

CASE STUDY

Project: James Young High School (Scotland)

EDUCATION

Scope: M & E

Value: £4.7 million

Client: Lothian Council / c/o SMC Parr

Main Contractor: McLaughlin & Harvey

Consultant: Wallace Whittle- Glasgow

Duration: 15 months



Brief

Blackbourne Integrated M&E were the mechanical and electrical contractor appointed to carry out the extension and refurbishment of the complete school (14300m sq), which currently has approximately 1100 pupils.

The school is a local community school which is open to the general public for use of the leisure facilities consisting of a swimming pool, changing facilities, 2 sports halls, squash courts, fitness suites, dance studios, kitchen and dining facilities, which together with external tennis courts and sports pitches all form part of the complex.



Solution

Phase 1 of this project required the complete removal and replacement of all main plant items and the spine services within a 7 week period. The school returned after the summer recess with all items operational and under BMS control.

The Contract was awarded due to Blackbourne's ability to demonstrate how they would plan, execute and manage the installation of a high volume of work in such a short period of time.

The remainder of the work was carried out whilst the school was operational requiring accurate programming of work and close supervision of all site activities.

All sections of the building were handed over on the agreed programme dates and within the client's budget.

At the Company's request a Client representative was present on site for 3 days a week throughout the installation of the works to approve proposed pipe, duct and containment routes, material selections, identification and rectification of defects and commissioning sign off.

A site based Coordination team was established comprising experienced M&E supervisors and a Co-ordination/ Commissioning Manager.

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Coordination Meetings were conducted on a twice weekly basis to discuss proposed coordination routes, sequencing of works and impact on building construction programme, progress, commissioning and handover. The Main Contractor, Clients representative and specialist sub-contractors attended the M&E Coordination meetings when applicable.

Schedules of builders attendances were prepared by the company prior to installation of plant and materials. Defects were identified, rectified and signed off through joint inspections with the Clients representative and the M&E supervisors.

Air and Water balancing records and plant commissioning tests were witnessed by the client and a full set of Installed drawings and O&M Manuals were produced within one week off handover.

Result

The project was completed both to the Blackbourne Integrated M&E internal budget by monitoring labour and material expenditure in line with estimated cost, and within the clients contract budget.

Blackbourne Integrated M&E submitted monthly valuations which included a percentage completed against the summary of the tender for that particular phase.

Variations we priced and submitted on a monthly basis, the project manager would issue an instruction for the work to proceed if he was satisfied that the variation was value for money and within the terms of the contract.

Once the instruction was issued it was added to the list of previous instructions and added to the next months valuation so that both the main contractor and client's QS was fully aware of the overall contract cost and by following this methodology the contract was completed within budget.

Because of the fast track nature of this project (12 months) Co-ordination proved to be key in the overall successful completion on time and within budget.



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Scope of Work

The scope of the Mechanical Services Installation comprised the following:

- Installation of new central boiler plant, chimneys, hot water calorifiers, pumps and Automatic Controls.
- Provision of new heating and plumbing mains in all corridors.
- New heating, plumbing, drainage and ventilation in refurbished areas and new extensions.
- Cooling for selected areas via DX refrigerant one-on-one split systems and VRF multi systems.
- Fresh Air Ventilation for Library via central Air Handling Plant, with distribution ductwork and ceiling mounted grilles.
- Ventilation and Cooling for the Fitness Suite via local Heat Recovery type Ventilation Units and DX refrigerant cooling units.
- Designated Pool Hall Ventilation system complete with distribution ductwork and grilles.
- 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.

The scope of the Electrical Services Installation comprised the following:

- Installation of new main switchboard.
- Installation of new sub mains cabling and sub switchboards.
- Provision of general and emergency lighting system.
- Provision of new fire alarm system.
- Provision of new general power system.
- Provision of new electrical services to the main swimming pool and associated plant rooms and equipment.
- Provision of new security systems which consisted of cacti, door access and intruder alarm.
- Provision of new electrical services to mechanical plant and associated equipment, this included ventilation, sprinklers, air conditioning, and general hot/cold water systems.
- Installation of PA and music systems within specialist dance studios.
- Installation of electronic scoreboard system within major sports halls.