CDI International Building Services Engineers

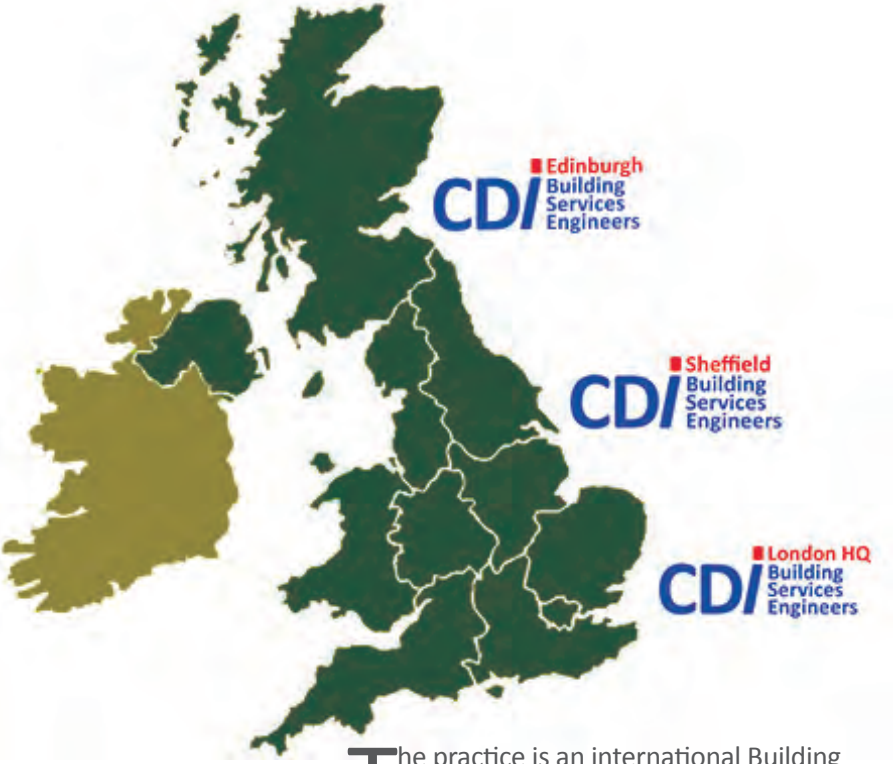
Education and Healthcare Projects

159 St James' Road
London
SE1 5BP
+44 (0) 203 589 0090

13 Breadalbane Street
Edinburgh
EH6 5JJ
+44 (0) 131 555 5388

Unit 3 Kelham Square
Sheffield
S3 8SD
+44 (0) 114 553 9700

About CD International /



The practice is an international Building Services Consulting Engineers having completed award winning projects throughout Europe with construction values up to £300 million.

Location

The company has offices in London, Edinburgh and Sheffield with associate partners throughout Central and Eastern Europe, Central Asia and the U.S.

Sectors

Market strategy has been committed to developing consultancy appointments throughout all areas of the commercial sector including:

- Mixed-use & Retail
- Leisure and entertainment
- Office & tech hubs
- Hotel & Resorts
- Residential
- Listed & Heritage

The business strategy is also focused on a European and worldwide operation with a number of major projects successfully completed in continental Europe, Africa and the Middle East.

Working with lead architects and local partners on international schemes, we developed unique experience and ability to combine knowledge from various practices and implement it into the real project.

Services

The company offers a full range of professional services which can be individually tailored to meet specific client needs as follows:

- Mechanical Design
- Electrical Design
- Public Health Design
- Fire Protection and Life Safety
- Vertical Transportation
- Infrastructure
- Low energy design
- IT communication
- Low Carbon Energy assessment
- BREEAM assessments
- Thermal Modelling
- Energy audits and energy appraisals

Structure and Experience /

Working closely with architects and local specialists, we implement the latest technologies and modern approach to deliver comfortable and sustainable living environments.

Structure

- Project Directors remain an integral part of the design process.
- Shortened communication channels ensure a fast response time
- Project teams capable of handling a wide range of project types
- Individual groups draw upon the shared experience and resources within the company.

Mixed use projects

CD International engineers have been working under the multiple projects in mixed use and residential environment for the past 25 year.

We have highly qualified team, with experience in design of building services for developments in Europe, including Russia, Ukraine, Bulgaria, Albania and the UK.

Experience

We have got strong technical engineering understanding of the projects in all building sectors and across many countries.

Geography of works

- Albania
- Armenia
- Belarus
- Croatia
- Czech Republic
- France
- Germany
- Macedonia
- Moldova
- Montenegro
- Poland
- Russia
- Serbia
- Ukraine
- England, Scotland & Wales
- Kyrgyzstan
- Kazakhstan
- Lebanon

Long term clients & frameworks /

More than 60% of our work comes from the long term clients and by recommendations.

Our core senior engineers worked together over several years under Hilton Framework, where we provided MEP design for new build or refurbishment of Hilton Hotel, using Design Standards.

CDI have been in the Framework with Butlins and Haven Holiday for more than 10 years. The work includes working with Design Standards including luxury chalets, hotels and venues.

We have enhanced energy saving profile, working extensively with park and resort managers in order to create comfortable environment for the customers and at the same time make it energy efficient.

Stadium Developments

Butlins Resorts

European Bank for reconstruction and Development

Haven Holiday Parks

Architect: AD Architects
Structural: Curtins
Interior Design: Goddard Littlefair
PM/QS: Lavingtons
Contractors: ARJ Construction

Healthcare / UK

Hemel Hempstead / One Stop Doctors

Hemel One is a pilot project in health care sector for the developer. The building is a private healthcare clinic located on Boundary Way in Hemel Hempstead.

Phase 1

Total GLA of around 4000sqm. Building will accommodate clinic with 160 rooms and office premises over 2 levels, internal landscaped courtyard and external car park.

We have completed the first two phases of the OSD Centre in 2016, which now housing the outpatient department, dental, physio and diagnostic clinic.

The new Building will incorporate the following main facilities:

- Treatment Rooms
- Consultant & Examination Rooms
- Pharmacy
- MRI and X Ray Rooms
- Recovery Rooms
- Staff Rest Rooms & Changing Areas
- Dental Treatment Rooms
- Toilet Areas
- Seminar/Meeting/Training Rooms

Installation of a biomass boiler to supplement condensing boiler system for heating and hot water and air-to-air chillers for a cooling system.

Natural daylight provided into the toilets and changing areas by a series of Sunpipes, also PV cells to be installed.

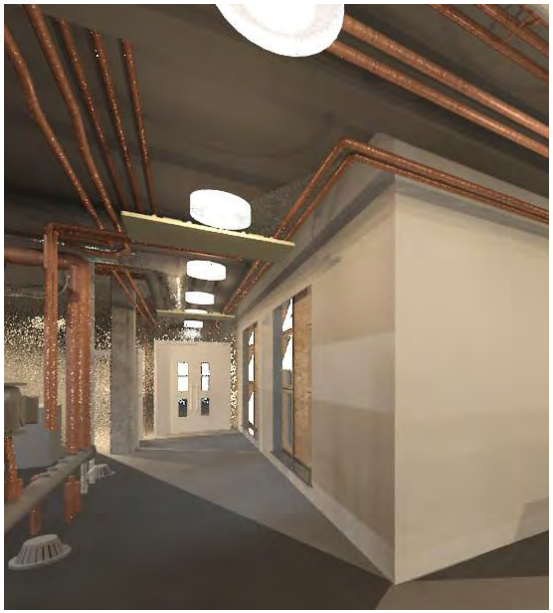
One of the specifics of the project is that MRI and X-Ray rooms are required to maintain very specific conditions both for temperature and humidity.

Mechanically operated windows are incorporated and these will be controlled by the BMS.

The gas fired CHP and two gas fired boilers shall provide heating to the building and for the hot water generation

Three air cooled packaged chillers shall provide cooling to the building . The chilled water system serving the medical equipment shall have a buffer tank.

Click here for a fly-through a model video on our Vimeo channel.



From top left: CGI of the plantroom; WindCatchers® and PV panels Revit Model; and as installed; installation of duct and pipe work; CGI for distribution through the corridor.

Phase 2

To complement the existing provision, OSD plan to offer a wider range of day case procedures via a new purpose built Ambulatory Surgical unit.

The development will include two laminar flow theatres, four recovery bays, together with nine day-case beds, changing facilities and other supporting ancillary areas.

The unit is currently under construction and due for completion in May 2020.

CDI's provided full survey works, load assessments for the development, liaison with the incumbent supply utilities in support of establishing the existing supply infrastructures

Full performance related duties to produce MEPH employer's requirements documents in support of contractors providing design proposals and outturn install works to marry with the same to accommodate the new build works.

Client: European Bank for Reconstruction and Development, UK
Energy Assessor: CD International BSE, UK

Energy Efficiency Assessment / Moldova

Chisinau/ MedPark Hospital

A modern private general hospital (61 beds) with a total area of 12,286m², located in downtown Chisinau. The hospital will provide a full-service package, incorporating a polyclinic, ambulance, emergency unit and a pharmacy.

Project outline

Our engineers had undertook the review of existing technical design and technical specification; assessed expected energy performance of the Project and compare it with the energy baseline.

Also, additional energy efficiency opportunities were identified and conducted their cost-benefit analysis. This was the basis for Sustainable Energy Investments (SEI) assessment of the Project that includs assessment of energy benefits in terms of energy savings and carbon reductions. Technical assistance on specification of Building and Energy Management System was also included within the project.

Client: North Lincolnshire Council
Contractor: Elecomm
Architect: Race Cottam Associates
MEP: CD International BSE, UK

Public Sector / Office / UK

N.Lincolnshire Council Office

The project is a £5.7 million Church Square House extension in located in Scunthorpe, extension to the North Lincolnshire Council building, where 600 of the authority's staff will be based.

Client's brief

Building located in the centre of Scunthorpe on Church Square will benefit from a new three-storey extension, while the existing main building will be completely remodelled.

This will enable the council to transform the way it works based on an agile workforce delivering services designed around residents. The Council's new town centre offices are already creating construction jobs and will save local taxpayers £375,000 a year.

Council's aim is to strategically downsize to more efficient, environmentally friendly and productive premises.

Deliverables

CDI has completed the Detailed Design for mechanical, electrical and public health service. Produced in Revit® in a fully coordinated model between contractors, architects, structural engineers and the rest of the project delivery team.

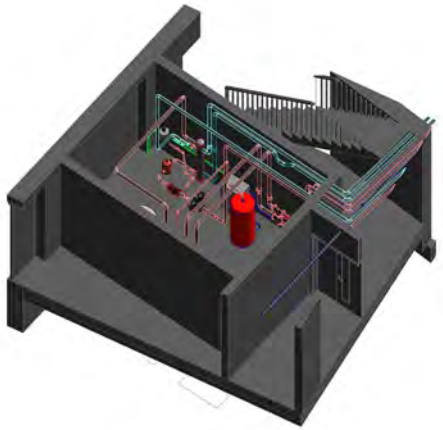
Delivering the project up to BIM Level 2, allowed us to reduce the delivery programme, eliminate clashes between services and enhance coordination between the disciplines.

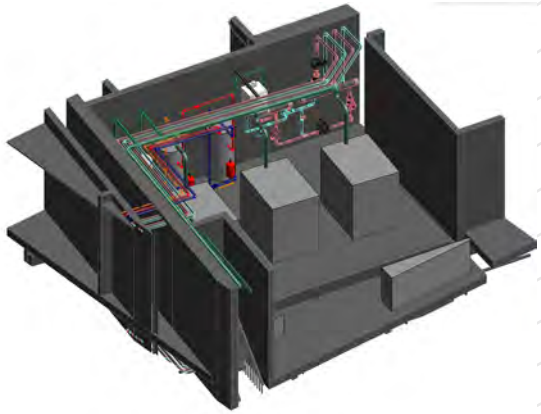
Energy Efficiency

The Council has put a strong emphasis on the sustainability and energy efficiency of the building and the design team worked together to implement those principles into design solutions, starting from building fabric, reducing energy demand. Our team incorporated maximum energy efficiency measures during building services upgrade, without compromising on comfort.

The hybrid ventilation system was designed to provide natural ventilation, secure nighttime cooling and boosted levels of ventilation during summer. The HTM FS systems installed above a suspended ceiling or within a ceiling raft, is working well together with natural ventilation provided by manual or automatic windows and Windcatchers installed on the roof.

Heating is provided via Air Source Heat Pumps controlled and monitored by the BMS system. All utilities are metered and energy and water consumption are monitored by BMS and facilities management team from the point of commissioning, to ensure that all systems are working in sync and comfortable internal environment achieved and resource use optimised.





James Buddery

Senior Mechanical Engineer

Mental health extension – Sheffield NHS

Existing stone built period building for NHS Sheffield used for community Mental health services was extended to accommodate further patients. This involved working in a live building and extending M&E services from existing plant for heating and domestic water services. A SBEM calculation was required for the extension and enhanced thermal insulation and glazing was used with natural ventilation to achieve compliance. Project value 0.6milion.

High Security hospital - Rampton

Refurbishment of office areas within Rampton Secure Hospital is a high security psychiatric hospital. This involved strip out of existing M&E services and installation of new Heating, ventilation and domestic water services to suit the new layout all fed from centralised heating network. Project value 0.5milion.

Kings Mill hospital, Mansfield

Condition survey and financial analysis to provide services in line with current standards and performance in the existing part of the hospital, including theatres, X ray, Acute care, A&E. Financial appraisal was carried out to assess the viability to implement new M&E installations.

Leeds hospital, ward refurbishment

Refurbishment of an existing ward. Involved the modification of heating, ventilation and medical gasses to suit the new layout which involved 24 new beds.

Richard Swindell

Senior Electrical Engineer

Building Schools for the Future

Independent inspector for new build schools programme (BSF) for 16 new schools to the Barnsley area.

Role included supervising for the Biomass boiler installation, various wind turbines and controls for natural ventilation.

Northern General Hospital (Sheffield)

Project management and electrical services engineer for new built, refurbishment and upgrade of MEP systems.

Hallamshire Hospital

Project management and electrical services engineer for new built, refurbishment and upgrade of MEP systems.

Rotherham General Hospital

As an energy consultant was responsible for the design and supervision of electrical services associated with the new A&E department.

Corus Steels and Avesta

Intermediate Electrical engineer, responsible for the design and running of medium sized healthcare projects and rail projects.

Design engineer on several for on projects in Sheffield and Rotherham area.

Gary Batham

Senior Electrical Engineer

NHS Blood Transfusion Hazop Cryogenic Stores – Nationwide Replacement Scheme

Duties required were M&E design works to support the introduction of specialist ventilation systems to ensure that correct flow and extract rates would be provided to ensure correct oxygen levels were maintained within the rooms. Works included modifications to existing pipe-work, electrical services and associated control systems to ensure the stores presented a safe environment for NHSBT employees to work in.

NHSBT Team Base Projects – Nationwide Relocation of Team Base Services

Design services were provided to support the relocation of team base services. Schemes consisted of the design of building services systems i.e. lighting, power, fire alarm, emergency lighting, intruder detection, public address, CCTV, lightning protection, emergency management systems and mechanical services systems. Project management duties were also provided to ensure that all works proposed and undertaken were in full accordance with the Clients requirements.

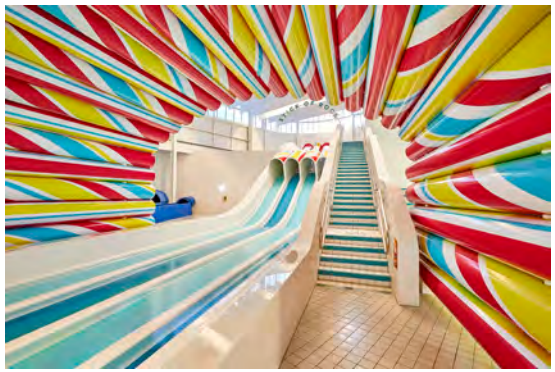
GUM Clinic – Sheffield, Full Refurbishment Works

Project lead for M&E, design duties required to carry out the remodelling works within a shared building. The works were challenging as a result of the adaptation works that were required where existing services served other parts of the building that needed to be kept operational at all times. Communication was a key factor in facilitating the successful delivery of the project works to all key holders satisfaction.

Leisure / UK

Butlins Bognor Regis / Splash

During our long term collaboration with Butlin's, we have provided our MEP design service for their resorts in Minehead, Skegness and Bognor Regis. In summer 2019, Butlin's celebrated the opening of its highly-anticipated seaside-inspired swimming pool at its Bognor Regis resort.



Project outline

The new Splash Zone occupies over 6,500sqm of floor space and has a capacity for almost 1,000 people. The main building is over 14m in height with an even taller Flume Tower which provides access to external water slides.

CD International BSE delivered full services design solution for MEP systems.

Back in March 2016, being appointed on the project, we started from sustainability and energy efficiency assessment of the future pool. The scale of it, creative force and out-of-the-box thinking by the design team made this project extremely interesting to work on.

Client: Bourne Leisure
Architect: PWP Architects
QS: Lavingtons
Contractor: KIER
MEP Engineer: CD International BSE, UK

We delivered full design, managed tender and provided site design drawings for contractors as well as were supervising commissioning and handover.

All MEP Services were designed and coordinated in Revit, and delivered up to BIM Level 1.

Main Pool Area

The main pool area served by a fully ducted heated warm air ductwork installation supplied from three air handling units, incorporating heat recovery, to maintain comfortable conditions within the Pool Hall. The indoor pool air handling plant incorporates LPHW heating coils and the heat source will be from a combination of high efficiency condensing boilers and three CHP units located within a basement plant room.

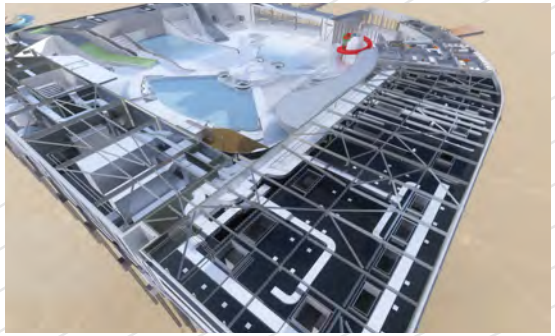
Flume Tower

The flume tower includes a fully ducted heated warm air ductwork installation supplied from a dedicated air handling unit incorporating heat recovery to maintain comfortable conditions within the tower. The tower air handling plant incorporates a LPHW heating coil and the heat source will be from a combination of high efficiency condensing boilers and 3 No CHP units located within a basement plant room.

Changing village

The Changing Village provides male, female, family and disabled changing facilities and be heated and ventilated by fully ducted tempered air ductwork installation supplied from two air handling units incorporating heat recovery to maintain comfortable conditions within the changing area.

The Changing Village also incorporates under-floor heating throughout to offset the fabric heat loss within the space. The Changing Village area and the associated Pool Hall entrance areas are heated with an adequately sized and zoned underfloor heating system.



Cafe & Viewing area

The Café & Viewing area will be ventilated by a fully ducted tempered air ductwork installation supplied from an air handling unit located at first floor incorporating heat recovery to provide minimum fresh air for the occupants within the space.

The Café & Viewing shall also incorporate underfloor heating throughout to offset the fabric heat loss within the space. The Café & Viewing area shall be heated with an adequately sized and zoned underfloor heating system served from dedicated manifolds. It will also have a VRF system to provide comfort cooling within the space.


CDI
International
Building
Services
Engineers