

BATTLE McCARTHY©

Consulting Engineers & Landscape Architects



PROJECT:

ENDESA Headquarters, Madrid, Spain

CLIENT:

ENDESA

ARCHITECTS:

Kohn Pedersen Fox Associates

BM SERVICES:

Structural, Building Services
& Environmental Engineering

VALUE:

£65million (approx)

CONTRACT DATES:

1999 - 2003

DESIGN BRIEF

This project is the new headquarters for Spain's leading energy supplier ENDESA.

The scheme has been engineered to meet the client's desire to demonstrate their environmental consciousness. The company has historically generated most of their electricity from nuclear and fossil fuel power stations but is keen to address issues of sustainability.

The corporation recognises their particular responsibility and found an ideal opportunity to improve their public image by integrating environmental conscious design into their new Headquarters.

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

0746/3

DESIGN INITIATIVES/ACTIONS UNDERTAKEN

The site is a greenfield site just north west of Madrid and is bounded by the M40- Madrid's periphery ring road. The design team involved a partnership that blended London-based consulting engineers Battle McCarthy and architects KPF with Madrid based architects RLH and the building engineering company, Prointec. Battle McCarthy has provided structural, building service & environmental engineering.

Integrated design measures have been taken to reduce the headquarters' dependence on mechanical systems and extraneous energy use. Targets were set at a significant 30 per cent reduction in energy consumption. Furthermore, EU funding is currently being pursued to install photovoltaic panels on the atrium roof, which has been designed to receive standard sized panels progressively procured during the building's life up to a potential 4,600m² of PV panels.

The development consists of three blocks of between five and six levels that are built over two car park levels. The completed project will have 32,000m² of enclosed carpark; 45,000m² of office space, useable retail and commercial; and approximately 6,000m² of covered mall/atrium space.

The atrium is a central feature to the development forming an internal 'street' between the main building blocks. Its environment is passively controlled by a combination of external shading, natural ventilation fed via earth tubes with evaporative cooling and supplied via a raised labyrinth sub-floor.

Internal office climate is controlled by a combination of under floor displacement ventilation and perimeter under floor, four pipe fan coil units. High efficiency central plant is used, along with full heat recovery on all major air handling plant. Evaporative cooling towers were selected for chiller heat rejection to make use of the low average RH in Madrid climate

AWARDS

AIA New York Chapter Design Awards

2001



Glass Façade



Wind Scoops (Model)

Built Wind Scoops



Main features are:

- 6,000m² passively controlled atrium
- Solar/Wind flues
- Photovoltaic atrium roof
- Highly efficient façades with external shading
- Excellent daylight penetration
- Displacement ventilation
- Full heat recovery throughout
- High efficiency plant and systems
- Concrete frame
- Flat slab 'in-situ' construction
- Large span column grid
- 8,000m² steel frame glazed atrium roof spanning 40m

