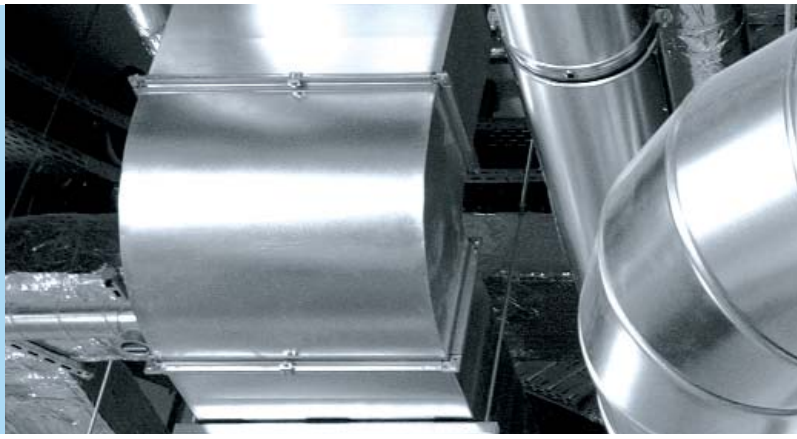
BLACKBOURNE
Integrated M&E

CASE STUDY

Project: Clare House- Harbourgate

PUBLIC SECTOR

Scope: M & E
Value: £3.4 million
Client: Turkington Developments
Main Contractor: Turkington Construction
Consultant: Williams & Shaw
Duration: 12 months
Completion: February 2007



Brief

Blackbourne were the Electrical & Mechanical Contractor appointed to carry out the fit-out of an existing three storey building to provide open plan Office Accommodation, Catering and Fitness Suite facilities for approximately 500 staff of the Central Procurement Directorate (CPD) as a Pathfinder Project for the NI Civil Service's 2010 Estates Project.

Solution

A site based M&E Co-ordination Engineer was appointed by the Company, who was provided with a site office, PC with latest AutoCad software, printer, AO plotter and email facilities.

Co-ordination drawings were produced and submitted for approval identifying routes of cable tray and trunking, pipe work and ventilation ductwork, Client coordinated ceiling layouts were updated as required and locations of access points for both commissioning and maintenance purposes identified for agreement.

An installation and commissioning programme was produced with commissioning periods identified for each Mechanical system shown. This programme was discussed at an early stage to ensure that construction activity was integrated with M&E planning. Key dates, such as 'power on' were identified for main plant areas.

Building areas of high engineering input such as Plant Rooms, Kitchen, Communication rooms and Server Rooms were fast tracked for construction to enable early completion and commissioning of M&E systems.

Following the discussions with the Main Contractor, Electrical Sub-Contractor, in-house specialist Sub-Contractors and Specialists an agreed commissioning programme was produced.

A schedule of demonstration dates for each M&E system was prepared and issued to the client for approval, this being issued in time for Client representation to be arranged.

Sign-off sheets were prepared for each demonstration identifying what system had been demonstrated and who had been in attendance representing either the Client or Contractor.

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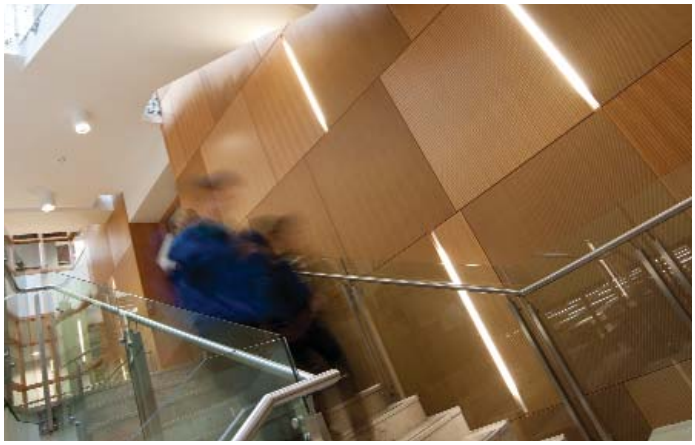
We implemented several renewable practices on this project, such as, bore hole technology and solar panel installations. These help lessen the negative impact on the environment and reduce the building's carbon footprint.

Result

Due to the extremely short installation period and the complexity of all the services, we as a member of the overall team attended technical meetings on a weekly basis. We subsequently held weekly internal meetings with site based foremen in charge of heating, plumbing and ventilation operatives and also with all specialists present to relay all the most recent information to all parties. The client requested changes to the building as original handover approached. These changes were able to be incorporated and a revised completion date was agreed and the building was subsequently handed over to the client.

Budgetary control of the project was achieved through the provision of a Bill of Quantities submitted at appointment stage. A Value Engineering process was carried out after appointment during which technical and cost details of alternative plant and materials were submitted to the Client and his representative for consideration and approval or rejection.



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Integrated MJE

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RoSPA 2009 PRESIDENT'S Award
BM TRADA ISO 9001
BM TRADA ISO 14001
BM TRADA OHSAS 18001

Scope of Work

Mechanical

- Fresh Air Ventilation for 500 persons via central Air Handling Plant, with humidity control, distribution ductwork and ceiling mounted grilles.
- Heating to all areas via gas fired condensing boilers and radiators with weather compensation and zone control to facilitate the orientation of the building.
- Cooling for occupied zones via chilled water fan coils and an external air cooled Chiller Unit.
- Cooling for non-occupied areas, including Kitchen and Restaurant, via DX refrigerant one-on-one split systems or Multi-slit systems to facilitate out of normal working hours operation.
- Ventilation and Cooling for the Fitness Suite via local Heat Recovery type Ventilation Units and DX refrigerant cooling units. Local temperature control facility provided for occupants.
- Domestic water heating via gas fired water heaters.
- Low carbon renewable energy technologies in the form of
  (i) pre-heating of domestic water for the kitchen via roof mounted solar panels
  (ii) pre-cooling of fresh air ventilation system via energy received from on-site borehole.
- Provision of a new Building Energy Management System (BEMS) to monitor and control the various mechanical services systems and to provide an energy monitoring and management facility.

Electrical

General Services
Main Switchboard
Sub mains cabling
Distribution boards
Lighting
Distribution boards
Lighting
Lighting controls
General power
Under floor busbars
Mechanical Wiring
Kitchen Wiring
Testing & Commission

Communication
IT & data Wiring
Telephone Wiring
Public address
Deaf loop
TV aerial
Disabled Toilet
Disabled refuse call
UPS for IT cabinet
Hard wire clock system
Test & comm

External Services
External Lighting
CCTV system
Intercom System
Boom Barriers
Lighting Protection
Solar Energy Panels
Test & Comm

Fire & Security
Fire alarm
Deaf alerter
CCTV system
Intruder system
Door access System
Door driver
Panic Attack
UPS for IT cabinet
Intercom System
Test & Comm