BATTLE McCARTHY©

Consulting Engineers & Landscape Architects

PROJECT:
The New Home Office Headquarters

CLIENT:
Home Office

ARCHITECTS:
Terry Farrell & Partners

BM SERVICES:
Environmental Design
& Building Services Engineering.

VALUE:
£120million (approx)

DESIGN BRIEF

The New Headquarters for the Home Office is on the site of the old Department of the Environment at 2 Marsham St. Jack Straw has selected a consortium, including Battle McCarthy and Terry Farrell & Partners to construct these linked low-rise buildings using innovative ideas, which represented best value for money and a long-term solution.

Battle McCarthy is providing environmental consultants and mechanical engineers for the redevelopment, with plans to make the new headquarters a demonstration project of the government's goals regarding sustainability.

The environmental objectives for the project respond to the latest governmental commitments on sustainability laid out by the Montreal Protocol (ozone depleting substances), Agenda 21 and the Kyoto Protocol.

BREEAM 'Excellent' Rating

London UK Office
T: +44 (0)20 7440 8282
F: +44 (0)20 7440 8292
E: admin@battlemccarthy.com
www.battlemccarthy.co.uk

DESIGN INITIATIVES/ACTIONS UNDERTAKEN

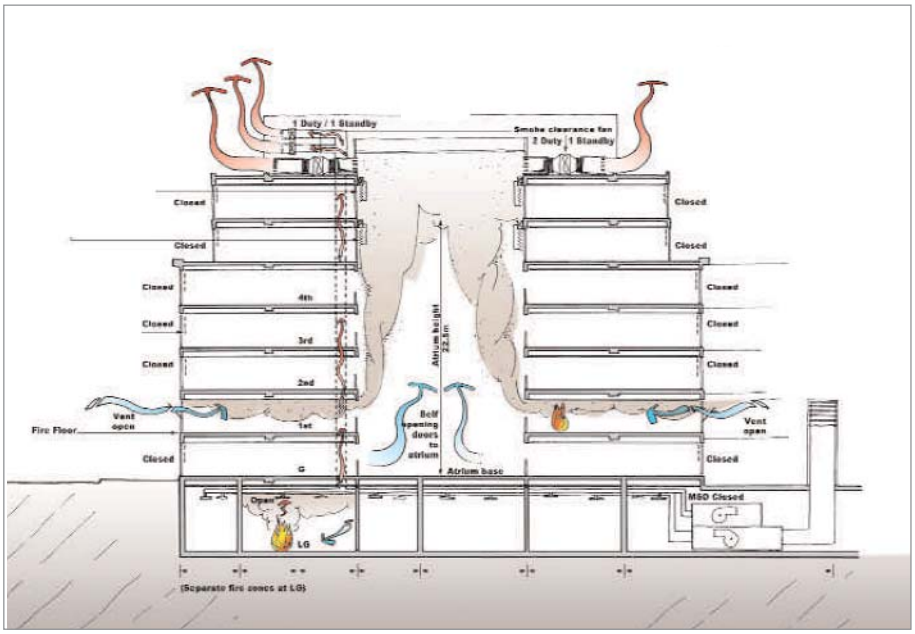
The redevelopment by Bouyges UK included the demolition and removal of the existing buildings and bomb shelters down to the existing basement slab. Construction of 55,000 m^2 of offices for the Home Office and Her Majesty's Prison Service and 10,000 m^2 of private residences is currently underway.

The existing buildings at Marsham Street posed a significant challenge both in their demolition and in attempts to re-use as much of the building materials as is possible. The demolition generated over 250,000 tonnes of concrete and a range of other valuable resources including steel, glass, aluminium and numerous fixtures and fittings. Recycled aggregates were then used in prefabricated components of the new structure. This practice will be used in Battle McCarthy's other high-profile projects including the Elephant and Castle Redevelopment. Throughout the design process, Battle McCarthy has worked closely with the Building Research Establishment to develop the potential of using this as a demonstration project.

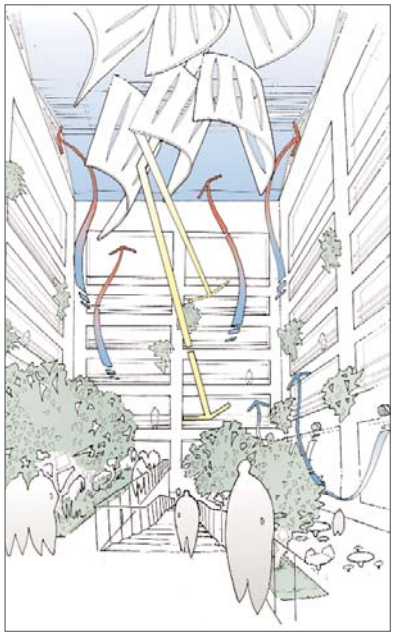
A unique environmental solution was developed for climatic control of internal spaces. This comprises of multiple zonal heat pumps all sharing energy across an 'energy transfer loop'. The system makes the best possible use of variations in heating/cooling loads across all buildings. Central chillers are a fraction of conventional sizes. The transfer loop requires boiler input during low winter months and otherwise generally rejects the residual of heat via roof cooling towers for the rest of the season.

AWARDS

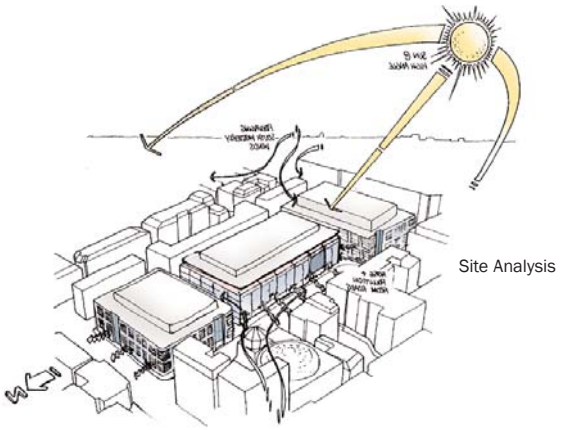
BREEAM Design Rating 'Excellent'



Building A



Atrium Concept



Site Analysis

The key environmental commitments that Battle McCarthy have ensured were incorporated into the scheme are as follows:

- The basic concept for temperature control within the project utilises water as an energy transfer medium. Using reverse cycle heat pumps within the offices, accommodation heating or cooling shall be provided to suit immediate local environmental requirements.
- Air conditioning within the general offices accommodation shall be provided, via reverse cycle heat pumps, located within designated "on floor" plantrooms strategically located throughout the building.
- Fully conditioned primary fresh air for ventilation of offices accommodation shall be provided via air handling plant, located in designated plant enclosures at roof level.
- The integration of supply air diffusers within the defined modular planning grid and the extension of the energy transfer system with valved connections within ceiling voids of the office areas, affords ease of modification for future cellularisation and/or change of use.
- Primary heat input to the building at low external ambient conditions, e.g. 2°C outside air temperature shall be provided, via gas fired boiler plant, located within a designated plantroom at basement level block A.

Phased occupation of the buildings began in February 2005