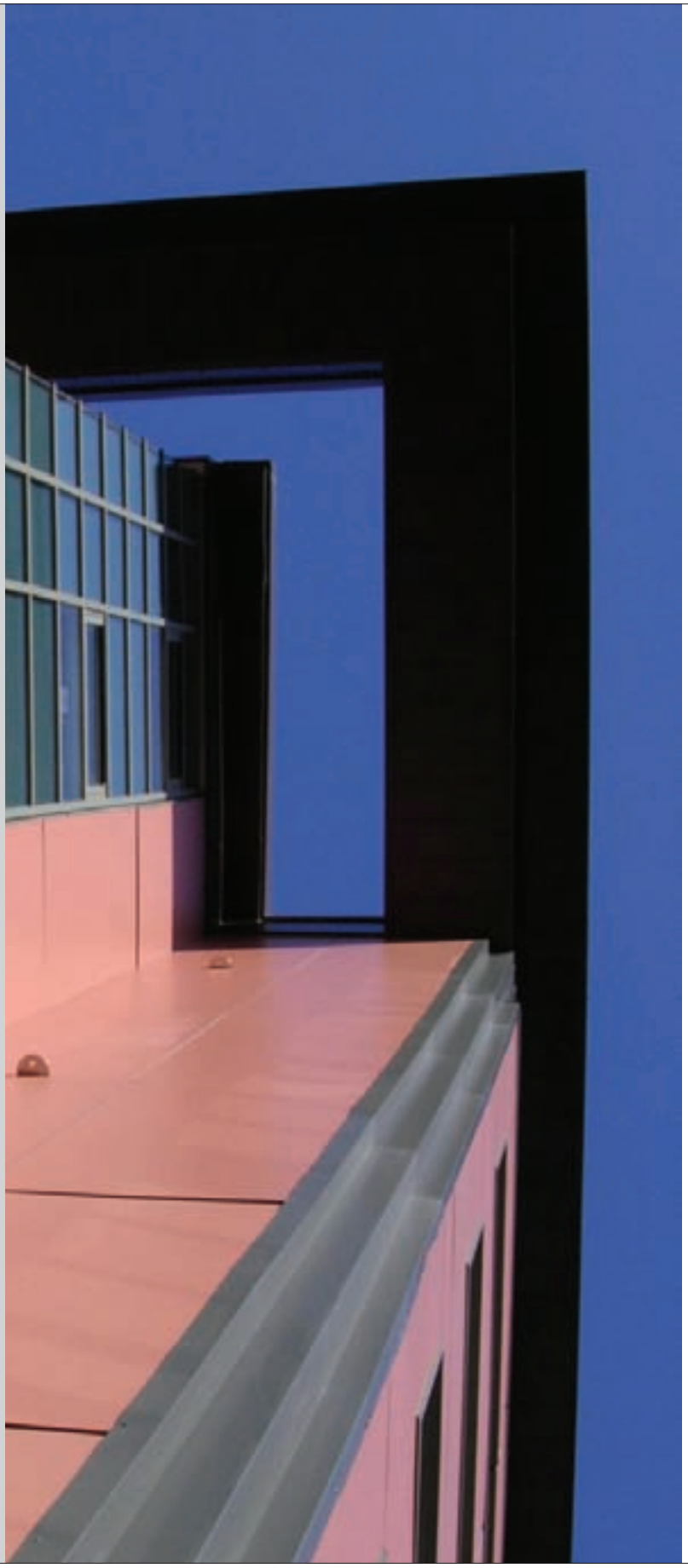
PROWESS



Consulting Engineers

Mechanical & Electrical Engineers

Company profile

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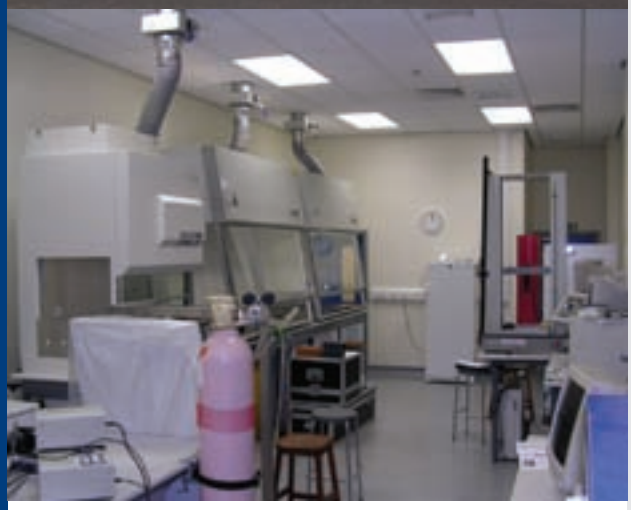

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1 Greater Manchester Fire Service, Technical Services Depot

2 Tissue Laboratory, University of Leeds

3 Carlinghow School

4 Bar in Multiscreen Cinema

5 Engine test cells

No matter how demanding, the company offers the expertise and resources to ensure that projects are successfully delivered to the highest standards of excellence.

History

Prowess Building Services Ltd was established in 1994. The company was formed by the partnership of its two principle directors namely Damien Pratt who specialises in Mechanical Building Services and John Westby who specialises in Electrical Building Services. In fact the name of the company is formed by bringing together the surnames of the two directors. The name of the company also reveals some of our philosophy and aims i.e. definition of prowess: skill, expertness, superior ability attained by study and practice.

Experience

The two directors have a combined experience of over 50 years in engineering and have been involved in all aspects of mechanical and electrical engineering in industries as diverse as commercial, leisure, process, pharmaceutical, nuclear, industrial, utilities, public services, education and MOD.

The strength of the company lies in the experience, expertise and enthusiasm of the two Directors. The team is augmented by mechanical and electrical engineers, technicians, CAD operatives and administration staff. Recent contracts have included traditional, design and build and PFI.

Services

The company operates as a Mechanical and Electrical Building Services design house and offers the following services:

- project management
- design
- specification
- cost control
- consultancy
- mechanical, electrical and public health engineering
- site supervision
- investigative and fault finding work.

The fact that we are a small company makes us flexible and quick to respond. By retaining a small team, and pulling in additional resources when required, has led to greater efficiency and gives us a competitive edge over our larger more established rivals.

Technology and Innovation

We make full use of the latest technology, and software design suites when applicable. Drawings are produced on CAD and we use e-mail for the electronic transfer of drawings and documentation. We can provide the people, the multi-disciplinary skills and experience to understand our Client's requirements in detail and create innovative, added value solutions to meet those needs, with an emphasis on attention to detail.

Our innovative and lateral thinking approach has led to satisfied Clients and the receipt of repeat orders.

Trouble-shooting

One area where we have found a niche is in trouble-shooting at sites where the installation and commissioning are completed but where parts of the Mechanical or Electrical systems are not operating correctly. Prowess Building Services Ltd can investigate the existing installation, check the installation has been designed and installed correctly, fault-find, and formulate measures to correct or resolve the problems.

Quality Assurance

All work undertaken by Prowess Building Services Ltd is to procedures which comply with the intent of ISO 9001:2000. Prowess Building Services Ltd also has previously, and is willing to undertake activities to specific Client requirements in accordance with the clients own procedures.

Mission

Our mission is to be the first choice provider of engineering solutions, delivering excellence in design and service through partnership. That partnership is with our Clients, with contractors, and between the disciplines and design teams of our Clients.

The success of our approach has led to repeat business from satisfied clients.

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Our philosophy is simple: the more we contribute to the long-term success of our clients, the greater is our success.

Services provided

Our services to clients are usually tailor made for each project. The following gives a flavour of the typical services that we regularly provide:

Mechanical Design

- Incoming gas and water supplies
- Natural ventilation
- Mechanical ventilation
- LPHW and radiant heating
- Domestic hot and cold water
- Building management systems & controls
- Sprinkler systems
- Compressed air
- Piped gas services
- Fume extract
- Kitchen supply and extract
- Car park smoke and exhaust fume ventilation
- Above ground drainage
- Comfort cooling
- Air conditioning
- Fume cupboards
- Dust extract
- LEV

Electrical Design

- Incoming power supplies
- Power distribution
- Small power supplies
- Lighting and emergency lighting
- Special effects and feature lighting
- IT/Data/Comms
- Public Address
- Fire alarm
- Intruder alarm, CCTV & access systems
- Lightning protection
- Disabled alarm, nurse call, panic alarms
- External Lighting
- Car park and street lighting
- Bespoke control systems
- Audio video systems
- Instrumentation, control and automation

Other Services

- Feasibility studies
- Condition surveys
- Energy surveys
- Specialist services for laboratories
- Site surveys
- Inspection
- Resident engineers
- Cost control
- Passenger lifts & fire fighting lifts
- CAD
- Troubleshooting
- Production of as-fitted drawing
- Production of operation & maintenance manuals
- Testing of M & E services
- Commission of M & E services
- Maintenance and facility management

Carlinghow School – new build

This school comprised Junior, Infant and Nursery facilities. The school was complete with Dining Room, Kitchen, Multipurpose Hall, Class Rooms and Play areas.

New incoming gas, water and electric mains were required and these were housed in a small separate building remote from the school.

The school included a Dining Room for 160 places and a fully equipped Kitchen complete with supply and extract ventilation, interlocked with the natural gas supply to the Kitchen. The LPHW heated air handling unit associated with the Kitchen is located on the roof. Also located on the roof is the extract fan which extracts from the kitchen canopy.

Water storage also located on the roof. The weight and size of the equipment on the roof necessitated early liaison with the Structural Engineer and Architect to ensure an efficient solution.

Early work with the Architect achieved the development of suitable window design to achieve the best natural ventilation possible. The orientation of the building, the location of individual rooms with high internal heat gains and the overhang of the roof for shading were designed into the scheme to minimise solar heat gain.

The height and shape of individual rooms was designed to allow the rooms to be ventilated naturally for most of the occupied time. Low power extract fans were installed to supplement the ventilation at peak times. The fans had variable speed control so that noise in the classrooms was at an acceptable level.

Project data sheet

1

Sir Charles Grove Hall of Residence - Manchester

A 10-storey, 600 room student accommodation block in the heart of Manchester Metropolitan Universities. The 600 rooms were prefabricated off-site and delivered in modules for assembly on-site. Construction took 12 months from a 'brown field' site. At this time this was the largest modular building in the UK.

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SITE SERVICES

This included detailed surveys of existing services in and around the perimeter, pavements, roads and site. Marking the services in paint and production of co-ordinated drawings.

Diversion of existing utilities, including a HP gas main and 300mm diameter water main, electrical supplies and traffic signal cabling.

Provision of a new electrical sub-station and back-up diesel generator supply.

Gas and water utilities.

ELECTRICAL SERVICES

Design, detailed specification and production of drawings for the electrical services.

The scheme included six fire-fighting/ passenger/disabled lifts, fire alarm system to HMO standards, access control and CCTV systems, telecoms and data structured wiring.

Each modular room was designed to be fitted out off-site with lighting, small power, telephone and data points, electrical heating, and some with kitchen equipment etc. with the final connections to the rooms made on-site by plug-in methods where appropriate.

MECHANICAL SERVICES

This included an underground car park and provision of new incoming gas and water services.

All bedrooms are en suite and these were serviced with extract ventilation and domestic hot and cold water services.

The scheme has basement cold water storage with portable water booster pumps. Domestic hot water is generated and stored in 3 rooftop plant rooms. There is also a management suite on the ground floor which comprises offices, security suite and toilet block.

1 The largest modular building in the UK

2 Internal courtyard

Project data sheet

University of Leeds - 'Phantom Heads'

A number of existing teaching rooms were converted into a state-of-the-art dental simulator suite, where student dentists are trained on 30 dental simualtors also called 'phantom heads'.

Lessons can be broadcast to the 30 display screens mounted on each phantom head station. CCTV cameras and a microscope camera also allow the tutor to demonstrate procedures by the same method.

ELECTRICAL SERVICES

Services to the 30 phantom heads included under floor power supplies and audio/visual/data networking. The lighting criteria called for good colour rendition/daylight, with no discernable reflections on the 30 display screens and the ability to wash the ceiling and light fittings to maintain clinical conditions. This was all achieved successfully.

Lecture/meeting rooms were also provided adjacent to the main area and fitted with interactive whiteboards.

MECHANICAL SERVICES

Comfort cooling, ventilation with LPHW terminal heater batteries were provided.

Potable domestic cold water and domestic hot water were also provided, along with above ground drainage and compressed air to drive the dentists' drills.

Project data sheet

1

Technical Services Depot for Greater Manchester Fire Service

The Technical Services Depot is a new purpose built building to bring together maintenance workshops, MOT workshops, body shop, paint booth, offices, main central stores, and breathing air (BA) facilities, which were previously at various other locations.

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ELECTRICAL SERVICES

A new electrical sub-station was provided to feed the new building and adjacent Fire Station. Power distribution to industrial areas included pre-wired multi-voltage service units, and supplies to MOT equipment and pits.

Power supplies were also provided for: MOT equipment, Sprinkler Pumphouse, Compressors, Fume Extract, Machine Tools, etc.

Lighting was provided by low-bay MBF lighting in workshop areas, industrial type fluorescent lighting in stores and office type fluorescent lighting in accommodation areas, together with emergency lighting. External lighting was also provided to the perimeter of the building and column lighting to the skid-pan training area and car parking.

Two passenger lifts, a Goods Lift and a facility to allow lifting items to the first storey stores by a fork-lift truck were provided. An automatic Security Alarm System is installed working in conjunction with external CCTV system linked back to a central monitoring station. An automatic fire detection system is installed to BS5839 Part 1 L2. Telecommunications structured cabling has been provided in the building and a PA system is installed.

MECHANICAL SERVICES

The services included gas fired radiant heaters, radiators, fan coil units, unit heaters, LPHW heating and high efficiency boilers.

A sprinkler storage tank, electric and diesel sprinkler pumps and a full sprinkler distribution system were installed.

Four pipework distribution systems were installed for the various vehicle fluids including central storage tanks and compressed air driven pumps.

A 10 bar compressed air system complete with refrigerant dryers and duty and standby compressors were installed complete with a comprehensive compressed air pipework installation. This system was used to power pneumatic tools and was complete with pressure reduction and lubricating terminal devices. A second compressed air system running at 200 bar was installed complete with duty and standby compressors and desiccant dryers. This system was used to power oxygen pumps which fill the breathing air cylinders.

A new oxygen system with an oxygen cylinder manifold was installed. A fume exhaust system was installed to remove the products of combustion from the 15 fire engine bays.

A Trend control system was installed to monitor and control the mechanical services. This system was linked by modem to the Fire Services Headquarters in Swinton.

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1 Technical Services Depot

2 Maintenance workshops

3 MOT bay

4 Chassis wash and sprinkler house

5 Workshop showing a pit bay

6 Rear of workshop and MOT bays

Project data sheet

Fartown High School – refurbishment

The school was in a run down state and many of the mechanical and electrical services were in a very poor condition.

The heating system including, boilers and pumps, and domestic hot water system were completely replaced. The cold water storage tanks in a roof top plant room were replaced.

Gas fired radiant heaters were installed in the Sports Block. The swimming pool plant was completely removed and replaced with a new heat exchanger, filter, chemical dosing equipment, pumps and interconnecting pipework.

The Dining Room was extended and all equipment and services in the kitchen were stripped out and replaced. New Kitchen ranges were installed complete with an extract canopy with supply air ventilation. The supply and extract ventilation are interlinked with the natural gas system to shut off the natural gas in the event of a failure of the ventilation system.

A dust extraction system was installed in the Technology Block. New fume cupboards were installed in the Science Block.

A ventilation system was installed in the Drama Theatre. This ventilation system comprised a roof mounted air handling unit with LPHW heating coil, filters and a ductwork distribution system. The extract system comprises high level extract grilles and a roof mounted extract fan.

Refurbishment of Bolton Fire Station and Divisional Headquarters

The existing premises were surveyed and a report produced to develop scheme concepts and Budget Costs for the replacement of the mechanical and electrical services. The project included the conversion of workshops and existing office areas into new offices. Close co ordination of the M&E services design and architectural design was very important.

We also provided a full time M&E Resident Engineer during the construction phase of the works, as the Fire Station and Headquarters were kept fully operational at all times.

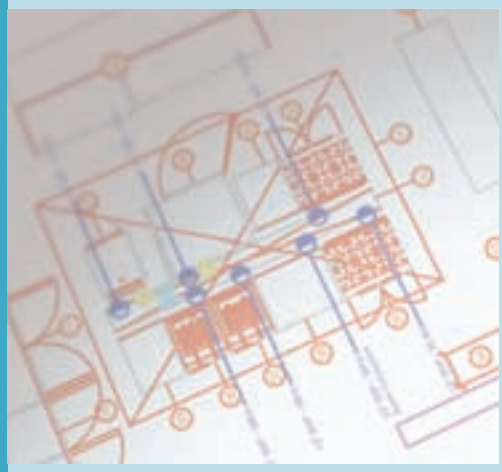
The complete heating system including boiler plant, controls and flues etc, were replaced. A new air handling unit was provided for the lecture theatre. Separate workshop buildings were provided with gas fire radiant heating and a small boiler house for heating and hot water.

The mains distribution equipment was completely replaced, The lighting and power throughout was replaced and re-wired. A fire alarm system, emergency lighting, intruder alarms and telecoms systems were introduced. The call-out system which automatically switches lighting on in the event of an emergency call-out was also replaced.

Project data sheet

Boiler Replacement Scheme for Greater Manchester County Fire Service

A boiler replacement scheme was undertaken for Greater Manchester County Fire Services to replace obsolete 30 year old plus equipment at various Fire Stations. The existing systems were surveyed and a report produced with recommendations. This was followed by a full system design for each Fire Station. Fire stations remained fully operational throughout the works. Temporary boilers were provided until the new systems were fully commisioned.



Some other recent projects (with approximate M&E Installation value) include the following:

Royds Hall School **Huddersfield (£ 0.6m)**
Holmfirth High School **Holmfirth (£ 0.7m)**
West End Junior School **Cleckheaton (£ 0.4m)**
Salendine High School **Huddersfield (£ 0.4m)**

PFI schemes involving part refurbishment and part new build.

Factory Unit and Offices

Stalybridge (£ 0.4m)

New build project for the construction of a facility to produce architectural and structural steel work. Factory unit included a high bay facility with overhead crane and a mezzanine floor for welding and metal shaping.

Holbeck Rail Depot

Leeds (£0.6m)

Existing train maintenance sheds were upgraded, an on track maintenance shed was extended and a two storey building was refurbished to form new offices.

Dental Hospital One Day Unit

Leeds University (£ 0.3m)

Refurbishment of Operating Theatre, Anaesthetic Rooms, Recovery Rooms and Nurse areas.

Office Block Heating and Cooling Scheme

Dungeness Power Station (£ 0.5m)

Provision of a heating, cooling system and ventilation system for a 1,200 m^2 office block. The building is a four storey structure with a large percentage of glazing facing south.

Mechanical Engineering Laboratories

Leeds University (£ 0.3m)

An existing area of the Mechanical Engineering Building was refurbished to form a number of laboratories. These included a Hunan Tissue Lab, 3-D Modelling Lab, Human Factors Lab and a Fluids Lab.

Multiscreen Cinemas

High Wycombe (£ 0.5m) • East Kilbride (£ 0.4m) • Edinburgh (£ 0.4m)

Refurbishment of multiscreen cinemas. The work was split into phases with only one phase worked on at any one time. The remaining phases remained fully operational throughout the works. The complete controls systems were replaced along with all the lighting. The projectors and sound systems were upgraded.

Car Showroom and Workshops

Cardiff (£ 0.5m) • North Shields (£ 0.5m) • Slough (£ 0.4m) • Warrington (£ 0.6m)

New build projects with large glazed showrooms, MOT and maintenance bays, and offices.

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