

## SPECIFIERS WAKE UP TO UNITISED CLADDING SOLUTIONS

To the layman, a fully-glazed office building with its coat of glittering aluminium and glass is the epitome of modern building design. But in the world of curtain walling, as with every industry, some systems are more cutting-edge than others.

The traditional method to curtain walling – the so-called ‘stick’ system in which individual panel components are assembled and installed on site – can produce building envelopes that are as technically advanced as they are visually striking.

But UK specifiers and designers are increasingly looking to off-site production to keep ahead of changing Health and Safety and quality criteria.

The UK cladding market is well adapted to the traditional stick system. This is designed by the manufacturer which supplies the extruded profiles and ancillary products to its client, the specialist curtain walling contractor. The client then uses these components to manufacture the elements which create the facade framing according to the design.



Pre-manufactured or ‘unitised’ curtain walling systems effectively take the construction off site. Instead of delivering stock lengths of extruded profile, the company supplies its client with fully assembled glazed panels.

Such is the growing demand for unitised curtain walling systems that leading architectural aluminium systems supplier Kawneer, a global player in curtain walling and part of the multi-billion dollar Alcoa group, has set up a new division in the UK to address it.

Based in Birmingham, the new UK office of Kawneer Global Special Projects (KGSP) is targeting curtain walling contracts where the benefits of unitised production will bring significant advantages over the traditional stick systems.



In terms of speed and efficiency, the benefits of unitised systems can be enormous. Mark Wainwright, Kawneer's special projects manager, explained: "A stick system gets to site quicker – typically within 16 to 20 weeks of the order being placed – whereas a unitised system will take 30 to 36 weeks".



Once on site however, it is a different story.

"A stick system can be installed at a rate of around 50m<sup>2</sup> a week but a unitised system can be installed at up to 75m<sup>2</sup> to 150m<sup>2</sup> a day, depending on the complexity of the application," said Mr Wainwright.

This massive acceleration in installation time more than compensates for the extra time it takes to deliver the system to site. Furthermore, in an integrated construction team where key sub-contract packages are let very early in the design stages, off-site production can easily be scheduled to allow the curtain walling to be delivered promptly on the fastest of fast-track programmes.

The efficiency gains achievable with a unitised system are enhanced by better quality control. Carrying out design, engineering, manufacture, assembly and glazing within its own off-site manufacturing facility gives the manufacturer unprecedented control over the production process and minimises the risk of defects appearing further along the supply chain.

Clients of KGSP estimate the off site process is four to five times quicker than traditional stick systems, taking into account assembly, glazing and installation.



Although unitised curtain walling is hardly new (Kawneer in North America has supplied unitised systems across the world for at least the past two decades) in the UK it is a concept whose time has come.

The so-called “Rethinking Construction” movement, inspired by a critical report published by former Jaguar and BAA chairman Sir John Egan in 1998, encourages the greater use of off-site manufacture and just-in-time delivery as a way of improving productivity and reducing construction defects.

At the same time, industry-led initiatives to cut the number of construction deaths and injuries have also championed off-site manufacture on the basis that it greatly reduces hazardous site work and the dependence on site-based labour. Unitised also takes away the need for scaffolding which has the advantage of a safe working environment and significant cost benefits.

Kawneer set up the KGSP UK office in December 2006. “The time is now right to establish this group in the UK,” said Mr Wainwright.

Over the past five or so years, milestone projects including a new London headquarters for data specialist Global Switch, the St George’s Quay development in Dublin and Manchester’s Lowry Hotel, have showcased the company’s ability to provide flexible unitised curtain walling to the UK and Irish markets.

But the most recent project, also in the Irish Republic, has gone even further in demonstrating the capabilities of unitised systems. Kawneer has recently completed the supply of 660m<sup>2</sup> of unitised four-sided structural silicone-glazed panels to a new 12-storey Sheraton Hotel, part of the 500 million Euro town centre redevelopment of the Irish town of Athlone.



Whereas most unitised curtain walling systems are based on bespoke profile designs produced specifically for the project in question, the Athlone project uses Kawneer’s AA@201 unitised system, a standard system.

The new hotel is linked to a shopping mall and has two elevations clad from the second storey upwards with AA@201 panels which were designed, manufactured and supplied by Kawneer to a Dublin-based curtain walling sub-contractor in ‘knock-down’ unitised format.



This is in effect a “semi-bespoke” system in which a standard profile is adapted to meet specific design requirements. What makes this so remarkable is that these requirements include a genuinely curved (as opposed to faceted) corner detail and staggered panels which require the use of half-panels at alternate storeys.

“On this project, the really big advantage is that we were able to completely dispense with external scaffolding,” said Mr Wainwright. Poor site access and Health and Safety concerns were two reasons for not using scaffolding. Cost was, of course, another.

“Most of what we do is still bespoke but on this project there was not one custom extrusion. This was completed with a standard system,” said Mr Wainwright.

Completed panels were loaded onto stillages which were delivered to site and lifted onto the hotel’s roof. The site tower crane was then used to lift panels into place from above. All installation staff worked in safety from inside the building.

The sub-contractor was able to install 12 units equating to 36m<sup>2</sup> per day and installation was completed in around 25 working days. A traditional stick system would require more time, more staff and more access equipment to install. And the net cost would be commensurately higher, points out Mr Wainwright.

This is the first example in the British Isles of a semi-bespoke application of the AA®201 standard unitised system. But it will not be the last, said Mr Wainwright.

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