



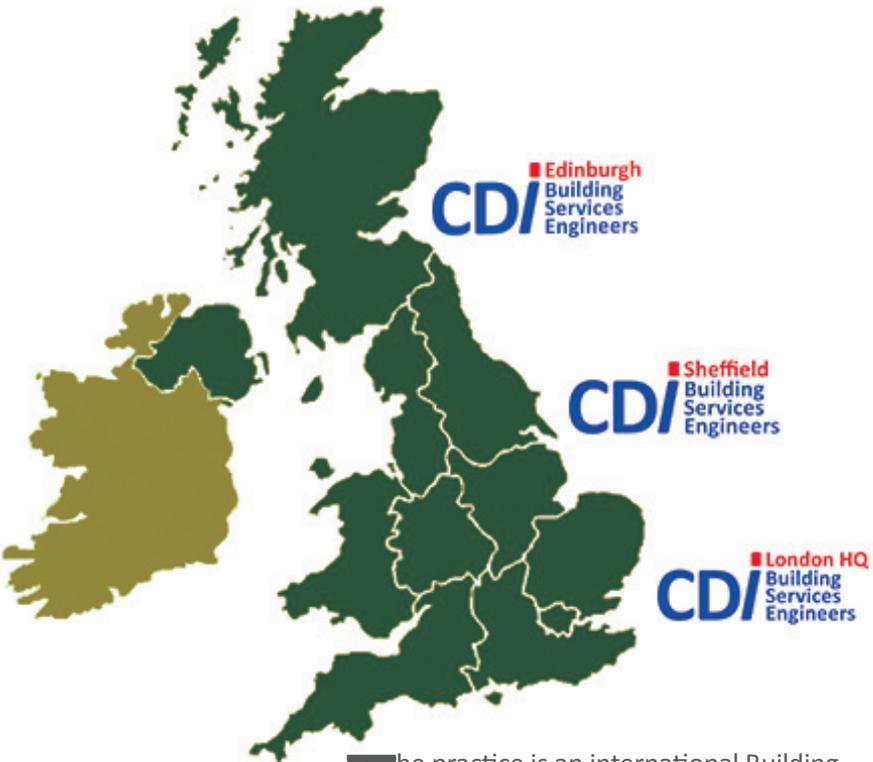
Mixed Use Sector Projects

*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

Projects locations /

Sectors

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

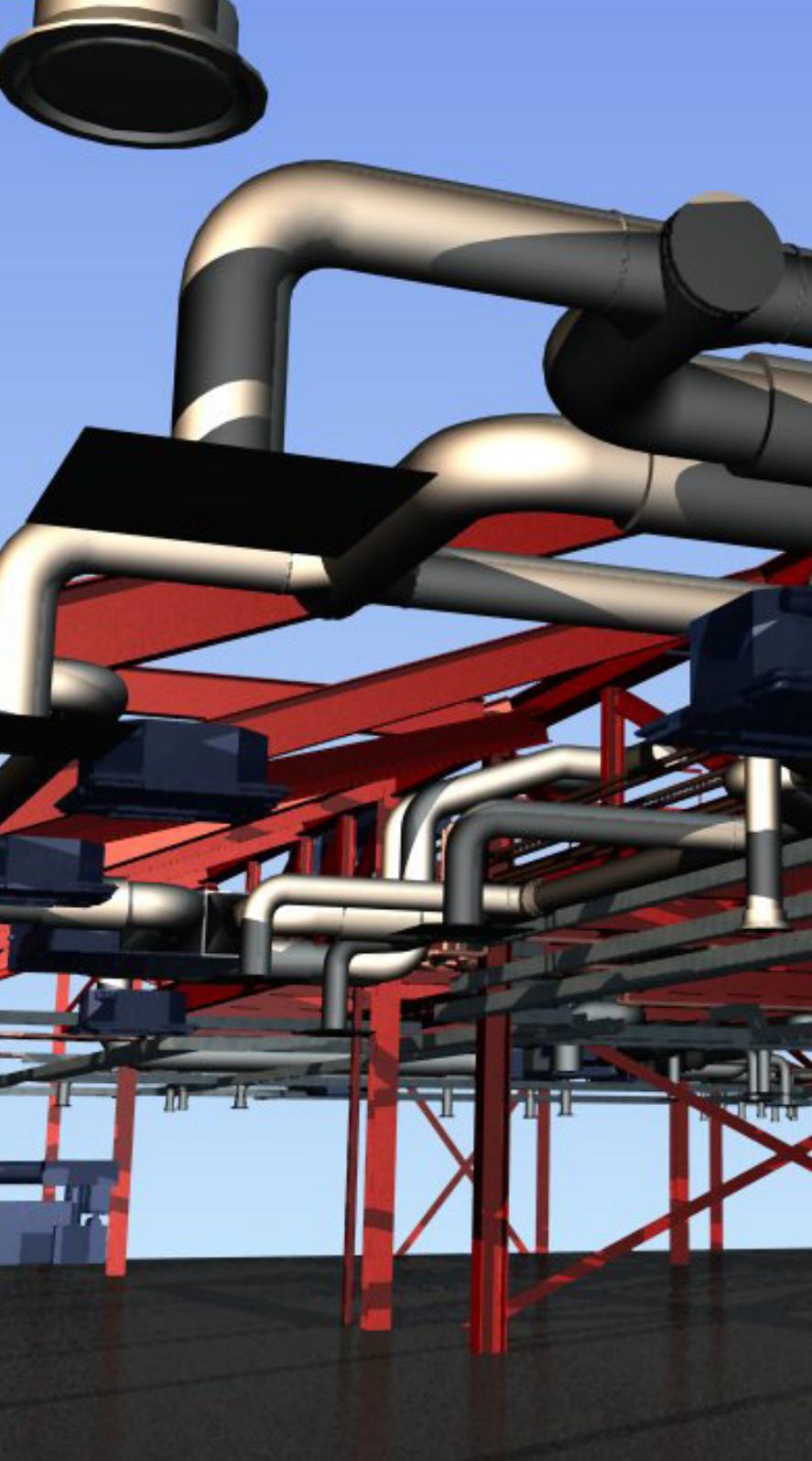
- Mixed-use and Retail
- Hotels, Leisure resorts
- Business centres & offices
- Residential: Private and multi-storey
- Heritage buildings.

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

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.

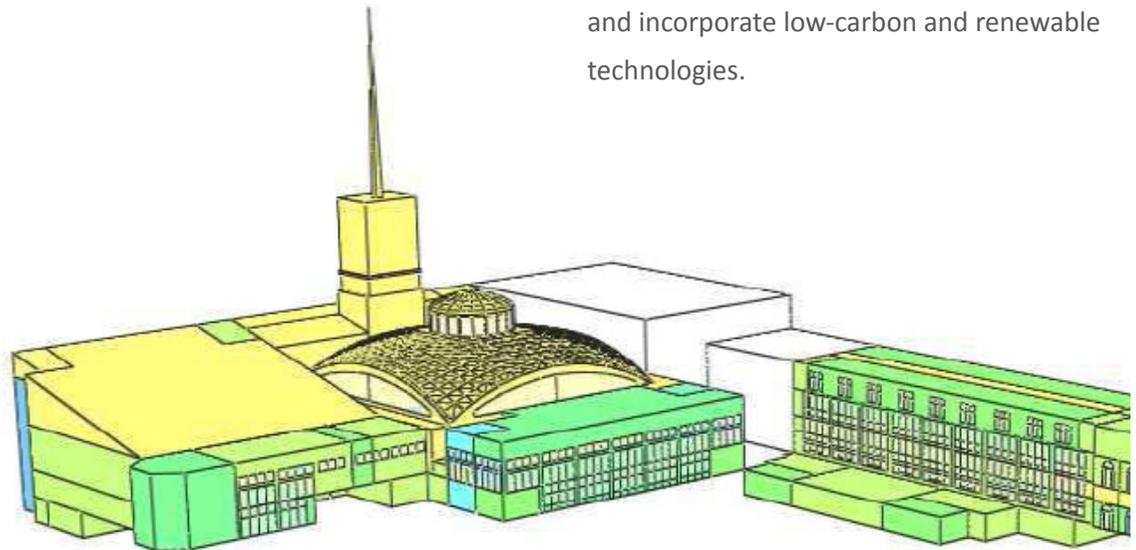
- Albania
- Czech Republic
- Germany
- Kazakhstan
- Moldova
- Russia
- Serbia
- Spain
- UK
- Ukraine





Technology & BIM /

We have been using IES-VE for Engineers modeling Software, SketchUP Pro and Revit® Architecture and MEP for most of the projects in the UK and abroad. This allows us to design comfortable buildings that consume significantly less energy and incorporate low-carbon and renewable technologies.



IES Thermal Model of Finlyandsky Station, St Petersburg, Russia



Piran Meadows Resort, MEP services design and construction coordination for Darwin Escapes



Seashore Holiday Park, MEP services design, construction coordination and maintenance management for Haven Holidays



One Stop Doctors Private Healthcare clinic, MEP Services design and construction coordination for OSD.



IESVE© for Engineers

is a cutting-edge suite of building performance simulation tools. Used by leading sustainable design experts across the globe, it creates understanding of the performance impacts of different low-energy design strategies.

We use it for advanced dynamic thermal simulation for better computation of building components and to test the option for a variables for buildings and systems. For energy expenditure prediction, we use building & room-level annual, monthly, hourly, and sub-hourly analysis.

Autodesk Revit ©

We use REVIT for our BIM, which allows multiple disciplines work together on the same project. With REVIT we can perform collision checking, which detects if different components of the building are occupying the same physical space.

We have been using Revit MEP for more than 5 years to fast-track the design and construction of residential, mixed use, healthcare and other sector projects. Leveraging our BIM capabilities allow design teams involved in the project to ex-

plore, visualize, and understand the outcomes of design choices from the earliest stages of the project.

Ultimately, Revit MEP is used to streamline the engineering design process using a single model to enhance the communication of design intent before construction begins. This, in turn, helps stakeholders to make more informed and accurate design decisions that not only reduce the time it takes to complete a project but also have a significant impact on overall building performance.



*Client: Soho Works
MEP: CD International BSE, UK*

Mixed use / UK

180 Strand / London

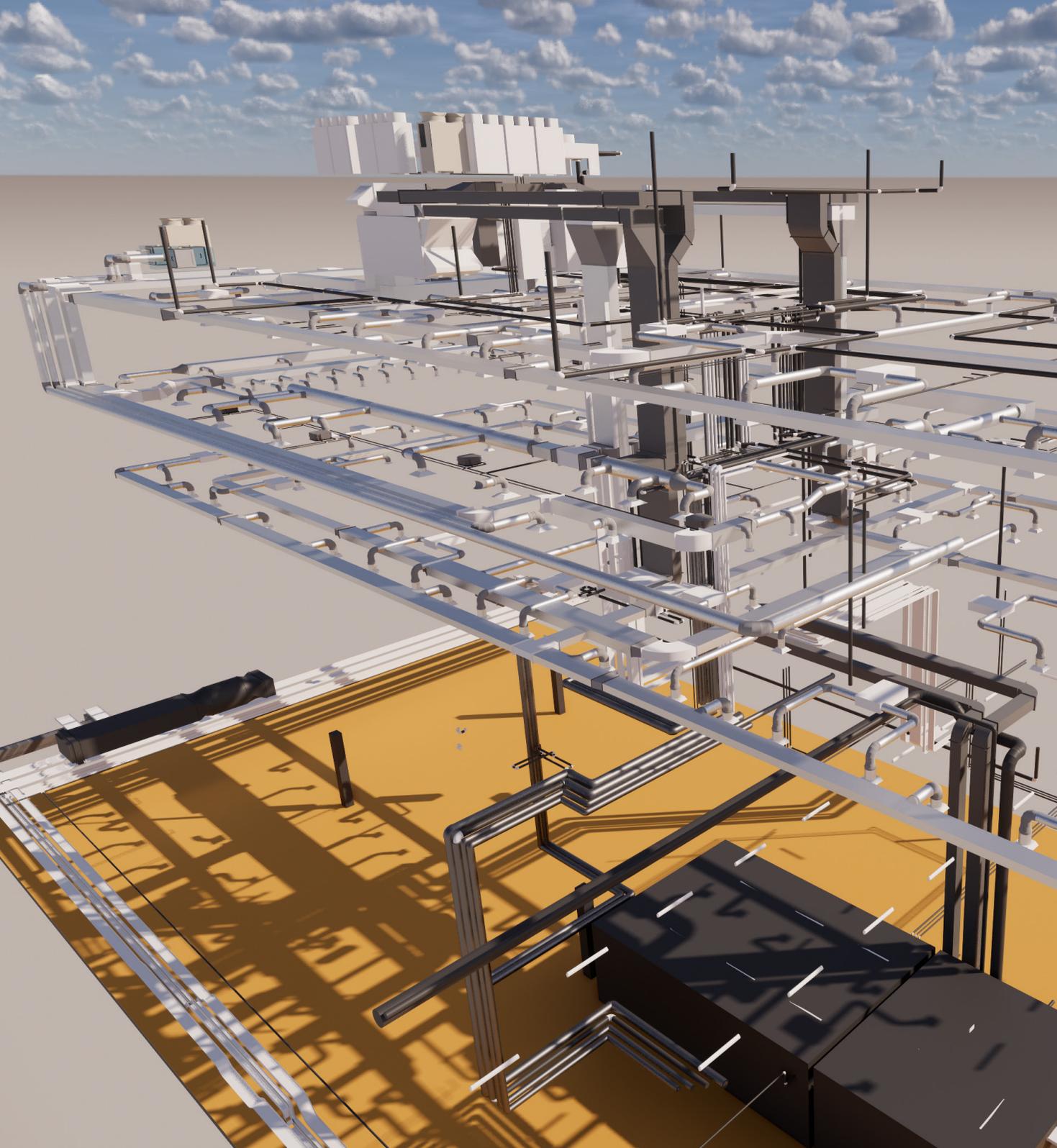
1 80 Strand is a fascinating project. Located in the heart of London between busy West End and the embankment of the river Thames, the project is redevelopment of the existing office building built in 70s.

Project outline

The renovation of 180 The Strand is one of the most complex and exciting projects in our portfolio. Located in the heart of London between busy West End and the Embankment of the river Thames, the project consists of redevelopment of three existing office blocks.

History

Built in 1965, Frederick Gibberd's Portland stone building has become a hub for creative industries: multiple design agencies, an office of the publisher for Dazed and Confused and the home for London Fashion Week shows. With an arts programme curated by The Store and 180 Strand, this iconic brutalist building provides a new space where innovative businesses and visionary talents can collaborate.



Task

The main idea of redevelopment is to adapt an outdated building to suit the current and future style of working, living and entertaining. Basement and ground levels of a former car park will be transformed to an exhibition and conference space, above them there will be floors dedicated to co-working spaces, offices and complimentary retail and entertainment tenants. Further above there will be serviced apartments, gym and other amenities.

We have MEP design performance specification and construction supervision role for the fit-out and provision of landlord services.

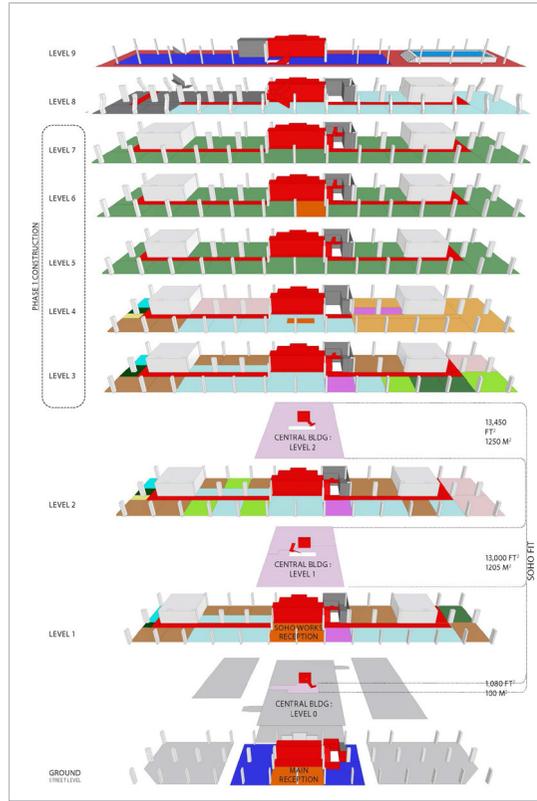
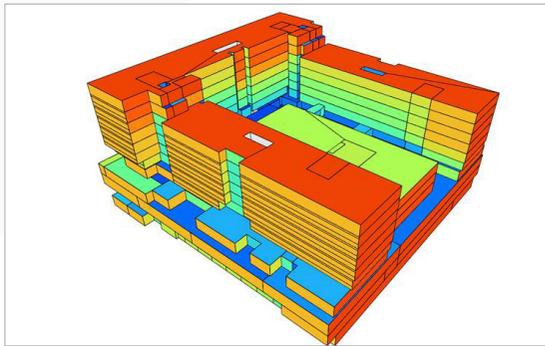
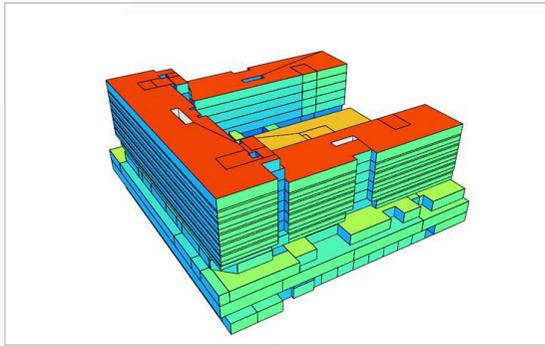


Progress

The Surrey street wing has been almost completed and occupied. David Chipperfield Architects, a large international architectural practice has taken two floors for their London HQ office, Charlotte Tilbury, a popular cosmetic brand will take around 1,500sqm for their HQ.

Soho House, a private member's club will expand their portfolio of clubs and co-working spaces by taking several floors in the building.

Most existing businesses are continuing to operate while the works are being carried out, while the main exhibition space in the Central building being used for the event like London



Fashion week shows, post Brit Awards parties, Cartier Jewellery exhibition and may other exciting events.

To cope with busy life of the building, the coordination between the design and construction teams and the tenants is a paramount. CD International is working collaboratively with the architects and structural engineers to deliver a fully coordinated MEP services solution in Revit. Some of our engineers are based on site to survey and profile the existing structure in order to facilitate coordination. Various scenarios for heating, ventilation and air-conditioning were tested using thermal modelling software.

In order to provide a power supply for all the tenants and ensure that flexible configuration and extra capacity are available, our electrical team worked very hard with design teams on site to build agile electrical and IT networks and secure a supply from local utility providers.

We are coordinating installation works as a roll out programme, where several fit-out contractors are working in different part of the building.

The location allows us to travel to and from our office to the site in less than 20 minutes by bike or public transport. And if our working day got extended, well, Covent Garden has a lot of entertainment on offer. Alternatively, we can watch a sunset from Waterloo Bridge nearby.





Mixed Use Development / Estonia

Tallinn / Porto Franco

The concept of Porto Franco was created by Tom Klinghoz from the international London-based architectural bureau Chapman Taylor. Openness, excellent location, and world-class architecture create a diverse urban environment, shifting the centre of Tallinn closer to the sea. Porto Franco — the new heart of the city, making Tallinn a fully-fledged seaside city.

Project Outline

It is the largest commercial and office centre in the heart of the city, with total area of approximately 160,000 sqm, and includes the shopping centre (GLA 40.000 sqm), the largest hyper-market in the city centre (6,600 sqm), cafes and restaurants, underground parking for 1,250 cars and the office centre (GLA 30,000 sqm).

*Architect: Chapman Taylor
Developer: Porto Franco OU
Services Design: CD International BSE, UK
Total Proect Cost: EUR 196,000,000*



CDI has completed MEP serviced design, in collaborative partnership with design team from Estonia, Finland and the UK.

We use BIM to create, manage and share the properties of the development throughout its design cycle. Model of the building has incorporated graphic, physical, commercial, environmental and will include operational data later. Thermal modelling provided servicing strategy and solutions that can be cost-effectively optimised against agreed parameters.

Total area of 150,000m², including:

- a shopping centre with the total area of 32,000m²
- hypermarket with the total area of 4,220m²
- cafés and restaurants with the total area of 5,700m²
- summer terraces and balconies with the total area of 2,500m²
- fashion stores with the total area of 14,000m²
- underground car park for 1,170 vehicles
- office premises for rent with the total area of 25,530m²
- hotel 8,600m²





Client: KERUEN
Architect: Chapman Taylor
Services Design: CD International BSE, UK

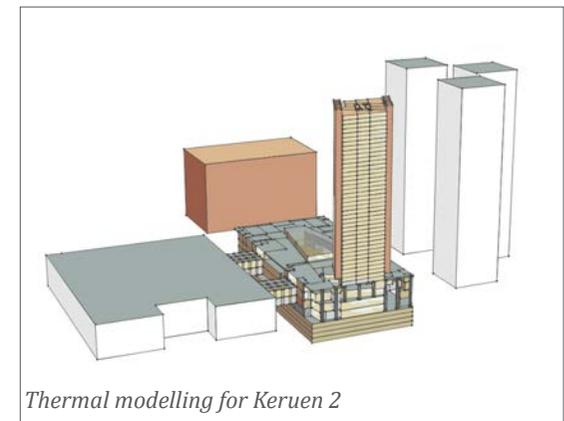
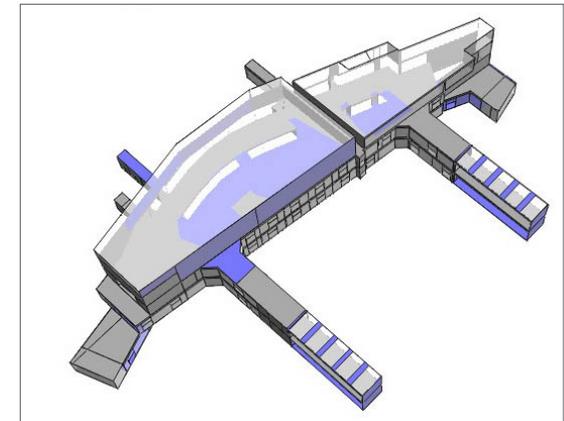
Mixed Use / Kazakhstan

Astana / Keruen 2

Initial Concept design for the development of the site to the west and adjacent to Keruen shopping centre. It will combine luxury retail, leisure, F&B and high-end Residential uses.

Location

The site is located facing directly onto the Kisho Kurokawa designed 'Shining Path' (Nurzhol) green boulevard which forms the urban design centrepiece of the redevelopment of the city. It is to the west of the central plaza of the boulevard containing the high Bayterek monument.





Retail

The retail concept is based on a central atrium, as it 'holds' customers in the shopping centre and provides excellent visibility to all the shops, restaurants and leisure facilities. In addition its north/south orientation provides strong connections between the prime access points on Nurzhol Bulvar and Dostyg Street.

The scheme is designed to be completely integrated, with 'racetrack' links at Levels 2 and 3.

Residential Tower

The tower sits neatly above the shopping centre on the north-west corner of the site.

The penthouse apartments will have the advantage of their own entrance lobby and lifts, as well as direct private access from their lifts to the spa, restaurants and the shopping centre.

Parking

The parking is on three levels below ground, with easy and efficient access and circulation. It is proposed that the lowest level has residential parking with its own ramp system. The Level -1 and -2 levels will be for retail customers.

MEP Systems

The following key drivers were considered at the pre-concept stage:

Extreme climate conditions of Astana with very warm summers and cold winters

There is an opportunity to benefit from low electricity tariff during night

Investment requirement to have separate plant and energy centre for residential towers and retail centre

Systems must be linking to existing Keruen 1 retail centre in order to integrate them in to one Building management system

Due to persistent strong wind, especially during winter month, common problem of any building in Astana is cold incoming air through entrance lobbies. We worked with architects to incorporate the solution into architectural and MEP design.

We have also provided the client with low energy and renewable technologies assessment.

We have provided the client with the Initial MEP strategy study. For residential towers we have considered investment cost, maintenance, energy efficiency for centralized and de-centralised system, as the ventilation rates can be achieved using individual systems in each apartment or a combined system, concentrating AHUs in each plantroom with each AHU serving several floors.

For retail we have provide three options of ventilation in order to separate zones for food court, mall and retail area, with either displacement ventilations at the lower level, or supply at the bulkhead to atrium or to the shops as well .

Study for two options for smoke extract: ducted and impulse fan assisted.

Also, investigate the possibility to utilize a night time cooling.

Kiev / Park Gorkogo

Mixed Use / Ukraine

*Design: LaguardaLow Architects, USA
Structural Engineer: Conisbee, UK
Services Design: CD International BSE, UK*

Design for 600,000m² of mixed use development within Kiev city centre, which includes 100,000sqm of office accommodation comprising one 31 storey tower, one 27 storey tower and one 21/23 storey tower; three 16 storey residential towers on the top of the retail podium, providing 461 apartments and 100,000sqm retail and leisure centre on 3 levels. The development is supported by 6 levels of underground car parking.

Project outline

International project team was involved in this project. The project concept is worked out by famous American architect company LAGUARDA.LOW ARCHITECTS. Park Gorkogo is an innovative Mixed-Use Development, the Architecture of Park Gorkogo is contemporary and innovative while the Design for all Building Systems is modern and of the highest international standard.

Sustainability

Use of the most current Building and Material Technologies is employed to make Park Gorkogo not only environmentally sustainable but also a Landmark project in and for the city of Kiev that will spark innovative development all around it.

The project aims to utilise low energy solutions to minimise energy consumption. This has involved detailed modelling of the roof and a mall displacement system to maximise on free cooling.





MEP Systems outline

- 40 MW district heating infrastructure
- 40 MW Electrical infrastructure
- Mall Displacement ventilation
- Solar shading/PV applications
- Integrated IT fibre optic network
- Dedicated free cooling system for office towers

Residential Systems

Conditioned air is provided directly to the bedrooms and living areas from air handling units located at roof level.

The living areas are with an underfloor cooling system which will maximise useable space and provide a silent, draught free environment.

Heating is generated by highly efficient gas fired condensing boilers located within the basement plant area.

An intelligent control system is designed to provide independent temperature control to the various spaces within apartments. A central BMS will be provided for all central plants.





Client: MEDIA OFFICE

Design: Ferguson Mann Architects

Services Design: CD International BSE, UK

Case Study: Regeneration

Bristol/ Creative Quarter

Regeneration and extension of a former Royal Mail sorting office, located on the river bank into a mixed use development of retail, office and residential accommodation.

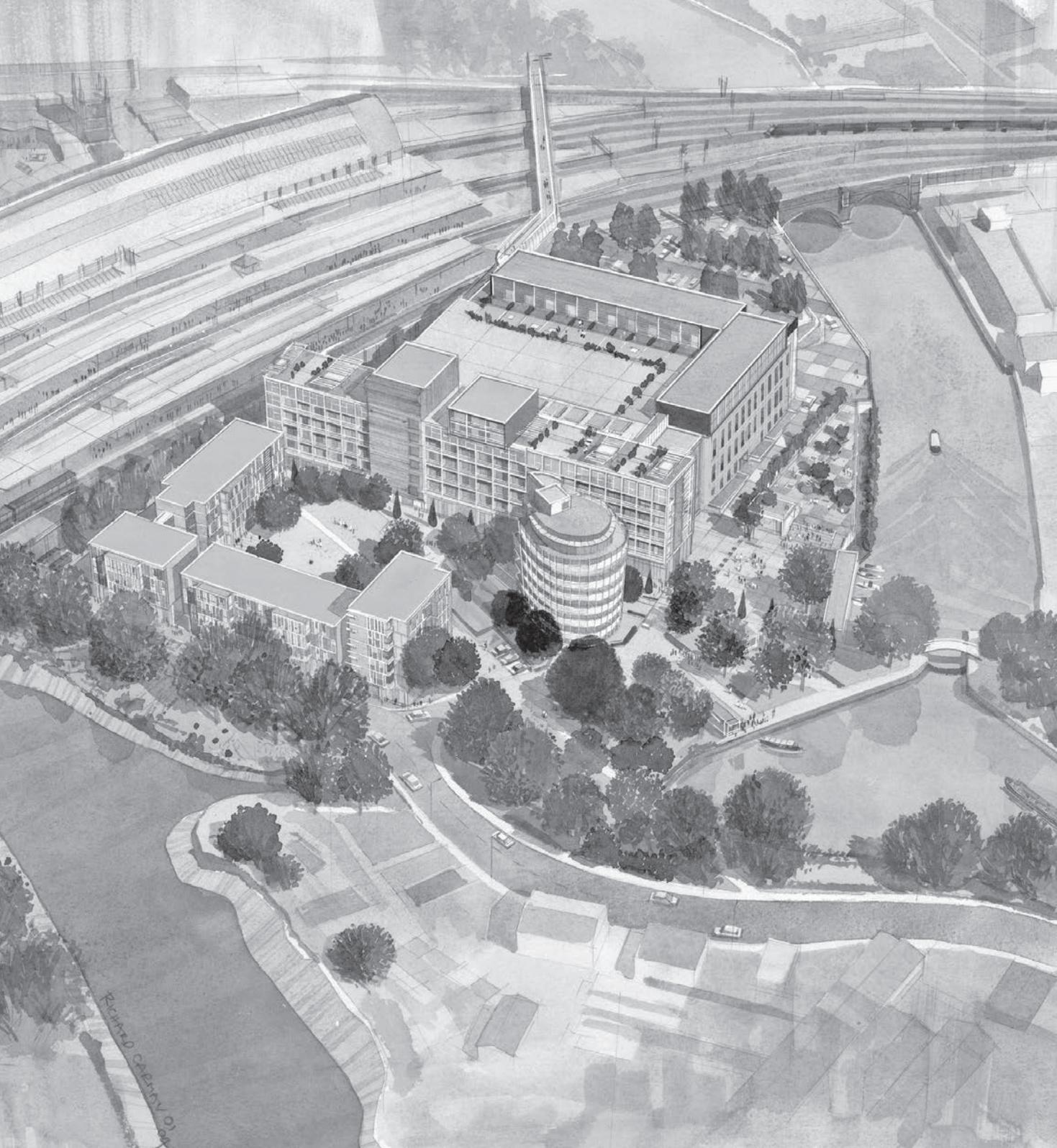
Project Outline

The project comprises 30,000m² of mixed use development with 110 apartments, 10,000m² of office accommodation and 5,000m² of A1 retail space. The development has holistic energy strategy with an energy balance being undertaken to maximise on the differing energy demands of the development uses.

The Depot

The proposal are based on transforming the existing building, retaining the industrial feel of main spaces, and aim to encourage small to medium sized creative businesses that will to forming a vibrant sustainable urban community.

The new buildings will provide Student Housing, Flexible Office Space and Studio Workspaces.



Bristol/ Creative Quarter

Sustainability

The development has a holistic energy strategy with an energy balance being undertaken to maximise on the differing energy demands of the development uses. The office environmental strategy is focused on a naturally ventilated solution although provision for some future cooling is being incorporated due to the deep floor plates and potential of subdivision.

Technical facts

- 2 MW electrical incoming supply.
- Pressure environmental control for office accommodation.
- Co-ordination of residential apartments through retail units.
- Ground sourced heat pumps for retail units.
- Rainwater harvesting to serve landlord areas..

CDI  **International**
**Building
Services
Engineers**