

FIREMAC

passive fire protection

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Fire resistant ventilation,
kitchen extract, smoke extract
& pressurisation ductwork.



firemac.com

FIREMAC

COMPANY PROFILE

Firemac was established in 1989 and has grown to become a major provider of passive fire protection products, both in the UK and internationally.

Passive fire protection (PFP) is a key part of the structural integrity and fire safety in a building. PFP contains or slows the spread of a fire through the use of fire resistant ductwork, walls, floors, and doors.

Firemac has been at the forefront in product design for the PFP sector for over 25 years, and has extensive experience advising a broad range of clients from solution selection through to designing and installing ductwork protection systems, fire walls and ceilings, and fire resistant services enclosures.

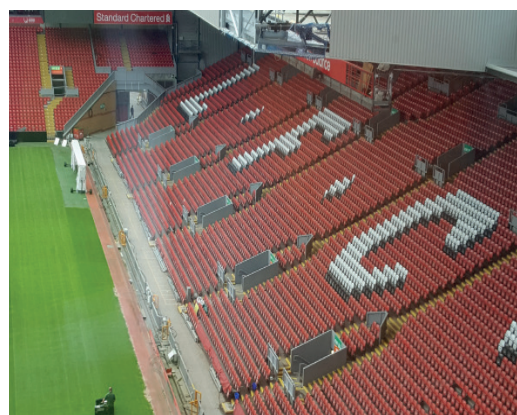
Firemac's market leading product range for ductwork, Firemac FM Fire Duct systems, has a proven track record in builds in the UK, the Middle East, Africa, India and Asia.

More recently, Firemac has introduced FM Blue – an impact-resisting, steel-faced non combustible board that can be used to form fire resisting walls, ceilings, ducts, and enclosures.

As our customers would expect of a company working in safety critical systems Firemac is ISO 9001 registered and Third Party Accredited.



Firemac Project:
Queen Elizabeth Hospital, Glasgow



Firemac Project:
Anfield Stadium, Liverpool

FIREMAC FM FIRE DUCT SYSTEMS

Building Regulations require that new buildings must be divided into fire compartments and provide means of escape in order that the spread of fire in the building is contained. Obvious areas of weakness include doors, building services, and ventilation ductwork passing from one compartment to another. In particular, the standard ventilation ductwork system offers little or no protection against fire spread, and to overcome this fire resistant ductwork is used.

Firemac FM Fire Duct systems gives ductworkers complete control of both fabrication and installation of fire resistant ducts where required in commercial developments.

This means that the full system is manufactured under strict factory controls to Firemac's required technical standards. All manufacturers of Firemac FM Duct systems are re-trained and audited annually by qualified ISO Internal Auditors.

FM Fire Duct systems have been designed around the needs of ductworkers, enabling them to manufacture fire resistant ductwork in their own factories without the need for third party suppliers.

Using FM Fire Duct systems puts all elements of a contract in the hands of the ductworker, and allows entry into a specialist market segment, without the need to develop highly expensive in-house systems.

Full training in the fabrication of fire resistant ductwork is given, and as part of Firemac's service commitment we work alongside our customers as the ductworker's technical support department. Firemac can deal directly with specifiers and consultants on any queries relating to fire protection, whether at the tender, fabrication, install or sign-off stage.

Firemac FM Fire Ducts are suitable for ventilation, smoke extract, kitchen extract, and pressurisation ductwork systems, offering up to 240min fire resistance when tested to BS 476: Part 24: 1987 (ISO 6944: 1985). Firemac FM Fire Ducts have passed the required flammability, smoke and toxicity tests required for use in underground metro projects.



FM Fire Duct systems use a glass fibre cloth, bonded directly on to steel ductwork to give fire resistance of up to four hours.



METRO APPLICATIONS

The design of fire safety systems in new or existing mass transit systems, including rail and tunnel projects, can be particularly challenging due to the potential high volume traffic, human behaviour in emergencies, and access difficulties for the fire service.

Inherent risks include the possibility of plant and rolling stock fires, high voltage cables and other hazards, contributing to substantial fire loading. This means that fire suppression systems and effective compartmentalisation are required to protect life and infrastructure.

The impact of national regulations, and the lessons learned from catastrophic fires from around the world have meant that fire safety is a critical consideration in the planning of metro and tunnel projects.

For metro approval Firemac FM Fire Ducts have to demonstrate fire performance to BS476: Part 24: 1987, and successfully pass impact, flame, smoke and toxicity tests. Firemac FM Fire Ducts have also passed the hose stream test as required in ASTM E119-1. These are the requirements of a number of transit systems around the world, including the London Underground.

PRODUCT DESCRIPTION

Firemac FM Fabric PSA is a specialist fire protection glass fibre fabric which is bonded and mechanically fixed to the outer face of galvanised or stainless steel ductwork, to achieve the required fire performance. The fabric has a self-adhesive backing so additional adhesive is not required. This improves quality control and makes logistics, storage and health & safety much simpler. The fabric is less than 0.5mm thick and adds virtually nothing to the overall weight of the duct.

Other benefits include the fact that the system does not require any curing time, meaning the duct sections can be fabricated and delivered without the delay of other competing systems. The light grey colour of the fabric ensures that the finished duct is unobtrusive but the fabric still clearly identifies the ductwork as a life safety system. The fabric is embossed with the Firemac logo and the words 'FIRE RESISTANT'.

Firemac FM Fire Ducts can be constructed as rectangular, oval, circular or spiral ductwork, manufactured in the normal manner and broadly following the requirements of DW144 / DW172. There is usually no requirement to upgrade the gauge of steel used to achieve the required fire resistance. The fabric is applied quickly and easily, and bonded to the duct using a contact adhesive. The fabric is mechanically fixed using mild steel rivets or screws along a single longitudinal edge. Flanges are then tapped on and fixed mechanically to the duct - no curing time is required and the duct is then ready to transfer to site for installation.



TESTING AND THIRD PARTY CERTIFICATION

With standard ventilation ductwork offering limited protection against fire spread it is an easy way for fire and smoke to spread rapidly through a building, penetrating fire compartment walls and floors and cutting off means of escape. Therefore it is vital that any safety critical product is rigorously tested.

Firemac FM Fire Duct systems have been tested and assessed to BS476: Part 24: 1987 and demonstrated fire resistance of up to four hours for both Duct Types A and B. A full appraisal of Firemac FM Fire Duct systems, which includes a summary of the supporting test evidence, has been issued by the Building Research Establishment (BRE) and is available on request.

Independent inspection of Firemac FM Fire Duct systems has been carried out by IFC Certification Ltd, a UKAS accredited and internationally recognised provider of Third Party Certification.



APPLICATIONS

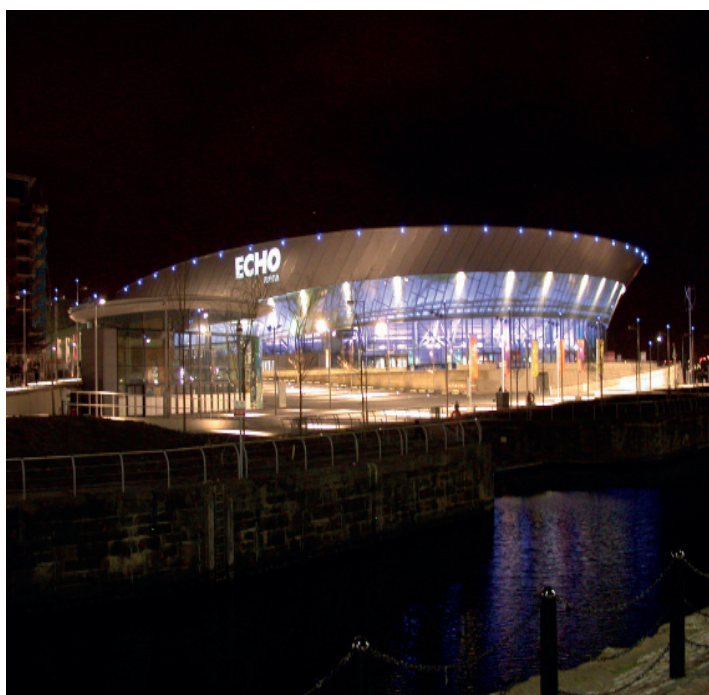
Suitable for a wide range of environments, Firemac FM Fire Ducts have been successfully installed in factories, commercial kitchens, schools, hospitals, shopping centres, metro systems, and other projects for the purposes of safeguarding life and property from fire.

Firemac FM Fire Ducts have passed the required smoke and toxicity tests required for use in underground metro projects.

Firemac fire resisting ductwork can be used in any area of a building to protect life and property and to aid the emergency services in the event of a fire.

Typical areas include:

- Ventilation Ductwork
- Smoke Extract Ductwork Systems
- Non Domestic Kitchen Extract Ductwork
- Basement and Enclosed Car Park Duct and Smoke Extract Systems
- Escape Route Ducts
- Pressurisation Ductwork Systems
- Dual Ventilation/Smoke Extract Systems
- Fume Cupboard Extract Systems
- High Risk Areas



Firemac Project: Echo Arena, Liverpool

Firemac FM Fire Ducts can be fitted as both uninsulated and insulated systems depending upon requirements. Following the guidance in BS9999 installing an uninsulated fire resisting duct system is normally acceptable to the approval authorities when personnel or combustible materials are at least 500 mm from the duct.

The fire resistant duct work system is part of the overall fire protection strategy for a building and will be designed to integrate with other passive and active systems, such as sprinklers. Often fire resisting ducts are expected to be exposed to much lower temperatures than those experienced in a fully developed fire. In this instance Firemac uninsulated FM Fire Ducts meet the requirements for smoke extract at temperatures of up to 350 °C, and kitchen extract for up to 400 °C.

Thermal or acoustic insulation can be applied to ensure the duct performs in normal operating conditions. Where a duct is required to meet the insulation criteria in a fully developed fire insulated Firemac FM Fire Ducts satisfy the stability, integrity and insulation performance of BS476: Part 24: 1987.

FIREMAC SYSTEMS: YOUR PARTNER FOR FIRE RESISTANT DUCTWORK

For companies who have not installed fire rated ductwork before, or have limited experience, initial entry into this market can seem daunting. As it is a safety critical area of the industry, the technical knowledge required can be off-putting.

Firemac acts as the ductworker's in-house technical department, and will answer any questions the ductworker or consultant has regarding fire rated ductwork, and the performance of Firemac's range of systems. Our technical team includes some of the UK's leading experts on PFP and Firemac's systems have been designed to be a straightforward addition to the range of services offered by professional ductwork manufacturers.

SITE INSPECTION

Correct installation is a critical element in ensuring the performance of fire resistant ductwork. In addition to the training Firemac provides to fabricators, Firemac Inspectors will carry out site inspections to ensure compliance with the installation of Firemac FM Fire Ducts.



TRAINING AND ONGOING SUPPORT

All of Firemac's customers receive full training prior to the fabrication or installation of fire resistant ductwork. The training package is delivered at the customer's factory and is a combination of technical presentations, training videos, and hands-on manufacture of Firemac FM Fire Ducts.

Upon completion of training, each company is certificated as an Accredited Installer. An annual training refresher is also given and any changes to the Technical Manual are communicated directly to the customer.

Firemac recognises that specifiers and building control officers can interpret the requirements around the installation of fire resistant ductwork in different ways. Firemac will work directly with contractors, consultants and other key influencers to ensure any technical submission meets their requirements.

Firemac inspectors will visit the installation of the ductwork on site to ensure it is fitted to the requirements of the Technical Manual, and issue a Certificate of Conformity in the name of the ductworker.

FIREMAC TRAINING PACKAGE

Training is a mixture of presentations, video and hands on fabrication designed to give our customers an introduction into the purpose and requirements of fire resistant ductwork.

Each worker will be taken through the fabrication of Firemac FM Fire Ducts including the initial forming of the duct, application of fabric, fitting of flanges, mechanical fixings, transitions and bends, patches, access panels and installation.



BENEFITS FOR SPECIFIERS

The fabric itself is extremely strong, while its flexibility makes it easy to apply, usually by one worker. It is applied after the duct has been manufactured by a combination of adhesive and mechanical fixings - no curing time is required - meaning that fire resistant ductwork can be built, delivered, and installed within hours without the need to use any third party contractors. This ensures any plan amendments can be easily and quickly accommodated, without any loss of time on site. It is usually not necessary to upgrade the duct to achieve the required fire rating.



Firemac Project: Amazon Warehouse, Rugby

UK COVERAGE

Firemac FM Fabric is sold exclusively, and directly, to ductworkers. The fabric is delivered within 48 hours of ordering, and Firemac's technical team are always on hand to deal with any questions the ductworker, or their customer, may have.

Firemac currently has over 110 ductwork customers in the UK, all of whom have been fully training in the fabrication and installation of Firemac FM Fire Ducts. This ensures nationwide coverage and unmatched speed of delivery.

- Proven track record in major builds
- Industry leading technical expertise in PFP
- Tested to British and European Standards
- Fire resistance from 1-4 hours as both Duct Type A and Duct Type B
- Usually no need to upgrade ductwork or hangers reducing time, wastage and cost
- Lightweight uninsulated system occupies minimal space
- Delivered on site, fire rated, and ready to install
- No requirements for second trades
- Firemac is an ISO9001 accredited company
- Firemac FM Fire Duct systems are manufactured under Third Party Certification
- System designs assessed by the Building Research Establishment (BRE)
- Suitable for Underground/Metro

Firemac FM Fire Ducts can be fabricated to four hours fire resistance in straight, spiral or circular forms, giving complete flexibility of design and installation.



A COMPLETE SYSTEM

Firemac FM Fire Ducts are safety critical systems and it is imperative that the fabrication of fire resistant ductwork exactly mirrors the design and build of tested systems to give confidence that in the event of a fire the ductwork will prevent fire spread between compartments. Until recently, test and certification bodies have permitted the use of a variety of fire rated sealants for use in duct systems. However they are now focusing on the importance of such products, and the desirability that the same sealants and accessories used in testing are also used in commercial fabrication and installation.

All Firemac accessories have been fully fire tested, and are prescribed for the fabrication and installation of Firemac FM Fire Ducts.

FIREMAC FM SILICONE SEALANTS

- High quality silicone sealant particularly suitable for use in Firemac FM fire resistant kitchen extract systems
- Manufactured in the UK
- Long shelf life
- Suitable for use in non fire rated applications

FIREMAC FM INTUMESCENT ACRYLIC SEALANT

- High quality acrylic sealant suitable for all applications
- Manufactured in the UK
- Long shelf life
- Tested in Firemac FM Fire Ducts to requirements of BS476: Part 24: 1987 for up to four hours fire resistance
- Prescribed sealant for Firemac FM Fire Duct Third Party Certification
- Can be used in non fire rated applications



FIREMAC FM BUTYL GASKET TAPE

Firemac FM Butyl Gasket Tape is a performed high performance polyisobutylene (PIB) based sealing tape available in single strand or multi-lane rolls.

This product has a multitude of applications where joints need to be formed to seal against air and water ingress, and is preferable to other methods of sealing flanges on ducting due to its ease of use and solvent free formulation.

The product is cost effective, non toxic, and requires no tools to apply.

FIREMAC FM ACCESS PANELS

Although the ductworker can fabricate access panels in accordance with the Firemac Technical Manual, Firemac has found our pre-fabricated, fire resisting access panels are increasingly popular. They are manufactured to the required sizes and can be delivered with the minimum of delay. This can save considerable time for the manufacturer of the duct sections. The access panels are supplied with a safety retaining chain as standard.

PROJECTS: EDUCATION

- Brooke Weston Academy, CorbyBury College
- Carnoustie High School
- City of London Academy
- Clackmannanshire Schools
- Da Vinci Secondary School, Derby
- Durham Johnston Secondary School, Durham
- Engineering, Aerospace and Automotive Technology Centre
Exeter College
- Govan Primary School, Glasgow
- Highfield and Penn Fields Secondary School, Wolverhampton
- International School of Aberdeen
- Kirk Balk Community College, Barnsley
- Kirkintilloch High School
- Kirkintilloch Learning Centre
- Knowsley Park CFL Secondary School, Knowsley
- Lakeside Community Primary School, Derby
- Lytham St Annes High School
- Monkseaton High School, Whitley Bay, Tyne and Wear
- Mount St Mary's College, Sheffield
- Newcastle University
- Nottingham Trent University
- Oxford Brookes University, Oxford
- Parson Street Primary School, Bristol
- Robert Burns Birthplace Museum, Alloway, Ayrshire
- Rotherham College, Rotherham
- Royal Welsh College of Music & Drama, Cardiff
- Sinfin Community School, Derby
- Sir Charles Parsons Secondary School, Newcastle upon Tyne
- South Cheshire College, Crewe
- St Michael's School, Cambourne
- St Ninians High School, Glasgow
- St Roberts of Newminster Secondary School and College,
Washington
- Taf Ely Learning Centre, Cardiff
- The Berwickshire High School, Duns
- The Roundhouse, Derby College
- The University of Bristol
- Tremough Campus, Combined Universities of Cornwall, Penryn
- Walkers Technical College, Newcastle Upon Tyne
- Warden Bay Primary School, Isle of Sheppey
- Waverley School, Birmingham
- West Kent College, Ashford
- William Hulme's Grammar School, Manchester

CASE STUDY



Sir Charles Parsons Secondary School Newcastle Upon Tyne

The new facilities created a high quality learning environment that benefits thousands of children and young people across the city as well as the communities in which they live.

Firemac FM 120 was installed to give 2 hours fire resistance kitchen extract.

PROJECTS: RESTAURANTS AND LEISURE

- Allstars Bowling Alley, Manchester
- Aspers Casino, Milton Keynes
- Brasco Lounge, Liverpool
- Brasserie Blanc, Portsmouth
- Broadway Shopping Centre, London
- Burger King, Glasgow
- Café Football, London
- Catterick Sports Centre, Liverpool
- Coast to Coast Restaurant, The Gates, Newcastle
- Cosy Club, Cardiff
- Cote Restaurant, The Oracle Shopping Centre, Reading
- Davy's Wine Bar, London
- Docklands, Albert Dock, Liverpool
- Filling Station, Braehead Shopping Centre, Glasgow
- Friary Centre, Guildford
- GBK, Nottingham
- Grosvenor Casino, Brighton
- Jamie Oliver, Brighton
- Jamie Oliver, Glasgow
- Le Pain Quotidian, London
- Le Pain Quotidian, Canary Wharf, London
- Leicester Tigers Stadium, Leicester
- Malakoff, St Ives
- Marks & Spencer Deli and Bakery, Milton Keynes
- Marks and Spencer Deli Prep
- Marks and Spencer Hot food
- Marks and Spencers Deli
- Merthyr Health Park, Methyr Tydfil
- Modelo Lounge, Brighton
- Musselburgh Race Course, Musselburgh
- Orzdilek Stratford, Westfield Shopping Centre, London
- Prezzo, Media City, Manchester
- Prezzo, Southport
- Punch Taverns, Burton On Trent
- San Carlos, Liverpool
- Spiceball Leisure Centre, Banbury
- Sticks n Sushi, London
- T.G.I. Friday, Manchester
- The Alchemist, Manchester
- The London Dungeon, London
- The Rat Trap, London
- The Rock, Bury
- The Royal Museum, Edinburgh
- Theatre Royal, Plymouth
- Truro Health Park, Truro
- Truro Lounge, Cornwall
- Twycross Zoo, Twycross
- Unit 502 Highgate Studios, London
- UTC Parkside School, Plymouth
- Wagamama Media City, Manchester
- Wagamama, Livingston
- Yo! Sushi Edinburgh Airport, Edinburgh

CASE STUDY



The National Museum of Scotland Edinburgh

The National Museum of Scotland was first opened in 1866, and has undergone a complete renovation at a cost of £47.5m.

The three-year programme has seen the original interior restored and storage areas turned into public space, making it one of the UK's largest museums.

The whole museum, situated in Chambers Street in the Old Town, will have 20,000 objects across 36 galleries.

Firemac FM Ductwork Systems have been installed in the new restaurant in the Museum, which welcomed over 1.4m visitors last year.

PROJECTS - COMMERCIAL & INDUSTRIAL

- Botanic House, Cambridge
- Brae House, Southampton
- Canal Street, Nottingham
- Carron Road, New Build Flats, Falkirk
- Catterick Garrison, Catterick
- Communication Exchange
- Darlington Council Head Office, Darlington
- Domino's Pizza, Head Office, Milton Keynes
- Eastlea Care Home, South Molton
- Easy Jet Head Office, Luton
- EDS (UK) Wynyard
- Eldon Square, Newcastle
- Faslane Naval Base, Helensburgh
- G1 Building, Glasgow
- Gresham Street, London
- Halton Extra Care, Cheshire
- Heathrow Terminal 2, London
- HBOS, Dunfermline
- Lavinia Square, Belfast
- Merseyside Fire & Rescue Service, Training & Development Academy, Liverpool
- Middlehaven C.I.A.C, Middlesbrough
- Ministry of Defence
- North Yorkshire Police HQ, Harrogate
- Oldbury Nuclear Power Station, Gloucestershire
- Oxygen Staff Restaurant, Exeter
- South Gloucestershire Council Headquarters, Gloucester
- St Pauls Car Park, Sheffield
- Tawar Mall, Doha, Qatar
- Tesco Finance Centre
- Tesco Finance, Glasgow

CASE STUDY



Oldbury Nuclear Power Station Gloucestershire

Oldbury nuclear power station was originally scheduled to close in 2007 but its generating life was extended to 2012.

As part of the redevelopment of the site Firemac FM 120 was installed as a smoke extract system within the stations's plant room.

The extract system continues to be an integral part of the stations's fire protection during the initial stages of decommissioning while the fuel is removed by 2014, and until it enters its care and maintenance phase in 2027.

PROJECTS - HEALTH

- Bristol Royal Infirmary
- Brooksby House Hospital, Largs
- Christie NHS Foundation Trust, Manchester
- Darlington Memorial Hospital
- David Walker Gardens Care Home, Glasgow
- Gloucestershire Royal Hospital, Gloucester
- John Radcliffe Hospital, Oxford
- Kings Mill Hospital, Sutton-in-Ashfield
- Mill Rise Hospital, Newcastle under Lyne
- Murrayfield House Care Home, Edinburgh
- Royal Victoria Infirmary, Newcastle Upon Tyne
- Queen Elizabeth University Hospital, Glasgow
- Southmead Hospital, Bristol
- St James Hospital, Leeds
- Stowford House Care Home, Abingdon
- Yorkhill Hospital, Glasgow

PROJECTS - HOTELS

- Blythswood Hotel, Glasgow
- Burghfield House, Dornoch
- Centre Parks, Woburn
- Holiday Inn Express, Various Locations
- Nostal Priory, Wakefield
- Rockcliffe Hall, Darlington
- Travelodge, Various Locations
- Turnberry Hotel, Turnberry

CASE STUDY



The Queen Elizabeth University Hospital Glasgow

The new 14 floor Queen Elizabeth University Hospital Glasgow (adult) building is one of the largest acute hospitals in the UK and home to major specialist services such as Renal Medicine, Transplantation and Vascular Surgery, with state-of-the-art Critical Care, Theatre and Diagnostic Services.

The atrium of the hospital houses retail shops and a coffee shop. There is a large restaurant/coffee area on the first floor of the hospital with a balcony and views out onto the landscaped area in front of the hospital.

PROJECTS - COMMERCIAL & INDUSTRIAL

- ASDA Stores
- ASDA Stores, UK wide
- Asda Worthing
- Audi, Stirling
- Boots, Glasgow
- Boots, Westfield Shopping Centre, London
- Britsspace Construction, London
- Debenhams, Bath
- Debenhams, Swansea
- Eldon Square Shopping Centre, Newcastle
- Forever 21 Store, Kent
- Glen Turner Distillery, Edinburgh
- H & M, Westfield Shopping Centre, London
- H&M Braehead, Glasgow
- H&M Southside Shopping Centre, London
- H&M Store, Cardiff
- H&M Store, London
- Harvey Nicholls, Edinburgh
- John Lewis, Cardiff
- Marks & Spencer, Ellesmere Port
- Marks & Spencers Brentcross, London
- Marks & Spencers, Hampstead, London
- Marks & Spencers, Luton
- Metro Centre, Newcastle
- Morrisons supermarket, Cwmbran
- Morrisons supermarket, Lowestoft
- Morrisons supermarket, Portsmouth
- Next, Aberdeen
- Next, London
- O2, London
- Primark Braehead, Glasgow
- Primark, Blackburn
- Primark, London
- St George's Shopping Centre, London
- St Pauls Shopping Centre, London
- Superdrug, Westfield Shopping Centre, London
- Tesco, Newcastle
- The Galleries, Bristol

CASE STUDY



Westfield Stratford Shopping Centre London

Westfield Stratford City in East London is Europe's largest urban shopping mall with a total retail floor area of 175,000 m². It is the 3rd largest shopping centre in the United Kingdom by retail space behind the MetroCentre and the Trafford Centre, developments where Firemac FM systems are also installed.

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