

INCORPORATING ENVIRONMENTAL BEST PRACTICE INTO COMMERCIAL TENANT LEASE AGREEMENTS:

GOOD PRACTICE GUIDE – PART 2©

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CRiBE Centre for Research in the Built Environment

Centre for Research In Built Environment

The Centre for Research in the Built Environment (CRiBE) is located within the Welsh School of Architecture, Cardiff University. CRiBE has pioneered research and established an international reputation in the fields of environmental design advice, energy efficiency of buildings and urban sustainable development. CRiBE comprises an established multi-disciplinary group of environmental design specialists including architects, engineers, planners and social and environmental scientists. This brings a uniquely holistic inter-disciplinary approach to effective and sustainable design, construction and operation of the built environment.

CRiBE plays a major role in informing the future of building design, and also in defining and developing the whole area of urban sustainability.

Expertise

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- Prediction and measurement of building performance
- Urban environmental planning
- Waste minimisation and management
- Renewable energy
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- BREEAM for Offices, Schools and EcoHomes assessments

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Computational modelling software for application to building and urban scale design and management. Includes environmental design software (HTB2), Ecotect and EEP, an energy and environmental prediction tool for urban scale modelling.

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- Architects and engineering consultants
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- Developers
- Estate managers
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- Building operators

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- Cardiff City Council
- DETR
- Hanover Trade Fair
- Millennium Dome
- National Botanic Garden for Wales
- National Assembly for Wales
- Newcastle City Council, Australia
- United Development Company, Qatar
- Ove Arup and Partners
- Wales Millennium Centre



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Good Practice Guide – Part 2

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Foreword

There are numerous reasons why commercial landlords and tenants should consider their responsibilities to improve their environmental performance, particularly in relation to energy consumption. Some of these reasons are provided below, and whilst the list is not exhaustive, they provide bottom-line business reasons, which all aim to reduce carbon emissions from the built environment and improve environmental performance.

- The Energy Performance of Buildings Directive (EPBD), has led to the amendment of the UK Building Regulations (2006), which will require all new commercial buildings to produce 27% less carbon than previously allowed. Further changes to the Building Regulations are planned.
- The EPBD has also led to the requirement for Energy Performance Certificates. These will be based on the energy efficiency of a building and will be required when buildings are sold, let or renovated.
- Reports from Government and the Royal Institute of Chartered Surveyors suggest that Green Buildings will be of greater value. Better performing buildings may provide better value for the tenant in terms of the rent, whilst offering more flexible leases.
- Compulsory carbon trading may be introduced by the Government. This is likely to affect larger occupiers and property owners which use greater than 6,000MW electricity per annum.

This Good Practice Guide aims to encourage landlords and tenants to consider a more sustainable approach, helping both parties to address these issues through the commercial lease agreement.



Incorporating Environmental Best Practice into Commercial Tenant Lease Agreements:

Good Practice Guide – Part 2

Introduction

The overall aim of the Good Practice Guide, *Incorporating Environmental Best Practice into the Commercial Sector*, is to help landlords and tenants of commercial buildings to incorporate a sustainable method of meeting the requirements of environmental legislation. This will involve them reducing resource consumption while improving the environmental performance and energy efficiency of their organisation and their building.

The Good Practice Guide is divided into two parts. Part 1 [1] provides model lease clauses and recommendations. These can be discussed and incorporated into commercial lease agreements at lease negotiation stages. It also highlights where adoption of model lease clauses help to meet

the requirements set by relevant environmental legislation within the UK.

This document, Part 2, is divided into Section A and Section B. Section A provides explanatory notes about the environmental legislation relating to the operation and management of a building. Section B provides explanatory notes on the research undertaken by the Centre for Research in the Built Environment (working in partnership with King Sturge, Eversheds, RICS Foundation and the Environment Agency Wales). The model lease clauses and recommendations provided in Part 1 were derived from this research.

Part 2 should be read in conjunction with Part 1.



Section A

Legislation – the driving force behind effective environmental management and operation of a building

Legislation overview

The Kyoto Protocol became international law on 16th February 2004 [2]. This committed the European Union to cutting their emissions of 6 greenhouse gases (including carbon dioxide) by 8% below 1990 levels by 2012 [2]. The residential and service sectors currently account for 40% of total energy use and are expanding [3]. This energy use is mainly related to buildings, and has increasingly become an area of concern. As a result, more stringent legislation is being introduced and enforced as part of a major drive to reduce greenhouse gas emissions from buildings.

Legislation is being used to improve building management and operation. The following summarises some of the key legislative drivers that have been introduced into the EU and the UK. The figures provided in brackets in **bold italics** refer directly to the clauses, as provided in Part 1 of this Good Practice Guide.

The Energy Performance of Buildings Directive (EPBD) 2002 [3]

With Climate Change being a key topic on Agendas all around the world, Europe has a major role to play. The EPBD sets obligations and requirements for all Member States to introduce legislation and regulations to enforce these requirements. Many of the forthcoming requirements will have direct relevance to the commercial sector:

- Article 4 - sets minimum energy performance requirements for buildings (both new and existing).
- Article 5 – ensures consideration of alternative systems in new buildings with a total useful floor area over 1000 m² (Article 5). The alternative systems mentioned specifically are:
 - = decentralised energy supply systems based on renewable energy
 - = combined heat and power systems
 - = district or block heating or cooling
 - = heat pumps
- Article 6 – ensures renovation of existing buildings over 1000m² includes upgrading to meet the minimum energy requirements as long as this is technically, functionally and economically feasible.
- Article 7 – requires the provision/display of energy performance certificates. Certificates will be:
 - = made available to the owner when the building is constructed,
 - = made available by the owner to the prospective buyer if the building is being sold,
 - = made available by the owner to the prospective tenant if the building is being rented out
 - = displayed prominently for buildings with a total useful floor area over 1000m² which are occupied by public authorities and institutions providing public services to a large number of persons and frequently visited by these persons.
- Article 8 – requires regular inspection of boilers fired by non-renewable liquid or solid fuel. This can be implemented through:
 - = a regime of inspections:
 - ≡ boilers with an effective rated output of 20-100 kW: regular inspection.
 - ≡ boilers with an effective rated output greater than 20 kW which are older than 15 years: one-off inspection for whole heating installation
 - ≡ boilers with an effective rated output greater than 100 kW: inspected every 2 years (4 years for gas boilers).
 - = Or the provision of advice to users on the modifications to the heating system and on alternative heating systems with non-compulsory inspections. If this option is taken the Member State has to submit a report every two years to show it has an equivalent result to the regime of inspections.

- Article 9 – requires regular inspection of air-conditioning systems with an effective rated output of more than 12kW.
- Article 10 – requires the independent certification of buildings, boilers and air conditioning systems and drafting of recommendations to be carried out by qualified and / or accredited experts.
- Article 15 – requires these items to be complied with through local legislation by 4/1/06.

As well as the specific requirements, the EPBD states its overall objective. This is to promote the improvement of the energy performance of buildings within the Community. Developing and including an Energy or Environmental Policy in the information pack shows commitment to this aim (*1.1 and 1.4*). As does encouraging tenants to consider and discuss energy related topics (*10.1 and 10.2*).

The Building Regulations (Non-Dwellings) – Part L 2006 [4, 5]

In the UK, amendments to the Building Regulations have been used to transpose articles 4, 5 and 6 of the EPBD. This amendment requires all new non dwelling buildings to produce 27% less carbon than previously allowed. It also requires improved energy efficiency of renovated buildings. Commercial buildings are covered by guidance documents L2A [4] and L2B [5], which relate to new build and existing buildings respectively.

The following provides an explanation of the recommendations set in the Building Regulations – Part L2:

- L2A introduces the methodology of calculation of the energy performance of the building and relates it to the Target carbon dioxide Emission Rate. It also defines the limits on design flexibility as related to aspects of the building.
- L2B introduces the concept of “Consequential Improvements”. This requires improvements to the energy efficiency of a building (area > 1000m²) to be carried out if the following alterations are being carried out:
 - = An extension
 - = The initial provision of fixed building services
 - = The installed capacity of fixed building services being increased.
- Consequential improvements should be carried out to at least 10% of the value of the principal works. The following improvements are considered viable if they have a payback of less than 15 years:
 - = upgrading heating, cooling and air-handling systems which are more than 15 years old
 - = upgrading lighting systems that don't meet the required lamp efficacy
 - = installing energy metering
 - = upgrading thermal elements and windows which don't meet expected thermal insulation levels.
 - = Increasing on-site low and zero carbon energy generating systems (although the required payback period is reduced to 7 years for these items)
- L2B also includes a list of controlled services and fittings. If these are being altered / replaced, they should meet the standards indicated in the guidance.

Adding energy monitoring is one of the possible consequential improvements specified by the Building Regulations. Compliance with this requirement can be demonstrated by showing the availability of metering and monitoring data in the information pack / tenant handbook (*1.1*).

Alterations to the building must be carried out in compliance with the building regulations. This means that alterations cannot be carried out which then cause a non-compliance with the building regulations. Neither is it acceptable for alterations to exacerbate an existing non-compliance with the building regulations (*9.1, 9.4 and 11.1*).

The Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007 [6]

Articles 7, 9 and 10 of the EPBD have been implemented through the Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007. This will ultimately increase pressure on all building owners and occupiers to improve energy efficiency.

The following provides an explanation of the recommendations set in the Energy Performance of Building Regulations.

- The building Energy Performance Certificate (EPC) must show the “asset rating”. The asset rating will express the energy efficiency and environmental impact of the building in terms of carbon dioxide emissions. This will generally be expressed on an A-G scale. The asset rating is calculated using the method published by the Department of Communities and Local Government [7]. An EPC is required for every building which is built, sold or let, and should be available to prospective buyers / renters. These certificates will be valid for 10 years. This requirement will hold for:
 - = the sale or rent of all buildings other than dwellings with a floor area over 500m² from 06/04/2008.
 - = the construction of all non dwellings from 06/04/2008
 - = the sale or rent of all remaining buildings other than dwellings from 01/10/2008
 - The Display Energy Certificate (DEC) shows an “operational rating”. This will be derived from meter readings which shows the energy consumed during the occupation of the building over a 12 month period. A DEC is required for every building with a useful floor area over 1000m² where the owner is a public authority or an institution which provides public services to a large number of persons and is frequently visited by those persons. These criteria would include Government Departments or Agencies, museums and swimming pools but not hotels or retail outlets. The certificate must be displayed prominently and be clearly visible to members of the public. These certificates will be valid for 12 months and must be replaced annually. The operational rating does not have to be included on the DEC during the occupier’s first 15 months of occupation. In addition to the DEC, an advisory report containing recommendations for improving the energy performance of the building is required. This requirement will hold for all public buildings from 06/04/2008
 - Any air conditioning systems in a building which have a collective cooling capacity larger than 12kW must be inspected at regular intervals. This should be done by an accredited energy assessor at intervals not exceeding 5 years.
 - = First inspection of all existing systems over 250kW must have occurred by 04/01/2009
 - = First inspection of all remaining systems over 12kW must have occurred by 04/01/2011
 - Energy assessors who produce EPCs or DEC’s or inspect air conditioning systems must be members of an accreditation scheme approved by the secretary of state.
 - A register of EPCs, DEC’s and related recommendation / advisory reports will be maintained by the Secretary of State. The regulations will be enforced by the local weights and measures authorities. The penalty for breaches are:
 - = Sale or rent of dwelling: £200
 - = Sale or rent of commercial building: £500 - £5000
 - = Failing to display a DEC: £500
 - = Failing to obtain an advisory report: £1000
 - = Failing to have an air conditioning system inspected: £300
- In the UK, Article 8 of the EPBD is being implemented by providing advice and information in relation to the energy performance of boilers and heating systems.

The requirement that the landlord provide copies of the EPC to prospective and actual tenants can be met by including it in the information pack / tenant handbook (1.1).

The Energy Performance of Buildings Regulations requires that air conditioning equipment on a system over 12kW must be inspected, this may require access to tenant areas. In addition it would be good practice to assess the energy efficiency of other equipment (1.2 and 7.2).

The Environmental Protection (Duty of Care) Regulations 1991

The following provides an explanation of the recommendations set in 10.2 of Part I.

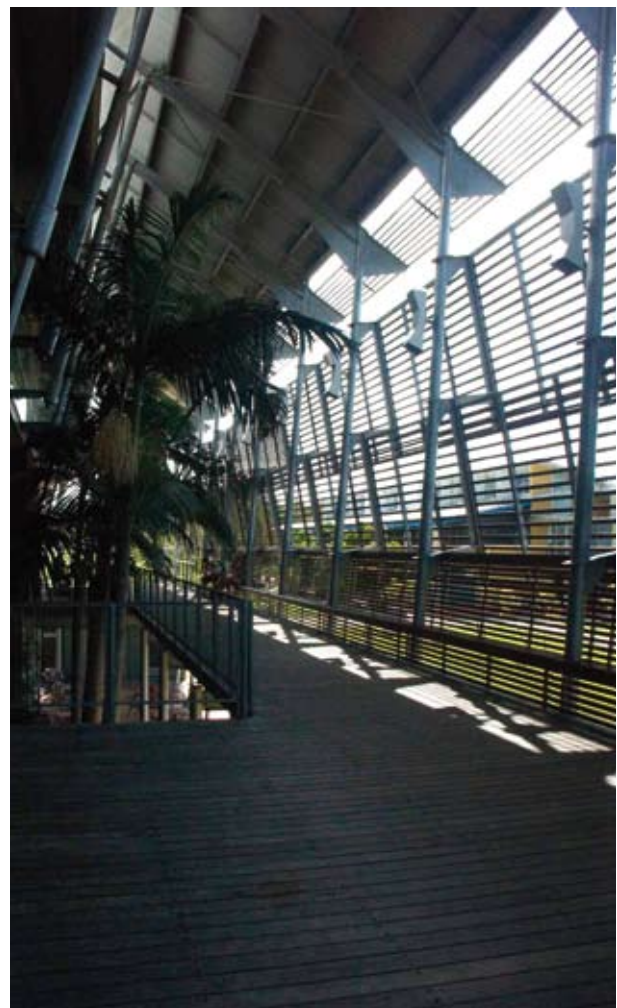
The Duty of Care Regulations are set out in section 34 of the Environmental Protection Act 1990. They apply to anyone who is the holder of controlled waste. "Controlled waste" means any waste generated from the domestic, commercial or industrial sectors. Anyone who imports, keeps, carries, disposes or acts as a broker on behalf of other people, is classified under the Regulations as a "holder" of waste. The holder of waste must take all reasonable steps to ensure the waste is contained, stored and handled correctly, preventing any leaking or littering into the environment. The holder of waste must also ensure that the waste is transferred to an appropriately authorised carrier for recycling or disposal and must know the destination of the controlled waste. Under the Duty of Care Regulations, records of the nature and volumes of waste must be produced and kept by the waste producer. This information must also be transferred to the authorised carrier of the waste by way of Transfer Notes.

Where landlords provide waste disposal services on behalf of tenants, the volume and nature of waste needs to be recorded. The keeping of accurate records will be easier and more compliant if tenants are asked to provide such information (for example on a monthly basis). Implementing this type of record keeping will also help the tenant become more aware of their waste disposal needs. They will then be able to identify when they are disposing of waste which needs special treatment (e.g. batteries or paint pots). (10.2).

The landlord can establish the obligations and responsibilities for both parties as they relate to "The Environmental Protection (Duty of Care) Regulations. This can be done by informing tenants about waste recycling schemes, waste disposal facilities and permitted disposal routes for liquid wastes (10.2).

Possible Future Legislation

- A future revised version of the EPBD would require mandatory compliance with standards that are currently voluntary. A revised EPBD may also require the energy performance of small buildings to be improved when they are renovated (currently this only applies to buildings of more than 1000m²) [8].
- Meeting the Energy Challenge – A White Paper on Energy 2007 [9]
 - = Large non-intensive public and private sector organisations account for 10% of the UK's emissions. A Carbon Reduction Commitment will apply to the largest organisations in this sector (those with mandatory half hourly metered electricity consumption greater than 6000MWh per year). This will involve a mandatory cap and trade scheme. This could be implemented using powers to set up new carbon trading schemes through the proposed climate change bill [10].
 - = There will be a consultation in 2007 on the requirement to display Energy Performance Certificates in business premises in England and Wales.



Section B

Research – the real case for effective environmental management and operation of buildings

I Research overview

Between 2000 and 2006, extensive research was undertaken by CRiBE to identify opportunities for improving the environmental performance of the commercial sector. This work was carried out with organisations and businesses within the commercial sector of South Wales.

Between 2000 and 2002 the work identified that the commercial sector comprised many tenant organisations residing in rented accommodation, often in multi-tenanted buildings. Many common cost-effective opportunities were identified for improving environmental performance and energy efficiency. However, the implementation was restricted by uncertainties relating to the distribution of responsibility between tenant and landlord. Coupled with this, financial benefits to either party were undefined. At the end of 2002, it was found that the standard commercial lease agreement is often considered a systemic barrier to environmental improvement and resource efficiency within the commercial built environment. This was particularly evident in multi-tenanted buildings. In summary, the work suggested the following 3 key reasons behind this:

- Commercial lease agreements did not encourage (and in some instances discouraged) tenants from making environmental improvements
- Payment structures inhibited tenants from making improvements and made it difficult for landlords to justify investments
- Lack of communication, particularly relating to best practice, between the tenant, the landlord and other tenants within shared buildings.
- ranging in age from 2 to 33 years old
- ranging from single occupancy through to 18 tenants
- and ranging from cellular naturally ventilated office (Type 1) through to open plan, prestigious air-conditioned office (Type 4).

Further funding enabled the work to progress and focus on opportunities with shared benefits (financial and environmental) for landlords and tenants. As illustrated in Table I, the five buildings selected for the work encompassed a range of buildings:

Bespoke support and training was provided to the cluster group for each building. This encouraged them to work together to identify feasible opportunities for environmental improvements. They were also encouraged to integrate environmental management and energy efficient techniques into day to day management and operation within the building. In 2003 work commenced to examine the commercial lease agreements with landlords to identify where the feasible opportunities could be incorporated.

Table I Details of Buildings and Participants

	Building A	Building B	Buildings C & D		Building E
Landlord Company	Associated British Ports / Norwich Union	Danmerc Property Management (agent)	Welsh Development Agency		Aberdeen Asset Management
Property Manager	Caxton Facilities Management				King Sturge
Age of Building	6 years	6 years	12 years	8 and 2 years (2 phases)	33 years
No of tenant companies	3	1	5	8	18
Type of Building *	4	3	2	1	3

* Type of office building – source DETR Energy Consumption Guide 19 – Energy use in Offices

Working with King Sturge, Eversheds and the Environment Agency Wales, the feasible opportunities identified were examined with support from a variety of landlords, the British Property Federation, Prudential Investment Management and the Royal Institute of Chartered Surveyors. A set of model lease clauses and recommendations were formulated from this consultation process and used for the development of Part I of this Good Practice Guide.

2 Relevance of the research to Good Practice Guide – Part I

The following provides the findings, observations, feedback and suggestions developed from the research undertaken as described in Section B (I) above. The figures provided in brackets in **bold italics** refer directly to the clauses and recommendations, as provided in Part I of this Good Practice Guide

Information (1.1 and 1.2)

Feedback from the research suggested that the selection criteria used by tenants for office premises included environmental issues as well as the more important issues of cost, location, size and suitability for purpose. However, as more stringent environmental legislation is introduced, tenants are increasingly becoming more aware of the need to consider environmental and energy issues in their selection criteria. This is evident in the increased uptake of environmental accreditation schemes, such as ISO14001, which add a recognised competitive edge to any business.

The cluster groups discussed the concept of Information Packs relating to the premises which give due regard to environmental issues. Information considered useful for tenants included:

- = Details of energy efficient facilities and equipment installed or planned for the forthcoming year,
- = HVAC efficiency and operating parameters,
- = Monitoring schedules,
- = Maintenance schedules,
- = Availability of metered information
- = Availability of recycling facilities available for waste.

Tenants in a multi-let building identified the need for more control over the monitoring of their resource consumption. Where rented premises do not provide individual sub-meters, the tenants had requested that they be installed. Where sub-

metering was not possible, they requested that the bill calculation method be made available to them. Landlords specified that if sub-metering was implemented, information regarding actual consumption and other such records would be required from the tenants to assess the overall energy performance of the building.

Environmental Credentials (1.3)

Research suggested that companies which have adopted Environmental Management Systems (EMS), either formally or informally, are more aware of the impact of their business activities on the environment. An EMS requires an organisation to formally monitor resource consumption and to review improvement plans on a regular basis. When a landlord is considering prospective tenants, he should acknowledge that a company with an EMS will assist with the reduction in the landlord's environmental risks and liabilities.

Environmental Policies (1.4, 8.1 and 8.2)

Research showed that landlords considered the development and marketing of an environmental policy for the building as a positive approach, encouraging improved performance. It was also agreed that tenants and sub-tenants (assignees) should be encouraged to adopt any such policy. An Environmental Policy for the building demonstrates commitment to employ more efficient management techniques within the building, where reasonably practical. The Environmental Policy can be displayed in a prominent place and can be set out in the information pack or tenant handbook. It can also be discussed with tenants at negotiation stages.

Environmental Assessment (1.5, 1.6, 1.7 and 2.1)

Questionnaires used within the research suggest that:

- in general, landlords of buildings do not undertake surveys to ascertain the environmental / energy performance of their building. However, landlords are aware of their environmental obligations and are increasingly aware of the implications of the EPBD.
- Tenants within multi-tenanted buildings have generally not investigated opportunities to improve energy and environmental performance through the lease contract. This is partly due to the fact that control of energy supply and base load consumption is largely beyond their rented areas.
- The tenants are generally not kept informed of ongoing or planned initiatives relating to



the energy performance or efficiency of the rented and common parts.

- Landlords require consultants to ascertain the efficiency of operation together with any alterations or replacement equipment required. They also need consultants to help them develop realistic environmental targets. These actions and targets are usually relayed to maintenance contractors who undertake work according to landlord instructions. It is therefore recommended that setting environmental targets for the building should involve third party contractors and consultants. The resulting targets and action plan should be communicated to tenants.

Support from the Carbon Trust identified opportunities for the implementation of landlord and tenant monitoring schemes. Towards the end of the research almost 50% of the tenants involved in the project had commenced monitoring programmes with support from the landlord, property manager and/or third party contractor. These programmes initially commenced on a monthly programme but 18% of the tenants went further and established weekly monitoring programmes. The tenants with monitoring programmes were able to set preliminary energy reduction targets for their own rented areas. Through discussions with property managers and landlords, they were also able to set preliminary energy reduction targets for the whole building. Reductions in other resource use could similarly be established.

Environmental support helped tenants identify potential opportunities for reducing resource consumption within rented areas and assisted them in meeting the requirements of environmental legislation. However, in a multi – let building the tenants found that they were unable to set realistic reduction targets without sufficient

monitoring support from the landlord or third party contractor. Where utilities (e.g. heating, lighting, water use, waste disposal) are charged proportionally, tenants are reluctant to procure more efficient equipment for rented areas without support from the Landlord. This is because there is no direct financial gain for the tenant who has to make a high capital outlay. Professional advice from environmental consultants is generally therefore required to help owners and tenants to identify feasible, cost-effective opportunities for environmental improvement and reduced resource consumption.

Financial matters (3.1, 6.1 and 15.1)

Surveys undertaken suggested that elements covered by the service charge are often not considered as a high priority during selection of office premises. However, it was agreed that where existing tenants undertake good environmental practice resulting in reduced resource consumption within their rented areas, the landlord should give due consideration to this. The landlord could allow adjustments in payments to reward such tenants. This would also encourage other tenants to adopt similar practices.

Leases and investments (4.1)

Incorporating resource and environmental best practice into existing long-term lease contracts with no break-clauses is extremely difficult. This is due to the costs involved and the need to consult and agree with guarantors. The research indicated that shorter leases are becoming more favourable but these also have issues. Where leases are shorter than 5 years, larger capital investments undertaken by the tenant for more efficient equipment are less likely to be arranged. Feedback suggests that such investments are more likely to be made if they are considered at negotiation stages. The Carbon Trust promotes financial schemes such as low or no interest loans, and the Enhanced Capital Allowance. Including information on such schemes within the Information Pack provided by the landlord would help tenants to decide and negotiate schemes with the landlord.

Maintenance and repairs (7.1, 7.2 and 13.1)

Tenants participating in the research indicated that inclusion of information relating to maintenance schedules for operating plant and services within information packs or tenant handbooks would be beneficial. At present, generally details are presented to tenants in the form of a reconciliation document at the end of the year. However, such reports do not include information regarding efficiency of operation or work undertaken

to improve efficiency of operation. Landlords participating in the work were willing to provide more information on service schedules through the provision of a planned schedule as well as a reconciliation document at the end of the year.

The landlord may serve a notice to the tenant at or near the end of the tenancy agreement requiring repairs to be undertaken. These repairs may be listed under a schedule of dilapidation. Termination of tenancy agreements was discussed with landlords. Assessment of costs associated with the “schedule of dilapidation” are often very complex, particularly in multi-tenanted buildings where service charges cover maintenance and certain aspects of repair. However, Energy Performance of Buildings Regulations requires the identification of equipment and facilities requiring improvement. This may make it easier to assess repairs required relating to energy management, when tenancy agreements are nearing the end.

Consents for alterations and changes of use (9.1, 9.2, 9.3, 9.4 and 11.1)

It is common practice to refurbish rented areas through the installation or removal of partitioning walls. Landlords have identified that such changes can have significant detrimental effects on the airflow velocities and efficiency of their central HVAC systems, where installed. This leads to, tenants installing additional HVAC systems in office areas. This is an additional capital cost to the tenant, and further decreases the operational efficiency of the landlord’s HVAC system. Control then becomes localised within the rented area at the discretion of the tenant and not the landlord. Additionally, installation of partitioning walls often neglects required changes to the configuration of light controls. This results in uncontrolled energy consumption in unoccupied office areas. Unless the tenant is proactive in employing energy efficient management, the above examples may have a detrimental effect on the overall environmental performance of the building.

Tenants are more likely to install a small domestic facility where centralised domestic facilities are not provided. This could include installation of partitioning walls, gas cookers or wall-mounted water heaters. Where the tenant seeks consent for such work from the landlord, there should be due regard to the (improved) resource consumption of equipment. Similarly the effect of the spatial alterations should be considered.

During a lease agreement, consent may be required from the landlord to:

- assign the lease
- Grant sub-leases
- Change the use of the property or premises
- Make alterations
- Display signs.

Whilst the effect on the landlord will vary, the lease agreement usually requires the tenant to cover the costs for the landlord to issue the consent. This topic was discussed with landlords. They suggested that tenants should ensure there is minimal impact on the environmental performance or efficiency of operation within the building when they apply for consent. This should be done by giving due consideration to the measures and steps that will be undertaken to carry out the change.

Communication issues (10.1 and 10.2)

Through working in cluster Groups, the Research identified that whilst relationships between landlord and tenant are generally good, communication needs to be improved. This is particularly relevant during rent reviews, variations in lease terms, planning applications, improvements, redevelopment or changes in the provision of services. Tenants within shared buildings identified a benefit in improving communication between other tenants within the building, specifically relating to environmental and energy related initiatives. Often good energy and environmental management goes unnoticed by other tenants, thus any initiatives implemented are perceived as having minimal impact.

Most leases require tenants to place waste in receptacles or facilities provided by the landlord. They also require that tenants adhere to relevant legislation regarding the handling and storage of waste on the site. Rarely are clauses included for the recycling or minimisation of waste or for the monitoring of waste types and volumes. Under these circumstances the landlord could be potentially held responsible for hazardous items of waste released through drains and sinks or transferred to the waste contractor for disposal. Without waste monitoring by both parties, the landlord is unable to accurately assess the volumes and nature of waste disposed. This is particularly important in multi-tenanted buildings.

Discussions with tenants in multi-tenanted buildings identified that tenants would like to undertake more recycling of waste. Often the small volumes generated by individual tenants either meant a requirement for waste storage areas within rented areas or the tenant would face a charge from the waste contractor for collection of small volumes of waste.

3 Benefits achieved through the research

In addition to the development of model lease clauses and recommendations, an assessment was undertaken of the additional business, environmental and financial benefits achieved through the project. The following highlights some of the key achievements.

- Staff awareness campaigns using posters and bulletins were developed in all 5 buildings to ensure that staff and out of hour contractors were aware of resource consumption and environmental issues.
- In Building E, variable speed drives for the pumps were installed and power factor correction was implemented. This was done with the permission of the landlord.
- Over the 5 Buildings, 46% of the tenant companies set up monthly energy monitoring, and a further 18% set up weekly monitoring to identify opportunities to reduce energy consumption
- Buildings A, B and E established switch off campaigns ensuring that 1510 computers and monitors, 100 printers, 30 photocopiers, 16 vending machines and 1 microwave were switched off overnight. This provides an estimated power save of 187.3 kW for every hour the equipment was switched off.
- In Buildings A, B, C and D energy monitoring was undertaken overnight by the cluster groups working with facility managers to establish base loads and problem areas. Each building obtained half hourly meter readings from the supplier and information is now available to tenants on request.
- Buildings C, D and E have initiated regular discussion groups for tenants and Building E has developed a web-site to keep existing and future tenants informed of building related issues.
- Buildings C and D have installed PIR sensors in corridors and toilets to reduce energy consumption in common areas.
- Building E has incorporated an energy policy and a requirement for contractors to adhere to energy efficient practices. This has been built into third party builders and M&E handbooks.
- Over the 5 buildings, 42% of the tenant companies set energy consumption reduction targets of 5% per year, a further 8% of tenant companies set higher targets.
- Building B - With consent from the landlord, a Building Management System was installed to improve control and help monitoring. Approximately 750 desk-top PCs, 50 printers, 14 photocopiers, 11 vending machines and 35 fax machines were identified in the building. The tenant commenced monitoring on a weekly basis and identified items that were using electricity over and above base line. They reduced energy consumption by 20.47kWh/m² through implementation of energy efficient management and technologies within the building in one year.
- Buildings C, D and E have established waste monitoring schemes with tenants. This has led to the introduction of collective waste recycling schemes amongst tenants.



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