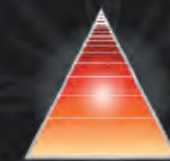


Education Capability



SPECTRUM
Consulting

SPECTRUM MEP CONSULTING LTD



Spectrum MEP Consulting is a consortium of three leading UK Building Services Engineering Consultancies, united to provide effective design services solutions to property development and construction professionals.

The collaboration partners are S I Sealy, Gill Massey and Hannan Associates with a combined 95 years in business. The partners have extensive expertise in different types and sizes of projects, and significant experience in the education sector.

With offices strategically located in the UK and also the United Arab Emirates, we boast a total staff base of over 100 and had a combined fee turnover well in excess of 5.0M. We pride ourselves on providing our clients with unparalleled service quality; innovative design solutions and customer focus.



S I Sealy was founded in 1949 by Sidney Inwood Sealy and has since grown into one of the foremost building services engineering consultancies in the North of England.

S I Sealy is a building services and environmental consultancy with knowledge and experience across all market sectors. Our flexible consultative approach allows us to exceed our clients' expectations across all market sectors, with particular strength within the education and healthcare sectors.

Our clients trust us to bring creativity and skill to delivering projects on time and to budget. Dedicated teams, dependable planning and practical monitoring of costs, excellent quality control and outstanding project management are all part of the S I Sealy approach.



Gill Massey is a practice of building services consulting engineers operating throughout the UK specialising in the design and project management of mechanical and electrical systems.

The practice is headed by Chartered Engineers experienced in the various disciplines and is committed to the training and the development of staff in order that they can achieve their full potential.

From inception to commissioning and practical completion of projects, Gill Massey provides a comprehensive and professional service.

Gill Massey believes in providing a fully integrated multi-disciplined approach to building services engineering and in so doing provides a professional and quality service to suit the clients' needs and expectations whilst developing close relations with our clients and fellow professionals.



William E Hannan & Associates was formed in 1983 by Managing Director Bill Hannan to provide Building Services Consultancy.

The company today continues to focus exclusively on Building Services Engineering and operates from offices in Manchester, London & Edinburgh. We work successfully throughout the UK and abroad and the business has grown consistently.

Hannan Associates is committed to creating successful buildings through attention to detail utilising our breadth of experience, technical skills and with significant levels of personal attention.

Our design solutions are renowned for pushing beyond current thinking whilst controlling risk and delivering on the key essentials of client and end user satisfaction.

Hannans has developed a solid track record in a number of sectors and has the capability to manage and deliver projects ranging from building surveys to projects valued in excess of £300m with international design teams.

Spectrum MEP Consulting has a wealth of collective experience within the Education sector via the consortium members and individual engineers. Whether it is a new school or a refurbishment, Spectrum can provide integrated design solutions.

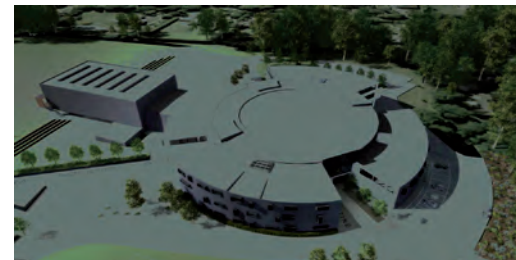
The quality of an educational environment is paramount and with the rapidly changing service delivery requirements the M&E services need to be designed so that they are robust and flexible whilst maintaining the highest level of availability and security. Spectrum's attention to detail and development of solutions in association with the education providers ensures the services delivered meet the exacting standards.

Our range of services includes:

- M&E Building Services Design
- M&E Design Development and Enhancement
- Building Health Checks
- Construction Inspection & Supervision
- Services Design Checking
- Feasibility Studies
- Vertical Transportation Design
- Value Engineering Appraisal
- Security and Access Control
- IT Systems Design
- Sustainability Review and Assessments
- Condition Surveys
- BREEAM and LEAD Assessments
- Energy and Carbon Assessments
- Fire Engineering
- Acoustics



**Spectrum has a wide range of experience in all sectors and types of buildings.
This document provides a sample of our UK Education experience.**



The University of Salford SEE Programme - The Think Lab

We were appointed to provide detailed M&E design services for the University of Salford's SEE Restructuring programme. This complex series of relocations resulted from the disposal of the Meadow Road Campus, resulting in the reconfiguration of the Peel Park Campus to accommodate the displaced faculties.

As an operational educational facility, it was critical that each and every phase was completed on time and on budget. This was achieved, and the works included the relocation of Physics, Chemistry, OHSS and ICD, general teaching spaces, pool rooms, lecture theatres and the innovative and world class "Think Lab"



2003-2005

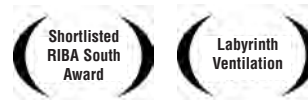
£15M+ Development

The Open University, Milton Keynes Jennie Lee Building

The Jennie Lee building has 5000m² over three floors, which houses the Faculties of Maths and Computing and the Institute of Educational Technology, an atrium and a 600m² state of the art Ambient Technology Lab. A Partnering procurement process ensured productive teamwork for this innovative education environment.

A key element of the brief was to encourage departmental interaction for free flowing ideas and academic cross fertilisation.

The building is naturally ventilated throughout, by single sided perimeter openings in the clusters and draws cooled fresh air via a concrete undercroft (labyrinth) to both the cellular Honeycomb and the Nexus, utilising the atrium's natural stack effect. The façade has only 35% transparency, balancing insulation and daylight. It uses night time cooling and rainwater harvesting.



March 2008

£10M+ Development

Previous Projects

Beckfoot School Bradford Bradford BSF Phase 2

This school is an excellent example of a modern, highly serviced education building.

Each classroom benefits from individual CO2 controlled fan coil units, with LPHW heating fed via high efficiency low NOx condensing boilers. Domestic hot water is provided from a central gas fired unit, with separate systems for classrooms, kitchens and laboratories.

The building is highly serviced, with sophisticated CCTV, ICT, Intruder and Door Access systems, and is highly energy efficient, with a TER of 36.03 and a BER of just 30.31. It also has a highly sophisticated building management system.

Brooklands Farm Primary School Milton Keynes

The school was targeted for a 'Very Good' BREEAM assessment but also a requirement of planning permission was to comply with Milton Keynes Sustainable Development Policy D4 which required 25% CO2 betterment beyond the Building Regulations and a minimum of 20% on site renewables.

The design process involved consideration of various plant configurations and SBEM modelling was carried out including 100% bio-mass boilers, shared bio-mass/condensing gas fired plant, ground source heat pumps, air source heat pumps, CHP, solar thermal panels and wind turbines.

The ventilation strategy was also considered in parallel to augment the heating plant strategy. Air source heat pumps linked to underfloor heating, automatic CO2 controlled natural ventilation and wind turbines were initially settled on, but failure to obtain planning permission for the 2 - 15 metre wind turbines necessitated final selection of a 70% bio-mass / 30% gas boiler plant mix.



Summer 2011

£25M+ Development



September 2010

£8.0M Development

Previous Projects

Cowley Language College

Situated in St. Helens Cowley Language college is a new 8900 m² 3 storey building consisting of 3 classroom blocks each linked to the admin building which also contains the common shared areas of dining area, kitchen, drama and dance studios, library and atria.

The central plant consists of a large biomass boiler with partial load gas fired back up boilers. An underground storage bunker is provided to cater for pellets or woodchips with a fuel transport system to the boiler.

The heating and ventilation is generally underfloor heating with mixed mode ventilation utilizing windows and roof turrets controlled by actuators linked to the BMS controls. Fans in the turrets provide induced ventilation in summer periods where natural ventilation cannot provide adequate ventilation to limit internal temperatures.

Solar thermal panels are provided for pre-heating of domestic hot water linked with the central plant. Rainwater harvesting is also installed for provision of toilet and urinal flushing.

The lighting installation utilizes high frequency dimmable luminaires throughout which are controlled by absence/presence detection and daylight dimming.

The MEP services were designed to contribute to a BREEAM Schools rating of 'Excellent'

Navigation Primary School Altrincham

The Council wanted to include as many low energy and renewable energy technologies as possible. The building therefore includes: rainwater harvesting, passive solar gain, natural ventilation, wind turbines, solar thermal collectors, daylight dimming lighting, and high thermal mass. The building incorporates sustainable materials and the classrooms are south-facing. It also has a sophisticated building management system.



September 2010

£15M Development



November 2007

£5M Development

RICS Sustainability NW Winner. Green Apple Gold Medal Winner.

Previous Projects

Manchester Grammer School (new Junior Department) Development

This is an excellent example of a truly sustainable building with an embedded carbon footprint significantly lower than that of a steel, concrete or masonry building. Total carbon reduction compared to a traditionally constructed building over 10 years is 68 tonnes.

The new one form entry school comprises five classrooms, together with ancillary teaching areas, Head's office, ICT room and staff rooms. The building has proved a great success in achieving its aims, to provide a secure and friendly environment, and an energy efficient solution with a sustainable design. The design includes maximising daylight, passive solar gain, natural ventilation, the use of sustainable materials, daylight dimming lighting, south facing classrooms and gas fired condensing boilers.

Brunel University Framework Agreement

£100m Framework Master Plan. Works have included:

Infrastructure

Appraisal, upgrading and enhancement of the campus utilities, security and IT infrastructure, to improve reliability and enable the new development on the site. The project included enhancement of the campus environment and formation of a statement gateway to access the site.

Energy Centre

Replacement of the campus central heating system which provides heat to all buildings on the campus. The project has included the evaluation of a range of sustainability measures; including biomass fuelled heating, micro CHP and Solar heating.

Indoor athletics centre

The project includes a new indoor 130m running track with support conditioning/science facilities and a new netball hall, both of which are naturally ventilated/cooled and modelled to maximise the use of natural daylight. The facilities were part funded by Sport England and are designed to meet their requirements. Also included is the refurbishment and upgrading of an existing sports centre for student and community use.

Bio Science

Refurbishment of workshop and laboratory areas and the formation of a hazardous experiment laboratory.



September 2008

£1M Development

RICS Innovation Shortlisted. Green Apple Medal Shortlisted.



Dec 02 - Jan 10

£100M+ Development

Previous Projects

Heinz Wolff Building, Uxbridge Campus

This scheme included the part refurbishment of the 2 storey Heinz Wolff Science Building at the Uxbridge Campus of Brunel University to provide new heating, ventilation and laboratory services whilst the building remained part occupied by PHD research students. Study spaces and research laboratories were brought up to modern standards to provide new fume cupboards, high quality lighting and IT/Data services throughout.



Mar 09 - Jan 10

£5.5M Development

Mid Cheshire College

The project incorporated the construction of a new build 2 storey Art Block within the existing college campus. The work package included the complete design and installation of new systems within the building. Our duties involved providing a Performance duties service.



Apr 05 - Aug 08

£2.5M Development

Previous Projects

Stratford-upon-Avon High School New Build

The project involved the construction of a ground, first and second floor school, separate sports hall, external all weather pitch, a caretaker's house and car parking facilities. There were existing school buildings, which were demolished upon the completion of the new school complex.

The building was designed in a way that would ensure the end result was environmentally friendly, energy conserving and maintenance minimising.

Manchester Mesivta High School New Build

This project involved the construction of a new build 3 storey Boys Secondary School and 6th form block. Acting as Principle Services Designers, our work package included providing the design of all new mechanical, electrical, public health and lift systems within the new building. These systems included mains distribution, lighting, general power, fire and security systems, communications, heating, ventilation and comfort cooling.



Dec 00 - Jan 03

£14M Development



Jul 03 - Jan 07

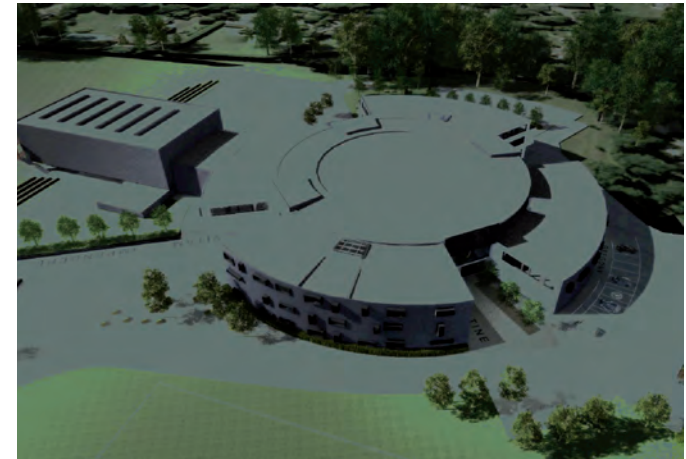
£4.5M Development

Previous Projects

St Ambrose College, Hale Barns – New Build

This is an excellent example of a truly sustainable and intelligent building with a carbon footprint significantly lower than that of a traditional school building. Total carbon reduction compared to a traditionally constructed school building over 10 years is expected to be in excess of 2000 tonnes.

We have written the detailed M&E engineering solution brief and vetted the contractors proposals. Balfour Beatty's team have been awarded the contract. Their proposal included an in depth feasibility study, proposed a number of low and zero carbon technologies (or "LZCs), such as a gas fired CHP plant, solar thermal collectors, rain water harvesting, heat pumps and mechanical ventilation with heat recovery and evaporative cooling, all closely monitored and evaluated by the use of a sophisticated BMS control system incorporating extensive metering. The BMS forms part of the fully integrated IBT system which controls all aspects of the M&E services, including cashless vending and Biometric access control systems.



Winter 2011

£22M+ Development

Previous Projects



Ian Joyce

**Company Director/
Principal Mechanical Design Engineer**

Qualifications:

Incorporated Engineer (I.Eng)
Building Services Diploma
Higher Certificate in Building Services



David Stafford

**Company Director/
Principal Mechanical Design Engineer**

Qualifications:

Bachelor of Engineering (Building Services Engineering Degree)
Chartered Engineer
Member of the Chartered Institution of Building Services Engineers
Member of the American Society of Heating, Refrigeration and Air Conditioning Engineers



Tony Massey

**Company Director/
Principal Electrical Design Engineer**

Qualifications:

Bachelor of Engineering (Building Services Engineering Degree)
Chartered Engineer
Member of the Chartered Institution of Building Services Engineers
Member of the Institute of Healthcare Engineering and Estate Management
Member of the Institute of Electrical and Electronic Incorporated Engineers

Spectrum MEP Consulting

Inwood Court - Stuart Rd
Bredbury
Stockport
SK6 2SR
England
Tel: +44 (0)161 430 2044
Fax: +44 (0)161 406 0446

Spectrum MEP Consulting

P.O. Box 45072
Abu Dhabi
United Arab Emirates
Tel: +971 (0) 2 639 2270
Fax: +971 (0) 2 631 2325

Hannan Associates

Beta House,
Alphagate Drive, Manchester Rd
Denton
Manchester
M34 3SH
England
Tel: +44 (0)161 337 2200
Fax: +44 (0)161 337 2201
www.hannan-uk.com

Hannan Associates

10/11 High Street
Uxbridge
Middlesex
UB8 1JN
England
Tel: + 44 (0)1895 232 234
Fax: + 44 (0)1895 232 325

Hannan Associates

Abbey House
83 Princes Street
Edinburgh
EH2 2ER
Scotland
Tel: + 44(0)131 247 6770
Fax: + 44(0)131 247 6710

S I Sealy

Inwood Court - Stuart Rd
Bredbury
Stockport
Cheshire
SK6 2SR
England
Tel: +44 (0)161 430 2044
Fax: +44 (0)161 406 0446
www.sisealy.co.uk

S I Sealy

Office 26
Brookside Business Park
Cold Meece
Stone
Stafford
ST15 0RZ
England
Tel: +44 (0) 1785 760357
Fax: +44 (0) 1785 761166

Gill Massey

7th Floor – Acre House
Town Square – Sale
Manchester
M33 7WZ
England
Tel: +44 (0)161 962 9145
Fax: +44 (0)161 969 7281
www.gillmassey.co.uk

Office Locations



SPECTRUM
Consulting



SPECTRUM MEP CONSULTING LTD

Registered Office: Inwood Court, Stuart Road, Bredbury, Stockport SK6 2SR

Tel: +44 (0)161 430 2044

Fax: +44 (0)161 406 0446

Email: d.stafford@spectrumMEP.com

