

IMPROVING THE ENERGY PERFORMANCE OF HERITAGE PROJECTS WITH CLEMENT'S STEEL WINDOWS AND DOORS

One only has to read recent press articles about The Hobbit and Sherlock actor, Martin Freeman, battling with Camden Council over the replacement of the original steel windows at his London home, to be reminded of how difficult it can be to get planning permission. As Liberal Democrat councillor, Matthew Kirk, was quoted in The Telegraph: “Preserving heritage and achieving energy efficiency and modern standards often conflict.”

Getting planning permission to replace the original steel windows at Listed Buildings, properties in Conservation Areas, or other architecturally important buildings is undoubtedly challenging. With the main objective being to conserve the original appearance of the building, usually only like for like replacement windows will be considered.

Luckily, modern steel windows are comprised of exceptionally slim frames which very closely emulate the look and character of original steel windows. New steel windows also contribute to better energy performance in a building, by way of developments in

thermal breaks, glazing, weatherstripping and locking.

Thermal breaks are now available with numerous steel window ranges and these insulating barriers significantly reduce heat transfer. Double or triple glazing, with argon or krypton gas fill, or specialist glazing such as the vacuum insulated glass by FINEO, together with high quality glass coatings, work towards reducing heat loss and increasing solar gain. Advanced weatherstripping acts as a barrier against water, air and dust and innovative multi point locking systems can also help to control airflow leading to better air tightness.

Below, Clement's W40 steel doors at Kew Studios provide modern performance while remaining true to the original character of the building



Here we look at some recent projects by Clement Windows Group where the installation of new steel windows has meant a real difference to the energy performance of the heritage project involved.

Kew Studios, Surrey

Kew Studios and Works is a former manor house which has been completely refurbished with an eye to incorporating the original period charm into the new modern design.

Sustainability was a key objective and solar panels, a living green roof and electric vehicle charging points have been included. The development has achieved a "B" Energy Performance Certificate and a BREEAM Very Good certification.

There is no doubt that the new steel windows and doors contributed to the overall energy efficiency of the project. For the exterior, Clement manufactured double glazed, steel frames from their W40 range. These double glazed, argon filled, low emissivity warm edge insulating glass units are ideal for heritage refurbishment projects where the pattern of the original fenestration is to be maintained. Instead of being painted, the frames were left with a contemporary Clement Naked Steel galvanised finish. The internal doors and screens were manufactured by Clement from slim Jansen Janisol 2 and C4 profiles which are thermally broken. They also meet the highest requirements for security and fire protection, while ensuring natural light flows throughout the space.



Above, the internal doors at Kew Studios are manufactured by Clement from thermally broken Jansen profiles

22-23 Little Portland Street, London

The original commercial premises at 22-23 Little Portland Street encompassed a vacant basement, ground floor and four upper floors. Robson Warren Architects were briefed to design a scheme to improve the office facilities and services, to enable the building to attract further tenants.

It was important that any proposals took account of the environmental sustainability of the works and their

impact on the property, which is located in the East Marylebone Conservation Area and abutted by a Grade II listed building.

The original single glazed windows would have prevented achievement of the required improvements in energy performance. Refurbishment was not an option as the frames were too badly corroded, not thermally broken and provided practically no insulation value, acting as a cold bridge and a source of condensation.

Architect Peter Warren explained: "Approval was sought from Westminster Council to replace the existing windows with thermally broken, double glazed, steel framed units to improve thermal and air tightness whilst replicating the existing appearance as closely as possible." Steel was chosen to allow the slimmest profile without compromising on the required performance improvements.

Clement manufactured bespoke steel windows and doors from the Jansen Janisol Arte 2 and Jansen Janisol HI ranges for the project. The new windows and doors contributed to the achievement of the project objectives.



Above, the Jansen windows and doors by Clement at Little Portland Street improve thermal and air tightness at the building.

Little Theatre, Gateshead

Believed to be the only playhouse built in Great Britain during the Second World War and home to The Progressive Players since 1939, The Little Theatre remains Gateshead's only theatre to this day.

Closed during the pandemic, funding was completed on an extension to the theatre creating a new rehearsal room above the auditorium.

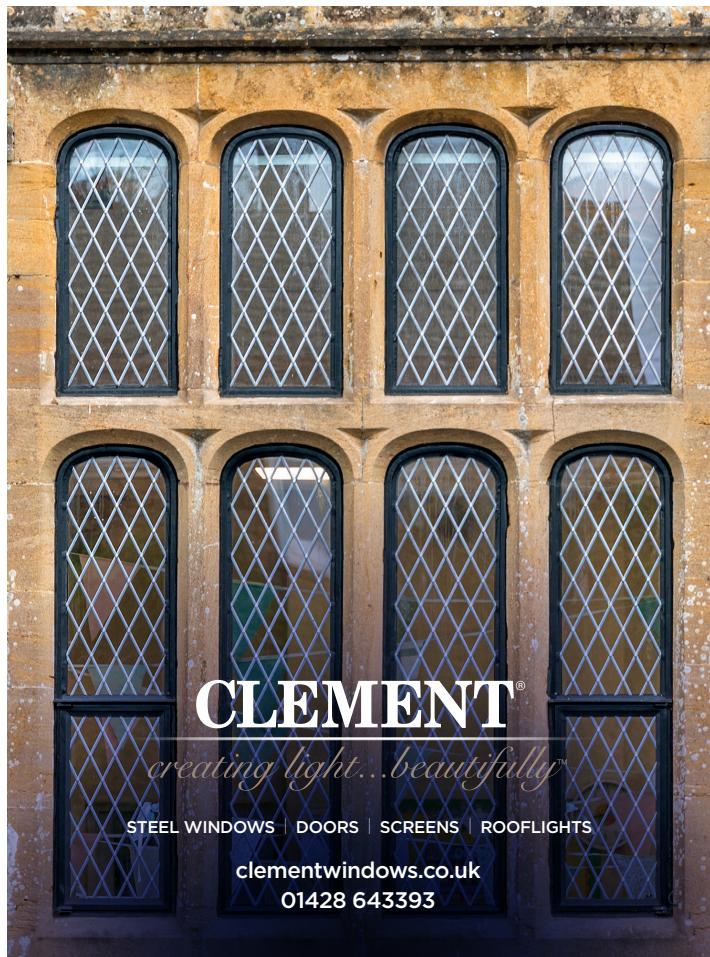
The new rehearsal room has the same dimensions as the main auditorium stage allowing a smooth transfer from rehearsals to final production. It is acoustically isolated allowing rehearsals to proceed even during a performance and was designed to be in keeping with the look and feel of

the original theatre. Fitted with modern lighting and sound systems, the rehearsal room has the latest connectivity and networking capabilities.

New steel windows from the Clement W20 range were chosen for this new space. The new metal frames were polyester powder painted in Jet Black (matt) and great care was taken choosing the glass for the two striking modular bays at the front of the building: SunGuard SuperNeutral 62/34 was chosen for the outer pane, offering very high light transmission while ensuring energy savings through solar protection and thermal insulation, krypton gas was used for the cavity and 4mm of toughened Planibel Grey was used for the inner pane.



Above, Clement W20 bespoke steel windows at Gateshead's Little Theatre with advanced glass and insulation for great energy savings and better security



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Private Residence, West Sussex

This country office in West Sussex is one of Architectural Designer Pauline Sutton's latest developments. The brief was to convert a residential outbuilding to provide both a home office and an art studio, all with minimal impact on the historic integrity of the 18th century building.

After carefully repairing the oak timbers in the roof, new felt, battens, insulation and re-used handmade clay tiles were added. Two Clement 0 rooflights were fitted and dressed with bespoke lead work. The spaces were completed with two new oak doors, the stripping back of some old brickwork, lime mortar repairs and new electrics.

As the rooflights were slightly out of reach, brass pole winders were fitted and a winding crank is used to open and close the rooflights.

Clement Conservation Rooflights have achieved a British Fenestration Rating Council (BFRC) Window Energy Rating of A+. This is the highest category within the BFRC's rating system, indicating that the product is highly insulated, significantly reducing heat loss and leading to lower energy bills.



Above, Clement Conservation Rooflights have been awarded an A+ BFRC Window Energy Rating

Clement Windows Group manufactures and installs an innovative range of steel windows, doors and screens for both private residences and commercial projects. The company also supplies conservation rooflights, which are available from stock or made bespoke to individual requirements, in either a tile or a slate profile.

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