

<b>Scan Sheet</b> <b>eCase DECC CU -</b> <b>New Case</b>	
--	--

1. eCase Case Ref.	
2. Case type (please circle)	
3. Case Title	
4. Department/Directorate (Team)	
5. Subject	
6. Date Post Opened and Scanned (Date Received)	17/2
7. Urgency (please circle)	HIGH
8. Handling Instructions	
9. Addressee minister (if applicable)	Barker Hendry <u>Huhne</u> Marland
10. Responding minister (if applicable)	Barker Hendry <u>Huhne</u> Marland
11. Allocated to (Drafter)	
12. 15 day deadline	

Rt Hon Chris Huhne MP  
Secretary of State  
Dept of Energy and Climate Change  
3 Whitehall Place  
London  
SW1A 2AW

12 February 2011

I am working with Brookfield Green on their projects for the design, building and operation of green buildings. In addition Brookfield has considerable experience and expertise in commercial property refurbishment and retro-fitting of green systems.

This knowledge, skill and experience could make a very significant contribution to cost savings and a reduced carbon footprint in the government estate.

In a chance meeting with the Prime Minister some months ago, David Cameron suggested that we should write to you to seek discussions on these opportunities. We are confident of our abilities in this field and would greatly appreciate a meeting to present the potential to you and your officials.

The Rt Hon. Lord Cunningham of Felling

# Case Study

## 20 Canada Square Canary Wharf

### Services upgrade



This Grade A Canary Wharf asset is not currently operating at a level consistent with good practice for a building of its age and size. Brookfield Green was engaged to develop a strategy to deliver efficiency gains and cost savings, without adversely impacting Indoor Environmental Quality.

This purpose of the review was to

- To ascertain the sustainability performance of the building based on carbon footprint, EPC performance and BREEAM;
- To identify means to improve the building's sustainability performance;
- To quantify the improvements in terms of capital cost expenditure and benefits to Brookfield Europe and their tenants (including Carbon Reduction Commitment exposure);

Brookfield Green developed a services upgrade strategy to improve both energy and carbon performance

- To recommend appropriate carbon footprint, EPC and BREEAM ratings for the property.

#### Description of Existing Systems

There are two main Air Handling Units (AHU) on the roof (one per core, east and west), which supply air to the on-floor AHUs. There are two AHUs per office floor, which distribute temperature/pressure air to zones on the floor via the FAT VAV terminal units. Two extract fans (one per core) remove exhaust air from each of the office floor levels and there is no heat recovery process.

#### Energy Findings

The electricity usage at the site has been benchmarked against CIBSE Guide F. Currently the building is operating at a level of 141% in excess of the Typical Practice benchmarks for a prestige air conditioned office.

The building had a current EPC rating of D.

#### Key Statistics

- GLA of 51,611m<sup>2</sup> over 12 floors
- 2 tenants
- Occupancy 92.0%

#### Upgrade Strategy Initiatives

- Replace chiller with variable speed chiller
- Cooling Tower Operation
- Chilled water system operation
- Control Feedback to on floor AHUs
- Car Park Extract System
- Landlord and Tenant Sub Metering
- Condenser Water Loop for Tempering Supply Air

#### Estimated Cost Savings

Full implementation of the upgrade strategy will realise cost savings in the order of £220,000 pa (2,750MWh/y)

CO<sub>2</sub> emissions will be reduced by around 1,160 tons

Estimated simple payback of the strategy is 3-4 years

Total project cost of £924,000

#### Project Status

The project is currently being installed. Expected completion April 2011.



## Case Study

### Services upgrade



This quality City asset is not currently operating at a level that is consistent with good practice for a building of its age and size.

The facilities management team have already implemented a broad range of measures in a bid to improve performance.

Brookfield Green was engaged to develop a strategy to deliver further efficiency gains and cost savings, without adversely impacting Indoor Environmental Quality.

Our first step was to conduct an on-site review, which included:

- An assessment of current energy performance;
- A non-intrusive survey of the building including plant; and,
- Measurement of key Indoor Environment Quality (IEQ) indicators

### Brookfield Green developed a services upgrade strategy to improve both energy and carbon performance

#### Energy Findings

The energy usage at the site has been benchmarked against CIBSE Guide F. Currently the building is operating in excess of the Good Practice benchmarks for a prestige air conditioned office:

- 146% greater than benchmark for electricity consumption
- 31% greater than benchmark for gas consumption

Night-time and out-of-hours electricity consumption was found to be high, generally totalling around 40-50% of overall energy usage.

#### Indoor Environment Quality Findings

Brookfield Green undertook onsite measurements of a range of IEQ variables associated with Thermal Comfort, Quality, Acoustic Comfort and Lighting Quality to identify opportunities to further enhance IEQ within the building and also to ensure that the energy efficiency measures identified in this report do not adversely impact on the experience of building users.

With the exception of formaldehyde levels in some areas, the Indoor Environment Quality is generally within recommended ranges and limits.

#### Key Statistics

- NIA of 31,500 m<sup>2</sup> over 26 floors
- 6 tenants
- Occupancy 99.9%
- Rent passing £14.2m pa

#### Upgrade Strategy Initiatives

- Modification to control strategies
- Install 2-port valves off risers
- Re-lamping (remaining T8 to T5)
- Presence detection to stair core lighting
- Power factor correction to main switch panels
- Upgraded humidifiers (jet spray)
- Automated humidifier operation
- Install small tri-generation system to match base load

#### Estimated Cost Savings

Full implementation of the upgrade strategy will realise cost savings in the order of £170,000 pa.

CO<sub>2</sub> emissions will be reduced by around 8.5%

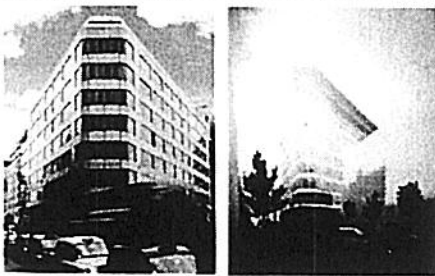
Estimated simple payback on strategy:

- 8.5 years with tri-generation
- 5.5 years without tri-generation



## Case Study

### Architectural and services refresh



Brookfield Green developed a series of refurbishment options for this tired asset adjacent to Victoria station.

With redevelopment plans in Victoria slowing, an opportunity emerged to enhance the value of this existing asset in the near term. Implementing measures to improve energy efficiency and indoor environment quality will increase tenant attractiveness and provide an ability to market the building's reduced operating costs. Options were developed within the scenario of the existing building having a five to ten year lifespan, before the site becomes part of a wider redevelopment of Victoria.

#### Architectural Findings

The building is characterised by an acute corner location giving it a prominent position when viewed from Victoria Station, Cardinal Place, and the VT12 development.

The adjacent street offers the potential for an attractive forecourt with direct access to the station.

Internally, the building has a highly planted atrium. The overall aesthetic is very dated, however, and would benefit from a major re-vamp.

#### Energy and Carbon Findings

When the existing energy usage data was compared with Typical Performance under CIBSE Guide F, it was clear that the building is currently exceeding the benchmark by a significant margin in the area of electricity consumption:

- 127% for electricity
- 98% for gas

There is considerable opportunity to improve operational performance against Guide F, through the introduction of a suite of energy efficiency measures:

- 22% for electricity
- 88% for gas

#### Indoor Environment Quality Findings

As part of our investigation we also took measurements of a set of key Indoor Environment Quality indicators:

- Thermal comfort
- Air Quality
- Lighting Quality
- Acoustic Comfort

Some opportunity for improvement was identified in the areas of air movement, ambient sound levels, and lighting levels.

#### Key Statistics

- NIA of 6,500 square metres
- 5 tenants
- Occupancy 99.8%
- Rent passing
- £2.4m pa

#### Refurbishment Strategy

- Phased replacement of existing heating & cooling systems
- Provision of new VRV heating and cooling system
- Re-lamping
- Upgraded controls system
- Tenant power sub metering
- Ground floor glazing line expanded
- Lobby upgraded
- A3 tenancy introduced at ground floor
- Facade overhauled

#### Estimated Savings

Full implementation of the refurbishment strategy will realise the following overall savings against business as usual:

- 38% reduction in electricity consumption
- 88% reduction in gas consumption
- 47% reduction in CO2
- Total projected cost savings over 10 years of £1,019,860





# Case Study

## Services upgrade



Clifford Chance have a 25 year lease on this Grade A Canary Wharf asset with a number of sub-tenancies. The building is consuming in excess of typical and good practice power consumption for a building of its type.

Brookfield Green was engaged to develop a strategy to deliver efficiency gains and cost savings, without adversely impacting Indoor Environmental Quality.

The basis for this initial study was to build upon the in-progress energy efficiency measures already being put in place by the occupiers own building management team and identify potential additional sustainability measures.

The analysis was based on a review of general building data, including energy consumption data and record drawings provided by the tenant. A non-intrusive survey was carried out following this review and a report produced describing the recommended sustainability measures.

### Brookfield Green identified services modifications to reduce the carbon emissions and running costs

#### Description of Existing Systems

The internal conditions are generally controlled via fan assisted VAV terminals within the ceiling void which incorporate electric reheat elements. Air is supplied via on floor air handing units, which include cooling coils to control the space temperature.

#### Energy Findings

The electricity and gas usage at the site has been benchmarked against CIBSE Guide F. Currently the building is operating at a level of 99% in excess of the Good Practice benchmarks for a prestige air conditioned office. Gas consumption is 77% below the Good Practice benchmark, which reflects the generation of hot water using electricity, and the heat recovery system on the supply air.

Significant energy efficiency measures were identified within the report to align the buildings energy consumption more closely to good practice benchmarks.

The building does not have any existing EPC or DEC rating.

#### Key Statistics

- NLA of 95,000m<sup>2</sup> over 30 Tenanted floors
- 1 tenant with sub-let floors
- Occupancy 100%

#### Upgrade Strategy Initiatives

- Mini CHP
- Power Factor Correction
- Car Park Ventilation System
- Tenants Sub Metering
- Variable Speed Chiller
- PIR Controlled Back of House Lighting
- Control of Supply Air Temperature
- Reduce Supply Air Volume
- Gas Fired DHW Generation

#### Estimated Cost Savings

Total project cost of £987,000.

Full implementation of the upgrade strategy will realise cost savings in the order of £230,000 pa (1,880MWh/yr).

CO<sub>2</sub> emissions will be reduced by around 715 tons.

Estimated simple payback of the strategy is 4 years.



02 February 2011

**Rt Hon Chris Huhne MP**  
Secretary of State for Energy and Climate Change  
Department of Energy and Climate Change  
3 Whitehall Place  
London  
SW1A 2AW

Dear Secretary of State,

**RE: MEETING REQUEST: HELPING YOU DELIVER DECC'S AGENDA ON GREEN BUILDINGS**

Brookfield Green is a consortium of four global organisations with unparalleled combined expertise in designing, building and operating green buildings. We provide a full retrofitting service to commercial and public sector building owners, working with them throughout the development process to ensure the greatest energy efficiency savings for their budget.

The Government has set some ambitious targets for overall carbon reductions, and specific reductions on the public estate. To meet the challenging targets of 34% reductions by 2020, and 80% reductions of the nation's carbon footprint by 2050, a significant amount of both residential and commercial stock will need to be refurbished.

We welcome your Department's focus on retrofitting through the Green Deal. For too long the debate around improving energy efficiency in buildings has focussed very heavily on the domestic sector, and so we were particularly pleased to see that the Green Deal will also apply to sub-prime non-domestic properties. It is refreshing to see sensible policy proposals being put forward by Government that will make energy efficient improvements far more attractive in the commercial sector.

However, although the Green Deal is likely to be a useful driver to encourage smaller and medium sized businesses to act, encouraging owners of larger commercial properties to improve the energy efficiency of their buildings can be far more difficult. The challenges associated with encouraging landlords, and indeed tenants, to take steps to reduce energy consumption in commercial buildings are well known. As most energy consumption from commercial buildings comes as a result of the tenant's operational use, there are few financial incentives for landlords to improve the energy efficiency of their buildings.

The removal of barriers and creation of incentives for the greening of existing stock will be critical to achieve the Government's ambitious climate change targets. At Brookfield Green



we have a number of ideas for how Government and the construction industry can work together to achieve these goals.

With this in mind, we would welcome the opportunity to meet you and your officials to discuss how private sector providers can help your Department deliver against these commitments, and how we may be able to assist Government in greening its own building stock.

As you may be aware, the Low Carbon Construction innovation and Growth Team's final report to Government recommended mandating the use of Green Leases in government buildings to help increase take-up in the commercial sector. The requirement for Green Leases in the Australian federal public sector has demonstrated that Green Leases can help close the gap in interests between building owner and occupier. There are a number of challenges to overcome to drive usage, and I would value an opportunity to discuss these in more detail.

If I may, I will ask \_\_\_\_\_ to contact your office to see if a meeting can be arranged. In the meantime, if you require any further information about Brookfield Green please do not hesitate to contact \_\_\_\_\_

Yours sincerely,

Brookfield Green Ltd

1944

1944

1944

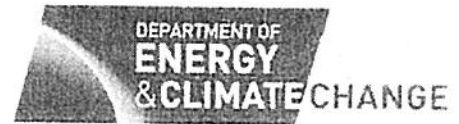
1944

1944

1944

1944

1944



**The Rt Hon Chris Huhne MP**  
Secretary of State

Department of Energy & Climate Change  
3 Whitehall Place  
London  
SW1A 2AW

[www.decc.gov.uk](http://www.decc.gov.uk)

The Rt Hon Lord Cunningham of Felling

2 March 2011

Thank you for your letter dated 12 February requesting a meeting to discuss the work of Brookfield Green.

Unfortunately, my diary commitments prevent me from being able to accept your request for a meeting on this occasion. However, my officials would be interested in meeting Brookfield Green to discuss this work further, especially in relation to the public sector. Please contact [redacted] to arrange a date.

<b>Scan Sheet</b> <b>eCase - Attach To</b> <b>Case</b>	
--	--

**Operator**

**Sheet Number**

**P Number**