

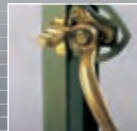


The Crittall Experience



Crittall Windows brings one and a half centuries of design and manufacturing expertise to meet your specific fenestration requirements offering project planning and contract management, logistics, bespoke products, installation and after-sales service.

Always ahead of our time, we use state-of-the-art manufacturing processes and, consequently, lead the field Internationally. This is the Crittall Experience ...



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Lichfield Court, Richmond Upon Thames



Overview

CRITTALL Windows has a long and proud history and its core values of trust, honesty and respect are as strong today as they were when the company was founded more than 160 years ago.

This brochure will give you a comprehensive view of Crittall's offer to the client, architect and contractor. It provides details of the many-faceted service that Crittall Windows can provide as well as a host of examples of high-status projects completed both in the UK and the United States.

You will also find details of the newly-revised Building Regulations and how they permit the use of Crittall steel windows with confidence.



The Crittall workforce celebrates the news of winning the Queen's Award. Inset, Managing Director John Pyatt with the Queen's representative, The Lord Lieutenant of Essex, at a special event held to mark the occasion at the company's headquarters in Witham, Essex



Crittall Windows is proud to have been granted the Queen's Award for Enterprise in International Trade in 2010.

"This is in effect an award for excellence in how we have gone about our business," says Managing Director John Pyatt. "Everything is taken into account – employment practices, environmental policy, and our work with the local community – as well as our export achievements."

The prestigious Queen's Award has been granted in specific recognition of the company's achievements in the American market, details of which appear on Pages 16 and 17 of this brochure.

Our history... 1900, 1910, 1920, 1930, 1940, 19



Braintree Works, 1920s



Boots D10 Nottingham 1990s after refurbishment



Luma Tower, Glasgow

CRITTALL is the world's oldest supplier of steel windows and has been in continuous operation for more than 160 years. The company was set up in Braintree, Essex, in 1849 by Francis Berrington Crittall and the family remained directly connected with the firm, through successive generations, until 1974.

An early prestigious contract in the mid 1880s was to supply the metal windows for the Houses of Parliament

and the Public Record Office. The company expanded abroad, opening subsidiaries or forming partnerships in the USA, South Africa, Australia, Nigeria, China and Germany where, among other contracts, it supplied the fenestration for the Bauhaus.

In 1939 the company opened its first galvanising plant at Witham, Essex, and in 1964 developed a process for pressure testing the weathertightness of windows, leading to

the creation of a new British Standard. The first polyester powder coated windows were developed in 1977 and a year later Crittall celebrated the production of its 50 millionth steel window.

New offices

The 1990s proved a busy time for the company which moved at the start of that decade into new offices with a new factory, still in Braintree. Three years later the

50, 1960, 1970, 1980, 1990, 2000, 2010...



Baskerville House, Birmingham

Corporate 2000 range of windows was introduced and in the following four years there were two changes in ownership, the latter being the company's purchase by Marmon Corporation of Chicago. That year, 1997, also witnessed the introduction of the Berkeley range for a prestigious contract at Yale University.

The company changed hands again before a management buyout in 2004, followed in 2007 by a move to new offices



Baltic Exchange, Newcastle Upon Tyne

and factory at Witham. Throughout these challenging times the company maintained a loyal and productive workforce with one in ten employees to date having been with the firm for more than 40 years.

Achievements recognised

All these achievements were recognised and crowned in 2010 when Crittall Windows was awarded a Queen's Award for Enterprise in International Trade.



Private Residence, USA

Project management

IN the UK market Crittall Windows is involved in the start-to-finish operation of designing, supplying and installing its windows and providing a reliable after-sales service. A market-leading inhouse design service is offered to help professionals achieve fenestration for contemporary or traditional solutions suited to either new build or existing construction.

Project and site management teams are able to offer advice on site logistics and installation sequencing so as to ensure co-ordination with other trades. Unrivalled experience in managing large-scale window renewal





schemes keeps disruption to building occupants – whether residents or workers – to a minimum while ensuring that complex projects can be completed on programme and within budget.

The company is proud of its Supply Chain philosophy to ensure value for money and continuously improved quality in working with supply chain partners. The company is willing, if asked, to act as principal contractor and to assist with or facilitate planning and building control approval. This is particularly important when dealing with heritage projects where Crittall is pre-eminent. It has the ability to manufacture bespoke products – in many cases returning to its original designs. Indeed, the company enjoys an unsurpassed reputation in the specialist field of supplying replacement windows for buildings of historic importance where the knowledge of the company's technical and design expertise is valued by planners, developers and architects alike.

Product range

Homelight



Crittall Homelight windows are designed for applications where smaller typical sizes are specified. They provide maximum daylight as their design allows the incorporation of larger areas of glass than any other window of a similar size.

Range Features

- ▲ Glazing up to 24mm
- ▲ Fully weatherstripped
- ▲ Windows offer the same sizes and styles as Imperial units

Corporate W20



The Corporate W20 windows and doors range offers great versatility allowing the designer the opportunity to create many styles including elaborate composite windows and curves from its extensive range of sections.

Range Features

- ▲ Glazing up to 16mm wet glazed
- ▲ Aesthetically delivers very slim sightlines – maximising the glazing
- ▲ Integral EPDM weatherstripping
- ▲ Ideal for replica refurbishment and heritage projects

Corporate 2000



The slimline rigidity of the three master steel sections allows the design of flat and unobtrusive 'minimum' coupling – with no protruding mullions or transoms for all but the largest spans. Corporate 2000 is equally suited for residential, institutional and commercial applications, and can be used to produce unusual and innovative curtainwall designs for new build projects.

Range Features

- ▲ Glazing up to 29mm using dry gaskets and aluminium glazing bead
- ▲ High performance pressure equalized design
- ▲ External rainscreen and internal airseal gaskets positively secured
- ▲ 40mm front to back dimension
- ▲ Double integral co-extruded TPE weather stripping

Berkeley

The Berkeley Window was originally created in order to replace existing 1920s and 1930s steel windows that were predominantly single pane leaded glass, exterior putty glazed. Berkeley offers an ideal solution for both replacement projects and new construction where minimum sightlines, maximum daylight, and fine detail are desired. The system is suitable for high-end residential, institutional and commercial applications.

Range Features

- ▲ Glazing up to 18mm
- ▲ High performance
- ▲ Solid chamfer replicates a putty glazing exterior
- ▲ Double integral EPDM weatherstripping



Cold Formed Doors

Crittall's door range is enhanced by an extensive range of narrow style hollow profile (cold formed) doors. These doors are particularly appropriate where larger frame openings, higher traffic usage or sophisticated electronic locking mechanisms are specified.



All Crittall steel windows and doors are hot-dip galvanised after manufacture to protect against corrosion. The frames are then chemically cleaned and pre-treated before being finished in a durable epoxy-free Duralife polyester powder, electrostatically sprayed on to the surface at its Witham Plant. A wide selection of colours is available.



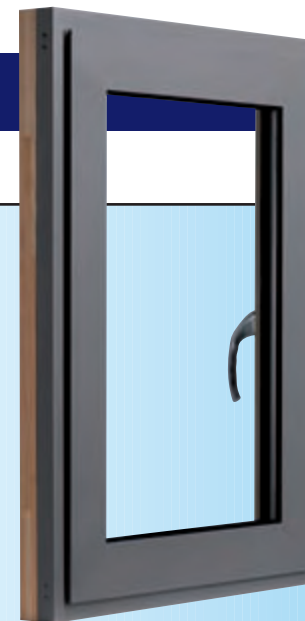
For full details on the Crittall steel range, including fire performance, accessories and fittings available please refer to catalogue no. 100 which can be downloaded from our website.

Composite

The Composite Window is a perfect blend of timber and aluminium. Meeting the dual requirements for the warmth and natural beauty that timber can bring to interiors, and the need to have minimal maintenance that aluminium brings to exteriors.

Range Features

- ▲ Glazing up to 28mm, internally glazed with timber beads retained in aluminium clips
- ▲ Excellent thermal performance
- ▲ Timber used is from PEFC and FSC certified sources
- ▲ Design life of 40 plus years
- ▲ Refer to catalogue no. 112L for full product information



Projects...

UNIVERSITY COLLEGE, LONDON

THE first-known application in the world of a particular low energy strategy in a city centre building has been assisted by the specification of Crittall windows in a new building in Taviton Street, Bloomsbury, to house the University's Slavonic Studies and East European School (SSEES). The Corporate 2000 range was specified for the exterior of the new building and internally Crittall Corporate W20 profiles were used in a magnificent six-storey atrium that allows light to permeate through the building that is naturally ventilated all year round and passively cooled during the summer months. It engages draught cooling via the central light well through peak periods of summer temperatures. The contract also included the use of Corporate 2000 profiles to refurbish several listed Georgian terraces also used by the University.

Client: University College London

Architects: Short and Associates

Main Contractor: Willmott Dixon



BRUNEL UNIVERSITY

THE steel windows in the 1966-vintage Heinz Wolff building at Brunel University at Uxbridge were replaced with Crittall's Corporate W20 profiles. This was a complete like-for-like replacement in order to maintain the architectural integrity of both the building and the campus of which it forms a part but with the new windows equipped with double glazing. Not only do the new windows meet aesthetic requirements but also the narrow sightlines made possible by the strength of steel mean that large window areas could be maintained in the building that houses the uni-

versity's bioscience teaching labs. An added requirement, ably met by Crittall, was to complete the installation while the daily use of the laboratories by students and researchers continued.

Client: Brunel University

Architects: Kendall Kingscott

Main Contractor: Crispin & Borst



BURBERRY GROUP

A customised modern interior has been created in the headquarters of the Burberry Group in Horseferry House, Westminster, but the exterior of the 1930s building has retained its original appearance thanks to the installation of Crittall Corporate W20 profiles. The windows match the original fenestration as required by the strict planning schedules of Westminster City Council. Small pane detail has been replicated in the eight-storey 160,000 sq ft building. Crittall also supplied bespoke glazed steel screens for the interior office spaces so as to ensure that the refurbishment created a light and modern office environment assisted by the original lightwells which have been utilised as daylight circulation spaces.

Client: Burberry Group. Architects: Allford, Hall Monaglen, Morris.

Main Contractor: I.S.G.



LICHFIELD COURT

THE £1.8 million contract to replace 1500 windows and balcony screens at Grade II listed Lichfield Court, Richmond upon Thames, was completed on schedule with all occupants of the 211-apartment art deco block in situ. A bespoke Homelight window was created to match the 1935 original but with double glazing; a fact that required approval by both English Heritage and the local authority conservation officer. This was achieved thanks to the fitting out of an on-site demonstration flat to show that a modern, energy efficient window could satisfy aesthetic and listing criteria.

Client: Festalfine Ltd

Architect: Hunter Price. Main Contractor: Phillips Contractors Ltd





Projects...

SOHO HOTEL

THE fashionable Soho Hotel, part of the Firmdale hotel Group, opened in September 2004 and Crittall supplied all the windows to the structure from its Corporate W20 and Corporate 2000 ranges. The Corporate W20 offers flexibility in design which was used by architect Peter French to maximize the glazing in the main façade: a major feature of the building. Steel was chosen to meet with planning requirements and to complement the surrounding buildings in the area. The use of glass as a design medium in its own right, complements the style of construction with the slim sightlines characteristic of steel windows adding to the overall aesthetics.

Client: Firmdale Hotel Group

Architect: Peter French

Main Contractor: Firmdale

SONY MUSIC ENTERTAINMENT

THE Grade II listed art deco building that once housed Derry and Tom's department store in Kensington High Street was transformed into the new headquarters of Sony Music Entertainment. Internal steel glazed doors and partitioning from Crittall Windows' Corporate W20 range played a significant role in transforming the third and fourth floors of the building to create an open plan warehouse-style office for 450 employees. The galvanised glazed screens separate various departments within the offices while ensuring that light can flow around the large interior spaces. The galvanising reinforced the industrial feel suited to a warehouse character sought by the designer.

Client: Sony Music Entertainment

Architect: MoreySmith. Main Contractor: Wates Interiors



CLIFTON COURT

CLIFTON Court is an 18-storey block of flats in Islington, managed by Homes for Islington, on behalf of the local authority. As part of a thorough refurbishment programme Crittall supplied Homelight L steel windows which are the same size and style as the originals they replaced, but upgraded and double-glazed. With slender sight lines providing a light and airy appearance the windows satisfied the energy conservation requirements that demanded a U-value of $2.2\text{W/m}^2\text{K}$

Client: Homes for Islington

Architect: HFI

Main Contractor: Eugena Ltd.

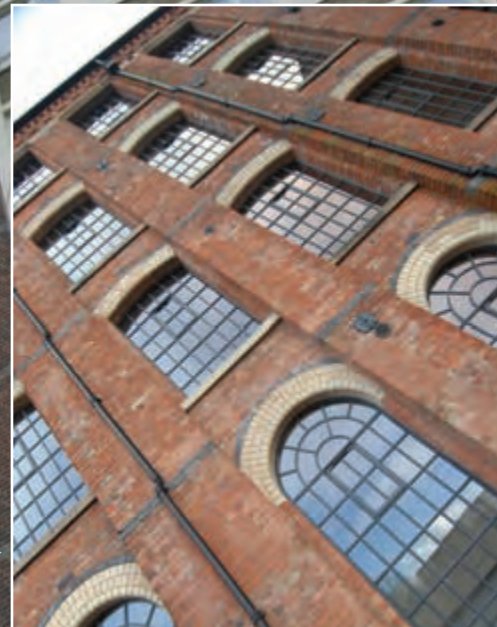
SPRINGFIELD MILL

NOTTINGHAM'S Springfield Mill has been redeveloped by City Lofts plc to provide 105 studios, one and two bedroom apartments, and top floor duplexes in a listed historic industrial building. So as to maintain its essential character and appearance Corporate W20 profile windows from Crittall were specified. A like-for-like replacement policy ensured that the narrow sightlines were maintained and obtrusive mullions and transoms avoided. More than 400 windows were installed in the Victorian building.

Client: City Lofts plc

Architect: Terence Conran Design

Main Contractor: Jessop Construction Ltd.



Part L Regulations and protecting the environment

Meeting the latest Building Regulations.

Crittall Windows has played a full and active role in the Government's consultation on the revision of Part L of the Building Regulations (Conservation of Fuel and Power) that came into force in October 2010.

As a result, architects and designers can continue to specify Crittall Windows' products secure in the knowledge that they may be used in a variety of ways that satisfy the requirements of the revised Part L. (See Table opposite for indicative U-values of window and door components).

Heritage buildings

Much of Crittall's work involves installation in heritage buildings. The new Regulations (Part L1B for Existing Dwellings and Part L2B for Existing Buildings Other Than Dwellings) both allow exemptions in the case of heritage buildings. These exemptions apply if compliance with the new energy efficiency



requirements would alter the character or appearance of heritage buildings or even risk a deterioration of the building fabric.

Exempt from the regulations

For existing dwellings and existing non-dwellings the exempt buildings are as follows:

- ▲ Listed in accordance with section 1 of the Planning (Listed Buildings and Conservation Areas) Act 1990;
- ▲ in a conservation area designated in accordance with section 69 of that Act; or
- ▲ included in the schedule of monuments maintained under section 1 of the Ancient Monuments and Archaeological Areas Act 1979

Also exempt are:

- ▲ buildings which are of architectural and historical interest and are covered in a local authority's development plan or local development framework;
- ▲ buildings which are of architectural and historical interest within national parks, areas of outstanding natural beauty etc;
- ▲ buildings of traditional construction with permeable fabric that both absorbs and readily allows the evaporation of moisture.

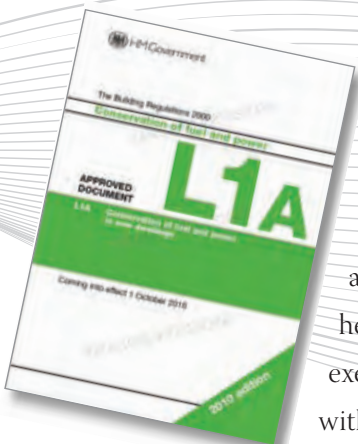
Where to go for guidance

Guidance issued by English Heritage should be taken into account and Building Control Officers are now instructed by the regulations to take account of the views of the local authority conservation officer.

Full details of how Crittall Windows comply are available from the company (see back cover for details)

Ventilation

Building Regulations Part F covers means of ventilation. Trickle ventilators are not required in all replacement windows but all Crittall windows can be fitted, if required, with suitable trickle vents. The work must not adversely affect the character or appearance of the building.



Indicative U-values of window and door components

Approved Document	Whole window U-value W/m2K	Centre Pane Value W/m2K	Doors W/m2K	Relaxations W/m2K
L1A New Dwellings	2.0	n/a	2.0	n/a
L1B Existing Dwellings*	1.6	1.2	1.8	n/a
L2A New Non Dwellings	2.2	n/a	2.2	2.7 with high internal heat gain
L2B Existing Non Dwellings*	1.8	1.2	1.8	2.7 with high internal heat gain

**WER Band C also acceptable as an alternative
Where replacement windows are unable to meet the requirements because of the need to maintain the external appearance of the façade or the character of the building, replacement windows should meet centre pane U-Value of 1.2W/m2K, or single glazing should be supplemented with low-e secondary glazing*



In partnership with MLM Building Control Ltd, a well respected Corporate Approved Inspector, Crittall Windows offers an advisory service that gives guidance to professionals seeking planning and building control approval. Additionally, through MLM, Crittall is also able to obtain Building Control. Approval for projects as a whole. To ensure the process of obtaining Building Control Approval for replacement windows is swift and straightforward, Crittall steel windows have been 'Type Approved' by MLM Building Control for compliance with the new Part L 2010 (Conservation of Fuel & Power) Building Regulation. With this knowledge, clients can be assured that Crittall Windows are fully compliant with Part L of the Building Regulations and can be used with confidence for both replacement window projects and new-build schemes.

Corporate responsibility

Concern for the environment is a fundamental aspect of Crittall's corporate business strategy. It has demonstrated this concern throughout its manufacturing processes and designs which strive to minimise environmental effects by using safe and sustainable resources and wherever possible to manufacture products from materials that are capable of being recycled.

Recyclable products

The principal components of a Crittall window are steel and glass which are the most recyclable building materials in use. Steel is a unique material because it always contains 100% recycled steel in its manufacture. Crittall also reclaims the steel and glass from old windows when replacing them with new products.

Sustainable processes

The company operates within the constraints of BS EN ISO 14001:2004 a recognised international environmental management standard that sets targets for solids, liquids,

gaseous emissions and waste generation. In the manufacturing process Crittall minimises the creation of waste, especially hazardous waste, and disposes of all wastes through safe and reasonable methods, which are in compliance with all relevant legislation, and it controls the discharges of effluent to sewers and ground water, as required by regulation. Crittall extends its environmental concern to its key suppliers and contractors and reviews their credentials as well.

Design advantage

Because of their inherent strength, steel windows have much thinner frames than is possible with other materials. This lets in more daylight thus reducing the use of artificial lighting in the buildings in which they are installed.

Green credentials

The Building Research Establishment's 'Green Guide' states a strong B rating for domestic and commercial steel windows,



International



THE crowning achievement of Crittall's export business was the award in 2010 of a Queen's Award for Enterprise in International Trade. This was in recognition of its success in the notoriously difficult American market where the company has seen the value of its sales increase by a significant amount in recent years.

Crittall is now the second largest supplier of steel windows in the United States having rebuilt its entire distribution network there in the six years since the management buyout.

For more than a decade Crittall has been the preferred supplier for replacement windows in an historic New York landmark: 300 Central Park West in the heart of Manhattan. The company supplied the original windows in the 1931 luxury apartment block and so was the natural choice to furnish replacements from its Homelight range. Crittall still had to satisfy the stringent requirements of the New York City Landmarks Preservation Commission concerning restoration of the façade but, thanks to its reputation for the highest quality products and its long connection with America, it was easily able to do so.



Global Expansion

Crittall's global expansion has been significant over the years with many landmark buildings, including Boots D10 building and the Hoover Building in the UK, Walter Gropius Bauhaus in Germany, L. Cordonniers Peace Palace (The Hague), the Hong Kong Yacht Club, and Albert Kahn's General Motors Building, Detroit.

DOWNTOWN New York's new luxury hotel is owned by the Firmdale Group, which also owns the London Soho Hotel where Crittall Corporate W20 and Corporate 2000 profiles were used throughout. It was the success of that UK project that led Firmdale to turn once more to Crittall to provide the fenestration at Crosby Street, NYC (pictured below). The final design incorporates a dramatic rectilinear facade of brick, framing 54 large New York loft style floor-to-ceiling height Corporate W20 steel windows, which allow the maximum amount of natural daylight to flood the rooms.

The dark-green Crittall profiles include an unusual 24-pane configuration with a central pivotal four-pane opening light, double glazed. This configuration helps to create an extremely low U-value resulting in excellent energy efficiency.



Projects in the US include a wide range of prestigious public and private sector buildings, including the Ivy League universities of Princeton and Yale.



Production excellence

C RITTALL Windows has undertaken a major investment in a state-of-the-art manufacturing facility at Witham, Essex, which it occupied in 2007. The factory boasts a fully integrated IT system that controls the entire process from raw material coming in, through production, to completed windows being shipped out.

This system introduces a new level of production innovation, quality control, internal and external communication, and customer service. The factory also contains Crittall's in-house testing facility and finishing plant that are among the most advanced in the world.

Crittall products are certified to quality management standard BS EN ISO 9001:2008. The company also holds a BS EN ISO 14001:2004 accreditation signifying that it operates in an environmentally responsible manner to prevent pollution and reduce waste year on year. All steel window and door products are manufactured generally in accordance with BS 6510. Hot-dip galvanising is in accordance with BS EN ISO 1461:2009 and the finishing, with an epoxy-free Duralife polyester powder coat, is to BS6497.







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