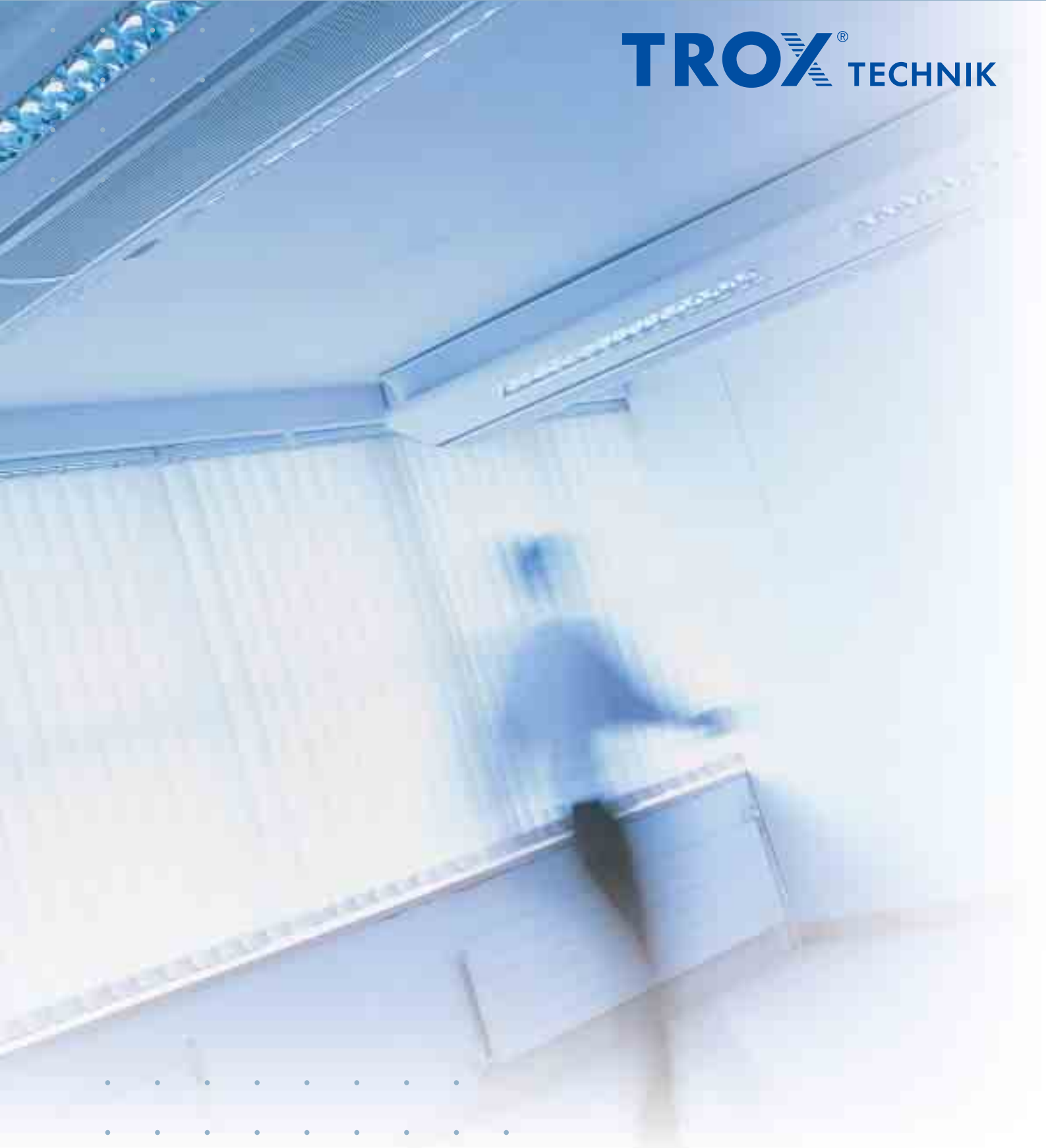


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Issue Date SEPTEMBER 02

# Multi-Service Chilled Beams

**TROX**<sup>®</sup> **TECHNIK**





## The attractive economic alternative

Multi-Service Chilled Beams (MSCBs) offer an alternative to suspended ceilings. This new generation of chilled beam provides very economic cooling, acoustic baffling, as well as modern lighting and a variety of other services:

*Sprinkler systems*  
*Public address systems*  
*Smoke detectors*  
*PIR sensors*  
*Fresh air*  
*B.M.S. cables*  
*Voice & data cables*  
*CCTV*



▲ *Voice & Data Cables*



▲ *PA Speaker*



▲ *Smoke Sensor*



▲ *Fresh Air*



▲ *PIR Sensor*



▲ *Lighting*



# Multi-Service Chilled Beams



Cooling Coil

# Benefits

The appearance of the building services can be styled by the Architect for the first time.

*Suspended ceilings are eliminated.*

*Slab to slab minimum height of only 2.8m.*

*Natural thermal cooling from the exposed mass of the concrete ceiling soffit.*

*Offsite pre-assembly reduces installation times and increases fast-track programming.*

*Plug & play units reduce commissioning times and costs.*



*Simple on-site co-ordination and installation.*

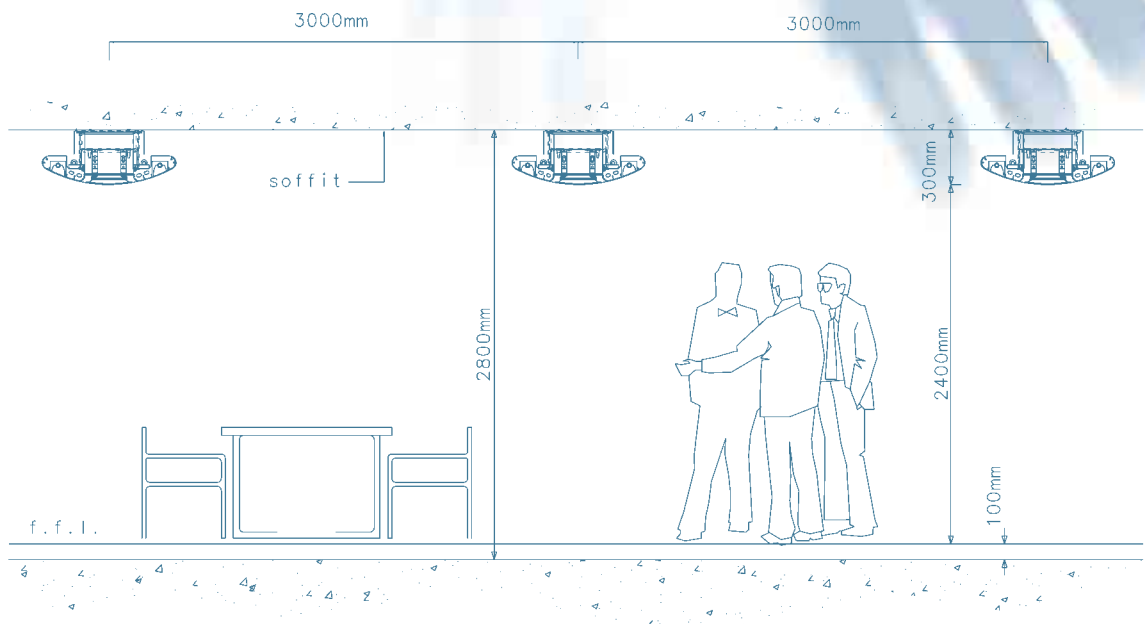
*Lower whole life costs when compared to traditional fan coil unit systems.*

*Lower capital costs when compared to a suspended ceiling with fan coil unit system.*

*Accommodates office 'churn', integrates with future partitioning & layout requirements.*

*Ideal for new-build and recycled 1960s buildings alike.*

*Part L 2002, will encourage the use of highly energy efficient systems such as MSCBs.*





# Multi-Service Chilled Beams



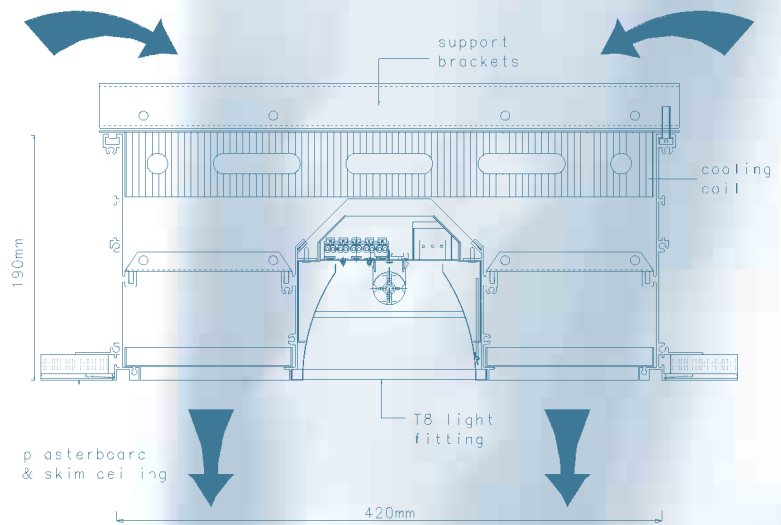
Project: GLA Building

# GLA Building

The Lord Mayor of London will be housed in this unique landmark building. Seven floors will feature a varying radial pattern, which is formed on the ceiling by using bespoke MSCBs.

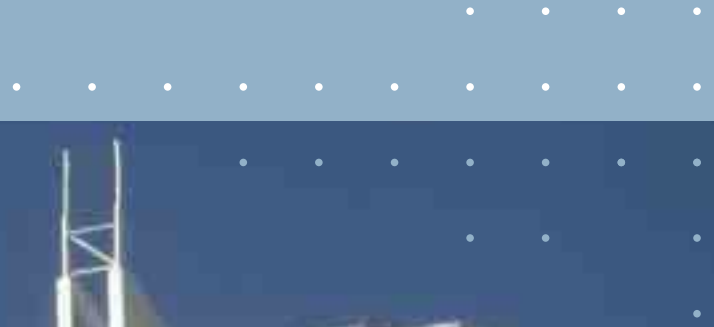


- Architect** Foster & Partners
- Building Occupier** Mayor of London
- Developer** CIT
- Main Contractor** Mace
- Services Consultant** Arup
- Completion Date** February 2002





# Multi-Service Chilled Beams



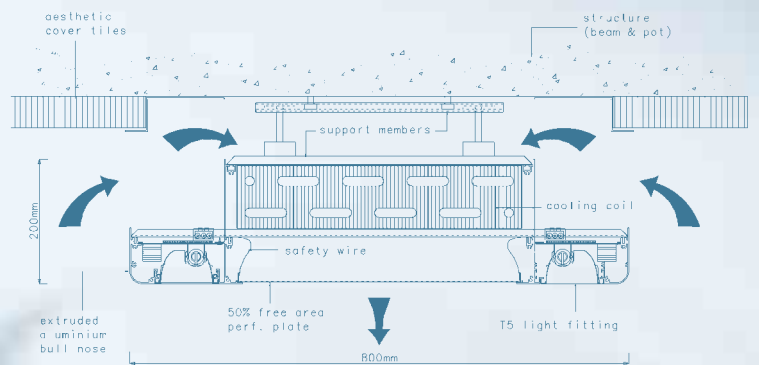
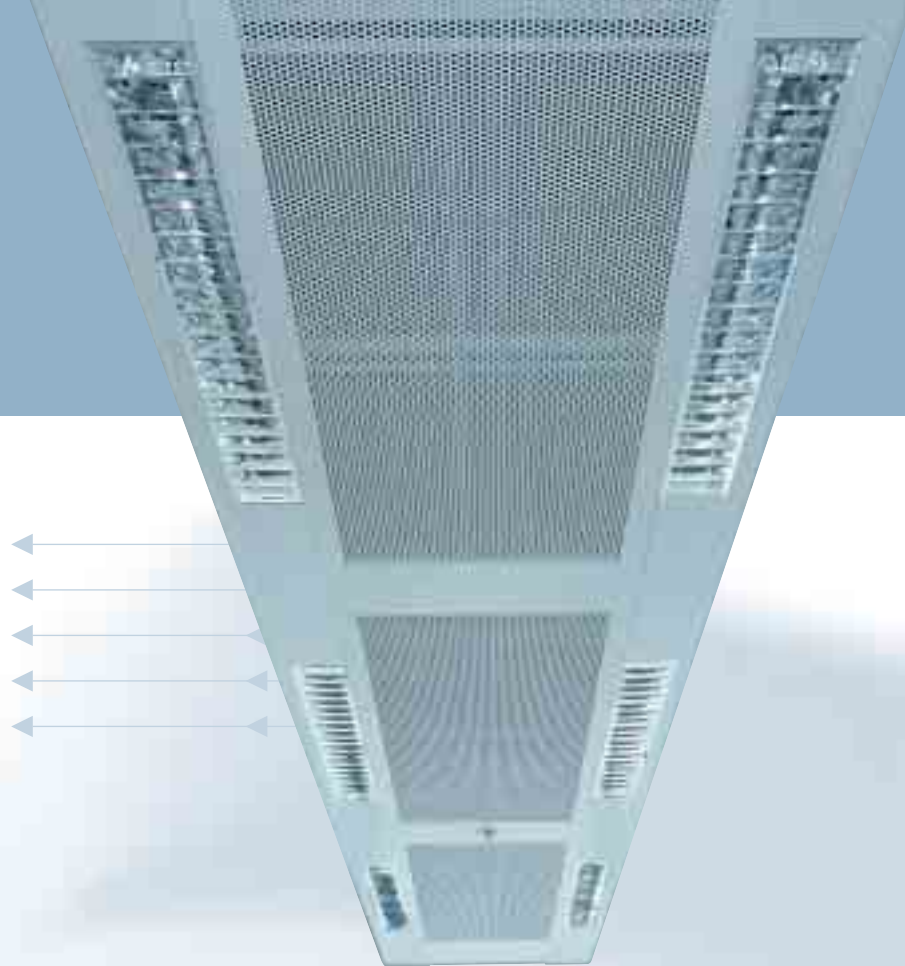
Project: Riverside House



image courtesy of RHWL

# Riverside House

The refurbishment and extension of this 30 year old building commenced in August 2000, in the proximity of Shakespeare's Globe Theatre. The unusual spinnaker contrasts with most other building lines across London, except of course the GLA building.



**Architect** Renton Howard Wood Levin

**Developer** Chelsfields

**Main Contractor** Bovis Lend Lease

**Project Manager** Buro 4

**Services Consultant** GW Consultants

**Completion Date** April 2002



# Multi-Service Chilled Beams



**Project: Empress State Building**

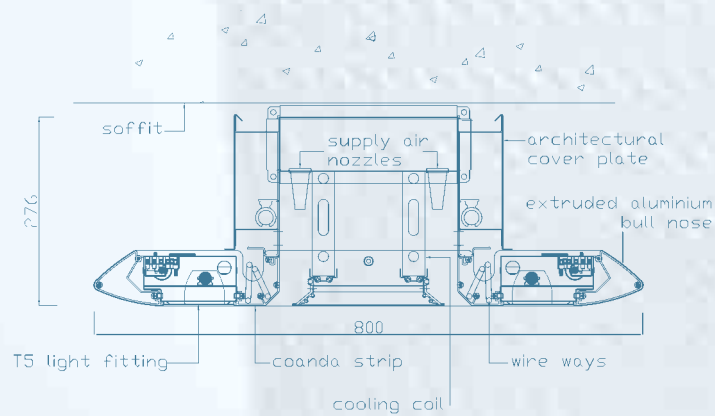
photographed by Andrew Putler  
courtesy of Wilkinson Eyre

# Empress State Building



With its low floor to ceiling height MSCBs were the perfect solution for refurbishing this 1960s ex-Ministry of Defence building into modern offices. The beams incorporate cooling,

lighting, PIR sensors, speakers and primary fresh air. Low whole-life costs and the ease of maintenance were also compelling factors in the decision to install MSCBs rather than traditional systems.



**Architect** Wilkinson Eyre

**Developer** Land Securities

**Main Contractor** Bovis Lend Lease

**Services Consultant** MG Partnership, BWS



# Multi-Service Chilled Beams

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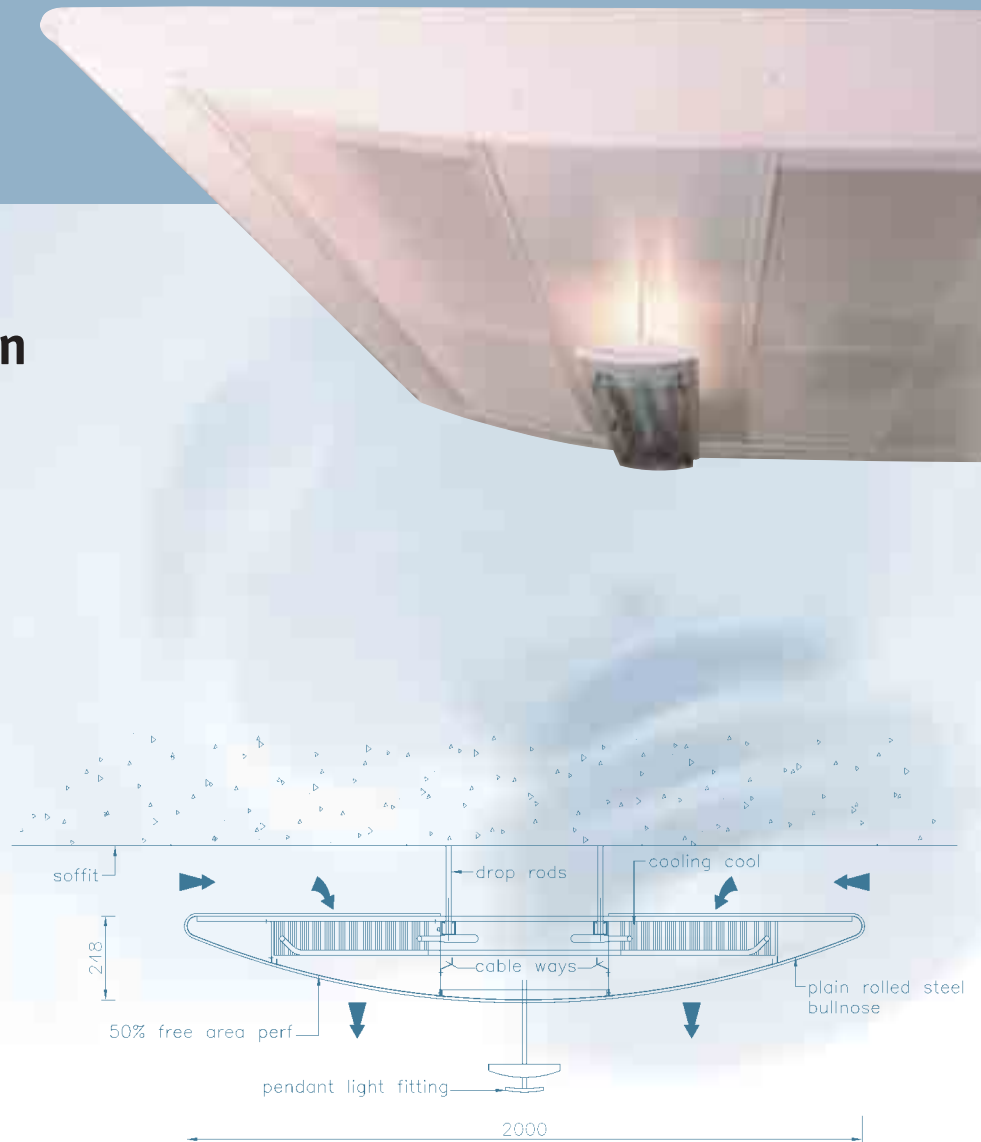


Project: Airbus UK, Filton

image courtesy of WS Atkins

## Airbus UK, Filton

This new build contract has 2m wide sculptured MSCBs to mimic the aerodynamic features associated with aircraft design. Positioned at 3m centres across the soffit, each beam incorporates two cooling coils to satisfy high cooling loads evenly over the space.



**Architect** WS Atkins

**Building Occupier** Airbus UK

**Design Build Contractor** Pearce Construction

**Services Consultant** WS Atkins

**Completion Date** May 2002



# Multi-Service Chilled Beams



Project: Lloyd's Register of Shipping





# Multi-Service Chilled Beams



Air Nozzles

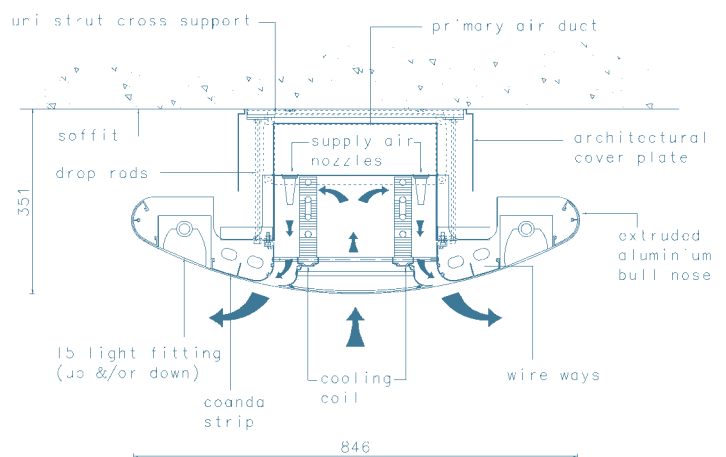
# Creativity

The MSCB has an architecturally designed ripple free extruded aluminium shroud that can be fixed to, or suspended from, the concrete ceiling soffit. Eliminating the suspended ceiling allows the architect to take full advantage of a room's height in its design.

The Architect can leave their

signature on the ceiling as MSCBs are styled on a bespoke basis.

The Trox Design Bureau offers 3D modelling so that creative ideas can be developed and visualised before comprehensive in-house laboratory testing and aesthetic mock-ups take place.





## Specifications

**Cooling** Cooling loads of up to 150 watts per square metre of floor area.

**Air** Fresh air volumes from 8 to 18 l/s per person.

**Light** Lighting levels of between 300 and 600 Lux.

Category 2/3 from lighting guide 3.

Uplighting to LG3 addendum 2001.

Emergency lighting integrated as necessary.

**Acoustics** Noise levels from NR15 up to NR38.



## Features & options

Although MSCBs are tailored to architects' individual specifications, below are some of the options available to enhance the internal environment:

**Up-lighting** Light may be washed across the soffit, eliminating a gloomy 'cave effect'. This can be used in conjunction with traditional down-lighting options.

**Down-lighting** A wide choice of fittings may be considered to illuminate the space.

**Exposed beam** Maximum effect of the ceiling space can be achieved by suspending the beam directly from the concrete soffit. The architectural beams then become attractive central features of the room.

**Recessed beam** Bespoke MSCBs can be incorporated into a suspended ceiling.

**Passive cooling** Natural convection is used to maintain high comfort levels via the water-cooled coils in the beam.

**Active cooling** Fresh air is ducted to the beams increasing cooling output.

**Heating** Active beams can be used to provide heating to the space utilising low temperature hot water.

