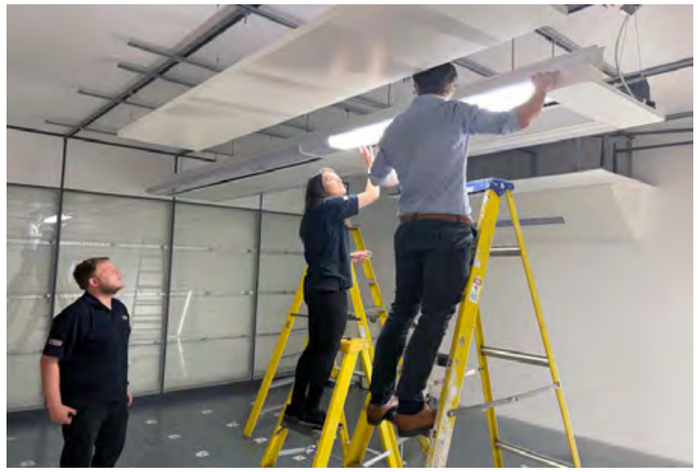
Multiservice Chilled Beams “MSCB” project references



active multiservice chilled beams

architect	*Ridge & Partners LLP*
contractor	*McLaren Group*
m&e consultant	*Michael J Lonsdale*
end client	*Aston Martin F1 Team*

Frenger was selected to supply the £200 Million pound Aston Martin Formula One (AMF1) Factory with their Compact Multi-Service Chilled Beams (MSCBs) with integrated LED lighting. Located adjacent to the Silverstone circuit in Northamptonshire, the new 16,250 sqm AMF1 factory is part of a wider 5-year plan outlined by Aston Martin to support their F1 team's push for World Championships.

Designed by Ridge and Partners LLP, Frenger was selected as the specialist manufacturer for the space conditioning for the AMF1 factory offices, with the layout designed to optimise communications for race car development. Frenger played a crucial role in the design process, which included hosting key partners at their UK Technical Facility and assuming a pivotal role in the lighting design to reduce uplighting.

Aston Martin Formula One (AMF1) Team Factory

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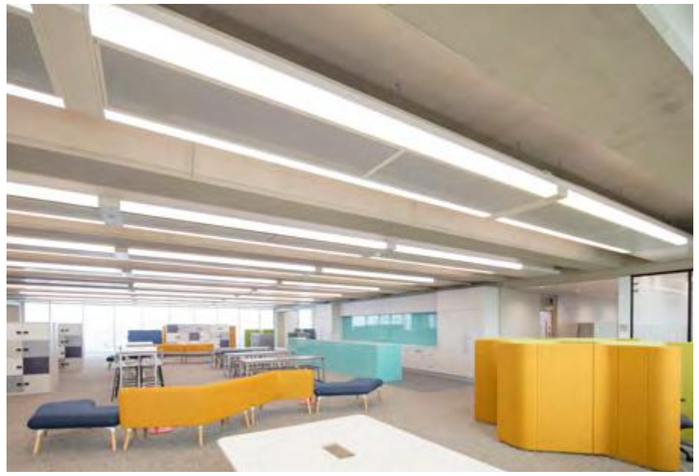
FRENGER® systems



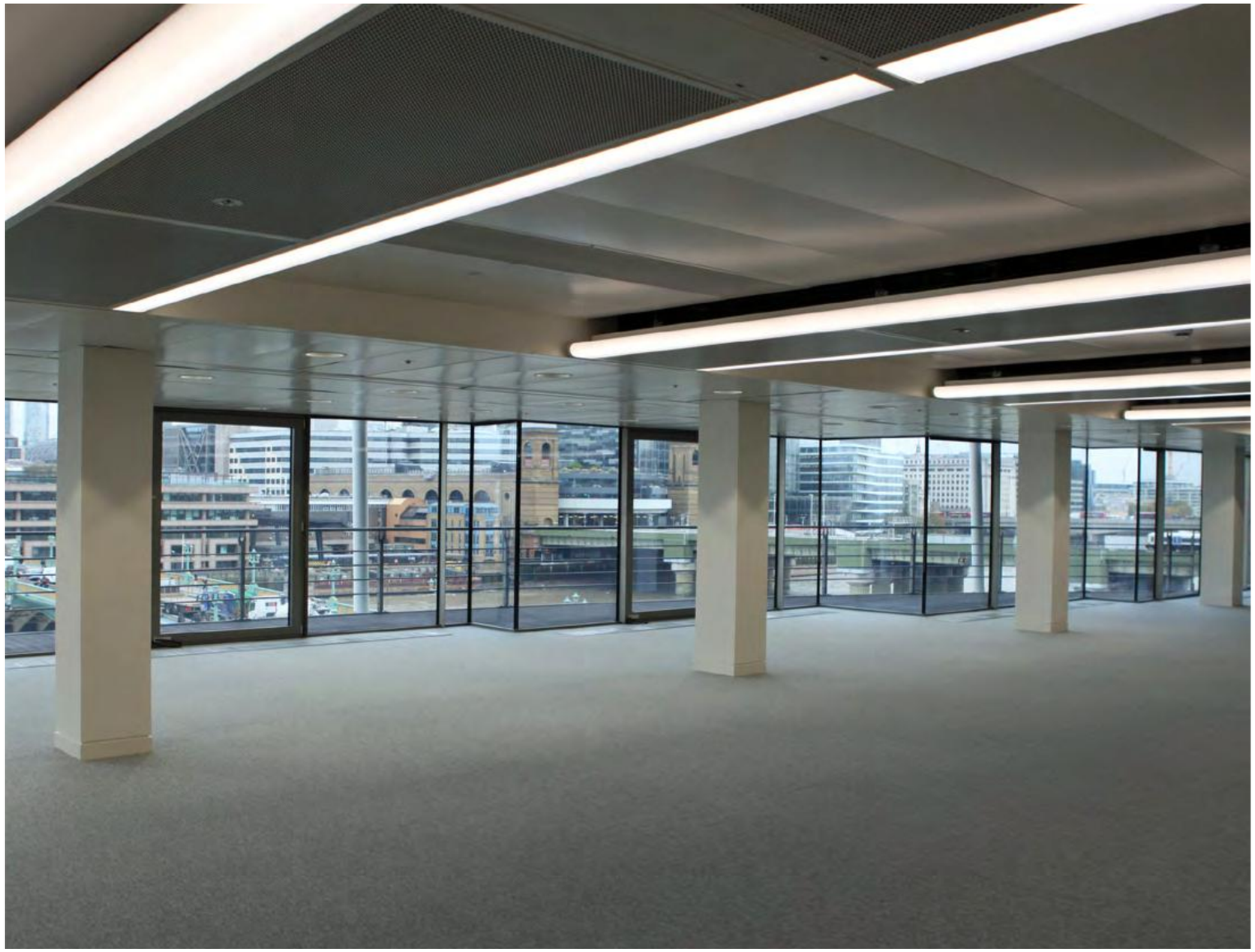
active multiservice chilled beams

architect	*Cartwright Pickard*
consulting engineer	*Chapman BDSP*
main contractor	*Morgan Sindall*
m&e contractor	*N G Bailey*

Three of Frenger's Chilled Beam models were selected to be used in the Lambeth Civic Centre Building; Compact® Active Multi-Service Chilled Beams (MSCB's), X-Wing® Passive MSCB's and Eco™ ceiling integrated Active Chilled Beams (CICB's).

The £45m building is constructed with a six-storey, post-tensioned concrete frame, which sits on 195 rotary piles. In order to attain a BREEAM Excellent rating a number of energy efficient systems have been utilised, such as Frenger Active and Passive Multi-Service Chilled Beams and an electronically charged intelligent glazing that provides solar control.

Lambeth Civic Centre



passive multiservice chilled beams

client	*OFCOM*
consulting engineer	*YES Engineering*
main contractor	*Overbury*
m&e contractor	*Envirotech Services Ltd*

Riverside House is the Headquarters of communications regulator, Ofcom and is located next to Southwark Bridge on the Thames in London.

As part of a bid to revamp Riverside House, Frenger were selected to supply in excess of 350 of their X-Wing® Multi-Service Chilled Beam units for the 10 floor building. These MSCB units are equipped with continuous “Bullnose” polycarbonate LED luminaires, which are designed, manufactured and tested in-house by Frenger to deliver direct and indirect lighting with a uniform lighting level across the building whilst also being fully optimised for energy efficiency.

Riverside House - OFCOM

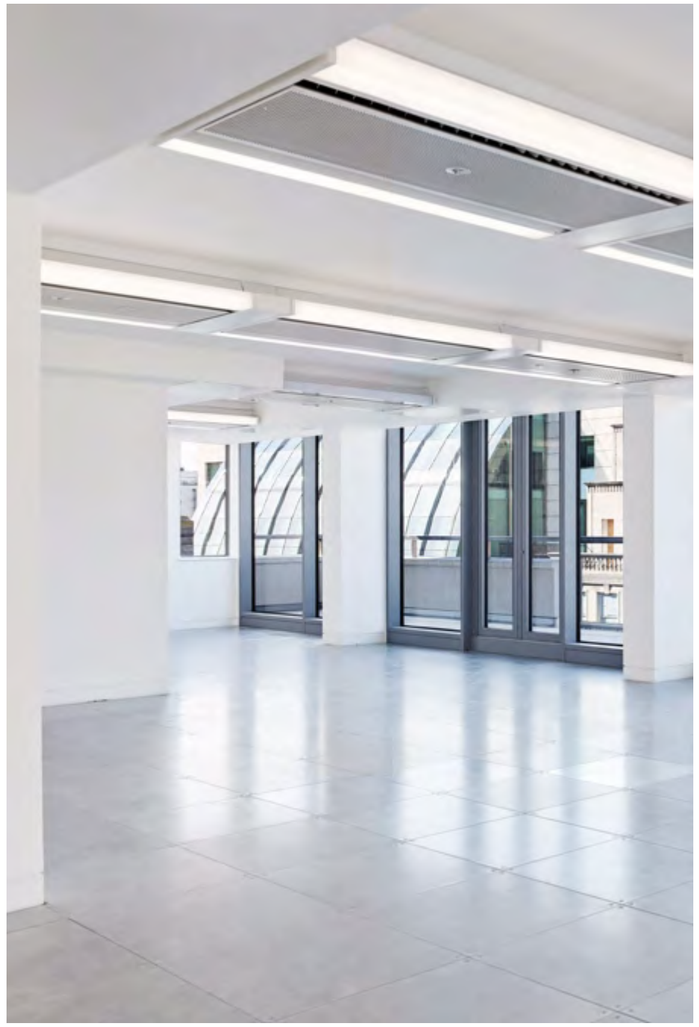
radiant passive multiservice chilled beams

architect	*AHMM*
contractor	*Bardsley Construction*
end client	*Muse Developments*
m&e	*Hannan Associates*

The Riverside House office in Salford perfectly balances contemporary design of the highest quality with the unique character of a period retained facade. Due to the property being a refurbishment instead of a new building, the developers have helped to save carbon emissions on the project.

Frenger supplied the award-winning project with their X-Wing 'Radiant' Passive Multi-Service Chilled Beams with integrated LED lighting, helping the office to achieve a BREEAM rating of 'Excellent'.

Riverside House, Salford



active multiservice chilled beams

architect	*Sheppard Robson*
consultant	*Meinhardt*
m&e contractor	*MALA*
end client	Lazari
structural engineer	Ramboll

The new High Holborn building brings together sustainable design and contemporary modernist appeal to present almost 38,000 sqft of mixed office and retail accommodation. Located Midtown, London, the eleven floored building is set behind a visually stunning Portland Stone facade. The spacious building also features LED lighting (within the Frenger's Active Multiservice Chilled Beams), communal bike storage, shower and locker facilities, ground source heat pumps and photovolaic solar panels.

With a key focus on sustainability, Frengers Active Multiservice Chilled Beams were chosen as the supplier for High Holborns air conditioning solution. The chilled beams contain no fans or engines, meaning high quality air is deployed quietly for years to come. Frengers Active Multiservice chilled beams deliver significant cost savings, partly due to the low maintaince costs, also helping to save the building over seven tonnes of carbon annually.

262 High Holborn

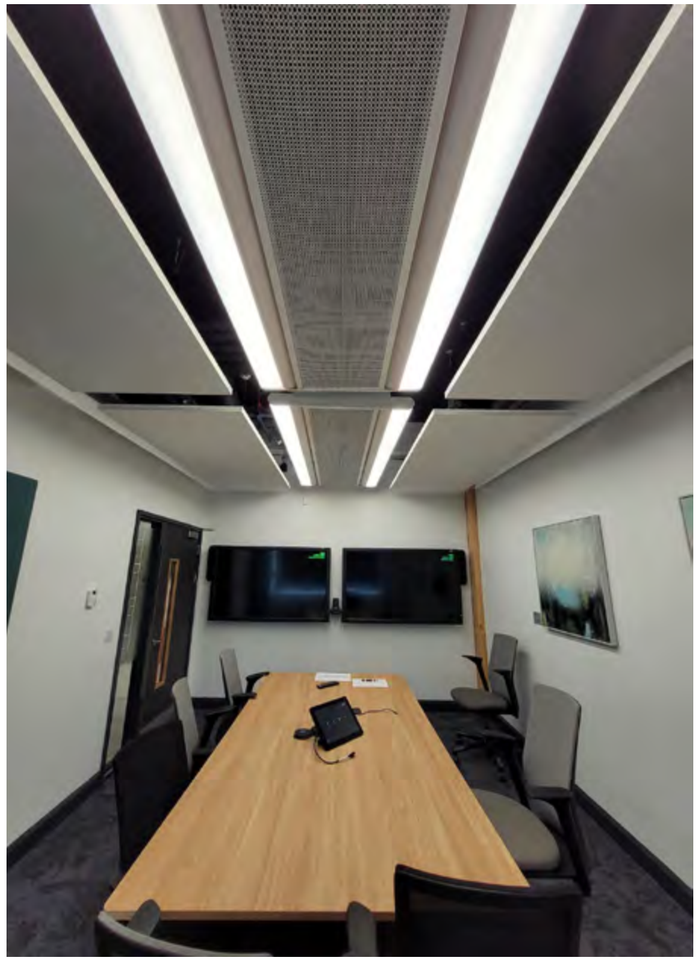
active multiservice chilled beams

consultant	*JAE Engineering Ltd*
m&e contractor	*Designer Group*
building use	Commercial Office

The 20,000sq foot commerical offices underwent a full refurbishment in 2019. This included a refurbishment of the facade, new windows, new lighting, new air conditiioning solutions curtsey of Frengers Active Multiservice Chilled Beams, reception area, new raised accessed floors, with suspended ceilings.

Three Haddington Buildings were supplied with Frengers Active Multiservice Chilled Beams (MSCBs) to supply a consistent deployment of air due to Frenger's patented 'burst nozzle' technology which entrains across the room due to the coanda effect taking place within the Chilled Beam.

Three Haddington Building



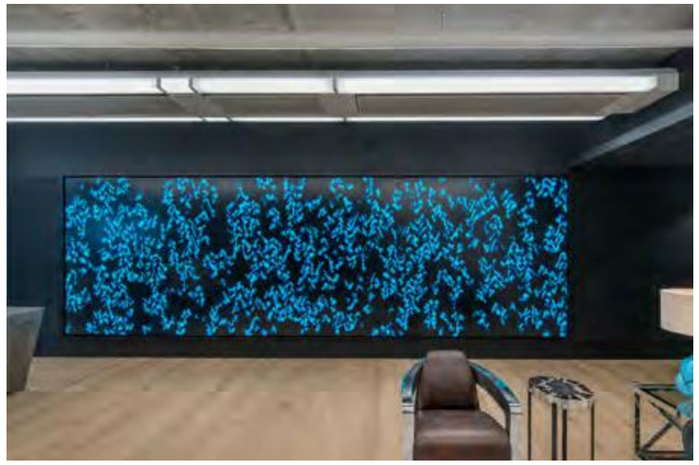
active multiservice chilled beams

client	*Equinor*
m&e contractor	*Castle Building Services*
main contractor	*Bowmer + Kirkland*

Frenger supplied the Dogger Bank Wind Farm Operations and Maintenance Base at the Port of Tyne with their Active Multi-Service Chilled Beams with integrated LED lighting, X-Wing 'Radiant' Passive Chilled Beams, and ENC Electric Radiant Panels.

The use of Frenger's highly efficient HVAC solutions provides building occupants with Excellent Thermal Comfort as they work to power over 6 Million British homes through building the 'World's Largest Offshore Wind Farm'. The building utilised low carbon materials in its construction, such as a Glue Laminated Timber (Glulam) frame and Cross Laminated Timber (CLT) roof and floor slabs.

Dogger Bank Wind Farm O&M Building



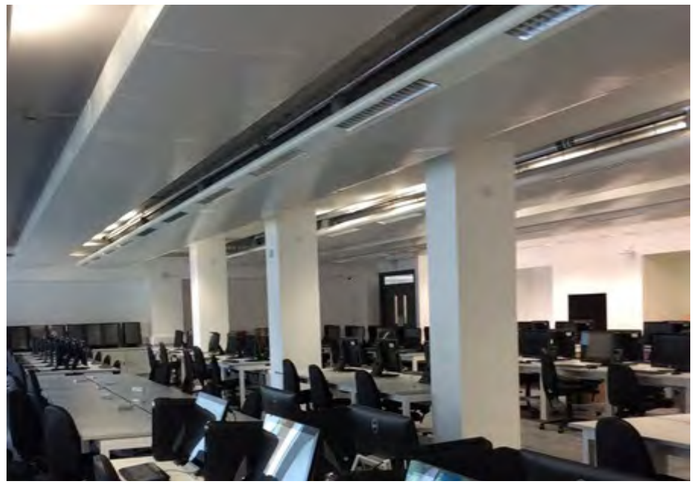
active multiservice chilled beams

client	*Argent LLP*
architect	*Duggan Morris Architects*
main contractor	*Kier Construction*

Frenger supplied the award winning Kings Cross Building R7 with their Active Multi-Service Chilled Beams (MSCB's) after working closely with the design teams to produce an engineering solution that meets the various demands of the HVAC system while also satisfying architectural inspirations.

Building R7 is a 10 storey mixed-use buildings in Kings Cross, London. The building consists of ground floor retail and 9-floor levels of commercial office space totalling approximately 180,000 sq ft.

Kings Cross Building R7



passive multiservice chilled beams

client	*Queens University*
architect	*Kennedy Fitzgerald*
main contractor	*O'Hare & McGovern*
m&e contractor	*Blackbourne Limited*
mechanical consultant	*Williams Shaw*

A four-storey 3,000m² building designed by Kennedy Fitzgerald Architects for Queen's University to accommodate Computer Science facilities. The building is built around the original concrete frame of the 1978 Bernard Crossland Building (BCB).

The building comprises reuse and extension of the BCB and refurbishment of the adjacent 14 – 16 Malone Road connected via a new glazed link. The completed project provides 5,911m² gross floorspace; 3,539m² refurbished existing floorspace and 2,372m² new floorspace. The building is designed to achieve the target of Building Research Establishment Environmental Assessment Method (BREEAM) 'Excellent' rating. To help meet this aim Frenger's "Radiant" passive MSCB's were chosen. The MSCB utilised integrated LED lighting with aluminium miro louvres.

Bernard Crossland Building, Queens University, Belfast

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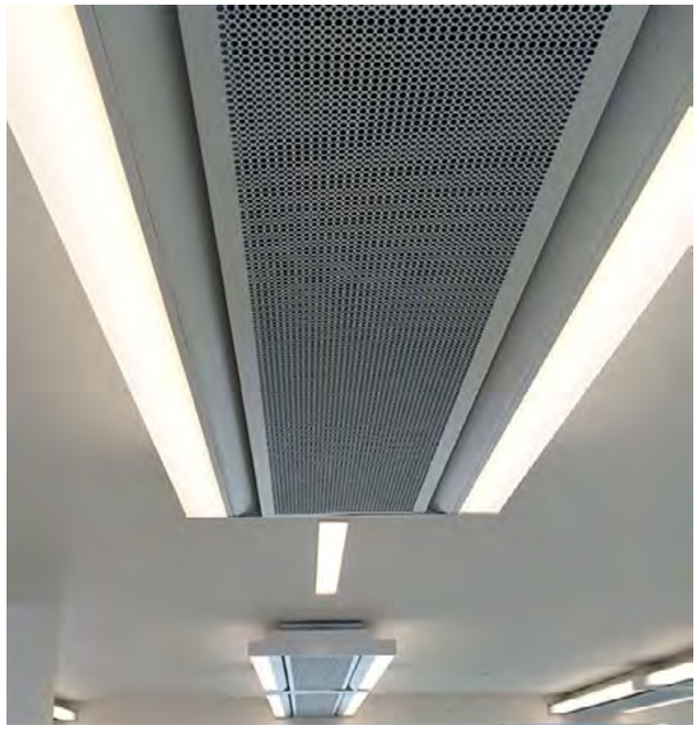


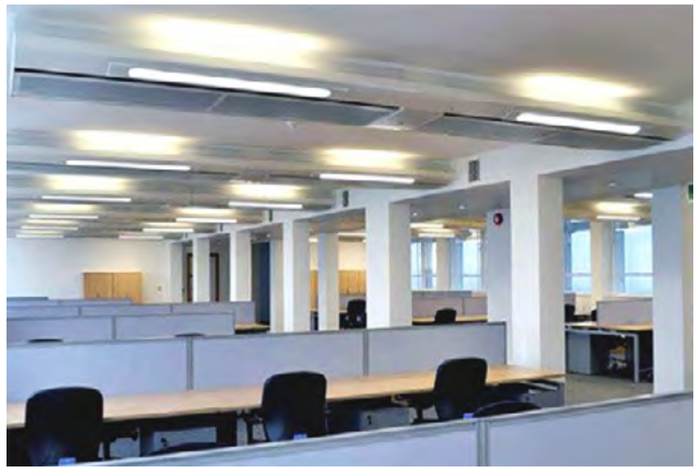
active multiservice chilled beams

client	*UBS*
consultant	*AWA Building Services*
m&e contractor	*FES Company LTD*

110 High Holborn offers 40,000 sq ft of high quality office space in the heart of midtown, london's new creative hub set amid a host of hotels, bars, restaurants and clubs. Highly efficient new office floor plates utilises three different variations of Frenger active chilled beams; the slimline Compact exposed (suspended below the roof soffit) Multiservice Chilled Beams (MSCBs) which include integrated LG7 lighting and building services, two-way discharge Ceiling Integrated Chilled Beams (CICBs) recessed into the plasterboard ceiling as well as one-way discharge CICBs recessed into the plasterboard perimeter margin.

Frenger not only manufactured the MSCB units, but also the luminaires. The lighting provided by the MSCBs are LED line systems that are designed to replace fluorescent lighting in new luminaires. The LED line systems are designed to produce pure white light for general lighting applications with high efficiency level, surpassing T5.

110 High Holborn, London

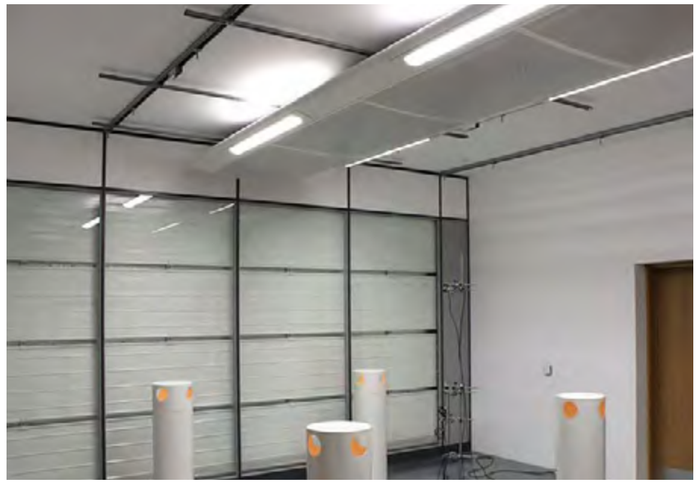


active multiservice chilled beams

client	*CLS Holdings*
architects	*Hok International*
consulting engineer	*Hoare Lea*
main contractor	*Hoare Lea*
m&e contractor	*PIP*

Given the low slab to slab height at Great West House was a key driver for the clients choice of Frenger's "Slim Line" Active Multiservice Chilled Beams (MSCB's). For this project Frenger pre-fabricated their MSCB's to be only 150mm deep and to provide in excess of 600 watts waterside cooling per meter with minimum fresh air for the respiratory requirements of the occupants to enable the most energy efficient air conditioning solution. Frenger integrated LED lighting to provide energy savings and long life expectancy in addition to that of their "Slim Line" Active Chilled Beams "Compact r". The building was awarded BREEAM "VEry Good" and the offices are considered Grade A.

Great West House, London

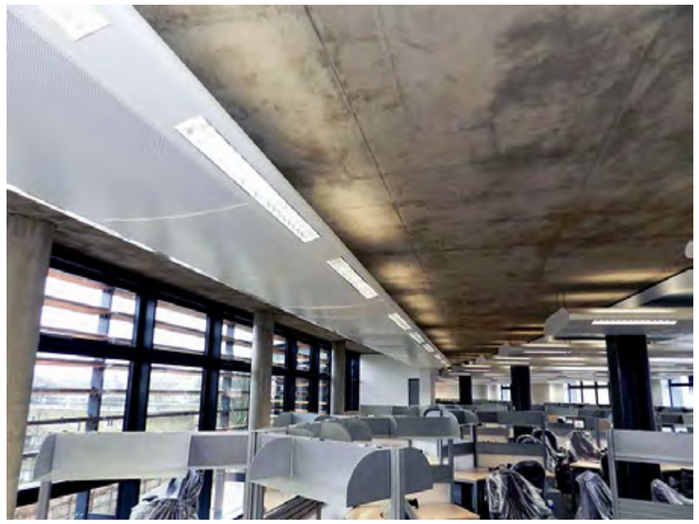


radiant passive multiservice chilled beams

Frenger were delighted to be specified for the supply of the “Radiant “Passive Multiservice Chilled Beam’s (MSCB’s) for the new University College Birmingham with a construction cost of £17 million.

The new college stands at 7,600m² and facilitates 2,500 students. It has two 125 person lecture theatres, one 250 person lecture theatre, small and large teaching rooms, technology blocks and a 200 person cafeteria. The use of Frenge’s “Radiant” Passive MSCB’s has helped contribute to the buildings EPC (Energy Performance Certificate) B rating and a BREEAM “Excellence” rating. Frenger’s inhouse manufactured “project specific” Micro Lens Prismatic luminaires maximise LOR and Uniformity for the project specific height ratios. This approach coupled with their day light linking and PIR control as part of the Dali compatible systems helps reduce energy consumption for the integrated lighting. Similarly Frenger’s “Radiant” absorption beams help reduce plant size, as their is an element of direct radiant exchange with the exposed concrete roof soffit assisting with peak loads, whilst also providing the cooling with minimal air movement below the beam for the optimum in occupancy room comfort to category A of BS EN ISO 7730.

client	*University College Birmingham*
architects	*Associated Architects*
main contractor	*Shepherd Construction*
consulting engineer	*CPW*
m&e contractor	*SES*



radiant passive multiservice chilled beams

client	*Anglia Ruskin University*
architects	*Richard Murphy Architects*
consulting engineer	*BDP*
main contractor	*Imtech*
m&e contractor	*Imtech*

This was a three phase building development consisting of a new skills teaching block and 200 seat lecture theatre. The building design includes the use of chimney ventilation stacks to enhance the natural ventilation. This development won a "Green Apple Built Environment Award" in the national campaign to find Britain's greenest companies, councils and communities.

Frenger's Radiant Passive Multiservice Chilled Beams (MSCB's) were utilised to provide the cooling and lighting for an energy efficient and striking visual feature whilst promoting a light and airy solution.

Frenger's inhouse manufactures lighting utilised T5 high efficiency lamps with day light linking.

Anglia Ruskin University, Cambridge

radiant passive multiservice chilled beams

client	*The Grosvenor Estate*
architect	*GMW Architects*
consulting engineer	*Hoare Leas*
main contractor	*Sir Robert McAlpine*
m&e contractor	*MJN Colston*

This Central London project included “Radiant” Passive Multiservice Chilled Beams (MSCB’s) technology operating in conjunction with “sustainable” ground source energy and achieved a **BREEAM “Excellent”** rating and also provided Grade ‘A’ office spaces across 5 floor levels.

To further enhance the energy performance of the building, **Frenger’s MSCB’s were combined with an open loop ground source renewable energy system which provided 100% of the buildings heating and cooling requirements**. This innovative approach to comfort cooling meant that no chillers or boilers were required on the project, freeing up valuable space and providing and Energy Performance Certificate (ECP) rating of only 36. This development also won the London and South East Regional award from the British Council for Offices (BCO).

Grosvenor Hill, London

active multiservice chilled beams

client	*Neo*
architects	*Roger Stirk Harbour + Partners*
consulting engineer	*Hoare Lea Partners*
main contractor	*Carillion Construction*
m&e contractor	*Interserve*

Frenger supplied Active Multiservice Chilled Beams (MSCB's) to the Bankside Project in London.

This extraordinary development is situated at the very heart of London's South Bank which is next to the Tate Modern and the Millenium Bridge. Frengers Active MSCB's were selected in order to maximise the space whilst providing high levels of cooling, heating and thermal comfort to the building occupancts. Frenger's unique Acitve MSCB's were also designed to achieve an aesthetic which was required by the project architect.

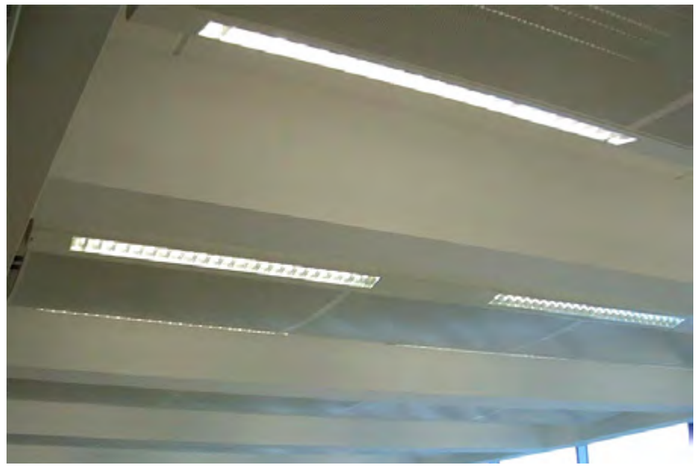
Bankside, London

active multiservice chilled beams

client	*Rockspring UK & Moorevale*
architects	*ESA Architects*
consulting engineer	*Meinhardt*
main contractor	*Volker Fitzpatrick*

Frenger provide “Slim Line” Multiservice Chilled Beams (MSCB’s) that are only 133mm deep and that provide in excess of 500 watts waterside cooling per meter with minimum fresh air for the respiratory requirements of the occupants to enable the most energy efficient air conditioning solution. Frenger also inhouse designed, manufactured and Photometric tested LED continuous lighting to provide energy savings and long life expectancy of the lighting in addition to that of their “Slim Line” Active Chilled Beams “Compact r”. The slimline construction of Frenger’s Compact MSCB were required given the buildings 2.65m slat to slab construction. The building was awarded BREEAM “Excellent” and of the offices are Grade A.

65 Southwark Street, London



radiant passive multiservice chilled beams

client	*Domino's Pizza*
architects	*Q2 Architects*
consulting engineer	*Walter Miles*
main contractor	*Buckingham Group*
m&e contractor	*CPW*

This Six Million pound design and build contract for Domino's Pizza's new HQ in Milton Keynes utilised Frenger's "Radiant" Multiservice Chilled Beams (MSCB's) throughout the development to help condensate the installation program given that all the MSCB's were 100% prefabricated off sire and factory tested which also assisted with the commissioning process.

All luminaires were bespoke manufactured by Frenger for the height to best suit and optimise LOR and Uniformity for the project specific height to space ratios. All luminaires were day light linked and PIR controlled via Multi sensors discreetly mounted within the extruded aluminium side profiles of the MSCB.

This flagship building for the Domino's group was awarded BREEAM "Excellent".

Domino's Pizza HQ, Milton Keynes

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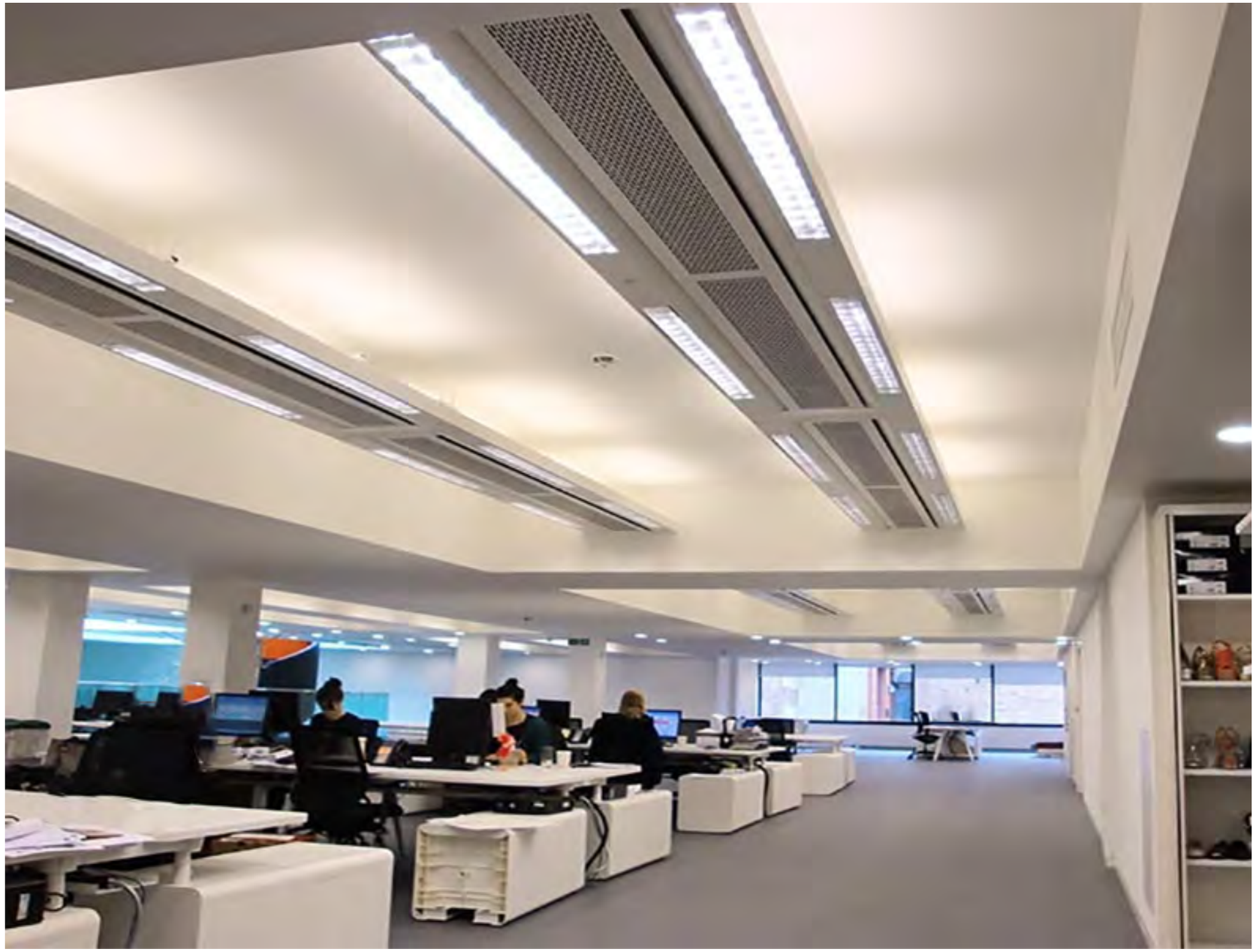


actvie chilled beams

client	*Great Portland Estates*
architects	*Archer Architects*
consulting engineer	*Cundall*
main contractor	*Airmaster*

This Grade 2 Listed Building constructed in the early 1970's situated in the heart of Clarkenwell Conservation Area in central London was brought forward into the twenty first century as part of an existing Multi Million pound refurbishment project.

The client undertook dynamic modelling via their professional team and similarly worked with Frenger, making use of their inhouse Climatic Test Laboratories, Acoustic Laboratories and Photometric Lighting Laboratories given that Frenger were selected to provide the Cooling, Heating, Fresh Air and Lighting for both ceiling recessed in plasterboard applications and exposed Multiservice Chilled Beams, all of which with day light linking and PIR control. The regenerated five-storey building achieved a BREEAM "Very Good" rating and the office Grade A.

24 Britton Street, London

radiant passive multiservice chilled beam

client	*Birmingham City Council*
architect	*Associated Architects*
main contractor	*Wates Construction*
m&e contractor	*Dodd Group*

Frenger are proud to have been chosen for the design, supply and installation of over 4,500 linear meters of Radiant Passive Multiservice Chilled Beams to the refurbishment of Birmingham City Council's HQ building. Frenger were able to demonstrate to the Design Team the unique benefits of the radiant/convective cooling element in delivering high cooling duties with significantly reduced air velocities when compared to traditional Passive Chilled Beams.

The project presented challenges because the building was occupied and therefore works needed to be carefully co-ordinated with the Client. The transformation of the original "dreary" office space into a modern and pleasant environment has been universally appreciated and is a testament to the well-designed application of Frenger's Multiservice Chilled Beam capabilities and inhouse installation teams.

1 Lancaster Circus, Birmingham

radiant passive multiservice chilled beams

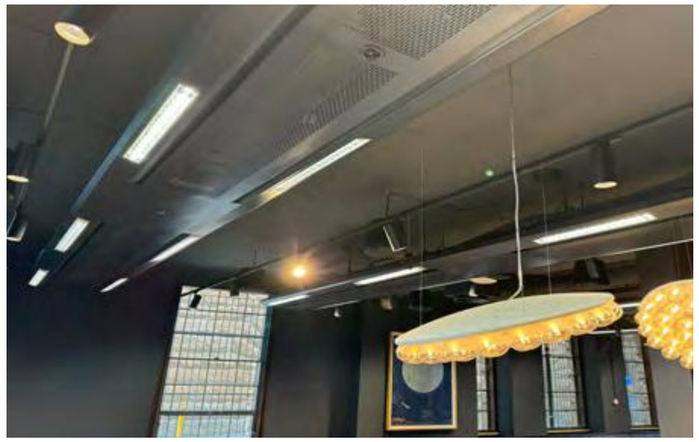
client	*Skipton Building Society*
architects	*Bowman Riley Architects*
main contractor	*Wates Construction*
m&e contractor	*Airedale*

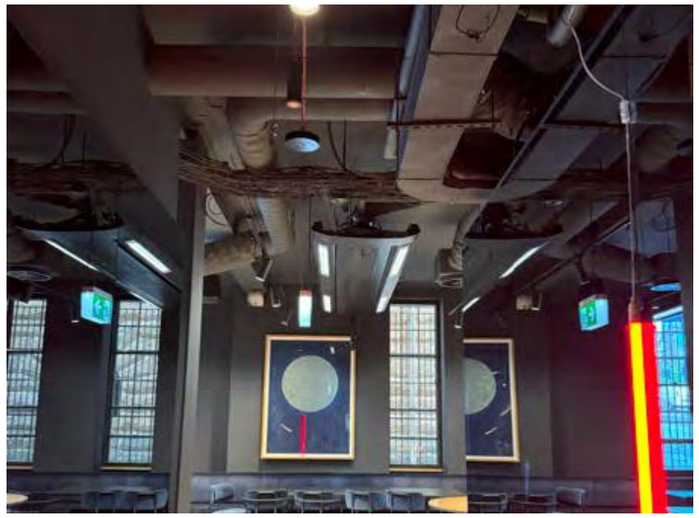
Skipton Building Society's subsidiary HLM (Home Loan Management) new headquarters on the edge of Skipton, the gateway to the Yorkshire Dales, cost £18 million to construct and stands at an impressive 120,000 sq ft over 3 floor levels.

The 850 staff based at Skipton HLM are spread predominantly across open plan office space air conditioned by Frenger's "Radiant" cooling Multiservice CHilled Beams (MSCB's) which provide room thermal comfort to the standard of Category A of ISO 7730.

Frenger also inhouse manufactured the integral luminaires of their MSCB's with asymmetric louvres providing a lighting scheme compliant to LG7. The building achieved a BREEAM "Very Good" rating based upon its green credentials and also received a Commercial Award in 2011 - RICS Pro-Yorkshire Award.

Skipton Building Society, Skipton





active multiservice chilled beams

client
consulting engineer
main contractor

Mulpha Australia
Crone Partners
J.L.Williams

Frenger successfully delivered an Active Multiservice Chilled Beam project for a significantly refurbishment program on Transport House, Sydney. The refurbishment of this important heritage listed building involved the design, manufacturing and shipping of 240 Multiservice Chilled Beams (MSCB's) which was successfully commissioned within a 12 month program. The project was the first major Active Multiservice Chilled Beam project of its type in Australia.

The MSCB's are designed to provide a cooling and illumination to the office space as well as accommodating a fast response sprinler system. The project needed to deliver high capacities (up to 550 w/m cooling) and provide excellent levels of occupancy comfort with minimal supply air rates and an under-beam installation height of approximately 2.9m. The use of Frenger's Active MSCB's allowed for the existing structural zones to be fully utilised even with a restricted slab height. The MSCB's offer a controlled environment within the office areas, combining exceptional levels of energy efficiency and low running costs.

This building was awarded a 5 Star Green Star Rating.

Transport House, Sydney

active multiservice chilled beams

client	*Cambridgshire County Council*
consulting engineer	*White Young Green*
main contractor	*Verry Construction*
m&e contractor	*SES*

Frenger's Active Multiservice Chilled BEams (MSCB's) form part of the £35 million pound re-development works at the Cambridge University Campus. The MSCB's provide for a good room comfort within the Library. Low noise (less than 20 dBA), low air movement (less than 0.2 m/s in the occupied zone) and upto 150 w/m² of waterside cooling. The MSCB's were 100% prefabricated and off site tested by Frenger to reduce on site installation and commissioning. All MSCB's delivered with "Plug n Play" for LG3 compliant lighting and prefabricated air interconnection ducts provided by Frenger for "series linking" of air. MSCB's provided Cooling, LTHW heating (supply at 50 deg C), fresh air delivery and LG3 lighting.

Cambridge Library, Cambridge

radiant passive multiservice chilled beams

client	*Nottingham University*
architect	*Alexi Marmot Associates*
consulting engineer	*DH Squire*
main contractor	*G F Tomlinson*

The re-development of this important educational facility demanded a product that would deliver the cooling, heating, ventilation and illumination to the space whilst providing a point of architectural interest. Active Multiservice Chilled Beams were selected because they can do all of this whilst providing an extremely comfortable environment with no uncomfortable noise or draughts. Further to prototype manufacture the Multiservice beam design was developed specifically for the client to deliver all of the required mechanical and electrical functions at a price point that met with their budget.

Hallward Library - Nottingham University, Nottingham

active multiservice chilled beams

The extensive refurbishment of 101 New Cavendish Street has been a most impressive and distinguished project incorporating nearly 2-kilometers of Active Multiservice Chilled Beams over 4-floor levels. The Developers 'Greycoat' have fully refurbished the building to provide over 8,500 square meters of Grade A office space, and have taken full advantage of the buildings central London location by creating a striking impression to the four streets that the building fronts.

The Multiservice Chilled Beams on this project provide the main architectural feature within the office space, therefore they were designed to enhance the building by using state of the art space conditioning technology whilst providing a striking aesthetic. To achieve a continuous linear aesthetic the Chilled Beams were series linked together to form run lengths of upto 19-meters long.

To achieve runs of this length with 100% off site pre-fabrication, Frenger manufactured each beam MSCB section 3m long complete with 'plug and play' systems for the Mechanical and Electrical services (thus saving our client time and money during the installation) interconnected behind 0.5m long plain removable joining infill profiles. All 3m long master and slave MSCB sections were factory set and tested both electrically and mechanically saving on site commissioning time.

In addition to the high cooling and energy efficient performance, the integrated luminaires were designed with full daylight dimming and presence detection ensuring that the total MSCB system continually operated with minimal energy consumption.

client	*Greycoat Central London Office Development*
architect	*Sturgess Associates LLP*
main contractor	*Faithdean PLC*
m&e contractor	*MALA Engineering*

101 New Cavendish Street, London

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FRENGER® systems

active multiservice chilled beams

client	*London & Regional*
architect	*Make*
consulting engineer	*Blyth and Blyth*
main contractor	*HBG Construction (BAM)*
m&e contractor	*HBG Building Services (BAM)*

The iconic 55 Baker Street building in London has been completely refurbished and redeveloped by London & Regional. The project's well-regarded success proves that 21st Century design can be applied just as well to existing building as it can to new buildings.

Frenger's order value was £7.6 million for the supply and installation of 4,500 Active Multiservice Chilled Beams (this equates to in excess of 114km of Multiservice Chilled Beams). The total refurbishment costs for this project were in the region of £200 million for HBG Construction (BAM) and this is still the worlds largest MSCB project to date - and Frenger developed a relationship with HBG that cumulated in the Frenger Team being considered as an Award Winning Supplier to HBG.

55 Baker Street, London

radiant passive multiservice chilled beams

The 41,000m² building for the City of Edinburgh's new Council offices was designed to be predominantly open plan and to accommodate approximately 1,800 office staff.

The buildings northwards orientation maximises the glazed elevations without the problem of solar gain. The reinforced concrete frame, with exposed coffered ceilings, takes advantage of the high thermal mass to stabilise the internal temperature. Frenger's "Radiant" absorption Multiservice Chilled Beams (MSCB's) and tempered fresh air supply via floor diffusers in the raised floor complimented the performance characteristics of the building. Night time cooling also used to make use of the buildings thermal mass and to improve the building's overall performance. The building achieved BREEAM "Very Good".

The building was designed to satisfy the most stringent Key Performance Indicators (74 in total) for sustainability set as project objective by the authority, including: Embodied energy in production and manufacture; CO2 emissions; transport and installation; waste control and minimisation; total energy and water consumption; air tightness of building fabric; high efficiency heating and lighting; low NOx boilers; and solar heating of water.

client	*The City of Edinburgh Council*
architects	*Building Design Partnership*
consulting engineers	*Cundall Johnson Partnership*
main contractor	*Miller Construction*
m&e contractor	*ECG Mechanical Services*

Edinburgh Council, Edinburgh

*Frenger Systems Limited is an **FTF Group Company***

FRENGER® systems

active multiservice chilled beams

main contractor *EIWHS*
consulting engineer *Meinhardt Group*

Frenger's 100% pre-fabricated and off site tested Multiservice Chilled Beams (MSCB's) were selected to provide both energy savings, long life expectancy and minimal maintenance for this prestigious project in the heart os St. James, one of London's exclusive real estate areas.

The MSCB's worked in conjunction with air source heat pumps and the building was awarded BREEAM "Excellent". The Multiservice Chilled Beams provided water side cooling, LTHW heating, supply air diffusion and LED lighting.

Duke Street, London

passive multiservice chilled beams, passive & active chilled beams

client	*National Farmers Union*
architect	*Corstorphine & Wright*
consulting engineer	*Hoare Lea*
main contractor	*HGB (BAM)*

Multiservice Passive Chilled Beams were used to provide the “wow” factor to this highly prestigious new-build headquarters development. The beams were carefully designed to complement the curved floor-plan of the building and provide a light and airy feel for the building occupants. The beam casing is provided with a metallic silver finish for an industrial futuristic appearance, especially the way in which they are link to the services bulkhead in such a way that they appear to float in free space.

Frenger also provided Passive and Active Chilled Beams for integration in areas with suspended ceilings, and worked closely with the project engineers to ensure optimal room comfort levels to all locations.

National Farmers Union, Warwickshire

radiant passive multiservice chilled beam

architect	*Fosters & Partners*
consulting engineer	*Buro Happold*
main contractor	*SOL Construction*
m&e contractor	*NG Bailey*

The design for this 21st Century University facility required a Passive Chilled Beam cooling system to operate in an environment where it is possible to open windows for natural ventilation as a “mixed mode”. Frenger developed a Chilled Beam design with integrated architectural underplate to conceal services pipework / ductwork.

The solution underwent extensive testing at Frenger’s Climatic Testing Laboratories at their UK headquarters to establish environmental conditions and a condensation management strategy. The testing process also enabled the development of Chilled Beam design from a “buildability” perspective, such that the Multiservice unit could be installed in double-quick time by Frenger’s own installation teams.

Djanogly Academy, Nottingham

active multiservice chilled beams

client	*Merck Sharp Dohme*
architect	*Red Architectural*
consulting engineer	*The Austin Company*
main contractor	*AMEC Group*
m&e contractor	*Hiltons / G & H*

This prestigious office development for Pharmaceutical giants “Merk Sharp Dohme” called for an integral cooling / heating / lighting solution that delivered high comfort levels with low maintenance and low running costs. The selection of Frenger’s Active Multiservice Chilled Beam units meant that the brief could be met with the added benefit of striking aesthetics and compliance with LG3 lighting requirements.

In the open plan areas the MSCB’s are linked together in series on the airside (up to 2 beams in a single run) such that the water and air connections are concealed from view, and removable infill joining strip sections afford the capacity for future space partitioning. In cellular offices a single MSCB is positioned in the middle of the room with extra luminaires to provide adequate lighting distribution.

Merck Sharp Dohme, Hoddesdon

passive multiservice chilled beams

This flagship headquarters building required a state-of-the-art cooling solution to optimise comfort levels whilst introducing a striking internal aesthetic. Multiservice Chilled Beams were chosen to provide a discreet uplighting of the soffit for compliance with LG3.

Frenger's Radiant Passive Chilled Beams were selected because of its cooling capacity with high thermal comfort levels. Furthermore, the Radiant effect of the beam allowed for an underplate perforated to just 33% so improving the visual aesthetic of the Multiservice Chilled Beam.

Extensive project-specific testing was conducted at Frenger's Climatic Testing Facilities to demonstrate that the Chilled Beam arrangement worked from a mechanical and architectural perspective to the entire design team and main contractors. Frenger supplied and installed all the service bulkheads, mechanical extract lighting and Multiservice Chilled Beams.

client	*Experian PLC*
architect	*Sheppard Robson*
consulting engineer	*NDY*
main contractor	*Bower & Kirkland*
m&e contractor	*G & H*

Experian, Nottingham

active ceiling integrated chilled beam

client	*Bee Bee Development*
architect	*C2*
consulting engineer	*Downie*
main contractor	*Mansell*
m&e contractor	*Campbell & Law*

The listed classification for the building coupled with minimal slab-to-slab height meant that this multi-storey speculative office development required a product that could deliver high levels of heating and cooling with minimal fresh air volume. This was achieved by Frenger's slimline Active Chilled Beams.

Frenger utilise 100% indirect lighting is delivered using TL5 lighting technology and opal diffusers to help assist with creating a light and airy aesthetic even throughout a very low floor to ceiling height. Tests were carried out at Frenger's laboratories to prove photometric data, climatic cooling and air distribution characteristics.

Saffron House, London

active ceiling integrated chilled beam

client	*Woolworth*
architect	*CWHB*
consulting engineer	*DSSR*
main contractor	*Spectrum*
m&e contractor	*RTT*

This major refurbishment to a landmark building required Multiservice Chilled Beams to an exacting technical specification. Minimal slab-to-slab heights and poor solar shading meant that the chosen solutions had to deliver cooling duties with the minimum fresh air requirement. Active Chilled Beams were required that could deliver 100w/m² of cooling at very low supply air (as low as 1.1 l/s/m²). Frenger's unique twin-battery technology was the only design solution that met both the technical and aesthetic criteria of the design team.

The installation was one of the largest Multiservice Chilled Beam project in the UK at the time - with over on thousand Multiservice Chilled Beams used on total of seven floor levels.

Woolworth House, London