

Client Overview & Site Waste Management Planning Case Study: RBS Gogarburn, Edinburgh

David Graham, Group Environmental & Sustainability Manager
The Royal Bank of Scotland Group

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Sustainable Construction & RBS group

Presentation:

- ✧ *Client's Overview*

 - ◆ *Why is Corporate Responsibility (Environment) important?*

- ✧ *Case Study*

 - ◆ *World HQ, Gogarburn, Edinburgh*

- ✧ *Conclusions*

Ten trends to watch in 2006

The February edition of McKinsey Quarterly:

Macroeconomic factors, environmental and social issues, and business and industry developments will all profoundly shape the corporate landscape in the coming years.

Ian Davis and Elizabeth Stephenson

Business Risk

Changing / increasing Business risks include:

- *Legal and Regulatory hazards*
- *Direct & Indirect liabilities and losses*
- *Fiscal (tax) challenges*
- *Poor internal performance - inefficiency*
- *Obsolescence - old (environmentally dirty) technology and management practices*
- *Governance risks*
- *Exclusion from Tender Bids / Investment Funds*
- *Damage to the **Brand / Reputation !!!***

Key environmental concerns

The cause of these..... Environmental Effects

The way we use resources

Includes - Source and Nature

(Renewable / Non-renewable)

- *Resource depletion*
- *Climate change*
- *Pollution*
- *Waste*
- *Effects on human health*
- *Loss of species and habitat*

Environmental Risk - Climate Change

For business, the operational effects of climate change potentially (but not exclusively) include:

- *unseasonable weather patterns*
- *increased frequency and severity of storms*
- *increased extremes of weather - heat, cold and precipitation*
- *i.e. increased business disruption*
- *increased health risks*
 - » *heat exhaustion / dehydration / skin cancer, etc. etc.*
- *i.e. reduced employee performance*

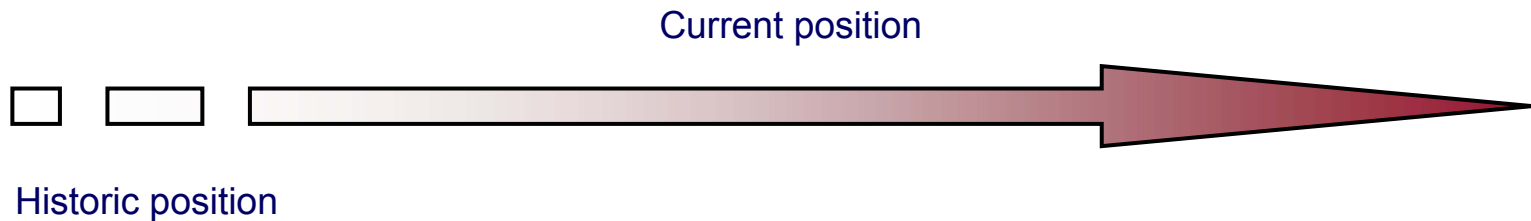
- *increased costs due to:*
 - » *lost production*
 - » *health effects*
 - » *cost of raw materials*
 - » *cost of energy*
 - » *new legislation*
 - » *new fiscal (tax) instrument*
 - » *voluntary agreements*
 - » *insurance*
 - » *reinstatement*

Trust - Corporate Responsibility

'Trust me'

Show me

..... Prove it!!!



Historic Marketplace

Customer Expectations?

Traditionally:

Business simply produced the right product (or services) at the right price.

e.g.

- *Technically sound.*
- *Competitively priced.*
- *Delivered on time.*
- *Managed service - manufacturing / product / billing.*

Changing Marketplace

International

- *UN Conference on Environment & Development (Earth Summit) - 1992 Rio De Janeiro*
- *United Nations Environment Programme (UNEP)*
- *International Chamber of Commerce (ICC) Business Charter for Sustainable Development*
- *UN Framework Convention on Climate Change - 1997 Kyoto (Not ratified)*
- *EU / Member States - commitments towards Greenhouse Gas Emissions - UK 12.5% reduction on 1990 levels by 2008/12 plus stretch target of 20% CO2 reduction by 2010*
- *International Labour Organisation Declaration of Principles & Rights at Work*
- *OECD Code for Multi-National Companies.*
- *UN Global Compact - Human Rights, Labour and the Environment*
- *World Summit on Sustainable Development - 2002 Johannesburg*
- *Basel II - Capital Adequacy provisions*
- *The Equator Principles - World Bank / IFC Standards for Project Finance*

Changing Marketplace

UK

- *Turnbull recommendations on Internal Controls and Governance*
- *Institute of British Insurers' Corporate Social Responsibility (CSR) Guidelines*
- *Public Procurement - 'Best Value Assessment' criteria being introduced by Clients*
- *Higg's Report recommendations on Governance Standards*
- *The Company Law Review*
- *Shift from traditional 'Command and Control' to 'Producer Responsibility' legislation*
- *Fiscal (tax) instruments supplementing statutory controls*
- *Voluntary Agreements*

Tomorrow's Marketplace

Changing Customer Expectations?

The changing marketplace and the effects of globalisation is being reflected in supplier assessments for the following reasons:

- *Bulked Term Contracts.*
- *Fewer Suppliers - higher value / higher risks.*
- *New / Increased Competition.*
- *'Best Value' Assessment criteria.*

Supplier Assessment

Customers now seek to assess:

➤ **Quality of Management**

- ❖ *Values, Governance Standards / Business Principles*
- ❖ *Leadership*
- ❖ *Business Strategies, Policies and Procedures*
- ❖ *Customer and people satisfaction.*
- ❖ *Effects on society - Social & Environmental*

- Use of Resources - Human and Material

➤ **Design of the Process, Products & Services - the use of cleaner technology.**

Case Study

"A facility that will attract and retain the very best staff"



Brief Project History

- *Option to purchase site agreed – May 2001*
- *Planning Application lodged – March 2002*
- *Enabling Works & Demolition commenced – June 2002*
- *Planning Approval granted October 2002*
- *Board Approval granted October 2002*
- *Purchase of site concluded November 2002*
- *Construction works commenced – November 2002*
- *Construction works completed – June 2005*
- *Occupation – July to September 2005*
- *Official opening by the Queen – 14th September 2005*
- *Achieved ISO 14001 - November 2005*

Location



Design Objectives

- *Clear organisation of work spaces and support spaces*
- *Clear access routes and internal circulation pattern*
- *Creating a 'sense of place', a building of space, light and air*
- *Fitting into the landscape and bringing the landscape into the building*
- *'Best Practice' office design*
- *Efficient use of space*
- *Excellent working conditions in an energy efficient and responsive working environment*
- *Incorporating the latest technology*
- *Creating a variety of work places and meeting places*
- *Creating a business community in a campus environment*

Construction Challenges

Waste / Resource inefficiencies - a few examples:

- *Over-design (and specification)* - *over-engineered solutions*
- *Inappropriate design solutions* - *solutions not fit for purpose*
- *Unsustainable material selection* - *renewable / non-renewable*
- *Construction programming* - *damage to stored materials / components on-site*
- *Personnel Skills* - *untrained / unskilled labour*
- *Selection of Plant / Equipment* - *wrong tools for the task*
- *Re-Working* - *loss of time, materials and programme delays*
- *Theft and Vandalism* - *loss of materials and general disruption*
- *Accidents* - *effects on human health and disruption*
- *Waste Management* - *recovery and reuse of the waste arising*

Environmental Highlights

Building Design:

- *Existing trees kept wherever possible*
- *Gross to net floor area ratio in offices – 89% (Additional space saving with move to electronic filing)*
- *Design of post tensioned floor slabs to minimisation of concrete used*
- *Chilled beam system – reduced energy*
- *Grey water use in all toilets, (Rain Water Run off from roof)*
- *Heat and cooling reclaim on air handling plant*
- *CHP for the Ancillary Buildings – the Leisure Pool*
- *Free cooling on central chiller plant for 70% of year*
- *Solar Blinds cut out / reduce heat gain*
- *Fully automatic lighting control system – Motion and time clock sensors in all areas*
- *Flat Screens on all P.C's – reduced heat and power load within the building*
- *Building Management System – All energy usage in the building is closely monitored and managed*
- *Building air tightness test were 15 times better than new English Building Regulations – more stringent than current Scottish Regulations.*
- *Infrared test on heat loss compliant with new English Building Regulations – beyond requirements of Scottish Regulations.*

Environmental Highlights - Continued

Construction:

- *The development of the Construction Environmental Plan*
- *Sustainability Forum established*
- *Supply Chain management - environmental aspects actively reviewed*
- *Buildability review process established*
- *Considerate Constructors Scheme operated*
- *British Safety Council undertook their Five-Star Environmental Sustainability Audit*
- *BSRIA – on site monitoring of waste, transport, prefabricated panel and concrete batching processes*
- *Trees and the Gogar burn protected from outset*
- *Co-ordination of topsoil strip with tree felling to avoid soil contamination*
- *On site concrete batching – saving energy, wastage and time*
- *No site excavations or material removed from site*
- *Rubble from demolition re-used for site roads, hardstandings etc.*
- *Maximisation of prefabrication of cladding panels to improve standards and accelerate installation*
- *Segregation of waste and the optimisation of vehicle movements*
- *Contribution to the achievement of ISO 14001 for the complex*

Environmental Highlights - Continued

Building Operation:

➤ *Biodiversity Action Plan*

- *Protection of rare plants (hog weed) and otter feeding grounds*
- *Flood Plane to protect landscape and Path of river **not** diverted*

➤ *Travel Plan*

- *Cyclists – 150 Cycle spaces and facilities including showers, drying rooms and lockers for cyclists*
- *Buses – 3 terminating bus services, 2 through services on site and 4 services on the A8*
- *Tram – Infrastructure in place for Tram Termination at the bridge.*
- *Car Parking –*
 - *Ratio of 2/1 to encourage use of public transport.*
 - *Numbered spaces to maximise efficiency of car spaces,*
 - *Click and park – maximising use of spaces when vacant.*
 - *Car sharing encouraged*
 - *Needs based space allocation process*

➤ *Achieved ISO 14001 for the Design, Construction and Operation of the complex*

Envirowise Project - Facts / Benefits

- 50,000 tonnes of fill was generated by crushing demolition material
 - £700,000 saved in the cost of importing an equivalent amount of (type 1) material and £250,000 saved in disposal costs.
- 1,000 tonnes of fill materials from the HQ project have been reused at the adjacent RBS Business School project
 - saving new material costs and approximately 100 lorry movements.
- Bulk excavation 125,000m³ of topsoil, which was distributed on-site
 - disposal off-site would have cost £1m and taken some 14,000 wagon loads (importing this volume would have cost £1.5m)
- 30,000m³ of topsoil was created on-site using existing materials
 - saved topsoil costs of £15 - 20 per m³ and avoided the need for over 2,000 vehicle deliveries
- On-site concrete batching plant generated 38,000m³ of concrete at 50m³ per hour
 - saved over 6,000 return trips to site by 6m³ concrete wagons - saving was offset to some extent by delivery of materials to the batcher.

Waste Management Initiatives

- *Establishment of rubbish collection points*
- *Designation of material handling routes*
- *Protection of installed works*
- *Provision of waste compactors and vehicle uplift hard standing areas*
- *Provision of a small team to help workers from trade contractors with general housekeeping*
- *Use of compactors - cut down the number of pick-up and delivery runs made*
- *All waste was sent to the Viridor Enviroskot transfer depot, where it was sorted and either recycled or disposed of appropriately*

Rationale:

- *Minimise disruption at the work face, while at the same time minimising health, safety and fire risks*
- *Minimise waste and vehicle movements - save money*

The Challenges

To break down the barriers / change perceptions:

- *increase awareness of the issues*
- *improve understanding of how it relates to our business*
- *encourage a shift from a 'cost' to a 'value' assessment methodology*
- *improve executive support*
- *encourage the business to take ownership of the agenda*
- *move from reactive to proactive management of the environment*
- *encourage innovation / improve standards*

Conclusion

Reshaping Industry?

“It is not the strongest of the species that survives, nor the most intelligent; it is the one that is most responsive to change.”

Charles Darwin

Thank you for listening

For further information contact:

David Graham, Group Environmental & Sustainability Manager

E-mail David.Graham@rbs.co.