SUSTAINABILITY NOW

Recommendations
for
MPP's Sustainability Agenda

Step change of approach

By taking a step change now to proactively engage with the issue of sustainability, Mountford Pigott can develop a strong position in the next chapter of activity in this field.

Step change of approach

Benefits

Adapted from BRE Information Papers IP 13/03 Parts 1 to 4

- Increase stature amongst existing client base
- Develop more avenues through which to attract new business
- Create more potential for publicity
- Improve ability to recruit good staff and staff retention
- Provide further levels of satisfaction
- Reduce costs
- Reduce risk

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Drawbacks of a reactive approach

- Miss an opportunity to gain competitive advantage
- Miss a window of opportunity to build a reputation

Scope

Why it is important to act now

- Demand
- Environmental drivers
- Legislation
- What is going in the field amongst competitors

Scope

Why it is important to act now

- Demand
- Environmental drivers
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- What is going in the field amongst competitors

How we can act

- Acknowledging and broadcasting what we already do
- Quick wins
- High impact measures
- Building a position

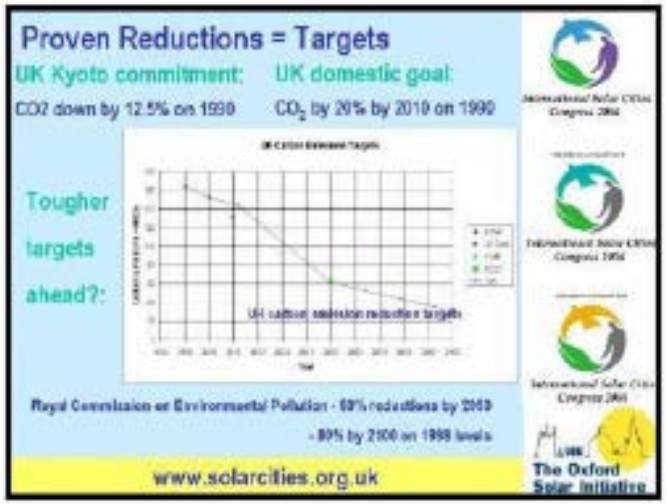
Why now

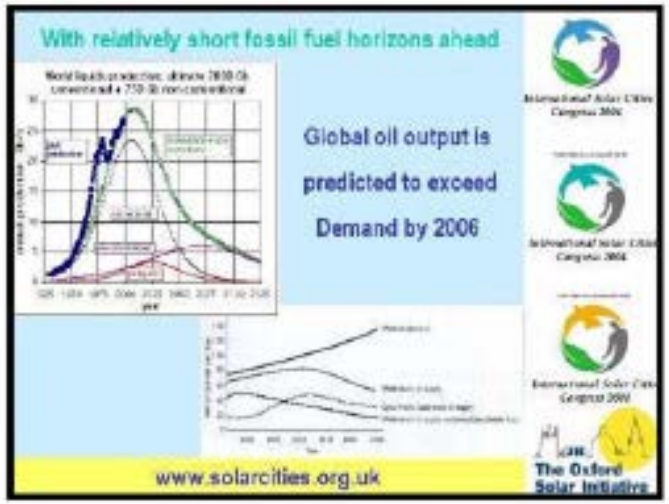
Demand

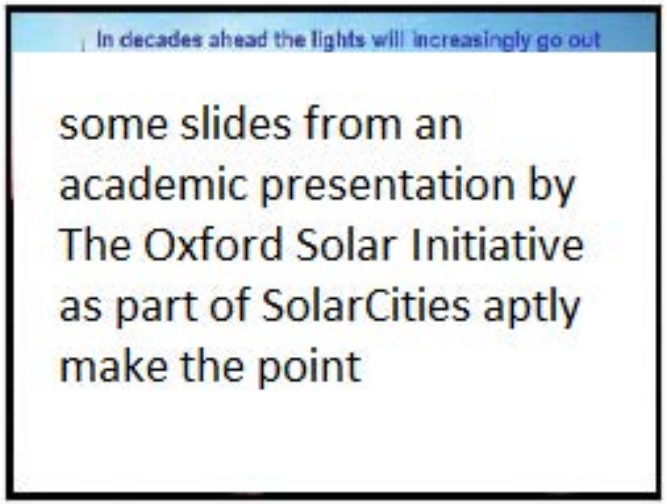
- **Professional services can only be provided in response to a demand**
- **Previously only limited demand**
- **Environmental drivers will produce demand…….the only question is when?**

Why now

Fossil fuel depletion / cost of energy

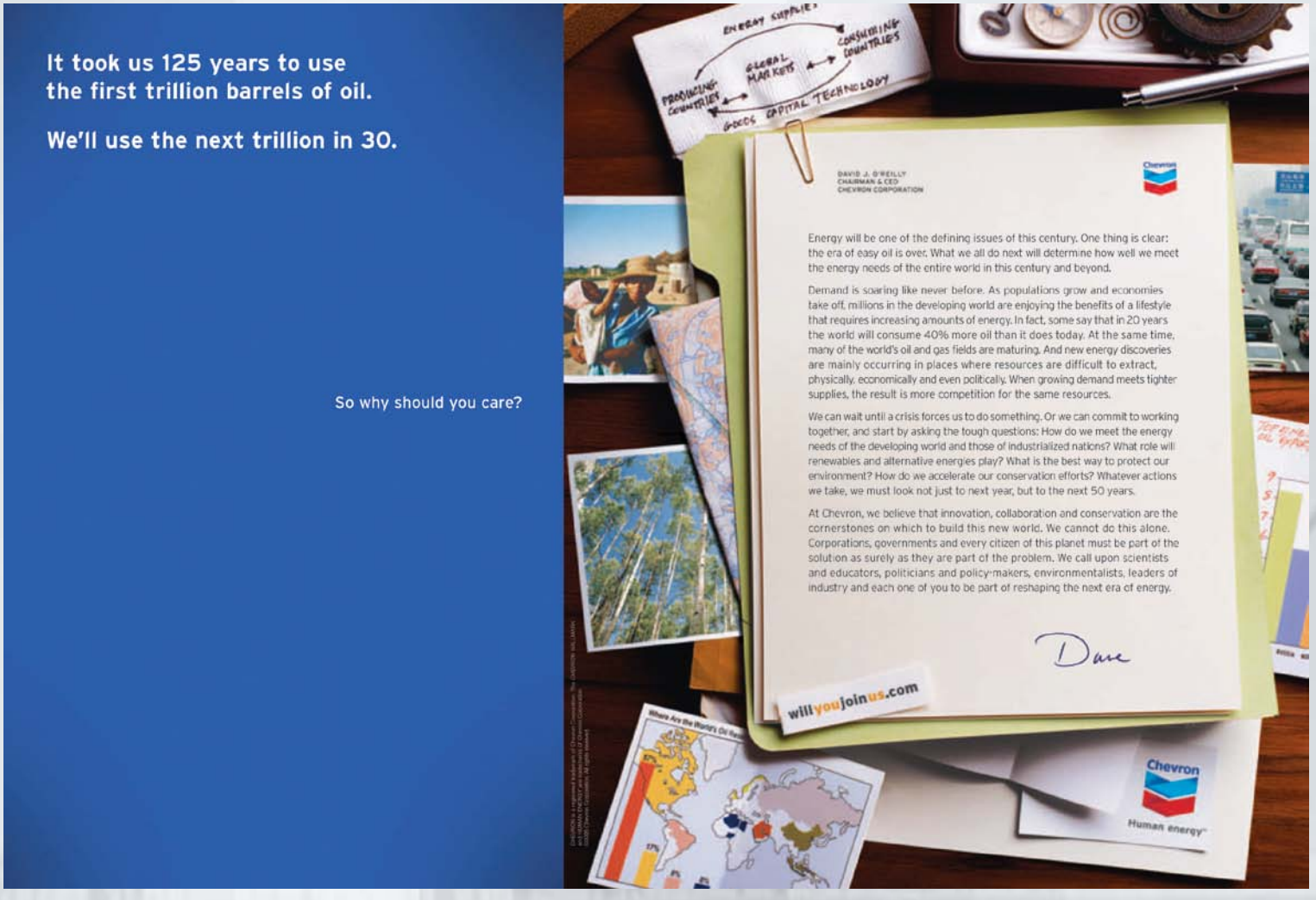






Why now

Fossil fuel depletion / cost of energy



Why now

Demand

- **Fossil fuel depletion / cost of energy**
  - » *Market demand*

Why now

Demand

- **Fossil fuel depletion / cost of energy**
  - » *Market demand*
- **Global warming / climate change**
  - » *Legislative demand*

Why now

One World Living

The story

ONE PLANET LIVING

- Europe's three planet lifestyle

Adapted from 'Taking Stock' - An Ecological Footprint of the South East, 2003, SEI et al

BioRegional

WWF

Why now

Demand

- **Fossil fuel depletion / cost of energy**
  - » *Market demand*
- **Global warming / climate change**
  - » *Legislative demand*
- **One World Living**
  - » *Moral demand*

Why now

Legislation

- **Energy Performance of Buildings Directive**
  - **Programme for implementation established in Energy White Paper 2003 and Action Plan for Energy Efficiency 2004**
  - **Part L changes**
    - » *25-27% improvement from current Part L*
    - » *Have to show that CHP; district/block heating; heat pumps and renewables have been considered*
  - **Building labelling – certificates**
  - **Upgrade on refurbishment**
  - **Boiler inspections**
  - **Implementation Jan 2006**

Why now

Legislation

- **Recent and emerging planning policy**
  - **Starting with PPG 1 (2001) : Sustainable Development**
    - » *Urban renaissance / mixed use / walkable neighbourhoods etc*
    - » *PPG 13, 2002 reduce need to travel etc*
    - » *PPS 6 and sequential testing for out of town retail*
    - » *etc*
  - **PPS 22: Renewable Energy**
    - » *Regional and local authorities required to take governments targets into account in local plans e.g. 10% of country's energy demands to be met by renewables by 2010*
    - » *OPDM's recent "Best practice guidance on the validation of planning applications" requires an "energy statement"*

Why now

Legislation

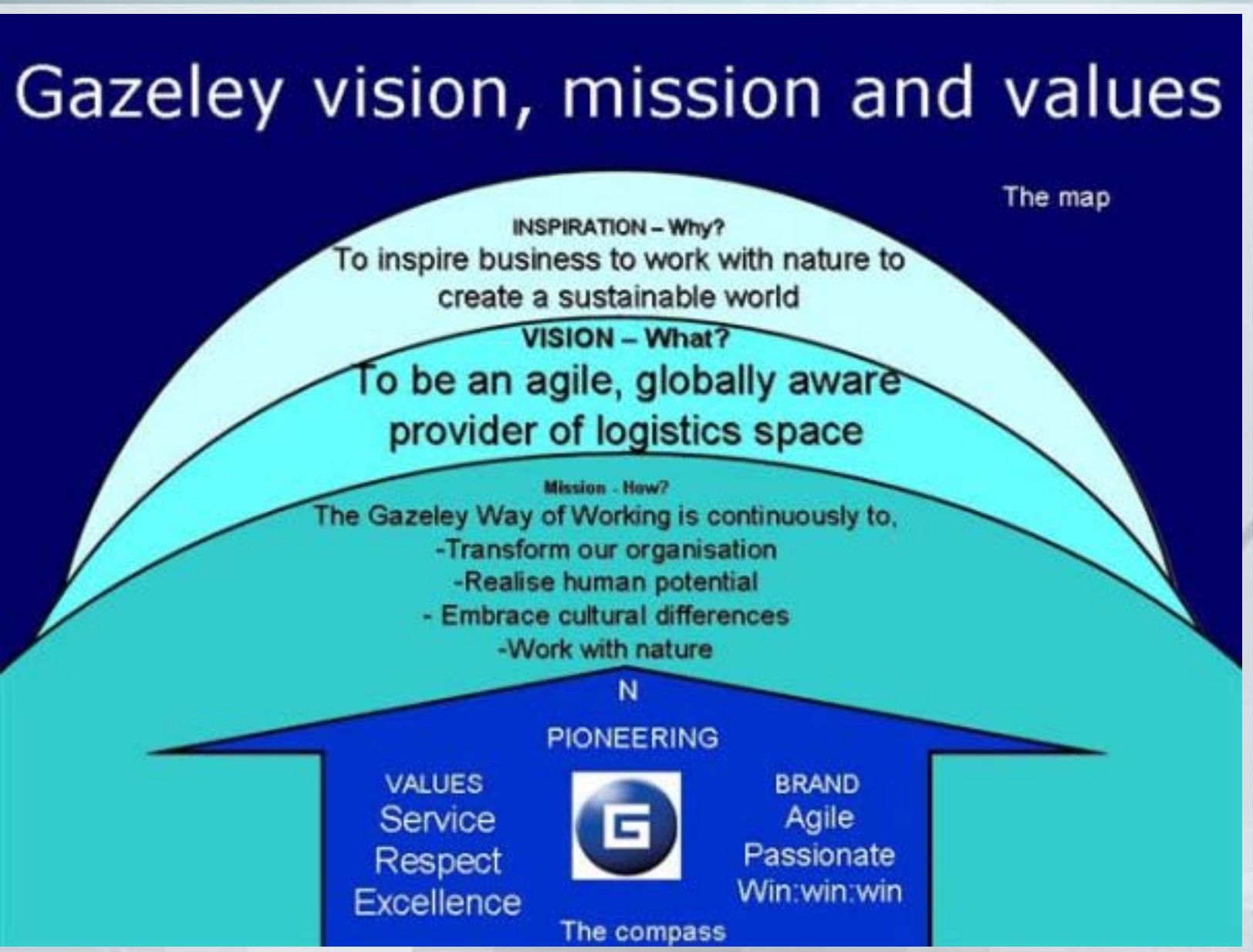
- **Sustainability Code**
  - **May 2006?**
- **London**
  - **Sustainable Development Commission (May 02)**
  - **Mayor's Energy Strategy (Feb 04)**
  - **SPG: Sustainable Design and Construction (Mar 05 for consultation)**
  - **Sustainability Framework (Jun 05)**
- **Woking**

Why now

Moral

- **Corporate Social Responsibility**
  - **Environmental and social impacts**
    - » *1999 Pensions Act – explain extent of E and S issues*
    - » *2000 Turnbull Committee – code on corporate governance*
    - » *About half the £800 billion invested in UK pension funds is claimed to be managed following "Social Responsibility Investment" and growing rapidly (SRI) principles [BRE IP 13/03 Part 1,]*
    - » *Growth in take up of environmental management through international standard methodology (eg ISO 14000 and EMAS)*
    - » *FTSE4GOOD index*
  - **Brand / corporate reputation**
    - » *"CSR is really corporate reputation – it's part of the brand, your stock market valuation is about confidence in you in the market place, and CSR is part of that" [Steve McGukin , Land Securities]*
  - **Investors and Tenants**
    - » *Banks leading the way [Mike Gedye, DTZ]*
  - **Agents, Developers and Contractors following**

Why now


Gazeley vision, mission and values
The map
INSPIRATION – Why?
To inspire business to work with nature to create a sustainable world
VISION – What?
To be an agile, globally aware provider of logistics space
Mission - How?
The Gazeley Way of Working is continuously to,
-Transform our organisation
-Realise human potential
- Embrace cultural differences
-Work with nature
N
PIONEERING
VALUES
Service
Respect
Excellence
BRAND
Agile
Passionate
Win:win:win
The compass

Why now

2006 watershed

- **Market demand**
  - Fossil fuel depletion / cost of energy
- **Legislative demand**
  - Global warming / climate change
- **Moral demand**
  - One world living

Why now

2006 – demand for what

- **Quantification**
  - **Market forces ➔ demand for answer to question: by how much can I reduce my energy costs and what will be my capital outlay**
    - » *Douglas Steidl AIA President : "…. At a sustainability roundtable led by the AIA Center for Communities by Design this spring, owners and developers sat in the AIA Board Room to tell those gathered that the cost to meet significant standards in the "greening of buildings" was minimal: 2 percent or less increase in capital investment. But the returns are significant: an 8 percent increase in rental rates. Would you pass up such an opportunity? And this didn't even include the savings from reduced energy use over the lifetime of the building. The new data make it clear: Sustainability equals profit…….Soon owners will be asking, "Why isn't my architect showing me how to increase my profits?" And the next sentence will be, "I need to change architects. I need someone looking out for my profitability through designs compatible with ecology."*

Why now

2006 – demand for what

- **Interpretation**
  - **Increasing legislation ➔ not unified and implementation and enforcement difficulties**
  - **Plethora of terms / guidance documents / interest groups / information**
  - **Distinguishing between aspects with value and false claims**
  - **“……the plethora of terms, bodies, and legislation involved is proving a barrier to adoption.” [EG 16 Jul 05]**
  - **“noise”**

Why now

2006 – demand for what

- **Mediation**
  - **Ability to deal with all agencies involved on behalf of the client**
  - **Fluency in the field of knowledge**
    - » *“Malcic’s (of HOK) fluency with building efficiency figures is a rarity across the industry. [EG 16 Jul 05]*

Why now

2006 – demand for what

- **Quantification**
- **Interpretation**
- **Mediation**

Before we assess the impact of this potential demand on us lets look at what the competition is doing…….

Why now

PTA at Mitcham for Chancerygate Group

Solutions Sustainability

IN DETAIL

41

Light industrial units, Mitcham, Surrey

Building designer and structural engineer: Powell Tolner & Associates

M&E services: Cadogan Consultants

A 4,500sq m speculative commercial development by the Chancerygate Group is the first project to be granted planning approval under the London Borough of Merton's prescriptive renewable energy policy.

The policy states that, "all new non-residential development above a threshold of 1,000sq m will be expected to incorporate renewable energy production equipment to provide at least 10% of predicted energy requirements". The 10% figure has been based on carbon emissions rather than raw energy usage.

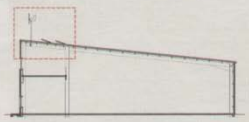
Ten light industrial units will be housed in two steel-framed buildings with monopitch roofs. Each unit will have water-saving taps, toilets and showers, passive stack ventilation to the toilets, and a 1kW wind turbine mounted on the roof that connects to the power ring main via an inverter. The turbines are designed to begin generating electricity at low wind speeds (3 to 4 metres per second) and reach their rated output of 1kW at a wind speed of 12m per second.

A 5kW photovoltaic (PV) array made up of four banks of seven hybrid PV panels will be mounted on the roof facing south-east. The panels will be fixed to galvanised steel frames screwed through the roof to steelwork behind.

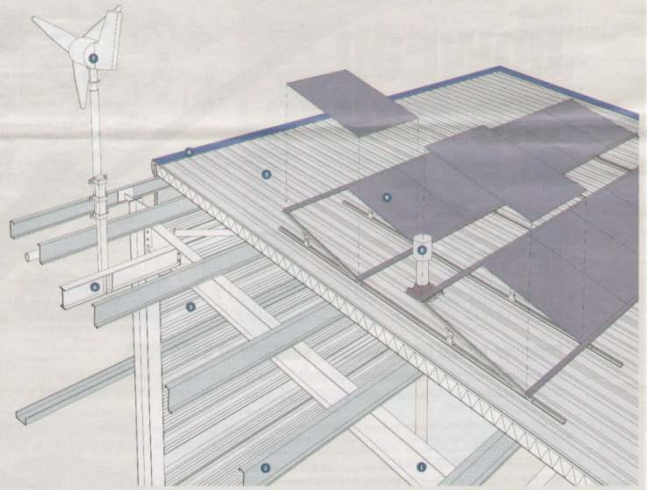
As a speculative development it is impossible to establish a baseline energy and carbon footprint. But these measures will not deliver sufficient CO_2 emission savings unless the tenants do not install heating. A Section 106 agreement therefore requires the developer to set aside a fund to be made available to the tenants to cover the cost of upgrading from conventional to condensing boilers and from conventional to energy-saving lighting.

The London Borough of Merton sees the project as an exemplary renewable energy-saving development as it shows that by adopting a holistic, flexible approach, this policy can be implemented in partnership with a developer.

Drawing and text by Graham Bizley



Cutaway detail section through roof.

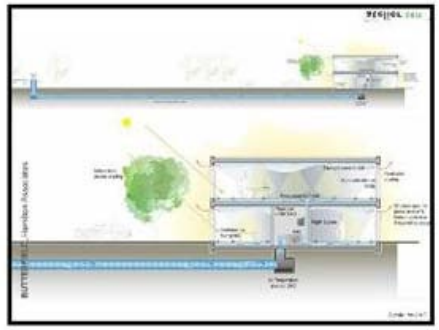


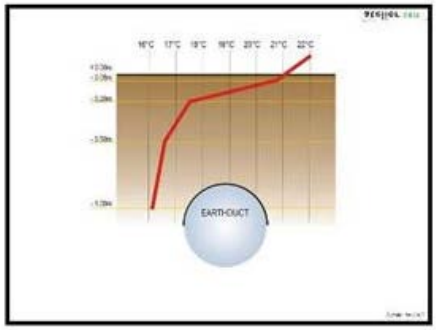
Cutaway detail section through roof

1. Steel frame
2. Purlins
3. Roof deck
4. Ridge flashing
5. Wall cladding
6. Wind turbine support
7. Wind turbine
8. Toilet vents
9. Photovoltaic panels

Why now

Hamiltons and Atelier 10 at Butterfield, Luton for the Easter Group





Why now

Scott Brownrigg at Howberry Park, Wallingford for HR Wallingford (EA HQ)

Building

Deeds not words

In designing a new headquarters building for the government's Environment Agency, Scott Brownrigg had to live up to the exemplary standards set by their client. Photos: Martin Cleveland.

Left Fully glazed skin to the north facade. The building is curved in plan and orientated east-west to maximise the long views across the park and capture the wind. A brise soleil minimises internal glare from the north and solar gain on the south.

Below South-north section. Clerestory windows on each floor provide cooling to the exposed concrete soffits.

Red Kite House is a new office for the Environment Agency. Owned by HR Wallingford, it is the first new building constructed at Howbery Park, a business/science park being developed to the east of Wallingford in Oxfordshire.

The Environment Agency's west area headquarters has been based at Howbery Park since 1995, with 250 staff dispersed between eight different buildings. The buildings lacked internal flexibility and were inefficient in their use of energy and water and the distances between them hampered effective team working. A decision was taken to move into a single building that offered more flexibility and was more efficient in its use of resources.

The high-tech r&d company HR Wallingford had obtained planning permission to redevelop part of its premises at Howbery Park as a business/science park and to construct 11,750 square metres of office space. After evaluating a range of options the Environment Agency agreed to lease one of the new office buildings for a period of 15 years. The Howbery Park site was chosen for a number of reasons, including the competitive lease terms, minimal business disruption, a beautiful parkland situation next to the River Thames and the developers' willingness for the agency to influence the design of the building.

From the start of the design process the agency worked closely with HR Wallingford and their team, including architect Scott Brownrigg, services engineer Hoare Lea and structural engineer Waterman Partnership. The agreed aim was to construct an office that would not only meet the agency's operational needs but would also serve as an example of best practice in sustainable office development.

The basic building had to achieve a Breeam 'excellent' rating to meet the requirements set out in the lease agreement. It was agreed that the office would be a three-storey, naturally-ventilated building with an internal floor area of some 3000 square metres. Moss Construction of Newbury, a division of Kier Regional, was awarded a design & build contract of approximately £4.5m to construct the building. Moss worked closely with the agency and the design team to ensure a successful outcome, especially in terms of environmental matters.

Ventilation and cooling The concrete-framed building is naturally ventilated and relies on thoughtful design features to provide the cooling needed. It is curved in plan and orientated to capture the wind, maximising airflow through the building. Manually operated window openings provide occupant-controlled cross-ventilation. High-level exposed concrete ceilings on each floor act as a heat sink during the day. They are cooled by air entering through 100 motorised clerestory windows on each floor, which are linked to the building energy management system and open and close automatically as the need arises.

Roof-mounted turbines draw air in through the windows on the top floor, which is the most vulnerable to overheating in the summer. This provides movement of air for the occupants of that floor and accelerates the rate of cooling of the concrete ceiling.

Neutral solar control glazing has been selected to minimise solar heat gain in summer but at the same time maximise natural daylight and views into the landscape. The south-facing brise-soleil provides external shading, especially to the top floor. Interstitial venetian blinds on the south facade provide additional internal shading and minimize unwanted solar gain.

Energy The energy strategy for the building involved both generation and conservation of energy. The brise soleil to the south facade is formed by some 200 square metres of photovoltaic cells. These will generate a 25kW peak output (approximately 20MWh per year) which will meet around 20 per cent of the annual demand of the building for electrical power. The agency was awarded a grant from the DTI towards the cost of these cells, which will reduce the amount of carbon dioxide discharged to the atmosphere by about 12 tonnes per annum.

Hot water is supplied by solar thermal panels installed on the roof, saving about 40 per cent of the annual demand for energy needed for hot water. The solar panels (also grant-aided by the DTI) will reduce the amount of carbon dioxide being discharged to the atmosphere by a further 1.6 tonnes per annum.

Heating is provided by high efficiency condensing boilers, which respond to weather conditions. Heat is delivered via perimeter trench heating with local zone control via thermostats. Artificial lighting is provided by a combined up/downlighting arrangement with high-efficiency T5 lamps, digital ballasts and passive infra red occupancy and daylight sensing controls.

In operation, the building is expected to have carbon emissions 26 per cent below that defined in the Department of the Environment's Energy Efficiency in Offices (Econ 19) Type 2 Good Practice guidelines.

Plans Ground, typical upper and roof. The naturally ventilated concrete-framed building achieved an 'excellent' Breeam rating, with predicted carbon emissions 26 per cent below the Econ 19 guidelines. Photovoltaic cells forming a brise soleil to the south facade will provide about 20 per cent of the annual electrical power requirement. Roof-mounted turbines draw air through the top floor to counter overheating while solar panels will provide some 40 per cent of the hot water requirement.

Why now

Chetwood at Bedford for Gazeley

"Cradle to Cradle"

- "Eco-efficiency" minimising impacts - old paradigm
- "Eco-effectiveness" : working with nature - new paradigm
- "Waste equals food": biological or technical nutrients
- Can we afford it; Economy Sector?
- Is it fair; Equity Sector?
- Are we working with nature; Ecology Sector?
- Sees business as the engine of change
- Re-making the way we make things:
- Takes account of "externalities"

Source – McDonagh and Braungart – Cradle to Cradle

EcoTemplate

- Landform and hydrology
- Bio-diversity and well-being
- Building design
  - Harvesting natural energy
  - Reducing C02
  - Reducing waste
  - Recyclable materials

Eco Template at Bedford: first steps

Generic spec 10p/sq ft

- Future proofing for Solar
- Storm water collection
- Local provenance vegetation
- T5 lighting to offices
- DSG partitions and ceiling tiles
- Marmoleum floor coverings
- Organic paint
- Interface carpets
- Low flush volume WC's
- Waterless urinals
- Spray taps

Why now

Burks Green at Worksop for B&Q

JUN 05 - BREEAM RATING OF “EXCELLENT” ACHIEVED FOR B&Q PROPERTIES

It was today confirmed that the 1 millionft² distribution centre Burks Green is designing for key client B&Q Properties has achieved the target BREEAM rating of “Excellent”.

Burks Green’s Project Director, Graham McMorran said, “This is a fantastic achievement given the size and complexity of the facility, and testament to the whole team’s commitment to a sustainable approach. B&Q Properties were determined to show that sustainable design could be applied to large industrial facilities and this rating is recognition of the effort put in by all project stakeholders.”

The facility is being developed on the former Manton Colliery site, is due to open in late 2005 and will create up to 1,200 jobs for the region.

The project entails a two-phase development on the 87-acre site, with an initial building of approximately 865,000ft² and future expansion to 1,125,000ft² .

The building itself will incorporate a complex automated sortation system in the high bay warehouse, and house comprehensive staff welfare facilities in the 50,000ft² office block including a full catering canteen, a gym and a training/learning room.

In addition to the requirement of achieving a BREEAM rating of “Excellent” for the building for energy efficiency, the B&Q Properties/Burks Green team has adopted a sustainable approach to externals, including a balancing lake, noise bunds and acoustic fencing to shield local residential areas.

Why now

USA

- **AIA President**
- **20,000 trained LEED professionals**
  - **2001 Nigel Howard from the BRE went to join US Green Building Council which went onto to develop LEED (US equivalent of BREEAM)**
- **131 mayors of cities across US pledged to adopt Kyoto targets**

Why now

Learning curve

- **React at time or prepare in advance?**

How we can act

Challenges

- **Building a body of knowledge**
  - » *Without a project*
- **Imparting the message**

Measures

- **Acknowledging and broadcasting what we already do**
- **Quick wins**
- **High impact measures**
- **Building a position**

How we can act

Acknowledging and broadcasting what we already do

- **Define sustainability very broadly to draw in benefits [BRE IP 13/03 Part 2, Sustainable buildings: benefits for designers**

How we can act

Quick wins

- **Specifications**
  - **Devise some broad specification constraints**
  - **Considerate contractors scheme in preliminaries**
  - **Construction waste**
- **Publish sustainability policy**

How we can act

High Impact

- **Train 2 staff to become BREEAM assessors**
  - **Acquire knowledge cheaply – £700 per person, 2 day course, £250 for test assessment**
  - **Verifiable claim to have knowledge**
  - **Advance 2 individuals who can then drive the corporate CPD**
  - **Possible profit centre**
  - **Informal assessment of our projects without involving external consultants – enabling authoritative advice to clients**
- **Publicity**
- **Alternative approach of using external consultants**
  - **E.g. EcoConsulting proposals Oct 2004**

How we can act

Build a position

- **Corporate and individual cpd**
- **Working party for 6 months**
  - **Action plan**
  - **Assess cost benefits of strategies and tools etc**

Summary

Why it is important to act now

- Demand
- Environmental drivers
- Legislation
- What is going in the field amongst competitors

How we can act

- Acknowledging and broadcasting what we already do
- Quick wins
- High impact measures
- Building a position
- Increase stature amongst existing client base

Benefits of action

- Develop more avenues through which to attract new business
- Create more potential for publicity
- Improve ability to recruit good staff and staff retention
- Provide further levels of satisfaction
- Reduce costs
- Reduce risk