmentally they may be good but they take longer to dry and cost significantly more in time and effort, the quality isn't as good and therefore they aren't sustainable in comparison to standard paints. The most we did with the paint was to manage our waste – have it taken off site and disposed of effectively'.

In case study B, there were aspects that Company B wanted to include in the sustainability elements of the brief but had to be excluded for cost reasons or organisational reasons. For example, one interviewee said:

'We were not prepared to put our partners in open planned space and that drives a certain design of air conditioning. If we were able to have a totally open environment you can create a more efficient system. The other thing that we looked at was the generation of solar powered electricity but we had to have more than the entire building covered in solar panels in order to drive it. We were able to do more by buying our electricity from sources that generate more efficiently than we ever could for the building; this is the direction we took' (director of property).

Again one interviewee (fit-out manager) suggested the cost issues of sustainability had been important:

'There are too many commercial influences to allow sustainability or environmental considerations to be adopted wholesale without question, because there's always a cost payoff… Were the project to start now, I think the project will turn out a little differently. However, some of the measures which are applied to their developments nowadays, grey water usage for example, could not have been applied to this development without huge investment. It's commercially driven'.

In Company B the main emphasis on sustainability was through the use of building management systems. The M&E consultant suggested that:

'The company has made lots of changes in the way in which central systems are run, operated and controlled and has pushed very hard for all sorts of monitoring throughout the whole office environment. All areas of the building are monitored. We're looking at resource use, for gas, water and electricity, light and air conditioning systems…Everything is centralised and the BMS system is a fully automatic or electronic management system which monitors on-floor conditions centrally, brings up any alarms that may get outside some condition thresholds. There are now limitations to the extent that employees can influence their environment.'

Case study C involved a major reconstruction and in fact the architect representative for the project suggested:

'Because it was an existing building, there was a feeling that if we didn't do something special then it would be perceived as a refurbishment on the market. By doing this it just takes it to somewhere else, there's a much more… it's a much more engaging building with it's surroundings'.

In case study C chilled beam technology had been installed which is quieter and more energy efficient than fan coil units. The occupiers were generally satisfied with the technology, after initial concerns. As one interviewee put it (Company C1):

'There were relatively few examples of chilled ceiling systems around and about I think XXX has got one on XXX Street and after that I sort of struggled to think of some other chilled buildings with a chilled beam system and so from my perspective it was well, this is green technology, it is relatively new, but we don't see it everywhere so perhaps we are a little bit suspicious of that' (partner).

Similarly an interviewee in Company C2 said:

'The great benefit of the chilled beams is that they're quiet and need very little maintenance other than for the control and they seem to work very well as well. I don't believe anybody has complained about the draught' (head of workplaces and projects).

The technology also has implications for the divisibility of space within the grid of the building given that the chilled beam system uses the existing beam structures (so there are only set points at which the beam can be sub-divided). Ultimately the same interviewee suggested that sustainability was important in the building in a number of interconnected ways:

'Well, I think it's a combination of different technologies. It is a combination of the way that the building was constructed… It's the way that we approached our fit-out in terms of making sure we were using sustainable products in our fit outs as well. But you know, the energy-efficiency hopefully in terms of the chilled beam system, is one that we'll live to benefit from'.

As to the overall costs of sustainability, the developer representative in case study C suggested that:

'…and then the air conditioning system, if you used chilled beams... one – it is far cheaper to run so your tenant in today's economic climate will turn around and say, 'Well, how much is the cost of running my building? And I can prove to them that it's 25% cheaper because you've got no moving parts in a chilled beam, and then they'll take it… If it costs me an extra 1 or so percent to have chilled beams over air conditioning then it's a lot, but the {payback} is far better because your service charge is lower. And if your service charge is lower, your rents can be higher'.

The architect representative for case study C also placed emphasis on the fact that there was just one set of plant for the building which made the end result more sustainable, and that the overall context of the building in its community was a vital aspect of its sustainability. Sourcing local materials had also been very important. Moreover, 'future proofing' the building had been an important consideration:

'Also, because of the way the glazing is, should the London market heaven forbid, ever go to natural ventilation like they do on the continent, then this building will be very easily converted with the glazing, which is all 'openable'. It's a simple adjustment of changing the handles and it can become a naturally ventilated building'.

In case study D, the most important sustainability feature was the energy efficient fabric of the building. The envelope was a key issue, with 36% of costs paid for the superstructure (£807,900). Company D implemented a concept called the 'Commercial Green' approach, which is about minimising energy loss through a super-insulated breathable membrane. Glazing is optimised to ensure good natural light and minimise solar gain and glare inside the building. The emphasis is on relatively low-tech solutions, focusing on demand and reducing carbon through reduced energy demand. The building probably took longer to plan and design than a conventional building with a substantial amount of modelling by building scientists, and with procurement of (recycled) materials proving difficult. The owner/developer representative explained:

'Another area that was very different was around the specification area… we were trying to select materials for this development that were not only named products but were coming from a particular place and would be delivered in a certain way which kind of drove us down the partnering form of procurement where we could sit with a contractor and work together in describing how and where we were going to source things from. That still hasn't been addressed in the industry'.

The philosophy of sustainability not impacting on overall cost was implemented through relatively high costs on the building envelope being offset elsewhere. The final build cost was £128 psf, which is equivalent to a medium level office quoted (at the time of construction) by Gardiner and Theobald. Choices were made about cost and technology at the time in order to achieve this aim. However, the building was future-proofed to ensure that additional technologies could be introduced later on if a financial return looked more favourable, as the technical expert for case study D explained:

'We tried to use ground source heat pumps for this building, but at the time that we did it there was only one person that was doing this and the ground condition risk presented a possible bill of £30,000-£40,000 and it was already £30,000-£40,000 more than an alternative system so we had to discard that. However, we sized the plant rooms up to accommodate the kit we would need to put it back in and…so that's something which we will come back to'.

Company E's plans were constrained by the existing building and their budget which meant that their ability to incorporate sustainability into their refurbishment was limited. The building engineer explained that they had to use:

'…value engineering here and there to swap things so that we could incorporate the motion sensitive lights and things like that. For example we have our own specification for carpet and wall paper which is quite expensive so we swapped the type of carpet we installed to save money on that which allowed us to do other measures that we wanted to, so there was a bit of tweaking of the budget to make things work'.

Other sustainable features they wanted to incorporate have not been possible due to the lack of facilities provided by the landlord:

'We wanted recycling facilities, but they haven't got the space to incorporate any of that sort of thing at the moment. So we are liaising with them [the landlord] to see if we can improve that…we do produce an awful lot of paper in the work that we do, and at the moment there's no recycling facilities here on the site, so…it's frustrating' (building engineer).

4.7 Impacts of sustainability issues on space, people and resources

The key benefits from the range of moves examined here can be compared in terms of the impacts on space, people and resources (Table 4.5).

Table 4.5: Summary of key impacts of the moves

Building case study	Key sustainability features	Space	People	Resources
A	Sustainable fit out	More flexible, open plan space	Tidy desk policy Cyclist and runner facilities Staff integration and networking	Reduction in filing storage Recycling
B	BMS (including fully intelligent lighting control)	Flexible space (with open plan and cellular space)	Hot desking Space sharing (70%-90% utilisation rates) Staff integration Floor managers Networking Reception pods	Reduction in filing storage Recycling
C	Chilled beams Sustainable fit outs Energy efficient	Good levels of daylight Open plan Client-friendly	Document management systems Distributed printing	Recycling Central waste
D	Energy efficient building fabric Low pressure mechanical ventilation system Sustainable fit out	Open plan space Good levels of daylight	Team integration Staff canteen Tidy desk policy Transport monitoring Pooled cars	EMS Waste management Recycling
E	BMS, motion sensor lighting, mechanical ventilation,	Flexible open plan space with good levels of daylight	Space sharing, staff integration and networking, staff canteen, cyclist and runner facilities	None, pushing landlords for recycling facilities

For example, open plan space has been a key factor in the perceived success of the relocation for Companies A, C and E. As the director of sustainability in Company A said:

'In the previous building (building X), we were actually quite isolated physically, so for us it's been fantastic to be in an open plan office…we're next to the development team, the risk management compliance team and close to the asset management teams. So we're now getting far more interaction with people which is exactly what you want in a sustainability team'.

This was also the case in case study D, where the move was to open plan from cellular offices because larger teams of people were being brought together. This changed the working culture. There were briefing sessions to explain why this been had done this and to set out the 'local rules'. As one interviewee put it:

'We brought together transport planners, ecologists, development planners, infrastructure engineers, flood . . . all those sorts of people into one place together. . . It did change the culture of the firm. But it certainly helps having spaces, open spaces, without any cellular spaces in there that's interrupting them for … teams of 60 and 70 people [it] has fundamentally changed the way that we think about our spaces and the way we set our teams up'.

Company E's brief also contained a requirement for flexible space which they could 'fit out' to suit their requirements. They completely gutted two floors of the building and redesigned their office space which centred on the need for an open plan office layout to enable staff to interact with each other, which was felt to be a key feature for achieving effective working practices. As the space planner explained:

'What we wanted was open plan offices because there are certain members of staff we have to mix with each other and work across disciplines within the office.'

However, open plan layout is not without its issues. For case study E, the technical representative explains:

'For example it's really important that this building looks like a showroom, to some degree, so we can show what's going on. We can show clients our people at work, show them in a sustainable environment and that means that they [the staff] can't be as messy as they would like, they can't leave things lying around as much as they like…and so I think that a sustainable building puts [some constraints] on you.'

In case study C, both occupiers commented on the fact that because chilled beam technology was relatively new that there was a learning process in understanding the technology and how it worked (ie a conventional AC system blows air). For example:

'…the core building was put together in 1957, so clearly there are some limitations on the envelope of the building, how that performs. It seems to me to be a very comfortable, very stable building. There have been a couple of periods of time where it has been too hot or too cold, but I think with a complex system like you have here it is only understandable it is going to take a while to actually bed in' (head of workplaces and projects, Company C2).

For the architect representative in the same case study:

'The good thing about the chilled beams is that they are very easy to use because everything is done from a central corridor rather than from the space itself, so it's very easy to adjust it. I think people were expecting it to be more difficult. I think sometimes the difficulties with some sustainable features that were put in, is that they are rather too complex. Their interface with the user is too complex and (people) haven't got the time or they haven't got the urge or they don't understand it properly, they don't understand the consequences of what they're doing. So here it's been deliberately funded to keep the interface as simple as possible for the user. Just behind it there's a whole range of complex software'.

Moreover, basic features such as natural daylight were seen as a huge improvement in the same building:

'I think it's fair to say that the working environment at Baker Street is a thousand percent better than it was. Where we worked before, some people hadn't seen natural light in 10 years in their offices' (partner, Company C1).

Similar views were held by Company C2. As one interviewee put it:

'From the perspective of the environment and the working environment, it is light years ahead of where we were in number eight Baker Street, in terms of the control of the air conditioning for the temperatures, the lighting is much better, it's better controlled. So, I think we are getting the benefits of coming into a new development' (head of workplaces and projects).

In case study D technical controls especially for lighting were too sensitive. As one interviewee put it:

'We had light sensors that turned our lights on and off . . . great idea but the trouble is that on a sunny day the clouds go over and everybody's going like this, and then the cloud goes, lights go off and they're shaking their heads again. So we had to actually remove the light sensor.'

In several instances there had been a strong move to use the move as the impetus for re-enforcing cultural change and to encourage more sustainable behaviour. Company A in case study A had implemented a tidy desk policy and a reduction in filing storage. Company B had focused attention on desk utilisation. As the director of property put it in company:

'We've still got about the same amount of floor space, we've still got about the same number of desks, but we have increased the utilisation of the space. We used to run at 50% to 70% utilisation and we now run at 70% to 90% utilisation of desks. That is a big win financially but there are also other knock on effects, including environmental credentials. It is just using the building better. It doesn't mean anyone has less space per desk; in fact, in many areas we're actually giving more desk space with more square footage per desk. We've just increased utilisation by increasing the number of people who share them.'

Changes to a recycling culture were common. In Company C1, one interviewee commented:

'I think from the recycling thing we've made a special effort with regards to how we operate and how we recycle our energy efficiently in our systems. Everyone has a recycling tray on their desk which gets cleared every night. So from that perspective all the paper that used to be thrown in the bin doesn't exist' (partner).

Company A had also focused on the people element of the fit out as well as the fabric used in the fit out itself. One area where this is clear is the provision of facilities for cyclists and runners (ie showers and changing facilities) and also the gym for sole use of company staff. Both were an important aspect of the fit out, with several interviewees highlighting it as a bonus for employees.

The PR and marketing benefits of a sustainable building were also recognised. As one interviewee in Company C1 commented:

'I think, you know, it comes through, one; the quality of the fit out and the way we've integrated that within the building system. But also, the base building specification has been very well-received by almost all of our clients that come to the space. They've been very impressed in looking at the way we've integrated our systems and our environmental elements together with the landlord. We have a huge number of people who now come on bicycle to the building as well' (Partner).

Similarly in Company C2:

'I think the client reception, or the 'libido' of the business has improved in that they've see the investment. I think … people do judge a book by its cover to a certain extent' (head of workplaces and projects).

As far as case study D is concerned, the company specialises in environmental engineering services, so it is a strong cultural element within the company. It has, however, resulted in significant additional benefits as the owner/developer representative explains:

'I think the whole concept of it being a friendly place to work and it being a demonstration of our skills. It's freedom of movement, freedom of thinking. It's been massively successful and for us as a marketing tool.

This building won the Chartered Institute of Building Service Engineers Office of the Year in 2005 and it won the Sustainability award from the Structural Engineers Institute in 2005 as well so it's been brilliant for us to say, 'Look what we can do.' Not just for staff but for recruits... it's helped us recruit people … and it's helped us secure work from architects that were after something similar and clients as well… but that final piece is the biggest one for us because that's the differentiator for us in our market place.'

4.8 Employee perceptions of sustainability in the building

Employee perceptions were also examined at two levels: firstly through questions posed to senior decisions-makers; and secondly to employees themselves.

4.8.1 Senior decision-makers

There was some evidence of the use of post-occupancy evaluation (POE) in one case study (C). As one interviewee put it:

'We did post the sort of 'move-ins', were done sort of a month after the move in. We haven't done any other subsequent stuff. We'll probably do something after a year I would of thought' (partner).

Company C2 was also considering POE:

'In the present climate people's focus has moved elsewhere, we are considering post-occupant evaluation with getting feedback from people, but looking just to see people's utilisations of the space' (head of workplaces and projects).

In case study D, the British Council of Offices POE carried out amongst employees scored very highly compared to norms. A series of lunchtime discussion meetings and groups have been set up across the building. Detailed monitoring of building technical performance to target levels is ongoing. The internal stakeholder representative pointed out that employee behaviour in occupation is critical to whether a building is sustainable or not:

'One of the things that I've learnt through it all is that you can do the most sustainable building in the world but if you have a culture that leaves all the computers and all of lights on overnight then you might as well pack up and go home... meaning that education becomes far more important than design… If you can't affect the way people behave to make them change then you might as well not bother with all these sustainable buildings actually. So that's, I think that's the bit that we haven't fully got to grips with here even though we have a highly educated and highly flexible group of people here, even here, that's hard.

The same interviewee commented on POE:

'We've got a highly critical set of occupants because of the profession that they're in and we were expecting to get a fair amount of negative... But we had a post occupancy study done and actually we scored very, very well in comparison to norms. And actually very well in comparison to people that have come from air conditioned, and or been in air conditioned, sort of more speculative type environments.'

Company E were also undertaking POE but had no figures available yet.

4.8.2 Employees

An overall summary of responses from 15 face-to-face interviews are grouped under the following headings.

4.8.2.1 Heating and cooling

Generally this was found to be within an adequate band although employees from all companies recognised that it is impossible to please everyone.

4.8.2.2 Ventilation during the summer months

Ventilation in all buildings was deemed to be adequate but most companies have only been in their respective buildings for a single summer which this year (2008) happened to colder than average so the systems still have not seen a thorough testing. Company E however bucked the trend with an air conditioning system that was too efficient and had faulty temperature gauges so levels of comfort never seemed to be quite right. Employees in Company C1 also had a few issues, although this was felt to be the fact that the building managers had not fully got to grips with the complexity of the new system.

4.8.2.3 Means of ventilation

Companies A and E had closed building envelopes and traditional air conditioning systems. A low pressure mechanical ventilation system which utilised the thermal properties of the concrete floor mass combined with the use of windows had been adopted for Company D. Companies B and C1 had closed building envelopes in conjunction with natural chilled beam systems.

4.8.2.4 Natural daylight

All employees agreed that there was adequate natural daylight and that it was an important factor in allowing them to fully concentrate on their work.

4.8.2.5 Awareness of sustainable features of this building

Employees from companies A, B, and D were aware that there were sustainable features within the building and tended to be able to identify why they were present, but were unable to name them in any convincing manner or describe their functions. Company E employees were not aware of any such features. Company C1 was the most successful in terms informing the employees what systems were in existence and the function each played, although knowledge was not extensive.

4.8.2.6 Employee engagement

Employees from companies A and B have contributed to surveys although they tended never to concern sustainability specifically and the sustainability section tends to be limited. There is the belief that middle managers and senior managers are consulted to a greater degree, although if there was anything that other employees ever wanted to suggest, there were opportunities, whether that was web-based or approaching the appropriate person. Therefore, although not greatly consulted, employees still believed that their opinion was valued by the company.

Companies C1 and D were took a more extensive survey of employee opinions and it was felt that they played a greater role from the beginning of the project.

Company E was solely concerned with health and safety but was regarded as valuing employees' opinions when voiced.

4.8.2.7 Influential sustainability features

For all buildings the most influential features were the high levels of natural light, as well as fresh air being provided through appropriate ventilation systems.

4.8.2.8 Operations of company

Companies A and B are said to be operating in a sustainable manner, although employees from each have discussed the potential for greater involvement in sustainable operations. In summary, the overall belief was that they are attempting to be sustainable, but could not be said to be sustainable in operation.

Company E places no priority on sustainable operation, rather one that is based simply on health and safety.

Employees from Companies C1 and D believed that the company was doing everything it could to operate in a sustainable manner.

4.8.2.9 Knowledge of achievements at a corporate level

Companies A, B, C1 and D have published their sustainability achievements and these are linked with CSR policies or formal environmental management systems. This has been in the form of articles placed upon the internal intranet system and therefore no great detail of any systems or policies may be given in detail. This suggests that if it is not of personal interest it is easily ignored and avoided. Only employees who worked on those specific policies or systems were able to name and detail them.

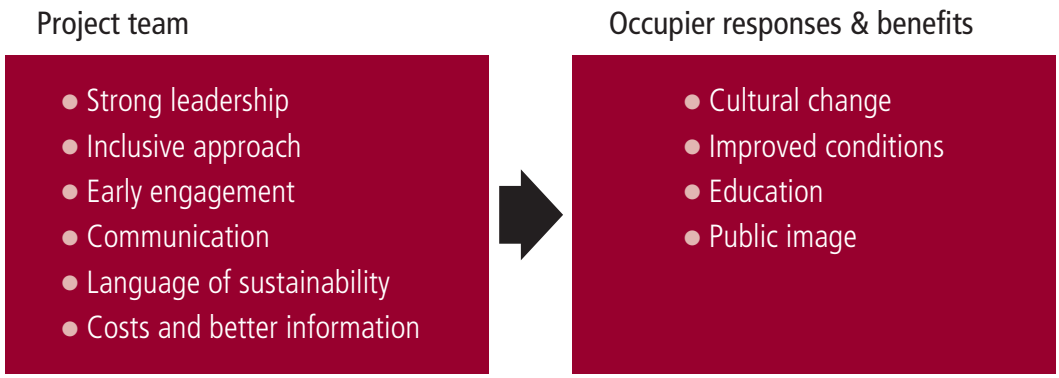
Company E did not effectively communicate any policies and therefore employees were unsure of their existence.

4.9 Lessons learned: critical success factors for sustainable offices

Synthesis of the findings from the five case studies in the research enables critical success factors to be identified as key to a project's success in terms of the sustainability outcomes (Figure 4.2).

As well as strong leadership and vision within an integrated project team (which would include the occupier, architect, developer/investor, agent and other key actors in a typical project), key for property investors is the need to recognise and understand the drivers for change in occupiers' businesses. Investors should recognise that occupiers with a cultural change agenda can use relocation to a sustainable office as a springboard for effecting successful change in the following ways (ie in terms of occupier responses and benefits).

Figure 4.2: Critical success factors for sustainable office projects



4.9.1 Drivers for change

In a very positive way, investors should recognise that occupiers with a cultural change agenda can use a relocation to a sustainable office as a springboard for effecting that change successfully.

- **Relocation can help drive cultural change and also encourage more sustainable practices in the office:** in many instances office relocations have been used as the springboard for changing company cultures in relation to space, people and the use of resources.
- **Sustainability can improve working conditions:** employees were generally pleased with the outcomes of the projects in this study, but it can be difficult to separate long-term change from a more short term, 'Hawthorne effect', or alternatively that any office upgrade whether sustainable or not could be perceived positively[24]. Again post-occupancy evaluation can offer more informed views of long term benefits.
- **Educating the work force and helping them understand the building can promote a smooth transition:** where a technology is relatively new and untested, patience is required over the transition period as the technology becomes embedded in the company workplace (eg chilled beam technology).
- **A sustainable building is good for public image and for promoting better client relations:** several case studies highlighted this benefit, but also the idea of 'walking the talk' with clients, particularly if the business was one which provided a service with a strong sustainability theme running through it.

4.9.2 Successful projects

Successful outcomes which integrate property investors' agendas with property occupiers' requirements can be created by an overall approach which combines the following.

- **Strong leadership and an inclusive approach:** a team approach, based on a shared vision and good communication between the client and all stakeholders is essential if a project is to be successful in sustainability terms.
- **Early engagement with key stakeholders:** leaving engagement with the project until it is too late will mean a client cannot influence the outcome effectively. New build offers key benefits in this respect but a good team approach in a refurbishment or reconstruction can also bring success.
- **Communicate fully with stakeholders at all levels:** this is essential and should be the case over the project lifecycle and into the post-occupancy phase.

[24]The Hawthorne effect is, in its broadest sense, a form of reactivity, and describes a temporary change to behaviour or performance in response to a change in the environmental conditions, with the response being typically an improvement of some kind.

4.9.3 The cost and language of sustainability

Property investors need to recognise that sustainability can be cost effective at a range of project scales and that they have a role to play in helping clarify the language of sustainability in the marketplace, alongside occupiers, agents and developers, and others.

- **Different scales of project suit different circumstances:** the case studies incorporated a range of projects in terms of size and complexity. For example, new build through to refurbishment/reconstruction. Indeed, a sustainable end result can be achieved at a relatively low cost through a sustainable fit-out, and this provides further opportunities for sourcing materials locally.
- **Sustainability does not need to cost more than a conventional building:** the case studies were not able to provide precise costings, but several stakeholders argued that sustainability was not adding anything substantial to total costs (ie 1–3% additional costs).
- **Simplifying the language of sustainability would help in driving change:** simple benefits such as energy efficiency, adequate ventilation, natural daylight and open, flexible space often get lost in the detail of 'sustainability'. Agents and other stakeholders need to engage more closely to understand and agree what is meant by 'sustainability', and a 'sustainable building'. This should also carry through into clearly communicating the sustainable outcomes and achievements of the building and its operations to employees.

4.9.4 Evaluating and monitoring

Although evaluation and monitoring is, ultimately, the responsibility of the occupier, property investors can also benefit by understanding and recognising how a sustainable office also creates benefits for employees if the project works successfully. This requires an understanding of the following factors.

- **Sustainability is about buildings AND the people that work in them:** recognising the part that employees play in the business is a vital part of the relocation process, and space dedicated towards enhancing employees' workspace environment can bring benefits in terms of employee satisfaction, and ultimately staff retention. A sustainable building can help create a sustainable business.
- **A successful outcome can be achieved by monitoring space, resources and people over the project lifecycle, including post-occupancy:** responsibility does not end with the completion of the project; there should be continued monitoring to ensure success.

5 CONCLUSIONS

5.1 Introduction

This section of the report draws conclusions from the overall research and identifies the main lessons for policy and practice. After a discussion of the integrity of the telephone sample the section is arranged by the main themes examined in the research incorporating both the telephone survey and case study interviews.

5.2 Telephone sample

The research incorporated some 87 interviews, and the telephone survey included 50 interviews, the majority of which were senior decision-makers. The overall response rate to telephone interview requests was about 30%, but in declining to be interviewed the vast majority of interviewees suggested they did not have time to be interviewed, rather than expressing any lack of interest in either sustainability or the survey itself. In some sectors the response rate was between 75% and 100%, but the financial and business services sector was lower at 12%, perhaps reflecting the fact that the sector is fee/hour based and perhaps therefore there was a greater reluctance to engage. Overall, however, there is no evidence to suggest that there is any 'non-response' bias in the sample.

However, the conclusions drawn must be set in the context of a sample which was ultimately heavily BREEAM-weighted. Building accreditation featured in 40% of cases, represented by the fact that there were 17 buildings with a BREEAM rating of 'good' or above in the final 50 telephone-based interviews. This compares with the estimate in this research that BREEAM-rated stock is less than 7% of new build, which itself represents about 1–2% of total standing stock each year. In terms of the sample, this difference may be because the majority of the sample was based in London and the South East, but it is not possible to be categorical on this point because BREEAM data is not available regionally from BRE to make a valid comparison between the sample and the population from which it is drawn.

5.3 Demand for sustainable offices

This research has shown that although there is evidence of an emerging and increasing demand for sustainable offices, other factors such as location, availability of stock and building quality remain more important in determining occupiers' final choice of office. This, however, must be seen in the context of a sample which is more highly BREEAM-focused than the UK office stock nationally, and so one could hypothesise that for stock which is less BREEAM-focused sustainability might even be considered relatively less important than it was in this survey.

However, within this sample sustainability has become relatively more important in moves made over the last 12 months, compared with moves made longer ago. There is also evidence of a greater number of sustainable features being present in a building in moves made more recently, or where moves were happening at the time of the survey. Nonetheless location and other factors were still found to be more important than sustainability as factors influencing the final choice of office in all groups within our sample.

Some sectors (for example, Technology, Media and Telecommunications (TMT)) without a CSR policy in place are more likely to consider sustainability as being even less important in the choice of an office than other sectors (for example, Financial and Business Services, and Real Estate and Construction). However, it is important to note that only five respondents in the sample did not have a CSR policy and four of these were in the TMT sector.

Those moving to a BREEAM-rated office building tended to rate sustainability as being relatively more important than those moving to a building without a BREEAM rating, but location and availability are still the most important factors.

5 CONCLUSIONS

In terms of what may be influencing the choice of final office, statistical testing (Appendix 4) suggests that a relatively more important view of sustainability is taken by companies which have moved recently, or are moving; are based in the RE&C or FBS sectors; are moving to a BREEAM-rated building; or are companies which have a CSR policy in place. However, this must be seen in the light of a relatively small sample and the fact that in these sectors other factors were still more important than sustainability.

The conclusion drawn is that sustainability in its own right has been a relatively low priority overall in office choice in comparison with other factors, although that is not to say it is unimportant, and its relative importance has increased in more recent moves.

5.4 Key features of the new/refurbished office

The most common sustainability features in office buildings are flexible space, efficient energy and utilities, and effective monitoring systems, followed by sustainable waste and water systems.

Nearly one third of respondents had specified minimum levels of environmental performance in the agent's brief, but only three had mentioned sustainability explicitly. Although some respondents indicated that if they were looking again now it would more likely to be included, this is still a sobering statistic. Indeed, this might invite criticism of agents for not identifying sustainable buildings for their clients, but if clients are not asking for those buildings perhaps that explains why the agent may not be looking for them.

On the other hand, it was also the case that the majority of those who specified a minimum standard ended up choosing a BREEAM-rated office, although some who did not specify any standard also relocated to a BREEAM-rated office, which perhaps implies that some moves to sustainable offices happen through accident rather than design.

5.5 Assessing the business and financial case for sustainability

Although some 42% of respondents had assessed the business and financial case for sustainability in the acquisition of the building, the rationale for doing this is not simply about cost, but is also driven by company culture. Knowledge and understanding of the cost implications also varied widely, but practising what you preach was fundamental to maintaining credibility with customers and clients.

5.6 Sustainability and company policy

Companies vary in their measurement, systems and policies for environmental management and related activities. For example, some 62% of respondents measured the overall environmental performance of their company's buildings, and of these, 58% published the data implying that important data on performance still does not reach the public domain.

At a company level, employees are the main drivers of change (82% of cases), followed by clients and customers (53%), and others in the supply chain (43%).

5.7 Drivers for a sustainable office market

Key drivers in the sustainable office sector are seen by occupiers as being organisational factors, increased demand from stakeholders (primarily customers, shareholders and employees) and legislation. Less important are direct publicity and marketing benefits, the use of accreditation schemes and green leases. The key drivers are seen as being more important overall than barriers in the sector, perhaps reflecting the fact that there is now an upward trajectory in market growth in this sector.

Sectoral change in relation to sustainability, particularly in the financial and business services and real estate and construction sectors, is also being driven by a need to 'walk the talk' for clients, customers and shareholders.

In a very positive way, investors should recognise that occupiers with a cultural change agenda can use a relocation to a sustainable office as a springboard for effecting that change successfully. For example:

- Relocation can help drive cultural change and also encourage more sustainable practices in the office: in many instances office relocations have been used as the springboard for changing company cultures in relation to space, people and the use of resources.
- Sustainability can improve working conditions: employees were generally pleased with the outcomes of the projects in this study, but it can be difficult to separate long-term change from a more short term, 'Hawthorne effect', or alternatively that any office upgrade whether sustainable or not could be perceived positively.
- Educating the work force and helping them understand the building can promote a smooth transition: where a technology is relatively new and untested, patience is required over the transition period as the technology becomes embedded in the company workplace (eg chilled beam technology).
- A sustainable building is good for public image and for promoting better client relations: several case studies highlighted this benefit, but also the idea of 'walking the talk' with clients, particularly if the business was one which provided a service with a strong sustainability theme running through it.

5.8 Barriers to a sustainable office market

Key barriers in the sector are seen by occupiers as being lengthy payback periods, relatively high sustainability costs and a lack of sustainable office supply.

Although lack of demand is not perceived to be a key barrier, occupiers generally believed that the additional costs of sustainability and undersupply were restricting market growth. Nonetheless the research also suggested that if occupiers look hard enough there is a supply of BREEAM-rated sustainable offices, although these may be restricted in terms of locational choice. We were not able to look at this latter point in detail in the UK as a whole because of the confidential nature of BREEAM certifications.

5.9 Policy and practice implications

Landlords were not generally seen as being strong agents for change in the sector. In some instances there was some criticism of landlords, developers and agents from occupiers in terms of these groups' levels of engagement in the sustainability agenda.

There is clearly a step change needed if the sector is to supply more sustainable offices to satisfy an increasing demand in the UK. This can only be brought about through behavioural change, underpinned by legislation which has been strengthened, for example, with the Climate Change Act 2008, Energy Act 2008 and Planning Act 2008, alongside the Energy Performance of Buildings Directive, which introduced EPCs and DECs. The targets set by the Climate Change Committee for UK non-domestic buildings and the imminent Code for Sustainable Buildings will also raise key challenges for the property investment sector in terms of carbon reduction. Given the tendency to rate sustainability as relatively more important in recent or imminent moves it would be therefore be interesting to conduct the same survey over the next few years as we also enter a period of changing economic conditions and increased legislative focus.

5 CONCLUSIONS

Investors and developers need to understand occupier requirements more clearly and to engage more closely with other stakeholders to understand and agree what is meant by 'sustainability', and a 'sustainable building'. In the same way agents and occupiers should also help ensure that the simple benefits of sustainability such as energy efficiency, adequate ventilation, natural daylight and open, flexible space do not get lost in the detail of sustainability. This should also carry through into clearly communicating the sustainable outcomes or achievements of the building and its operations to employees. Finally, the research has also shown that improved information on the costs of sustainability is needed to better inform key stakeholders.

As one interviewee in the telephone survey commented:

'I think it's perhaps quite often the breakdown of communication between landlords and tenants, as to what they need. We've talked for years about the circle of blame, everyone else blaming each other: "We would be sustainable, but for the investor or the landlord or the tenant or the consultant", or whatever. It's breaking out of that and saying, "Let's get on with it, let's get some sustainable schemes… that have been completed for a reasonable cost; everyone's going to get a very good return out of that, and that these will provide the blueprints for going forward" (Financial and Business Services).

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APPENDICES

Appendix 1: Summary of green and sustainable definitions

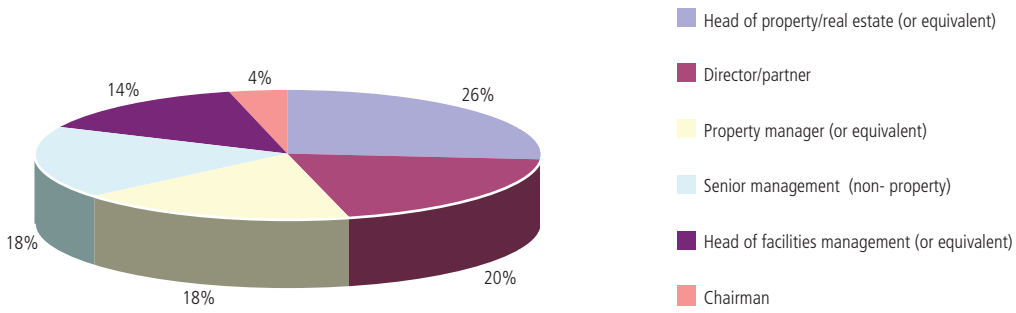
Definition	Year	Author	Country	Comments
Green building				
Six key criteria: ● Environmental design appropriate to context ● Use of simple rather than complex techniques ● Exploiting the thermal capacity of the structure ● Natural ventilation ● Easily understood building controls ● Avoidance of oversized plant	1998	Edwards (ed)	UK	Green design, focused primarily in the UK
Use key resources like energy, water, materials and land more efficiently than buildings that are just built to code.	2003	Kats	USA	Same definition applies to sustainable buildings
The practice of 1) increasing the efficiency with which buildings and their sites use energy, water and materials, and 2) reducing building impacts on human health and the environment through better siting, design, construction, operation, maintenance and removal–the complete building cycle.	2003	Office of the Federal Management Executive	USA	Process-based
Uses energy and material more effectively both in production and operation while polluting and damaging natural systems as little as possible.	2006	Straube	Canada	
A building that incorporates design, construction and operational practices that significantly reduce or eliminate the negative impact of the development on the environment and occupants.	2006	Green Building Council of Australia	Australia	
Green building refers to the shift from standard building practices, which are typically guided by short-term economic considerations, to "best practices" emphasising quality construction, energy efficiency, indoor air quality, conservation of water and other natural resources, and thoughtful planning and design for human productivity and health. Importantly, green building employs a "life-cycle approach," estimating the cumulative environmental and social impacts of a building throughout its lifespan, from construction to use to demolition.	2007	WRI	Global	Process-based
Green buildings …are very generally defined as developments that use fewer resources, produce less waste and have superior indoor air and other qualities.	2007	Compass	Canada	
Highly integrated approach and includes: ● Respect for the environment and setting ● Efficient use of resources ● Use of environmentally preferable materials ● Provision of a healthy and comfortable setting for employees ● Focus on flexibility and adaptability ● Performance-based building management and monitoring.	2007	.Frej (2007)	USA	Green offices

Definition	Year	Author	Country	Comments
Sustainable buildings				
Those buildings that have minimum adverse impacts on the built and natural environment, in terms of the buildings themselves, their immediate surroundings, and the broader regional and global setting.	2003	OECD	Global	Focus on 'environmentally sustainable buildings'
Six criteria: ● Longevity, in order to reduce embodied energy ● Loose-fit, or adaptable workspace ● Low energy and low carbon ● Locationally appropriate (including accessibility) ● Liked by occupiers ● Loveable with an aesthetic appeal and in terms of occupier satisfaction.	2004	Sayce et al	UK	
A building that can be produced and continue to be operated over the long term without adversely affecting the natural environment necessary to support human activities in the future.	2006	Straube	Canada	
The term sustainable building is used interchangeably with green building. Its purpose is to reduce the adverse human impacts on the natural environment, while improving our quality of life and economic well-being.	2006	Ministry for the Environment	New Zealand	Used interchangeably with sustainable building
Any building that exhibit{s}, at a minimum, better environmental performance than buildings built to building regulation standards in England, and that, in addition, may or may not have any features that address social and economic sustainability principles.	2007	Williams and Lindsay	UK	
Seven main criteria: ● Operational energy efficiency ● Climate control ● Physical adaptability of space ● Water management ● Waste management ● Accessibility ● Pollution	2007	Sayce and Ellison	UK	
Eight main characteristics: ● High energy efficiency ● Low levels of pollution ● Good access to public transport ● Effective monitoring of the building's systems ● Use of sustainable materials in construction ● Working environment promotes staff health and well-being ● Brownfield or ecofriendly site ● High water efficiency.	2007	GVA Grimley	UK	Investor-oriented
Buildings which are (1) are resource efficient (physical resources such as energy or water); (2) have zero or very low emissions, (CO_2, other greenhouse gases); (3) contribute positively to societal development and well being; and (4) contribute positively to the economic performance of their owners/beneficiaries and to national economic development more generally.	2008a	UK Green Building Council	UK	Holistic

Appendix 2: Characteristics of buildings in sample

The majority of interviewees were senior decision-makers in their organisation. As Figure A2.1 shows, nearly three quarters of respondents were at senior management level or equivalent .

Figure A2.1: Position of interviewees in organisation

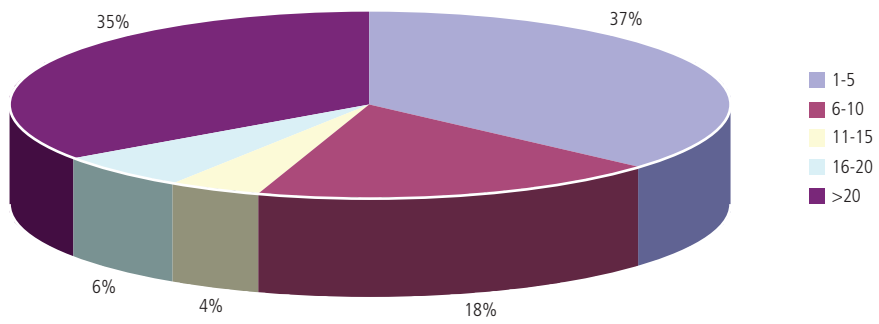


The majority of respondents (55%) held up to 10 buildings in their UK portfolio (Figure A2.2) with some 45% holding more than 10 buildings. This represents in total more than 49m sq ft of floorspace in the UK.

In terms of 'office movers', our survey showed that the total floorspace taken within office buildings which were the subject of this survey represented some 2.53m sq ft of floorspace (leased and owner occupied), equivalent to about 5% of the total UK floorspace held by respondents.

It was also clear that the majority of new space taken (including the specific buildings identified in this survey) was leased (some 90% of respondents) rather than purchased[25].

Figure A2.2: Number of buildings in UK portfolio



[25]Data from IPF (2007) suggests in value terms that UK commercial property is split fairly evenly between leased and owner-occupied property.

Overall summary of buildings in sample:

- The sample was split fairly evenly between new buildings and refurbished (48% and 52% respectively).
- Nearly one third of the properties in the survey were less than a year old, with 21% one year to 10 years old and the remainder (47%) more than 10 years old.
- The majority of office properties in the survey were located in London and the South East (58%).
- In terms of location type, some 72% of respondents identified a location either in the City (London), a central business district location or a town location.
- The majority of space in the sample was less than 50,000 sq ft (some 65% of respondents). More than 75% of units larger than 100,000 sq ft were taken by occupiers in the financial and business services sector.
- Some 90% of the buildings included in the survey were leased, with the balance being owner-occupied.
- About 40% of the office properties in the sample were not yet occupied[26], with 24% of occupiers having occupied for less than 12 months and 30% between 12 and 24 months.
- A little less than half of the buildings which were leased were let on terms between 10 and 15 years with an overall average of 12.6 years. The average lease length for a refurbished property was 10.5 years and for a new building, 15 years.
- Some 72% of the buildings were multi-let with the balance (28%) as single tenancies. This includes both tenanted and owner-occupied buildings.
- Some 40% of the sample carried a BREEAM rating of 'good' or above.

Details of sample

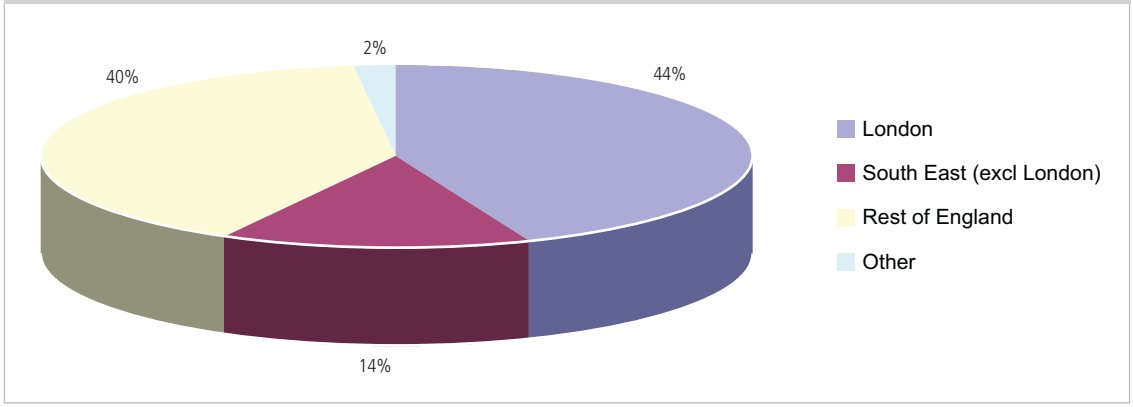
Type of project (new build or refurbishment)

The sample was split fairly evenly between new buildings and refurbished (48% and 52% respectively).

Location (geographical and type of location)

The majority of office properties in the survey were located in London and the South East (58%). One property was located outside the UK in mainland Europe (in the 'Other' category), but was included in the analysis as the response came from a multinational organisation with offices based in the UK (Figure A2.3)

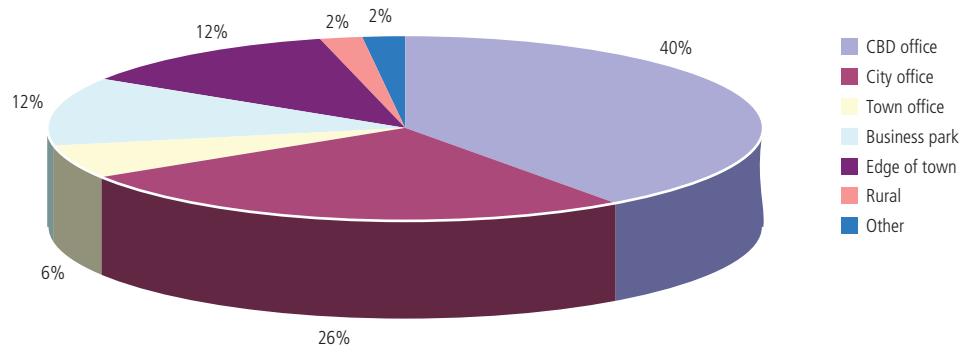
Figure A2.3: Geographical location



[26]This was where the move was imminent and an agreement to move had been signed.

In terms of location type, some 72% of respondents identified a location either in the City (London), a central business district location or a town location (Figure A2.4).

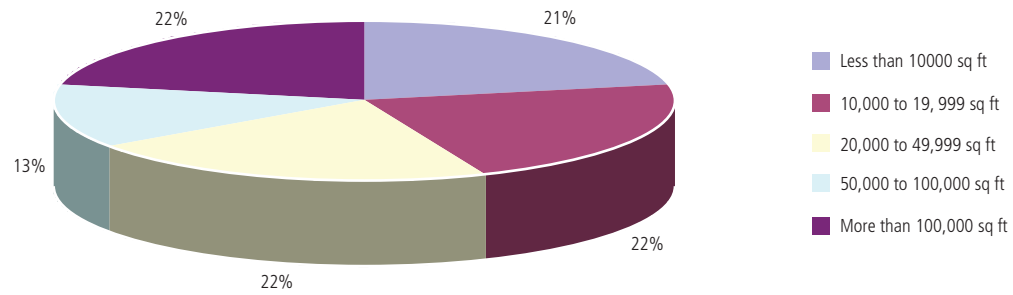
Figure A2.4: Type of location



Size of new or refurbished property

The majority of space in the sample was less than 50,000 sq ft (some 65% of respondents) (Figure A2.5). More than 75% of units larger than 100,000 sq ft were taken by occupiers in the financial and business services sector.

Figure A2.5: Size of office property



Type of occupancy

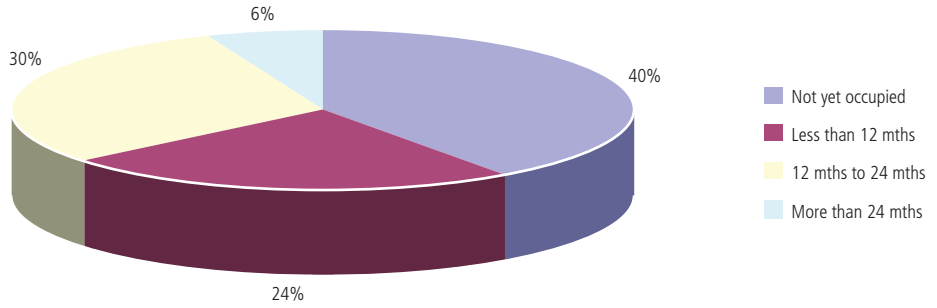
Some 90% of the buildings included in the survey were leased, with the balance being owner-occupied.

Length of occupation since move

As Figure A2.6 shows, about 40% of the office properties in the sample were not yet occupied[27], with 24% of occupiers having occupied for less than 12 months and 30% between 12 and 24 months. There were also three respondents (one of whom was an owner-occupier) who had occupied for a little over two years.

[27]This was where the move was imminent and an agreement to move had been signed.

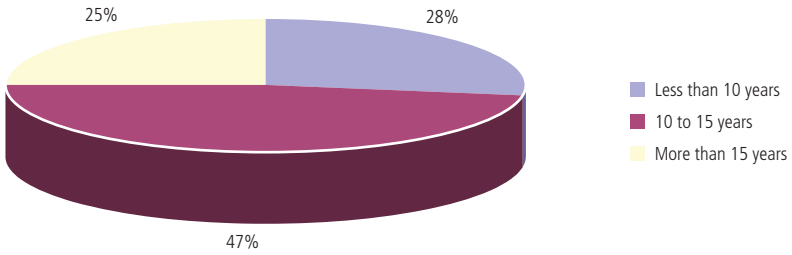
Figure A2.6: Length of occupation since move



Lease length on new or refurbished property

As Figure A2.7 shows, slightly less than half of the buildings which were leased were let on terms between 10 and 15 years with an overall average of 12.6 years. The average lease length for a refurbished property was 10.5 years and for a new building, 15 years.

Figure A2.7: Lease length



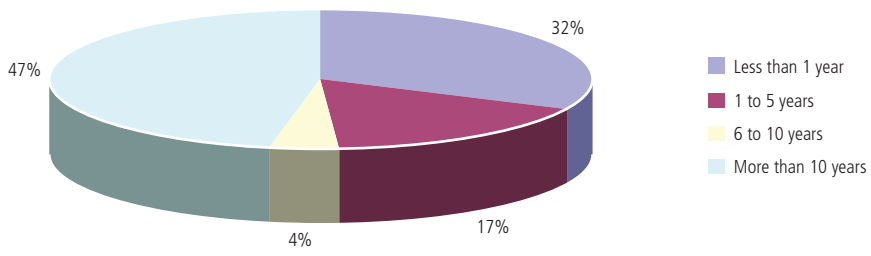
Type of letting (single/multi-tenanted)

Some 72% of the buildings were multi-let with the balance (28%) as single tenancies. This includes both tenanted and owner-occupied buildings.

Age of property[28]

Nearly one third of the properties in the survey were less than a year old, with 21% one year to 10 years old and the remainder (47%) more than 10 years old (Figure A2.8).

Figure A2.8: Age of property



[28]This is the age of the property from when it was first built.

Appendix 3: Sustainability features

Adaptability – overall flexibility of space in terms of changing layout (ie designing buildings for future use in terms of loose-fit design and re-use)

Energy – efficiency of building in terms of energy use

Utilities efficiency – overall efficiency of all utilities

Effective monitoring – presence of formal building management system

Waste – efficiency of waste systems

Water – efficiency of water systems

Land use – brownfield location

Accreditation – presence of BREEAM certification

Specific technologies – use of specific sustainable technologies in building (eg chilled beams, passive ventilation)

Building fabric – use of sustainable materials in fabric

Building design – presence of overall sustainable design

Ecology and biodiversity – incorporation of specific measures to encourage ecology and biodiversity

Appendix 4: Statistical tests

Non-parametric statistical tests were used to test the relationships between key variables in the dataset. These tests do not require assumptions to be made about the underlying population (ie they are distribution free) and can be used when data is nominal or ordinal level.

Factor	Test	Test value	Degrees of freedom	*p* value	Comments (in the context of the sample)
Sustainability rating					
Sector	Chi-squared (Kruskall-Wallis)	8.494	3	.037	Significant at 5% level. TMT sector less likely to rate sustainability as importantly as other sectors.
CSR policy	Mann Whitney	23.5	n/a	.002	Significant at 1% level. This suggests that companies with a CSR policy are more likely to rate sustainability as being more important. Test also found that design varied between sectors with TMT again less likely to rate this highly. However, 90% of companies (45 out of 50) did have a CSR policy ,and it is likely that because four of the five companies without such a policy were based in the TMT sector, that there is a dual effect, driven by sector and policy.
Length of occupation	Chi-squared (Kruskall-Wallis)	6.041	2	.049	Significant at 5% level. This suggests that imminent or recent moves placed a relatively higher emphasis on sustainability.
BREEAM Rating	Mann Whitney	141	n/a	.002	Significant at 1% level. This suggests that those moving to a BREEAM building place a relatively higher emphasis on sustainability than those moving to a non-rated building.
Sustainability Index					
CSR policy	Mann Whitney	36	n/a	.018	Significant at 5% level. This suggests that those companies with a CSR policy moved to a building with a relatively greater number of sustainability features than those who did not. Note caveat above, relating to CSR policy, however.
Length of occupation	Chi-squared (Kruskall-Wallis)	17.792	2	.000	Significant at 1% level. This suggests that those who had moved more recently or were in the process of moving, moved to a building with a relatively greater number of sustainability features than those who had moved longer ago.
Sustainability rating	Chi-squared (Kruskall-Wallis)	20.96	6	.002	Significant at 1% level. This suggests that those rating sustainability relatively more highly moved to a building with a greater number of sustainability features.

The table lists only variables which had a significance level of 5% or higher. All other factors were found not to be statistically significant.

Appendix 5: Case studies

CASE STUDY A: City Place House, 55 Basinghall Street, London, EC2

Building information:

Age from new: 17 years

Total floor space: Approx 250 000 sq ft (gross external)

Number of floors: Nine plus basement storage

Number of occupiers: approx. 550 people

Net internal area of building: 175 700 sq ft (net internal)

Stakeholder information:

Landlord: Freeholder = City corporation, head lessee = Edger Investments Ltd

Developer: Edger Investments Ltd

Occupier and space occupied PRUPIM level 7 and 9 (28 662 sq ft)

Other occupiers in building and space occupied (where available): Cleary Gottlieb, Knight Equity, GPT Halverton, Imprima (UK) Ltd, Oceanic Bank, Nordea Bank, and City Business Library.

Project information:

New build or refurbishment: Refurbishment

Total costs of project (if known): £4.6m

Project timescale: Project started June 2007

Project completed: November 2007

Key stakeholders in process:
Architect: Pringle Brandon
Building contractor: Overbury
M&E Engineer: Hoare Lea

Cost and sustainability information:

Total cost of building: N/A

Monetary investment in sustainability (if known): N/A

Expected overall payback period (if known): N/A

BREEAM rating of building: N/A

Occupier information:

Total number of staff: 310

Previous location: Princeton House, High Holborn, London

Length of time in occupation in previous location: 20 years

Length of time in current location: eight months

Number of staff occupying building: 220

City Place House: external

City Place House: interior meeting place

City Place House: interior meeting space

APPENDICES

CASE STUDY B: 2 New Street Square, London EC4A 3BZ

Building information:

Age from new: six months

Total floor space: 215 000 sq ft

Number of floors: Ground plus 10

Number of occupiers: 2 200 approx

Net internal area of building: 215 000 sq ft

Stakeholder information:

Landlord: Land Securities

Developer: Land Securities

Occupier and space occupied: Deloitte, 215 000 sq ft

Other occupiers in building and space occupied (where available): n/a

Project information:

New build or refurbishment: new build

Total costs of project (if known): Confidential

Project timescale: Base build commenced end 2005, completed June 2007, fit-out commenced June 2007

Project completed: Base build completed June 2007, fit-out completed April 2008

Key stakeholders in process:

Architect: Interior designer, MCM; base build architect, Bennetts Associates
Building contractor: Base build, Sir Robert McAlpine; fit-out, Overbury
M&E engineer: Base build, Cundall Johnson; fit-out, Troup Bywaters and Anders

Cost and sustainability information:

Total cost of building: Fit-out £215 000

Monetary investment in sustainability (if known): Not known precisely at this stage, however will be evaluated in due course

Expected overall payback period (if known): Not known until final workings are completed

BREEAM rating of building: base build, excellent; fit-out, very good

Occupier information:

Total number of staff: In the UK 12 000

Previous location: 180 Strand, London

Length of time in occupation in previous location: 25 Years

Length of time in current location: Six months

Number of staff occupying building: 2 200

2 New Street Square: external view

2 New Street Square: interior workspace

2 New Street Square: interior social space

CASE STUDY C: 55 Baker St, London

Building information:

Age from new: 1950s built but reconstructed 2005 to 2007

Total floor space: 750 000 sq ft

Number of floors: 10

Number of occupiers: seven office, one leisure, one medical, three retail, five catering

Net internal area of building: 500 000 sq ft

Stakeholder information:

Landlord: London and Regional

Developer: London and Regional

Occupiers and space occupied: n/a

Other occupiers in building and space occupied (where available): n/a

Project information:

New build or refurbishment: Reconstruction

Total costs of project (if known): n/a

Project timescale: Project started design April 2005

Project completed: ongoing

First occupation: December 2007

Key stakeholders in process:
Architect: Make
Building contractor: HBG
M&E engineer: Blyth and Blyth

Structural engineer: Expedition

Project manager: Tweeds

Cost and sustainability information:

Total cost of building: n/a

Monetary investment in sustainability (if known): n/a

Expected overall payback period (if known): n/a

BREEAM rating of building: Excellent

55 Baker Street: external frontage

55 Baker Street: reception area

55 Baker St: chilled beam technology

APPENDICES

CASE STUDY D: Carlton House, Ringwood Road, Woodlands, Southampton SO40 7HT

Building information:

When first constructed: 2004

Number of floors: Two plus ground floor canteen

Number of occupiers: sole occupier

Net internal area of building: 17 513 sq ft

Company floor area: sole occupier

Stakeholder information:

Landlord: Owner occupied

Occupier and space occupied: Owner occupied

Other occupiers in building and space occupied (where available): Owner occupied

Project information:

New build or refurbishment: New build

Total costs of project (if known): £2 243 600

Project timescale: Process started 2001, project completed 2004

Owner occupied/ tenant: Owner occupier

Lease length: NA

Key stakeholders in process:
Architect: Design Engine (under Richard Rose-Casemore)

Building contractor: Gifford

M&E engineer: Gifford

Project managers/QS: Gentle Associates

Cost and sustainability information:

Total cost of building/refurbishment: £2 243 600 or £128 sq ft

Monetary investment in sustainability (if known): originally not to go above 10%

BREEAM rating of building: Very good

Occupier information:

Previous location: Same site, different buildings

Length of time in occupation in previous location: same site nearly 40 years

Length of time in current location: Occupied site since 2004, with the move into the new building completed during 2004 - 2006

Number of staff occupying building: 150

Carlton House: external view

Carlton House: workspace

Carlton House: reception

CASE STUDY E: Friars House, Manor House Drive, Coventry CV1 2TE

Building information:

Age from new: Opened January 1990

Number of floors: 10

Number of occupiers: Six

Net internal area of building: approx 105 000 sq ft

Total useable space: 10 533 sq ft

Stakeholder information:

Landlord: Mapeley

Developer: Building, Newcombe Estates; refurbished floors occupied by Jacobs Engineering who undertook refurbishment of 1.5 floor (10 533 sq ft) prior to occupation

Occupier and space occupied: 10 533 sq ft leased

Other occupiers in building and space occupied (where available): Crown Prosecution Service and others

Project information:

New build or refurbishment: Refurbishment of two floors

Total costs of project (if known): No figures available

Project timescale: Project started Jan 2007 and completed March 2008

Key stakeholders in process:
Architect: Jacobs
Building contractor: Jacobs
M&E engineer: Jacobs

Total cost of building: Not known

Monetary investment in sustainability (if known): Approx £16 000 of total refurbishment cost

Expected overall payback period (if known): Lease period (five years)

BREEAM rating of building: None (ISO14001)

Occupier information:

Previous location: Coventry Point

Length of time in occupation in previous location: 8 years

Length of time in current location: Eight months

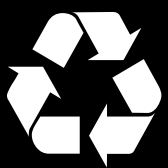
Number of staff occupying building: Jacobs have 95 staff but only around 50 are in the office at any one time

1st floor workspace from reception

2nd floor workspace, desks closer together

Appendix 6: Interviewees

Building case study	Interviews
A	Director of asset management Head of property development Director of sustainability Investment systems manager Operations director Technology director Partner Three employees
B	Director of property Fit out manager M&E consultant Space planner Client services Partner Three employees
C	Development director Partner (Company C) Architect Head of workplaces and projects (Company D) Three employees (Company C)
D	Building engineer Company partner and property director Three employees
E	Building engineer Space planner Agent Three employees



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