

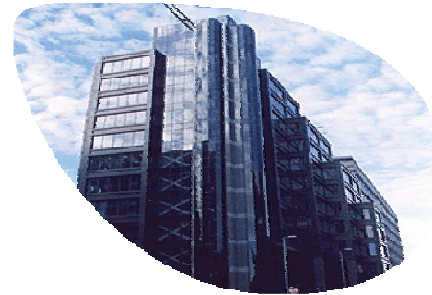
# Energy Performance Contracts A Major Tool for Energy Efficiency in the UK

Madrid, 27 October 2008

Nigel Gavin

Operations Director, Cofathec UK

# Energy Management in Modern & Old Buildings



# Energy Performance Contracts - The Drivers

- High energy costs
- Legislation
- Climate change
- Security of supply
- Environmental credentials / sustainability
- Efficient use of Plant

# Energy Performance Contracts - Main Elements

- Installation, operation and maintenance
- Building Controls systems
- Risk transfer (eg penalties / shared savings)
- Equipment finance
- Long term contracts
- Consultancy and audits

# Energy Management & Monitoring

Citrix Desktop - Citrix ICA Client

eSight - Edit Low Frequency Meter Readings - Microsoft Internet Explorer

Cofathec eSight Logout Help

Configuration | Site | Meter | Energy | Budget | Financial | Reports | Data Exchange | User Admin | Help | Logout

## Edit Low Frequency Meter Readings

Region: 051 Region 5 Birmingham Month: May 2004

Site: 3715 - Beaumont House Banbury

Meter: Main Gas Meter (m3)

Meter Number: 8914618301  
Reading Frequency: 7 Day(s) Cumulative  
Increase Tolerance:  $\pm 15\%$   
Reading Format: 999,999.99

View Meter Image

### Meter Readings

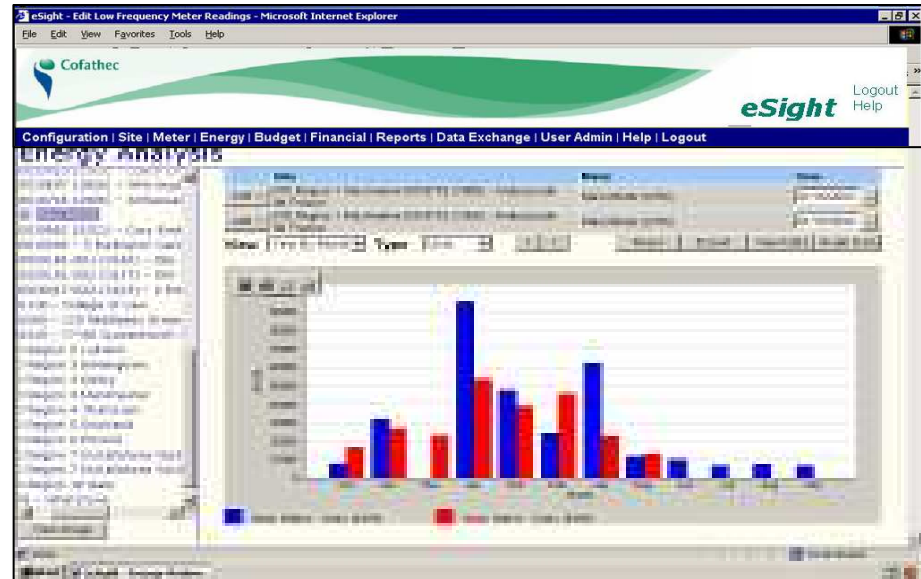
Week Commencing	Actual Date	Actual Time	Reading	Increase (m3)	Increase (kWh)	Target (kWh)	% Difference
26/04/2004	30 April 2004	00:00	0 5 2 5 5 2 0	365.50	4,030.98	11,459.08	-64.82
03/05/2004	07 May 2004	00:00	0 5 5 1 5 5 0	500.60	5,520.95	1,981.42	178.64
10/05/2004	14 May 2004	00:00	0 5 5 5 5 1 0	400.30	4,414.77	1,981.42	122.81
17/05/2004	21 May 2004	00:00	0 5 5 7 5 5 0	231.90	2,557.55	1,981.42	29.08
24/05/2004	28 May 2004	00:00	0 5 5 9 5 7 0	209.60	2,311.61	1,981.42	16.66
31/05/2004			0 0 0 0 0 0 0			1,981.42	

Save Cancel / Refresh

Done

Start Inbox - Microsoft Outlook eSight - Edit Low Freq... Local intranet

Start Citrix Desktop - Citrix... Sales FM Manual Version 2 - M... Appendix C Energy and ... 12:32



# Energy Performance of Buildings Directive

- Buildings account for around 40% of EU energy use
- EPBD aims to increase energy efficiency of buildings in EU by 11% by 2020
- Contains requirements for member states to make legislation
- Each EU member state has its own ideas about how to implement EPBD



# Energy Performance of Buildings Directive

- Article 7: *Member States shall ensure that when buildings are constructed, sold or rented out, an energy performance certificate is made available*
- Effective in UK from October 2008
- The Energy Performance Certificate (EPC) contains an asset rating
- Benchmarked with comparable buildings
- Measures Carbon Dioxide emissions

# Display Energy Certificates (DECs)

- Public buildings over 1000m<sup>2</sup> require a Display Energy Certificate (DEC) which includes an operational rating derived from actual utility bills
- New DEC required every year
- Recommendations for improvements
- Launched with great publicity



# Display Energy Certificate

## How efficiently is this building being used?



A Government Dept  
12<sup>th</sup> & 13<sup>th</sup> Floor  
Jubilee House  
High Street  
Anytown  
A1 2CD

**Certificate Reference Number:**  
1234-1234-1234-1234

This certificate indicates how much energy is being used to operate this building. The operational rating is based on meter readings of all the energy actually used in the building. It is compared to a benchmark that represents performance indicative of all buildings of this type. There is more advice on how to interpret this information on the Government's website [www.communities.gov.uk/epbd](http://www.communities.gov.uk/epbd).

### Energy Performance Operational Rating

This tells you how efficiently energy has been used in the building. The numbers do not represent actual units of energy consumed; they represent comparative energy efficiency. 100 would be typical for this kind of building.

More energy efficient

**A** 0-25

**B** 26-50

**C** 51-75

**D** 76-100

100 would be typical

**E** 101-125

108

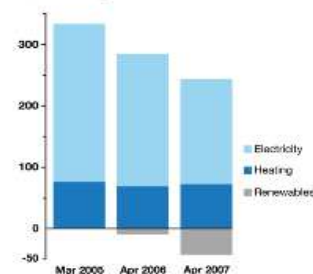
**F** 126-150

**G** Over 150

Less energy efficient

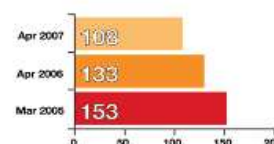
### Total CO<sub>2</sub> Emissions

This tells you how much carbon dioxide the building emits. It shows tonnes per year of CO<sub>2</sub>.



### Previous Operational Ratings

This tells you how efficiently energy has been used in this building over the last three accounting periods



### Technical information

This tells you technical information about how energy is used in this building. Consumption data based on actual readings.

Main heating fuel: Gas  
Building Environment: Air Conditioned  
Total useful floor area (m<sup>2</sup>): 2927  
Asset Rating: 92

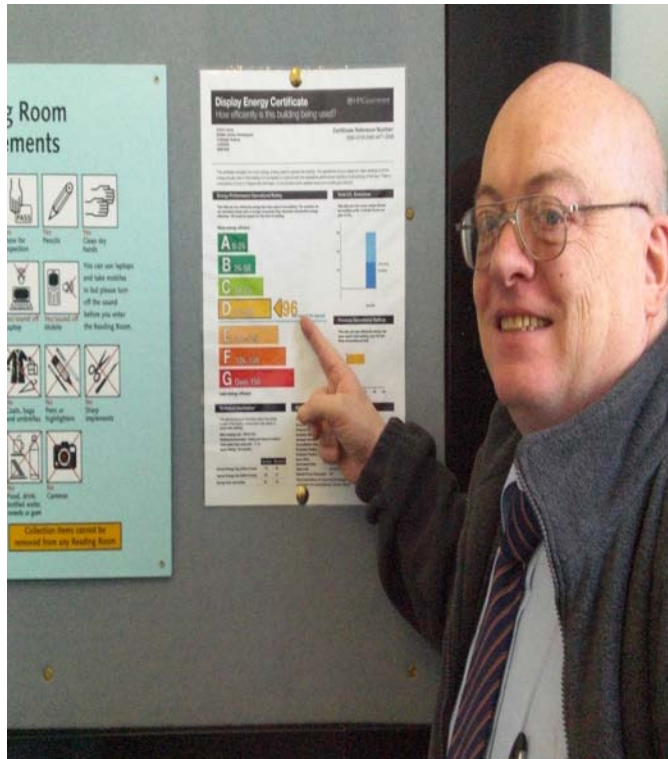
	Heating	Electrical
Annual Energy Use (kWh/m <sup>2</sup> /year)	125	129
Typical Energy Use (kWh/m <sup>2</sup> /year)	120	96
Energy from renewables	0%	20%

### Administrative information

This is a Display Energy Certificate as defined in SI2007:991 as amended.

Assessment Software: CR v1  
Property Reference: B91123776612  
Assessor Name: John Smith  
Assessor Number: ABC12345  
Accreditation Scheme: ABC Accreditation Ltd  
Employer/Trading Name: EnergyWatch Ltd  
Employer/Trading Address: Alpha House, New Way, Birmingham, B2 1AA  
Issue Date: 12 May 2007  
Nominated Date: 01 Apr 2007  
Valid Until: 31 Mar 2008  
Related Party Disclosure: EnergyWatch are contracted as energy managers  
Recommendations for improving the energy efficiency of the building are contained in Report Reference Number 1234-1234-1234-1234

# British Library Display Energy Certificates





## Environment



### Modern failure

The Imperial War Museum North in Salford, which opened in 2002, was given a G, the lowest score – the same as its 91-year-old sister museum in London

Photograph: Getty Images

# Halls of shame: biggest CO<sub>2</sub> offenders unveiled

# HM Prison Service

- 17 Building Portfolio
- Tranche II - 9 Prison Buildings
  - 100 million kWh per annum
  - Decentralisation – €16M Investment
- Guaranteed 30% Saving in Consumption
- Competitive Energy Tariff
- Environmental Saving of 7,500 tonnes of CO<sub>2</sub> per annum
- 16 Year contract



# Burlington Gardens, London

- 3,500 m2 – Air Conditioned Office
- Annual Energy:
  - 1,350,000 kWh Electricity
  - 639,000 kWh Gas
- Energy Performance Contract
  - Improved Control and System Management
  - Improved Maintenance
- GUARANTEED
  - 15% Electricity Saving
  - 12% Gas Saving
- Equivalent CO<sub>2</sub> Saving Per Annum: 173 tonnes



# UK Atomic Energy Authority



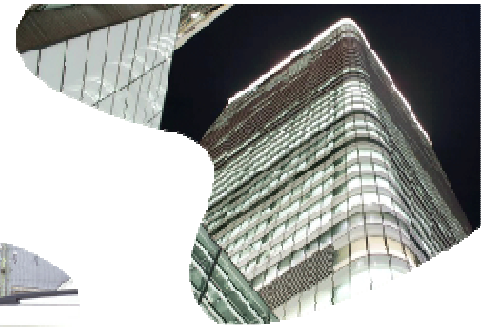
## Installation

- Plant Replacement and Decentralisation
- Total installed load of **17MW**
- Funding of **£2.2 million**



## Operation and Maintenance, Energy Management

- Saving achieved – **33%**
- Representing **2,400 tonnes** of CO<sub>2</sub> saved per annum
- 10 year contract



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Thank you for your attention !