

Energy efficiency in commercial offices: who can transform the market?

Jacky Pett

Association for the Conservation of Energy
Westgate House
2a Prebend Street
London N1 8PT, UK
jacky@ukace.org

Lotte Ramsay

Association for the Conservation of Energy
Westgate House
2a Prebend Street
London N1 8PT, UK
lotte@ukace.org

Keywords

office, commercial sector, energy efficiency, investment, property, economic instruments, corporate social responsibility, Buildings Directive, SRI

Abstract

This work develops themes from earlier research published as “White Collar CO₂” (Scrase 2000). This paper is developed from a scoping study of energy efficiency in offices that was carried out in summer 2002.

A number of stakeholders were interviewed to establish views and attitudes to energy efficiency in office properties, addressing the investment, management, occupation and development of such buildings. Stakeholders included fund managers, pensions companies, insurance companies, large corporates whose business is not related to property, valuation surveyors, property agents, facilities managers, architects, consulting engineers and property developers.

Results indicated that existing economic instruments could be designed more effectively to promote energy efficiency in offices. The main barriers to investment included perceived lack of demand and poor return on investment. However, investment is promoted by the risk of property losing value as climate change impacts become more obvious.

Addressing the costs of energy efficiency in ways that address the realities of lease management and building systems can stimulate demand. Key partners in this are the property managers, institutional investors and responsible large companies. Many of these are beginning to consider risk from climate change as an issue in investment practices,

as well as ethical and corporate social responsibility benchmarks.

Introduction

OUTLINE OF THE PAPER

This research paper aims to outline the problems of improving energy efficiency in the commercial office sector and identify the key actors who have the power and influence to create change. It is derived from a project “Energy efficiency in offices: motivating action”, a scoping study of options for action carried out by the Association for the Conservation of Energy (ACE).

The paper starts by introducing the commercial office sector in the UK, its size and energy use, then introduces the stakeholders and their role, and distinguishes between the construction, investment and use points of view. It then introduces the research project carried out by ACE, indicating the extent of the consultation and the characteristics of the respondents. It presents the findings from the two stages of the consultation process and indicates the recommendations on what should be done to engage the commercial sector in energy efficiency in office buildings. It finishes with a discussion of the main actors and the implications of these findings. It addresses these in the context of European policy and legislation and global commitments to climate change and sustainable development.

PROBLEM OF THE COMMERCIAL SECTOR

Since 1973, energy use in the UK commercial sector has risen by almost 70%, and this increase is projected to continue

into the future. Drivers include greater use of air conditioning and artificial lighting, together with more demand for energy services associated with the use of information and communication technology (ICT). Concerns about increasing energy use in the sector are compounded by the electricity-intensive nature of the end-uses and the resultant levels of carbon emissions.

Until recently, there has been little policy activity targeting the commercial sector, in part because rising energy use in commercial firms has been obscured in official statistics by reductions in public sector use. In commercial services final energy consumption grew by 68.4% from 1973 to 2000, compared to a 9.5% decrease in public sector services energy consumption (DTI, 1997 & DTI, 2001)¹. There has been no improvement in energy intensity (delivered energy consumption divided by contribution to GDP) in the UK service sector since the late 1980s (DTI, 1997). This is to say that while there has been rapid growth in economic output from the service sector, energy consumption has increased just as rapidly. DTI projections of energy use in the service sector predict a continuation of this trend with energy consumption rising by around 0.7% (in both high and low price scenarios) per year up to 2010.

Another worrying trend is the rate of increase in electricity consumption in the service sector. While *total* energy use in the sector defined as 'other final users' by the DTI increased by 17.5% from 1973 to 2000, *electricity* use more than doubled over the same period, representing 31.4% of total electricity consumption in 2000 (DTI, 2001).

THE UK POLICY RESPONSE

UK policy on carbon emissions reduction in the non-domestic sector is focused mainly on industry. Emissions trading is primarily aimed at large industrial emitters, although some construction and retail companies have taken part. Enhanced Capital Allowances are available for all types of business to install more energy efficient plant and machinery, but this does not include energy conservation materials or heating and air conditioning control systems. The commercial sector generally uses energy for space heating and cooling, lighting, refrigeration (especially in warehouses and food retail) and office systems including computing and telecommunications.

Since April 2000, companies not covered by a Voluntary Agreement to reduce emissions by a specific amount have paid the Climate Change Levy (CCL) on their energy bills. All companies have benefited from a reduction in National Insurance contributions (a type of employment tax) for their employees. Whilst this produces a neutral tax for the UK Treasury, some types of business, particularly those in the commercial sector, have a net gain, whilst many process industries and others with comparatively few employees are net payers. However most companies do not balance the energy budget against the payroll budget and the gains have largely been unrecognised. The general understanding of the situation before this research was that there was little interest or activity in reducing energy consumption in offices,

and few drivers to do so. The provisions of the EU Directive "Energy Performance in Buildings"², which will be transposed into UK law before 2006, are thought to be the only legislative spur to change.

SIZE OF THE SECTOR

Statistics for office property in the UK are hard to establish with a high degree of confidence because of definitions, change in methods of collection, confidentiality of ownership and valuation data. Many data sources cite figures for *commercial property*, which includes offices, retail, warehouses, hotels and the leisure sectors. Difficulties also arise as some data are collected on a country basis, i.e. for England or Wales, Scotland or Northern Ireland, but not necessarily on the same basis. Some are collected for the UK as a whole and not available as disaggregated figures.

It can be assumed that all of the 3.6 million UK companies have at least one office, owned or rented, however small, even if it is part of a building classified for another use. However, there are only 6 735 companies with more than 250 employees (DTI, 1999). This makes it very difficult to address the stakeholders and to get office users involved in policy issues. Yet the total office space is valued at £ 625 billion (1 000 billion Euro) (ONS, 2002) which is a substantial property asset. In England three million companies occupy 288 000 offices covering in total 87.2 km² floorspace (DTLR, 2000). The sector is dominated by London, which contains 47% of the property value but only 27% of the floor area.

Who owns this commercial property? In 2000 private corporations held 50%, financial corporations 15.5%, the public sector 25% and households and non-profit institutions 7.8% (ONS, 2002). There are assumptions in some statistical analyses which seem to equate ownership by financial corporations with investment property and non-financial corporations with owner-occupied. This is demonstrably untrue as just a brief check shows companies like Esso, Shell & BP with substantial property holdings (mainly in London) which are treated as investment property, and other major companies are known to hold a large property portfolio amongst their financial assets.

A rare analysis of ownership by commercial property value comes from a report by Capital Economics for the Royal Institute of Chartered Surveyors (Capital Economics, 2002), shown in Figure 1. This analysis shows owner-occupiers own 64% of commercial property, however it also shows that UK insurance & pension funds combined with the property companies own 24%, which does not agree with the national accounts, probably because of the assumptions indicated above. The spread of figures from various sources suggests that owner-occupiers may represent at least 50% by any calculations.

London also has a role in the global property market. Investment in property (or "real estate") is an international business, with funds that invest in property in a particular country (not necessarily their own) and others with portfolios of property that span national borders. Some 34% of City

1. For further analysis of this energy consumption see Wade et al (2003).

2. EU COM/01/226.

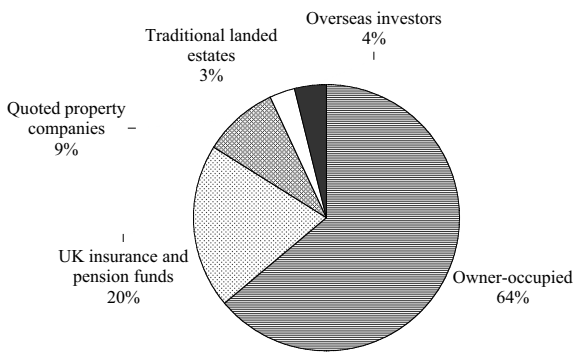


Figure 1: Ownership of UK commercial property.

of London commercial property (by floorspace) is now owned by non-UK sources (Lizieri et al, 2001), an increase of nearly ten percent since 1997. The importance is mainly due to its strength in global financial markets; London leads Frankfurt as the leading European player, and competes with New York, Hong Kong and Tokyo for pre-eminence. This means that the London property market is very sensitive to legislative or policy changes that make London more or less attractive as an investment.

STAKEHOLDERS AND THEIR ROLES

Stakeholders in commercial offices are generally those who invest in or use the properties or for whom property is the focus of their business. They can be broadly divided into seven categories.

1. Investors have a financial interest: they invest in property to earn income and/or capital growth. Depending on the type of investors the role may be as simple as to invest money and to receive the profits (e.g. private investors). Financial sector companies such as banks and fund managers generally invest in property as part of a balanced portfolio, to manage other people’s money for sound financial returns and to make money themselves. Individual companies invest in their own and other property portfolios in order to maximise the earnings on their capital assets; insurance and pension companies invest as part of their financial management for future commitments.
2. Property developers make money from buying land or property, demolishing and rebuilding it or refurbishing the property to a standard that will earn them increased returns on their original investment plus the amount spent on the upgrade. They may also carry out the design and building process, and may continue to own and manage the property afterwards. Otherwise they employ construction companies, architects and property management companies to carry out these functions on their behalf.
3. Construction companies may take on the role of property developer by investing in land or property and usually selling the completed product. Some may keep a proportion of the properties they build as their own investment portfolio.

4. Property managers rent, lease and manage the tenancies of properties, often on behalf of other organisations. Although most outsiders see property managers as providing a service to the tenants, in most cases the aim of property manager is to maximise rental return for the client.
5. Professional advisers is a term used here to comprise all those who specialise in property-related activity and includes architects, designers, land surveyors, valuation surveyors, building services engineers, facilities managers and anyone else whose prime function is to advise, manage or implement on a project basis. It also includes professional associations such as the Royal Institute of Chartered Surveyors (RICS) and the Chartered Institute of Building Services Engineers (CIBSE). For the purposes of this paper, we also include product and service providers including installers, manufacturers, utilities, ICT etc. in this group.
6. Policy and governance, a group that includes all those involved in policy, research and legislation relating to property and environment. The UK government departments concerned would be DEFRA and DTI; local government are also actors due to their role in planning permission and in setting and receiving local business taxes.
7. Users or occupiers are anyone that uses an office, therefore by definition stakeholder groups 1-6 are also users. We have identified three approaches to distinguish users; strategic, operational or passive. Strategic users are the managers of firms that use offices and require them to perform the function of providing a place where the firm operates. Operational users are those employees of the firms that are required to ensure that the buildings provide the correct functions to the firm, these are usually premises managers or, if specialists, may be environmental or energy managers. Passive users are for this purpose taken to be anyone who works in an office; whether the office itself is the focus of their work is not important. For firms that use offices there is a further distinction, whether they own the building (owner-occupiers) or whether they lease it (tenants).

CIRCLE OF BLAME

With so many stakeholder interests in the property industry, no one can be identified easily as the party who can take responsibility for improving the energy or environmental performance of offices. A number of factors discourage action to solve the problem of poor energy efficiency in offices.

Problems begin at the design stage. Clients rarely demand energy efficient buildings and architects rarely force it on to the agenda (this may improve now that sustainability considerations are a requirement of design projects in all British architecture degree courses). Architects, surveyors and letting agents all have a financial interest in increasing the specifications of buildings, since their commission is proportional to total cost, although the extent to which this affects actual practice is unclear. Environmental engineers are then called in to design building services to overcome the effects of inappropriate building design (Bordass, 1993). The result

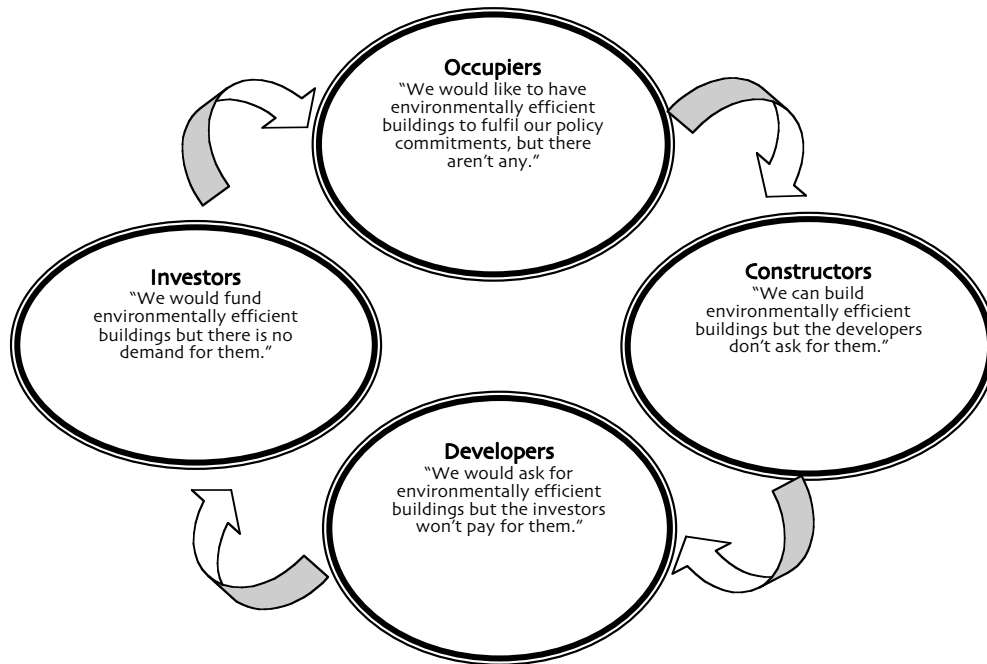


Figure 2: The commercial building "Vicious Circle of Blame".

may be an inefficient, uncomfortable and unhealthy building, but this will not necessarily be reflected in a lowered valuation if it is otherwise of 'investment quality'. Indeed, the opposite situation is more likely: when confronted with a non-standard product (such as a highly energy-efficient building), UK valuers actively mark down prices (Gibson & Lizieri, 1999).

Conservatism and vested interests across the property professions inhibit provision of the kinds of workplaces occupiers actually want. So why do occupiers not press for change? A considerable amount of stakeholder dialogue has taken place in the UK in the last four years, focused on various aspects of sustainable development, and particularly sustainable construction. The report 'Towards sustainability: a strategy for the construction industry' (Sustainable Construction 2000) describes it as a circle of blame as shown in Figure 2.

Is the position then hopeless unless legislation can be brought in? The research undertaken by ACE sought to identify who can take effective action and what might be done by each stakeholder.

Methodology

A report by ACE on energy efficiency in commercial offices was published in 2000 (Scrase, 2000). This report was updated as a briefing paper for potential stakeholders, and to identify changes in policy frameworks since the original research. The intention was to carry out a limited survey of stakeholders, bring the analysis of the survey to a workshop of the same stakeholders, to verify and augment the findings, before developing conclusions and recommendations.

SELECTION OF STAKEHOLDERS

In order to get meaningful results, the aim was to get a sample from the largest and more forward thinking of the stakeholder groups although it was decided not to involve any policy makers at this point. The type of person approached, and the success in obtaining an interview and attending the workshop is shown in Table 1. The purpose and scope of the project was explained by telephone to each contact. They were asked to commit firstly to the workshop and then to a telephone interview in advance. Two contacts were unable to commit to the workshop but were interviewed due to previous engagement with the issue.

TELEPHONE SURVEY

The telephone interviews took place in late June/early July 2002. There were six groups of questions. Every respondent was asked the first, which contained questions about the type of company, its energy or environmental policies and attitudes of the staff to those policies. The company representative was asked to compare it with its own sector in terms of engagement in energy efficiency. The intermediate sections were designed to establish characteristics and attitudes of office users, property owners, managers (covering owned or leased premises), investors or developers. Most respondents answered the "users" section plus one other, although several answered more than this as their role covered more issues. The final question to all interviewees was to name the three key things that they thought would make a difference to energy efficiency in the office sector.

WORKSHOP

The themes and responses from the interviews were analysed and presented at a workshop in July 2002, held at the Carbon Trust offices in central London. Respondents were sent the briefing paper plus an update on essential legisla-

Table 1: Matrix of stakeholders and their involvement.

Stakeholder Group	Sub-set	Number approached	Number Interviewed	Number at workshop
Investors	Fund management	4	2	0
	Insurance	3	2	1
	Pension Funds	1	1	0
Property Developers		5	1	1
Construction Companies		2	1	0
Property Managers		5	2	2
Professional Advisers	Architects/Engineers	3	2	1
	Professional Associations	2	1	1
	Facilities Managers	1	1	0
Policy makers		0	0	0
Occupiers	Strategists	3	0	0
	Premises/energy managers	3	4	1
<i>Total</i>		32	17	7

tion including the EU Buildings Directive to ensure that all had access to the same developments in policy and research. There was a disappointing turnout as apologies were received from three in advance and two on the day with just seven of the original respondents attending. The workshop presented the main points from the briefing and the survey, then two groups discussed points arising from the general headings “Finance and incentives” and “Regulation and mechanisms”.

Results

STAKEHOLDER CHARACTERISTICS

An analysis of the stakeholder responses to the questions about their environment, energy and corporate social responsibility policies was compared with their assessment of how active they were in these areas. The graph in Figure 3 demonstrates that most respondents saw themselves as very aware of the issues, although most lagged behind this assessment in what they had been able to do in a practical sense.

Generally, respondents saw themselves as ahead of their sector in this respect, although one user had recently found that they lagged their sector and this was the main reason for their heightened activity in improving energy efficiency in their offices.

OCCUPIERS

When questioned about energy efficiency measures in their own offices, the majority are tackling user behaviour but find it difficult to get users to turn off lights, computer screens etc., when not needed. They are installing easy technical fixes and a few are putting technical changes in place especially at times such as lease reviews, refurbishments, etc. The main drivers and barriers they found are cost, especially initial capital cost, its pay back time combined with lease lengths and the low levels of energy costs compared with other business costs. They also cited user awareness, getting users to use the energy saving mechanisms of the designs installed and leasehold arrangements that prevent them taking advantage of improvements in energy efficiency because they are tied in to existing agreements. There is a particular problem in English contract law that makes changes to the

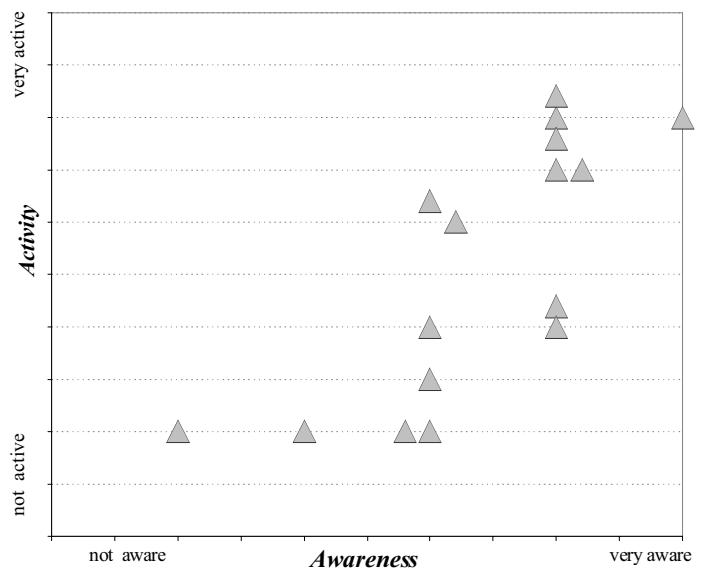


Figure 3: Characteristics of Stakeholders: Management activity versus Awareness.

building fabric difficult to achieve when one is only a tenant due to the agreement that the tenant must hand the property back in the same condition as when it was let.

Issues that drive effort for energy reduction for occupiers are sustainability or corporate social responsibility (CSR), their business ethic, image or reputation and for some, cost savings, although for others cost savings are expressly *not* one of the issues. The attitude of individual users and managers varies from very involved to disinterested and has a tendency to lag behind “corporate” interest. In the main, though, energy is simply not important in overall business concerns.

INVESTORS

One of the factors mentioned often in discussion of buildings is “investment quality”. Investors were asked to identify what they meant by this. “Investment quality” was primarily a building that gave good return on investment. Factors that were taken to indicate that letting would be

easy and income good were flexibility of the workspace, particularly in terms of changeable layout, and often the ability for a tenant to sub-let during times of down turn. Building quality, i.e. how well it was built and finished, was also an issue. Location, meaning ease of access to transport facilities and banks, supermarkets and other facilities is of major importance. Two of the four investor stakeholders consider environment and/or “future proofing”. This meant that they considered how the building would stand up to scrutiny in the future, either under more strict environmental legislation or physically, in response to climate change.

Investors were asked about their attitudes to “green” buildings, i.e. those that had been built to a good environmental or sustainable development specification. Most had no opinion, partly because they had not seen any or needed a better definition of such a specification. However where an opinion was expressed, it was that such buildings were more expensive, hence producing a lower return on investment, and would therefore be unattractive. They were considered to be for owner-occupiers only, where prestige and statements about the company’s image to consumers was seen to be important. One respondent actively pursues environmental improvement of their property portfolio; this can be difficult as, under current leasing arrangements, changes must be negotiated with tenants and not all tenants wish to undergo the disturbance that improvements would bring.

Investor stakeholders were asked about the role that climate change had in decisions on investment property. Most saw it as an issue for tenants, who would have to cope with extremes of weather and temperature on the building in a reactive manner. It was felt that socially responsible investment (SRI) teams were not yet having much effect in changing attitudes towards environmental matters and that there was a danger of increased regulation in UK pushing investment abroad. As climate change impacts will increase reliance on heating and cooling, it was thought that the cost and depreciation of plant will be more of an issue than preventative work on the building fabric. However, climate change is a long term issue that is building concern about possible impacts. There needs to be a business case made for investment in measures to mitigate climate change, with predictive tools available now so that new buildings are designed and built for the range of future conditions. This is especially important for private finance initiative (PFI) projects that need to take account of this *now*, when the proposals are being developed, because they design, build and manage the building in the longer term, and do so in conjunction with authorities accountable for providing sustainable solutions to the public.

The drivers for investment in energy efficient offices were the changes to UK Company Law which mean that trustees and pension fund managers have to be involved in the issues. There is a need for hard data that make the link between energy and asset value. The barriers remain high, principally the requirements and requests of investment clients to maximise their returns without concern for long term effects. This is coupled with not enough willingness from “ethical” investors to face the costs that are associated with making a genuine difference. A major driver would be if such investors stuck to their principles and actually implemented their CSR and environmental strategies.

PROPERTY DEVELOPERS

Property developers were asked what energy efficiency measures they currently include and why. The responses included “any cost-effective ones”, “any needed for good (or very good, or excellent) BREEAM rating”, high frequency lighting, high specification boilers, advanced building management systems (BMS) and any that improved thermal mass and air tightness which are key quality issues in UK building performance. BREEAM is the Building Research Establishment Environmental Assessment Method, which is a standard product with versions for different types of building that allows an environmental quality rating to be given. It includes energy efficiency as a factor.

When asked why they included these measures, the somewhat surprised response from all interviewed (including professional advisers) was that it was good practice. There seemed to be frustration that they routinely used good practice, and too many builders were building according to standard practice that was in effect poor quality. Good practice was easy to do, so why had these superior methods not become standard practice?

Property developers were driven by concerns not only of buildings that they were to hold in their own portfolio, but also those that were prime examples of their work to future customers. They were concerned about “future proofing” in the same way as investors but also, with a building life of 30-40 years they wanted to withstand the carbon legislation of the future. Energy labelling was seen to be a positive step forward that would drive change. This would create a drive towards building to a good standard and ensure that the developer would not be left with buildings that could no longer be let or sold. Barriers were seen to be cost (at least the perceived cost) of environmental measures or of better design at an earlier stage. The landlord-tenant issue was also highlighted. If the developer or landlord wants low capital cost this will lead to higher running costs for tenants. Tenants are often small and powerless at getting change, although some of the larger companies interviewed gave examples of how they had worked with their landlords to improve the building specifications. More problems appear in the management and interpersonal issues of building design; the basic specifications need thought if they are to deviate from “standard”. This means they need to be included from the start of the design and not enough thought is given early in the process – often architects and design engineers are not involved in the development specification and contract. Another issue is that good quality buildings need good workmanship and proper supervision, two things sadly lacking in the construction trade at present.

PROPERTY MANAGEMENT

From the property manager’s point of view, energy efficiency is obstructed by lack of interest or awareness from both landlords and tenants. In addition, the landlord provides the capital cost whereas the tenant receives the benefits, both in improved comfort and in lower energy bills. There is some evidence that large corporate tenants do what they need to their premises and negotiate with the landlord where necessary if the building does not meet the original specification at the end of the lease. Some landlords take measures as part of their own CSR, but for most energy efficiency is not

something which is thought about at all. Managing energy in a multi-tenanted block can be difficult as many landlords take a bill for a building and divide it among tenants in proportion to their floor area, rather than measuring actual energy use on a tenant-by-tenant basis. Heating and air-conditioning is usually provided as a building service, therefore tenants do not have the facility to control the cost of the temperature services. Managing agents are the link between landlord and tenant; they do not see it as their role to promote energy efficiency to tenants, but they may consider it in lease negotiations where cost-effective. Trends towards flexible leases, with more break points and get out clauses, may inhibit design for lower energy use as it inhibits investment in good quality buildings with lower return on investment. This will also occur with those that just provide “shell and core” (the building itself and the core services such as heat, light, lifts and toilets) so that the tenant arranges the internal layout and all the rest of their facilities. These buildings tend to be overspecified for all services in order to be able to provide for any eventuality.

Leases are the key legal mechanism that drive property management and improvement. Most leases require the tenant to leave the property in the same condition as they acquired it, which prevents most making any improvements. Most tenants believe that they cannot make any changes to the property. Thus energy issues are not considered unless there are strong environmental drivers, however, one landlord and one tenant each expressed the view that the lease does not present a problem for tenants wishing to improve the property for energy efficiency. It would appear that the legal jargon surrounding leases may be used as an excuse to do nothing.

Property managers found it difficult to find drivers for energy efficiency in buildings. It could be a positive selling point for new clients, but would only become an issue of importance if there were robust data that showed that a better working environment caused better productivity. The barriers were all cost-related: cost of change as well as cost of equipment and installation, neither the tenant, manager, nor client wanting to spend money in advance of savings, ignorance of the benefits leading to no perception of reasons to spend, and low energy cost meaning that bills were not a significant part of operational costs.

KEY TRIGGERS

As stated above, respondents were asked to suggest three things that would make a difference to the improvement of energy efficiency in commercial offices. The responses were grouped by type of response using a key word analysis and are shown in Table 2. They are ranked in order of the number of responses received of this type. The leading trigger was raised awareness of the issues of energy efficiency and climate change and their importance to us all. There was no overall desire to raise awareness in one particular group. Policy mechanisms such as financial incentives, tax, legislation, standards and labelling were all cited, and these were largely followed by interpersonal issues such as demand for change as an external pressure and management demand for change internally to the company. Both of these are linked to awareness of the issues.

Three financial issues were cited: reduction in capital costs (through grants, enhanced capital allowances (ECAs) etc.), mechanisms which produced better payback on capital costs and tax/stamp duty tied to BREEAM rating so that there was a financial incentive to achieve a better rating. There should be tax breaks and incentives to improve energy efficiency, and mechanisms designed so that they addressed multi-tenanted buildings. One important issue was to equalise VAT on refurbishment, as in the UK new construction is zero-rated whereas refurbishment work is rated at full VAT rate.

THEMES EMERGING OR DEVELOPED DURING THE WORKSHOP

Seven stakeholders attended the workshop, which began with an overview of the results from the interviews and went on to discuss the main themes emerging – financial instruments, legislation, standards and quality issues, and energy labelling. In addition to these themes, the participants discussed their role in the issue. They viewed their commitment to energy efficiency in offices (or to energy as one strand of an environmental policy) as a major factor in increasing awareness of energy as an issue in property management and investment. The view was expressed by many that they lead the “pack” but that they need to get more property professionals to join them, and that this was beginning to happen. For the most part, the response in the workshop represents those developments that could help move mainstream thinking towards best practice. Response from the workshop was augmented by comments from two others that had been unable to attend.

Financial issues

The themes reviewed by this group included enhanced capital allowances (ECAs), the Climate Change Levy (CCL), Emissions Trading Scheme (ETS) and return on investment (ROI). The main comments on each of these are shown in Table 3. A general point was made that information on financial instruments is widespread and difficult to access. There

Table 2: Key triggers for change cited by stakeholders.

Key triggers	
Awareness of the issues	6
Financial incentives	5
Legislation/standards to force compliance	5
Demand from public/companies	4
Tax on inefficient buildings/plant	4
Building and system energy labelling	3
Management pressure	2
Metering for tenants, departments at local budget level	2
Carbon valuation system	1
Energy Agency that provided a one stop shop for all energy issues	1
Housekeeping – efficiency of use in existing system	1
Improvement at key points such as refurbishments	1
Investment incentives & commitment	1
Landlord tenant mechanism being devised that benefits both	1
Professional advice	1
Rights to working environment leading to increased user demand	1

was discussion as to whether the variety of sources was helpful or confusing, or whether one agency to handle all was better. An accreditation scheme from one agency to ensure the quality of all information providers might provide the solution.

Legislation, standards and labelling

This group suggested that client demand for energy efficiency as an investment quality factor was more effective than regulation and they welcomed the Buildings Directive initiative for energy labelling as an important driver. Raising the profile of energy efficiency standards in buildings could create a new element of competition in the market.

The group called for:

- A responsible body in the UK to drive forward robust labelling for offices overcoming all the difficulties entailed in addressing embodied energy, energy in use, multi-tenanted buildings, office quality, reliability of information and ease of assessment.
- Planning authorities and regional development agencies (RDAs) required to develop a coherent strategy for buildings and energy efficiency, indeed for sustainable energy, incorporating suggestions such as fast tracking,

i.e. speeding up the planning process, for high quality environmental buildings where it is in the public interest.

- Use public procurement as a means of driving up what is seen as the minimum acceptable standard. All public offices should have a BREEAM assessment (specifying the lowest acceptable rating), whether leased, new build, or other owned buildings. Government departments should report on their energy use in offices so that it provides a benchmark for private companies.
- Common standards in environmental reporting: environmental reporting emerges as an important driver. Two aspects should be developed in this respect; the requirement for companies to report on their environmental impacts, and the transparency or importance of buildings emissions as part of their impact.
- Provide more and better information in a format suitable for specific users to enable them to select energy efficient options more readily.

Work should be done to further understanding of energy efficiency as a system rather than the result of individual pieces of equipment and to demonstrate the value added to the accountants.

Table 3: Key points on financial issues from workshop discussions.

Mechanism	Key Points	Changes required
Enhanced Capital Allowances (ECAs)	<ul style="list-style-type: none"> • Only available on equipment, not systems or controls • Fail to make efficient options competitive on an initial cost basis • Difficult to understand especially for smaller businesses • Tax status and tax rules can render them ineffective 	<ul style="list-style-type: none"> • Applications should be reconsidered • Easier access to information • Easier to understand • Consider requiring net gainers to spend gain on energy efficiency
Climate Change Levy (CCL)	<ul style="list-style-type: none"> • No impact on those with power to reduce bills • Irritant rather than effective 	<ul style="list-style-type: none"> • Reduction in costs needs to be linked to installation of plant or systems i.e. within same management accounting category
Emissions Trading System (ETS)	<ul style="list-style-type: none"> • Good potential • Cost per tonne of carbon negligible for savings in a big construction project • Too easy to "cheat" the system at present – easy way in for those who have done nothing 	<ul style="list-style-type: none"> • Credits for high efficiency buildings • Develop system so it is sustainable and provides a good income • Develop rigorous methodology • Make it easy to claim
Return on investment (ROI)	<ul style="list-style-type: none"> • Needs balance between property income and cost to tenants • Local rates distort simple equations • Energy efficient buildings are perceived to be more expensive to build, therefore of higher value, so for investors to get return, rents or service charges (or in combination) need to be on the high side of the market, however that makes the rateable value higher also, thus the tenant pays more in every way for an energy efficient building • For landlords the benefit of "lettability" - comfort and controllability afforded by energy efficient offices - leads to greater tenant satisfaction, lower "churn" and reduced void times as well as an expectation of good returns 	<ul style="list-style-type: none"> • Evidence on energy efficient buildings needs to be gathered and data assembled to prove the value to business of investment in, ownership and occupation of such buildings • Local authorities should encourage energy efficient buildings by lowering rates for environmental quality in the same way that Enterprise Zones can make adjustments

Recommendations

A number of core issues emerged from the workshop:

- Design of financial instrument;
- Energy labelling;
- Environmental reporting and CSR;
- Role of the planning system in energy in the built environment;
- Evidence on energy efficient buildings;
- Public procurement as a benchmark;
- Partnership working.

These were developed into a number of recommendations for action, particularly in order to disseminate information and practical resources to the people that had the power to use them. Four proposed further research, two into aspects of economic instruments, and two that gathered and evaluated evidence on buildings and user productivity and on energy efficiency as an issue in asset management. It was clear that each of the stakeholder groups had a role to play, but that companies play a major role as investors, as clients of property developers and managers, and as occupiers, both owner-occupiers and in the landlord-tenant equation. Government needs to enable change to take place by setting frameworks, policies and financial instruments that are well designed and well marketed. Building professionals including property developers, agents, architects, engineers and facilities managers, hold the knowledge that they need to apply if energy efficiency is going to be implemented. They can promote energy efficiency through partnership. They can allow it to be ignored through inactivity, or through failing to ensure that those with a narrower focus actually understand its benefits. Energy efficiency has to be incorporated early enough in design and contract decisions to reap those benefits. More importantly, opportunities to improve energy efficiency when carrying out refurbishments and at tenancy changes must be taken.

Discussion

There are significant barriers to change; overcoming these requires long-term policy or cultural change:

- Awareness of the public on climate change issues;
- Awareness of tenants of the need to reduce energy consumption;
- Awareness of clients that they can “demand” improved energy efficiency, or that buildings have a function in terms of thermal comfort, not just as shelter;
- Achieving improved market valuation for energy efficient buildings;
- Improving the quality of construction workmanship to achieve energy efficiency as specified by the designs;
- Changing leasing structures so that they enable rather than prevent building fabric improvements;

There are drivers that move the issue forward. Momentum already exists in:

- Corporate social responsibility or sustainable development policies or other ethical core values;
- UK Building Regulations;
- Environmental reporting;
- Benchmarking.

The question remains, who is going to transform the market?

From the issues raised during this consultation there are a number of candidates and some of them do not even appear on the “circle of blame” discussed earlier.

The candidates are:

- Governments; whether local, national or international.
- Companies, in the role of investors, clients and tenants.
- Property agents who are uniquely positioned to see both sides of the landlord-tenant arrangement and influence decisions.
- Property developers, who have the capacity to require delivery of finished buildings to the agreed specifications.

Views from the stakeholders appeared to see governments as providing steering or pointing the way; on their own, they are not going to transform the market. Demand creation must come from occupiers wanting to use energy efficient buildings. The power driving transformation is demand from investors, who could see this type of building as an inherently better risk that also gives them better return on their investment – and that return comes from the demand for the office from occupiers. So far, though, this is in danger of repeating the “circle of blame”, as occupiers complain that no-one builds the energy efficient buildings for them to use. If property developers are willing to build according to the clients’ specifications, the problem is speculative office building, where there is no occupier in mind for the finished building and leasing of existing office space. Who determines how quickly an empty office is let? Enter the property agent or letting agent (who does not continue to manage the property once the landlord-tenant arrangement has been drawn up). This is the point on which all the “investment quality” issues hang. If the building can be let to one or more tenants in a quick time at a reasonable cost for the tenant, providing income for the owner, then it is good investment quality. As energy efficiency is not valued at all as a factor in the quality of a building, no attention is paid to it.

There are two opportunities for changing this. One is engagement with the Royal Institute for Chartered Surveyors (RICS), the influential professional body concerned. Their publication “RICS Appraisal and Valuation Manual” known as the “Red Book” provides the guidance and standards for valuation surveyors to assess property. Whilst RICS currently has a group addressing sustainable development and the RICS response, and another working group on CO₂ reduction, neither appears to have been engaged in the revisions underway to the Red Book (RICS, 2002). RICS has the potential to have a major impact on the way energy efficiency is valued in commercial offices, and is currently working to put in place realistic and workable international standards in valuation for real estate globally.

The second is the degree of commitment of companies to their CSR or environmental policies. The evidence provided through the consultation showed that companies making an effort to improve their energy efficiency are influencing the market, as competitors with less commitment to such policies find they are lagging their peers in benchmarking exercises. This is an important factor for those companies where a public image is important, whether their "public" is the consumer, shareholder or civil society. Leading companies can influence the property market, and act with their own properties so that when they move on, or sublet, the standards are raised for the next tenant. The most important organisation for the UK property market is government, as the public sector are seen as reliable and responsible tenants who set the minimum acceptable standard. Raising the standard to include energy rating of rental property would send strong signals to the market and provide a new baseline for smaller companies without strong CSR concerns.

Does such a change extend to property globally? For major companies, their ethical ratings through indices such as the Dow Jones Sustainability Index join with initiatives such as Global Carbon Disclosure that was launched at the World Summit for Sustainable Development 2002 in Johannesburg. One investor stakeholder suggested that the UK has an opportunity to demonstrate how to handle property development in a low carbon future. If it succeeds in establishing the policy framework that promotes energy efficiency *and* allows a thriving London property market in the global economy, then other cities will follow suit.

The problem in this scenario is that companies do not yet understand the role of their office buildings in contributing to lower carbon emissions on a country or global basis. Much education and dissemination of information is required, both of the problem and the benefits of solving it, business benefits as well as environmental ones, before the leading companies provide the force for change in attitudes to property valuation.

The introduction of European legislation may raise awareness and drive the lowest standards upwards. The requirement for energy labelling within the Buildings Directive provides a competitive spur to office property, depending on the final interpretation of "public buildings". UK Health & Safety law applies to public buildings meaning any that are accessed by the public including employees. This would imply that most commercial property, and especially those in multiple occupation, would be included in the definition. The challenge is to develop a robust, meaningful common standard of energy labelling system applicable in the different climates and microclimates in the cities and regions of Europe. The Emissions Trading Directive also offers an opportunity for property developers in particular to gain from introducing energy efficient buildings. These directives assist towards achieving Europe's climate change targets under the Kyoto protocol, but the role of the commercial sector in meeting the target is otherwise small. The strongest driver for companies globally to address energy efficiency in commercial property appears to be sustainable development and reporting standards.

Conclusion

This paper identifies the drivers and barriers for energy efficiency in commercial property, an issue that is endangering carbon emissions reduction because of inefficiencies in building performance and the greater use of electronic technologies within the commercial sector. It considered the viewpoints of the wide range of stakeholders involved in property, from investment to management, from design and build to occupation. The main agents for change have been identified as property managers, investors and occupiers. Property managers have the key link role between occupier and investor, and influence the market through property evaluation as well as through contract management. Investors and occupiers can create demand, but this is mainly stimulated by their social and environmental stance, as most lack understanding of the opportunities for and benefits of energy efficient property.

Current legislation provides a framework for improving the understanding, and energy labelling provides a competitive edge both in property development and management. However, much work needs to be done to persuade valuation professionals to identify energy efficiency as a desirable investment quality and finance professionals of the systematic nature of energy efficiency and its value to the company, for users, investors and constructors. The leading representatives of these stakeholders see many opportunities for change including financial incentives, but the underlying drive appears to be an active corporate philosophy represented by a public sustainable development strategy.

Thus in a multiple stakeholder arena, each stakeholder can act, but none can transform the market in isolation. Multiple actions from stakeholders in a framework that allows change to institutional practice is required: it would seem that some of the stakeholders are willing, but institutional barriers and traditions must be overcome to encourage the rest to take action.

References

- Bordass W. (1993) Building performance for the responsible workplace, in F. Duffy, A. Laing and V. Crisp (eds) *The Responsible Workplace*, DEGW Ltd., London, pp. 78-94.
- Capital Economics (2002) *Property in Business – a waste of space?* April 2002 RICS, London.
- DTI (1997) *Energy consumption in the United Kingdom: Energy Paper 66*. Department of Trade and Industry/ Government Statistical Service. 1997 The Stationery Office, London.
- DTI (1999) *SME Unit UK businesses 1999* The Stationery Office, London.
- DTI (2001) *Digest of UK Energy Statistics 2001*. Department of Trade and Industry/ Government Statistical Service. The Stationery Office, London.
- DTLR (2000) *Commercial and Industrial Floorspace and Rateable Value statistics 2000* (based on Valuation Office data) The Stationery Office, London.
- Gibson V.A. and Lizieri C.M. (1999) New business practices and the corporate property portfolio: how responsive is the UK property market? *Journal of Property Research* 16, 201-218.

- Lizieri C., Oughton M. & Baum A. (2001); *Who Owns the City 2001*; University of Reading, Reading, Berkshire
- ONS (2002) Blue Book, in *British Property Federation Quarterly Review* March 2002
<http://www.bpf.propertymall.com/publications/>
- RICS (2002) From various faculties and forums of the Royal Institute of Chartered Surveyors (RICS) website May-August 2002, including http://www.rics.org/val/red_book.html
- Scruse, I. (2000) *White Collar CO₂* August 2000 Association for the Conservation of Energy, London.
- Sustainable Construction Focus Group (2000) *Towards Sustainability: a strategy for the construction industry*. April 2000 The Construction Confederation, London.
- Wade J., Pett J. & Ramsay L. (2003) *Energy efficiency in offices: assessing the situation* March 2003 Association for the Conservation of Energy, London. www.ukace.org

Glossary

ACE	Association for the Conservation of Energy
BMS	Building Management System
BREEAM	Building Research Establishment Environmental Assessment Method
CCL	Climate Change Levy
CIBSE	Chartered Institute of Building Services Engineers
CSR	Corporate Social Responsibility
DEFRA	Department for Environment, Food and Rural Affairs
DTI	Department of Trade and Industry
DTLR	Department of Transport, Local Governments and the Regions
ECA	Enhanced Capital Allowances
ETS	Emissions Trading System
EU	European Union
GDP	Gross domestic product
ICT	Information and communications technology
ONS	Office of National Statistics
PFI	Private Finance Initiative
RDA	Regional Development Agency
RICS	Royal Institute of Chartered Surveyors
ROI	Return on investment
SRI	Socially responsible investment
UK	United Kingdom
VAT	Value Added Tax

Acknowledgements

ACE gratefully acknowledges the funding support of the Carbon Trust for the work described in this report and for permission to publish it. The views expressed however are those of the authors and should not be attributed to either the stakeholders who contributed to the study or to the Carbon Trust itself. The information is being made available to you as part of the Carbon Trust's general activity of promoting a low carbon future for the UK.