



New station is just the ticket



Over 1,000 square metres of convex and concave smooth curved Kalzip aluminium standing seam roof sheets have been installed on the impressive new Pudsey Bus Station to provide the market town with a striking new centrepiece.

Convex taper-curved to a 10 metre radii, the Kalzip sheets form full

semicircles on-plan at both ends of the roof - and with Metro (the West Yorkshire Passenger Transport Executive), keen to have an aesthetically pleasing underside to the bus station's canopy, the soffits were ingeniously created by using a similar combination of downward facing concave curved Kalzip sheets.

The roof canopy is neatly finished with tightly curved aluminium bull-nosed fascias polyester powder coated to RAL 9006 and an 80mm thick layer of Kalzip Insulation 23 glass quilt sandwiched between the Kalzip soffit and top sheets for rain-sound reduction. Produced using a unique manufacturing process, the 'true' curved fascias were designed to be invisibly fixed using a system of bonded butt straps which create a beautifully seamless finish to the roof's eaves.

As well as winning the 'Best Kalzip project under 1,500 square metres' and the 'Best use of fabrications' awards at the recent Teamkal Awards ceremony, roofing contractor KGM Roofing has also won the Roofing Awards 2011 'Best Roof Sheeting' category for Pudsey Bus Station.

Funded jointly by Metro and Leeds City Council, the £2.5m Pudsey Bus Station boasts an enclosed waiting area with comfortable seating, improved lighting overall, real-time information screens and level boarding to buses for the convenience of passengers.

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Olympic venues on the finish

Euroclad has manufactured both the rainscreen cladding for the new Olympic Stadium and the entire roof for the enormous International Broadcast Centre (IBC) at the Olympic Park development in east London, both buildings which have been completed on time.

The London 2012 Games are the catalyst for transforming 2.5 square kilometres of land into a fully functional, exceptional Olympic Park. What was once industrial, contaminated land has been rapidly transformed over the past three years.

Euroclad manufactured around 4,500 square metres of LINEAR 2 rainscreen facades in aluminium composite material (ACM) for the Olympic stadium. The size of panels and the type of installation presented considerable technical challenges and the solutions proposed by Euroclad formed part of the successful bid by specialist contractor Prater. The LINEAR 2 system consists of vertical hook-on panels fixed at a 40° incline, which results in the panels being closer to the steelwork at the bottom than at the top. This required the construction of a full-size test rig at Euroclad's facilities to trial the handling, transport and fixing of the system. The panel lengths of 7.6 metres were longer than any that have ever been produced



using ACM; posing significant challenges to ACM manufacturer Mitsubishi, which had to produce 7.8m long sheets; the longest ever made.

The 80,000 seat stadium is costing £496 million to construct and is being designed and constructed by 'Team Stadium' consisting of Populous, Sir Robert McAlpine and Burro Happold, with landscape designer HED and planning consultant Savills Hephher Dixon

The roof of the International Broadcast Centre (inset) posed a different set of challenges. With a roof area of 27,000 square metres and a requirement to manufacture 77 metre continuous length sheets

directly onto the roof there were few places for roofing contractor Hathaway to turn. Euroclad offered the perfect solution with its secret fix roofing system which was manufactured on-site in continuous lengths. A fully tested lifting rig and remote control manufacture meant that sheets could be roll-formed directly onto the roof saving time and making construction of the roof much more efficient.

The 275 metre long International Broadcast Centre building will form part of the main media complex – a 24 hour media hub which also includes the main press centre – while the complex will cater for over 20,000 broadcasters, photographers and print journalists.



Ash & Lacy is top of the class



Metal decking supplied by Ash & Lacy has been used in the construction of Tuke School, a purpose-built secondary school for children with profound and complex learning needs. All elements of the school in Peckham, south London from the single-storey design to the external cladding and materials used are tactile and chosen to assist students and improve their experience at the school.

In total, 4000 square metres of metal deck was supplied by Ash & Lacy, of which 2400 square metres was used under the flat roof and the remaining 1600 square metres was used under the standing seam element.

Tuke School features a green roof – where Ash & Lacy has a particular expertise having supplied the roof for the award-winning Adnams Distribution Centre in Southwold. Ash & Lacy has developed a grade of AshZip specifically engineered for the purpose of supporting sedum roofs and the teaming of Ash & Lacy's AshZip standing seam together with the green roof technology has allowed the school to remain true to its sustainability objectives. In addition to the green roof the building also features a ground-source heat pump, an earth tube and a sustainable drainage system.

Midair manufacturing

Kalzip has introduced an on-site production facility which uses a portable roll-former suspended from a crane to manufacture aluminium standing seam sheets where they are wanted - up on the roof. This creatively engineered midair manufacturing solution is fast, efficient, extremely safe and very versatile as the roll-former can be quickly repositioned to produce long sheets of Kalzip anywhere around the building or site.

The new midair manufacturing facility is not attached to the building in any way - the roll-former is mounted on a specially designed carrying cradle which is suspended from a tower



or crawler crane. Powered by an integral generator, this self-sufficient production unit is 'stabilised' in its midair manufacturing position (about a metre away from the roof's eaves) by virtue of Tirfor winch-tensioned cables which run from its underside to large anchor weights on the ground below.

Kalzip employs the highest standards of safety at all times and this is exemplified by the fact that the roll-former unit's positioning in midair and all of the roof sheet production is managed and remotely controlled by a highly experienced operator safely positioned on the roof. There is also a large, clearly-marked 'safety exclusion zone' beneath the roll-former which comes into operation whenever the machine is airborne and replenishing the coil is done swiftly and easily by lowering the cradle down to ground level.

Another safety factor is that roof level sheet handling activity is significantly reduced with midair manufacturing as it's the system that's moved to where the sheets are needed. On-site roll-forming is a particularly convenient and cost-effective method of manufacturing long sheets - and most appropriate where site access is restricted. Kalzip can be produced in continuous sheet lengths in excess of 150 metres



which virtually eliminates the need for end-lap joints and, with aluminium being much lighter than steel, labour requirements are further reduced.

On-site manufacturing is also environmentally beneficial as up to 5,000 square metres of coil can be delivered on a single trailer, which reduces CO2 emissions as well as saving transport costs. Administrative and organisational costs inevitably associated with the movement of very long loads by road are also eliminated and so perhaps it's no real surprise that demand for the on-site roll-forming of Kalzip is steadily increasing.

CA Group does the double

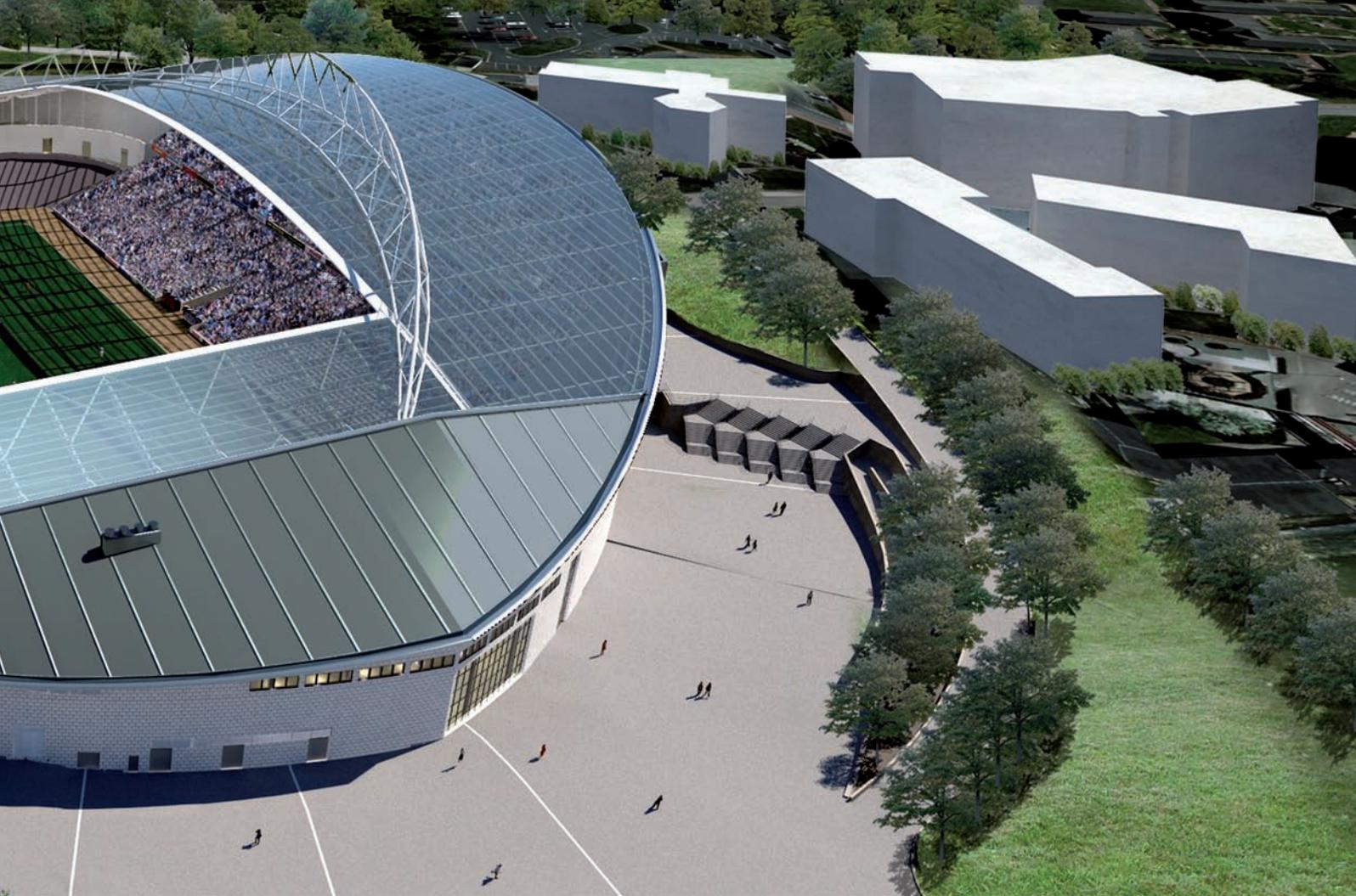


It was a double triumph for CA Building Products whose roofing and cladding products were specified in two of the award-winning projects in this year's Structural Steel Design Awards.

The award-winning Marks & Spencer distribution warehouse on the Prologis Park, Bradford is believed to be one of the largest ever warehouses built in the United Kingdom. The judges commented that the project exterior conceals the sophistication of the engineering design, fabrication and erection for economy and speed of construction. One of the main

challenges was the shed's size; the project involved a roof size of over 95,000 square metres with a radius of 1.5km from eaves to eaves and a pitch of 1.5 degrees. This presented CA Roofing Services with the challenge of fitting the largest single roof sheet that it has ever produced; a record breaking 178 metres long.

One of the key requirements for Prologis and Marks & Spencer was that the new distribution centre had to be sustainable and carbon neutral. To achieve this, CA Group supplied the Twin-Therm® roof and wall



systems which were manufactured using Colorcoat® pre-finished steel by Tata Steel. The use of Colorcoat HPS200 Ultra® and Colorcoat Prisma® as part of the Confidex Sustain® assessed Twin-Therm® systems ensured that Marks & Spencer had a CarbonNeutral building envelope. This guarantees that all of the unavoidable carbon emissions created throughout the entire life of the system, cradle to cradle, are offset by investing in environmental projects worldwide.

On the South Downs, the new Amex Community Stadium for Brighton and Hove Albion Football Club also took top honours in this year's awards. The state of the art £93 million project has been designed specifically to promote as much natural light as possible for the players. The translucent roof panels, supplied by Brett Martin, have been installed in the area above the main stand; the sky blue panels are combined with a reflective silver wall cladding which further enhances the natural light.

The stadium roof features CA Group's River-Therm® secret fix roof system with its unique drainage channel,

critical to the stadium design, and uses Colorcoat HPS200 Ultra® by Tata Steel in Merlin Grey which is guaranteed for up to 40 years. Colorcoat HPS200 Ultra® has an optimised Galvalloy® metallic coating for corrosion resistance and cut edge protection and is made exclusively in the United Kingdom.

Brian Watson, group development director of CA Group commented "We are delighted to have played our part in two of this year's winning projects; CA Group's ability to provide fully integrated solutions to the complete building envelope has been a key factor to our success in securing contracts with major clients".

The judges of the Structural Steel Design Awards selected 18 projects for this year's shortlist, spread across the United Kingdom, the Republic of Ireland and Holland, covering a wide range of structural types, demonstrating once again steelwork's adaptability and economy. Projects ranged from high quality commercial offices, stadia and other sports facilities to interesting bridges, a distribution centre, a waste-to-energy plant and structural sculptures.

New look for historic dock

A previously derelict building in Liverpool's historic Huskisson Dock has been given a new lease of life with a complete refurbishment of the external building envelope. Situated near the mouth of the River Mersey, Liverpool's historic Huskisson Dock dates back to 1852. Originally dealing with timber, it gradually developed as a grain trading centre and also provided berthing facilities for passenger ships on North American routes.

Huskisson Dock was largely destroyed in World War Two and underwent extensive rebuilding after the war. In 1960 a quarter of a mile long grain store was constructed, running along almost the entire length of the dock. Over the years the building had fallen into a state of disrepair and the owners Peel Ports decided it was time for a refurbishment programme.

The West Huskisson Grain Store has been fully restored and transformed both in terms of appearance and weather protection thanks to the cladding system supplied by Panels and Profiles, part of the Tata Steel group.

The Grain Store's marine location and its exposure to high winds and

salt water dictated that the new external envelope materials needed to be of the highest quality and performance. Panels and Profiles' R32 roof and C32 wall profiles in Colorcoat HPS200 Ultra[®] were specified for the refurbishment. Backed by a 30 year coastal Confidex[®] guarantee and available in 40 standard colours, Colorcoat HPS200 Ultra[®] pre-finished steel combines outstanding performance with unrivalled reliability and impressive sustainability credentials. It is the ideal option for a building in a very exposed location and aggressive marine environment.





A total of 24,000 square metres of profile in Colorcoat HPS Ultra® was specified and consisted of the 0.9mm thick R32 roof profile and the 0.7mm thick C32 wall profile. The colour choice was Merlin Grey for the roof and the walls and a contrasting Black finish was chosen for associated trims and flashings and above the service doors.

The new look Huskisson Grain Store is now fully modernised and back in use, ready to play its part in the growth of the Liverpool Port business.

New Rainscreens Group

Thanks to the development of a wide range of stylish and natural finishes, rainscreen facades are becoming increasingly popular both for their design and for their practicality and with the latest advances in rainscreen technology these systems have become more affordable and are no longer confined to high-end developments. To ensure that architects and designers get the most out of the specification of these innovative systems, MCRMA has created the Rainscreen Group.

The group, formed from companies within MCRMA membership, includes the principal companies who supply metal based systems and component parts used within the fabrication and construction of rainscreen cladding systems. Members of the group have been involved in the development of rainscreen systems over many years and have an extensive knowledge of their use and application on all types of buildings. In addition, the Rainscreen Group provides a technical focus for specifiers who wish to use these highly aesthetic systems on prestigious new build developments or refurbishment projects.

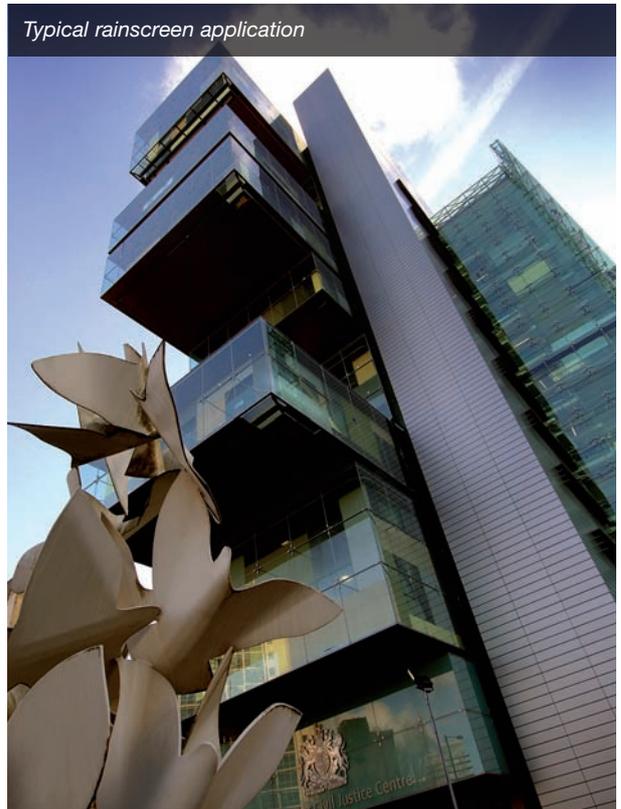
Consultants partnership

As part of its continuing drive to raise standards and ensure compliance with Building Regulations, MCRMA has established an Independent Consultants Group. The Group will provide advice on the requirements of the Part L2 Building Regulations, guidance at the design stage and monitor the on-site assembly and construction of quality and reliable non-domestic buildings. This Group will provide a focus for clients who wish to be associated with thermally efficient, reliable and sustainable buildings.

The technology used within modern rainscreen systems provides a weather skin which can be attached to an existing wall or new sub-structure and allows the incorporation of insulation systems which comply with the latest energy efficiency standards and building regulations. Rainscreen systems also offer specifiers and building owners the opportunity to explore the use of colour and scale to provide a visually exciting or contrasting façade.

Members of the Rainscreen Group speak with authority on the subject, provide support based on years of knowledge and give reliability in the systems they supply and manufacture.

Typical rainscreen application



The founder members of the group are Barry Jackson Associates, Building Sciences, David Hicks Consultants, H W Roofing and Cladding Services, K F Roofing, Keith Kendal Consultants and Michael Kilbey Associates. Full details of the consultants and their range of services can be found at www.mcrma.co.uk/consultants.htm.

APL against the elements

When the school sports hall roof at Stromness Academy in Mainland, the second largest of the Orkney Islands, needed replacing careful consideration had to be paid to the climate that prevails on the Orkney Islands which is subject to some of the most extreme weather conditions in the United Kingdom.

The roof of the 20 years old sports hall provided no soundproofing and had poor insulation and as a result the sports hall was difficult to teach in during bad weather. It was decided to retrofit the roof of the hall with an Energi™ Roofing System manufactured by Architectural Profiles Limited. Energy Efficiency was the driving objective in the project and the system installed achieved an improvement in insulation U value which, on its own would have made a major reduction in excess of 30% to energy consumption, but was in fact also combined with improvements and upgrades to the venting system and the windows to complete the programme.

For the school, the most noticeable change since we had the over-cladding is the absence of weather noise and the consistency and control over internal conditions and temperatures which means that the facility can be used all year round whatever the weather.

APL Energi™ Roof consists of APL's patented Tritherm spacer/fixing system, the appropriate thickness and specification of insulation material to suit the design requirements and either sheet delivered or on-site rolled standing seam roofing profile.



MCRMA membership

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Ash & Lacy Building Systems Limited
C A Group Limited
Euroclad Limited
Kalzip Limited
Panels & Profiles
SpeedDeck Building Systems Limited
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Independent consultants group

Barry Jackson Associates
Building Sciences Limited
David Hicks Consultants Limited
H W Roofing & Cladding Services Limited
K F Roofing
Keith Kendal Consultants
Michael Kilbey Associates Limited

Selecting the right cladding

The MCRMA's most recent technical paper focuses on the potential consequences of seeking to reduce the effective gauge of a steel sheet used in the manufacture of an external cladding system. The guide examines the critical areas in the specification of external cladding systems, including the importance of the correct nominal thickness and adherence to relevant standards; tolerance specification; safe working load; use of appropriate load span tables and potential impacts on performance and other components in the building system.

It is the clearly stated position of the MCRMA and its members that the best assurance of compliance with the appropriate standards and performance expectation is to source systems and products from reputable manufacturers who can demonstrate the pedigree of the materials used and support design requirements with job specific data.

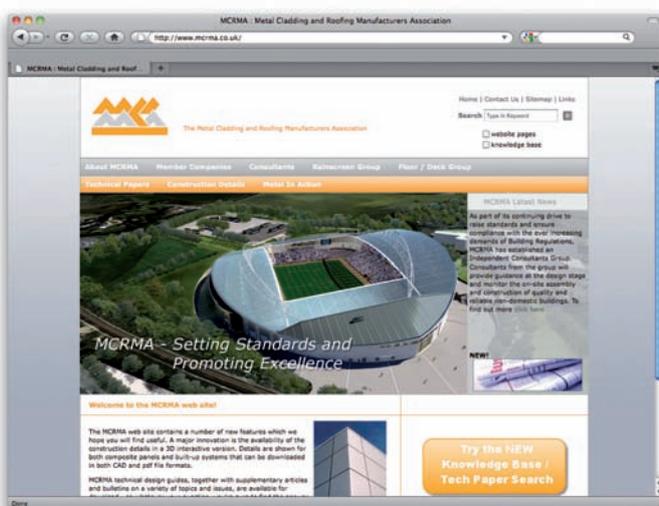


The design guide titled *Appropriate selection of metal thickness for use in walling and roofing applications* can be downloaded from www.mcrma.co.uk

Web wise

Keep in touch with the latest developments in building envelope systems by visiting the MCRMA web site. Use the knowledge base to search all documents on the web site through a simple keyword search and contact MCRMA via the technical hotline. The web site also incorporates a news feed which provides a forum for members to post company updates, in addition to general industry news.

The web site hosts a comprehensive range of 3D interactive constructional diagrams with details for both composite panels and built-up systems that can be downloaded in both CAD and pdf formats. The constructional details are supported by the full range of MCRMA technical design guides – all available from www.mcrma.co.uk.



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