

Inspiring the next generation

Ash & Lacy's AshTech rainscreen cladding system has been used to absolutely stunning effect at the new state of the art Thomas Ferens Academy in Kingston upon Hull.

Built for Hull Esteem Consortium, the organisation appointed by Hull City Council to deliver the city's Building Schools for the Future programme, the £24.5 million complex is a leading-edge centre of excellence, using the most up to date knowledge and technology to inspire young people to learn and achieve. It aims to promote the development of every student as an expert learner.

The new buildings have been designed to be eco-friendly and distinctive and to create a positive and stimulating learning environment. The Academy can accommodate 1250 pupils between the ages of 11 and 16.

Visitors to Thomas Ferens are immediately struck by the tremendously innovative multi-coloured façades, made using Ash & Lacy's AshTech Freedom 1 rainscreen cladding system – a concealed-fix, baffle-jointed cassette rainscreen with a fully adjustable support system, primarily used for horizontal application on walls and for soffits.

Fixed to a lightweight steel frame, AshTech panels in dark grey and three contrasting tones of orange have been installed in occasional varying depths and a complex raking façade effect, to create even further visual interest.

They also feature on the branded fin at the very front of the main entrance.

The attention to detail on this project even extends to the use of AshTech on roof parapet areas.

Approximately 1000 square metres of AshTech was specified in 3mm powder-coated aluminium to a marine-grade specification to cope with the rigours of the local coastal environment, providing a 25-year system warranty.

All this was achieved through the very close collaboration throughout the project between Ash & Lacy, project architect Space Group, main contractor Sewell Group and installation contractor Halcyon Building Systems.

Commenting on the project, Karl Brennan, associate architect for Space Group said: "The service provided by Ash & Lacy was outstanding, in terms of the level of support and product development they invested in the project and achieving such a striking colour scheme.

"AshTech is a fantastic product at the top of the range of aluminium rainscreen cladding systems and the finished facades certainly reflect that status.

"It was a pleasure to work with Ash & Lacy. I think that between us we created a fantastic building and look forward to creating exciting new ones in the future.

<i>Architect:</i>	Space Group
<i>Main contractor:</i>	Sewell Group
<i>Installer:</i>	Halcyon Building Systems



CA Group helps achieve zero energy cost for business park

CA Building Products has contributed in making Armstrong Point the first zero-energy cost business park in the UK and the first business park whose tenants will pay no energy bills.

The energy costs of the park have been eliminated by high levels of energy efficiency and a range of renewable energy technologies with the result that Armstrong Point tenants will save an estimated average of £2 per square foot on their rent because they will have zero energy costs.

Nine high specification units were clad in CA Building Products' Twin-Therm® roof and wall systems, which contributed to the units achieving air-tightness figures of less than the challenging 3m3/hr/m2@50Pa which the developer had set for the main contractor, Tolent Construction. The client will benefit from a full Twin-Therm® 25 year system guarantee, covering the manufacture and design of the roof and wall cladding systems including all of the components supplied

and manufactured by CA Building Products such as profiled sheets, flashings, gutters, fasteners, sealants, insulation, spacers, etc. This project incorporated the full Confidex Guarantee.

Armstrong Developments have confirmed that the units will achieve A+ zero rated Energy Performance Certification along with a BREEAM 'Outstanding' rating for the complete site, the highest accolade available, shared only with a handful of buildings across the UK. This has been achieved by incorporating a number of renewable energy technologies, including a wind turbine, photovoltaic panels, solar water heating and air source heat pumps, together with CA Building Products' SolarWall® Transpired Solar Collector.

The SolarWall® Transpired Solar Collector is an open-loop, active, ambient air-heating solar collector, which harnesses the sun's energy to heat fresh, outdoor air for buildings. With no moving parts, the

SolarWall® collector provides a truly renewable heat source with solar collection efficiencies as high as 80 percent. The system offers one of the fastest returns on investments of any solar technology currently available, delivering proven payback periods as low as three years.

Installed as an additional skin to the building's southerly facing elevations, the SolarWall® collectors are used to pre-heat the delivery air to the main Nordair Niche air handling units which incorporate an intelligent Building Management System (BMS) specifically designed to optimise the energy savings provided by the technology. The SolarWall® system is expected to save 15.5 tonnes of CO2 per annum, whilst also providing extremely high levels of occupancy comfort due to a constant supply of fresh ventilation air. During warmer periods, the SolarWall® technology also helps to keep the building cool by absorbing the summer sun and taking the heat striking the outer cladding away from the building.

New award for architecture students

MCRMA has established the Clifford Dyer Memorial Award to be presented to the individual student judged to have made the best design submission that addresses the topic of the metal building envelope.

The award has been created in association with the School of Architecture at the University of Liverpool in recognition of Clifford Dyer's contribution to the metal cladding industry. The prize will be awarded to the student who demonstrates the best response to the architectural and environmental needs of the building envelope using metal. The prize will be presented at the University's Degree Show in June 2013.

Professor André Brown, Head of the School of Architecture, commented "We are delighted to have been asked to create this Award in association with the MCRMA. The scope of the Award is such that it will allow our students to create imaginative and innovative designs and we look forward to judging the results."

The Clifford Dyer Memorial Award has been established to commemorate the life and work of Clifford Dyer who died last year. Clifford Dyer was the founder and director of MCRMA which brings together the UK's leading roofing and cladding systems providers supplying built up systems, insulated panels, rainscreens, drainage systems and structural deck systems. These companies have delivered to the majority of the industry's most prestigious buildings creating imaginative and innovative building designs that offer cost-effective and sustainable solutions which will benefit future generations.



Metal offers a sustainable future

Specifiers and designers now have to look towards developing sustainable building solutions to achieve government targets in order to significantly reduce the country's carbon emissions.

Metal roofing and cladding systems contribute significantly to the sustainable design concept thanks to their high recycled content, recyclability and energy efficiency. For many years specifiers have chosen metal over other materials for its energy efficiency, low maintenance and durability. However, metal has other attributes namely its striking beauty, clean appearance and versatility; metal cladding systems offer a choice of steel or aluminium substrate which can be linked with a range of colours, shapes, panel sizes, finishes, profiles and vertical and horizontal applications. These attributes have established metal as the material of choice for both new and refurbishment construction.

Steel and aluminium offers a better life cycle return on investment than other materials. Today's metal construction products are protected by highly durable paints and coatings that now ensure a service life in excess of 40 years. Steel construction is efficient and competitive, buildings can be rapidly constructed using steel-based primary and secondary components that are efficiently manufactured off-site and therefore are dimensionally accurate and of known quality.

Steel framing and metal cladding systems provide the scope, in association with other materials, to design buildings with low overall environmental impacts. Steel-based construction systems provide flexible spaces which have the potential to be easily modified and adapted so that the life of the building can be extended by accommodating changes in use, layout and size.

Both steel and aluminium can be reused or recycled repeatedly without losing its qualities as a building material. The recovery infrastructure for metal recycling is highly developed and highly efficient, and has been in place for decades. Current recovery rates from demolition sites in the UK are 99 per cent for structural steelwork and 94 per cent for all metal construction

products – figures that far exceed those for any other construction material.

When metal is specified for a building, it is unlikely to become waste. Steel and aluminium always have a value and is only ever sent to landfill as a last resort. Waste generation is one of the least sustainable aspects of construction. Choosing a metal-framed building is the simplest and most effective way to reduce waste. Even during manufacture and fabrication, any swarf or offcuts are recovered and recycled back through the primary production process.

Metal has much to offer in the areas of green technology and sustainability and MCRMA members are at the forefront of developing innovative solutions, for example green roofing systems that can improve the thermal performance of a building by providing protection against heat loss in the winter and heat gain in the summer. Other examples include metal solar cladding systems that will enable buildings to generate their own electricity or deliver naturally warmed fresh air into the building. Members have developed functional coated steel products based on renewable energy for use in the roofs and walls of buildings.

Image courtesy of Euroclad Ltd



Louvres feature on new hospital building

Louvres from Architectural Profiles Limited (APL) feature on the new Hope Building which is part of Salford Royal NHS Foundation Trust's £200 million redevelopment programme. The building houses a new A&E department and 242 beds, including a 55-bed emergency assessment unit, a 32-bed critical care unit, and new facilities for renal, intestinal failure and urology services. The facility is also home to the new Christie cancer care centre.

A combination of APL's AP70 Live louvre and matching louvre profile feature all around the services on the roof. The building itself provides 36,000 square metres of accommodation and APL has provided 2,800 square metres of the AP70 louvre system for ventilation, screening and aesthetic purposes. APL has now had its AP70 louvre system specified on several major hospital projects, including the new Romford Hospital in Essex.

APL louvre systems are striking in their visual impact, particularly when used in combination with other profiled exterior claddings from the APL portfolio of products. APL products and systems service the entire building envelope encompassing both roofs and walls. APL's StrongBak™ structural framing systems are one of the fastest ways to gain building closure and air seal allowing following trades to come in weeks earlier.

APL AP70 Louvres are part of the APL Energi™ roof and wall construction systems, proven to reduce carbon emissions by up to 45 percent and to provide a 28 percent saving on energy.

The louvres were installed by Red Architectural Limited and the main contractor on the project was Balfour Beatty Construction.

High fastener performance - whatever the weather

In spite of the forecast of a cold and snowy winter with temperatures expected to go as low as -180c, it is imperative that UK airports remain fully operational. At Bristol Airport, to further improve snow clearing operations SFS intec has specified its durable 316 grade, stainless steel fasteners and A+ Pink Strip sealant in the construction of a new salt store and snow base.

The new snow base has been designed and built to ease the hassle and long delays that the increasingly heavy snow fall may bring each year. It will accommodate a fleet of snow clearing vehicles and is situated near the runway for increased speed and efficiency.

Eddie Hampton, associate at architects McAlister Armstrong & Partners, Belfast, said: "We attended a CPD seminar with SFS intec back in August 2011 and at that time discussed with them the challenges and solutions that the snow base construction might bring. They were extremely thorough and highlighted the importance of specifying products suitable for this building environment."

Traditional material grades of A2 stainless steel cannot support longer term warranties of 25 or 40 years, so SFS intec has changed its minimum

standard grade of fasteners to 316. This reduces the risk of corrosion damage due to factors such as salt, for example, and keeps the associated costs down. The 316 grade fasteners installed on the snow base at Bristol Airport are therefore ideally suited to the conditions and will ensure high performance for years to come.

Paul Priestly, technical advisor at SFS intec, said: "As our winters continue to worsen and snowfall increases, the requirement for a dedicated clear-up strategy becomes much more vital, for airports

especially. The snow clearing vehicles will ensure that downtime is reduced and snow is removed from the airfield more efficiently.

"And due to the high resistance of the products we have specified, we have been able to guarantee long term product performance, with a 25 year warrantee. This is imperative given that such harsh surroundings could quickly degrade substandard fasteners."

Made in Yorkshire

EJOT UK's Operations Manager Simon Pearson explains how the demand for new fastening products is driving a return to home based manufacturing.

'Made in Yorkshire' - a popular strapline, lately applied to tea and biscuits through to internet broadband. Look closely at some of the construction industry's most recognised products and you will find the same message endorsing traceability back to Sherburn-in-Elmet, 19 miles south of York and 16 miles east of Leeds. Or, more precisely, the manufacturing and distribution base of EJOT UK.

Being 'local' to our UK customer base is driving a return to home-grown manufacturing. By making significant investment into people and machinery, the effect has been positive on every level - from range and quality through to a re-emergence of engineering skill sets that were virtually extinct just a few years ago.

A call for innovation

The story begins with the machinery that for years was the hub of EJOT UK's manufacturing capability. These manually operated 'vertical feed' injection moulding machines produce fast turnaround metal to plastic components - our original core fastener portfolio of 98 products in 382 colours available in two head styles. When legislative demands on the industry called for change, it is well documented that EJOT UK, allied to our Applitec development centre, has spearheaded a push to provide innovative solutions which, in turn, has created a much wider range of high performance building products.

Many of these innovations are UK-specific, so the logical step was to develop our own manufacturing centre rather than utilise the EJOT Group facilities overseas. Shipping in high end raw materials in bulk is not only more cost-effective than shipping finished components; it also reduces the carbon footprint.

A policy of re-investment

By investing in horizontal injection moulding machines to manufacture new products, we have been able to utilise the same high specification materials being discarded during production of the original core product.

This strategy now accounts for around 25 percent of the raw material used to produce new plastic construction components; anchors used in ETICS systems, washers and sleeves for membrane installation are typical examples.

This 'lights out' manufacturing process runs 24 hours per day with automated quality checks built in. Anything discarded is reused during the next machining cycle - maximising the investment in raw materials... absolutely nothing goes to landfill!

Whilst this invariably signifies a move towards robotics, our human resource policy mirrors manufacturing progression by regenerating labour skills. Everyone employed in EJOT UK's manufacturing area studies progressive manufacturing techniques at NVQ Level.

New apprenticeships for a new era

We have also been quick to identify a gap in engineering skills by pioneering an apprenticeship system which will pass on knowledge from one generation to a new wave of engineers. These apprentices have the opportunity to hone their skills and techniques on traditional machines whilst creating tooling for prototype components designed by Applitec. This has to be good news for the local jobs market, for UK manufacturing and for the people who buy our products.

Brighter buildings in a click

Brett Martin Daylight Systems has proven to be pitch perfect in its supply of more than 16,000 square metres of market-leading Trilite GRP rooflights for the American Express Community Stadium. Home to Brighton & Hove Albion FC, the stadium sports a striking sky-blue translucent roof specifically developed by Brett Martin Daylight Systems and expertly installed by CA Roofing Services.

In order to provide as much natural light as possible for players and fans alike, the roof, unusually, is solely comprised of Brett Martin's Trilite Ultra 36 GRP (glass reinforced polyester) roof sheet. Some 55 tonnes of the rooflight was provided, specifically tinted to architect, KSS Design Group's exacting requirements.

"We worked closely with the architect and roofing contractor to get the sky blue tint exactly right," explains Brett Martin's Commercial Director David Biggs.

"The Seagull's team colours - blue and white - played an important part but equally, we had to ensure it provided a light, bright and comfortable atmosphere internally. Trilite Ultra offers high light transmission levels while minimising distracting shadows so is perfect for sporting venues but it is unusual to tint GRP sheet on this scale. Having extensive experience

of stadia projects, we were able to provide technical advice and varying samples to ensure the aesthetics of the stands, pitch and external appearance all worked together."

The sweeping roof design and extensive use of rooflights was paramount in ensuring the stadium sat comfortably in its rural location, adjacent to a registered Area of Outstanding Natural Beauty. It has already won a Structural Steel Design Award and is receiving much attention nationally for its striking design.

Brett Martin's Trilite Ultra 36 is a BBA certified heavyweight sheet with SAA 1 fire grading. It incorporates an enhanced Superlife UV protective finish to minimise the harmful effects of the sun and ultra-violet radiation. Providing significantly greater safety levels than minimum requirements, it offers a 25 year non fragility classification; an important factor in its specification by roofing contractor CA Roofing Services.

Brett Martin Daylight Systems is the UK and Ireland's leading and largest rooflight manufacturer. It is the only European company to manufacture all the main plastic rooflight materials and was the first to produce GRP rooflights with extended weathering capabilities.

Motor Museum has roof covered



Building products manufacturer Steadmans has supplied the cladding for the new roof at an East Lothian motor museum.

Home to a large collection of vintage cars, commercial vehicles and motor bikes, Myreton Motor Museum now has exhibition space which utilises 270 linear metres of Steadmans' 40mm AS35 insulated steel roof panels, finished in pigeon grey. Steadmans' 'one stop shop' capability also saw it supply olive green, pigeon grey and terracotta flashings, fixings and gutters.

Installer and specifier David Miller, managing director of David Miller Contracts, based in Gifford, East Lothian, commented: "The quality of Steadmans' products is second-to-none. We have used them

for years and, in particular, on all our steel projects. The company's bespoke products are ideal for what we do and the diversity of the Steadmans range means we can order everything we need from a sole supplier. This is hugely beneficial to us, saving us both time and money."

Comprising two outer steel skins with an integral PIR insulation core, Steadmans' AS35 insulated panels are available in a wide range of colours and complement the company's broad variety of pre-engineered construction products, such as gutters, flashings, rooflights and doors. The company also recently announced the introduction of a new 120mm panel – the thickest available – into the AS35 range.

Brett Martin scores one for the blues at Brighton

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Kalzip blazes a trail in Northern Ireland

Kalzip's ingenious FC rainscreen and aluminium standing seam systems were specified for Northern Ireland Fire and Rescue Service's recently rebuilt and very eye-catching Rathfriland Fire Station in Co Down.

The original station was substantially damaged by fire and in response to the client's visionary brief, HLM Architects conceived an impressive new design which allowed for the refurbishment, modernisation and expansion of the fire station. The building now has a larger bay area for the two fire appliances, improved facilities for the firefighters to work, rest and train and increased space for storing a wider range of the most modern specialist fire and rescue equipment.

HLM's lead architect, Steven Lennon said, "It was important to create a striking new appearance for the fire station and to use high quality, robust materials. Kalzip's well proven aluminium standing seam system (PVF² colour coated to RAL 3002 - Carmine Red) was the obvious choice for the roof. We also specified Kalzip for extra weather protection to the fire station's west facing elevation with sweeping smooth curved sheets at the eaves to give the building envelope a strong visual identity.



"We wanted a similarly stylish, high quality material for the fire station's façade and so decided to specify Kalzip's quick-fit, bi-directional FC aluminium rainscreen system (poly coated RAL 9007, grey aluminium) because it's attractive and extremely cost-effective," continued Mr Lennon. "Importantly, in the event of future damage, individual Kalzip FC panels can be easily replaced without affecting adjacent components, thereby negating the potentially time-consuming and costly task of renewing large areas of the façade."

The Kalzip FC's unique bi-directional (top down and bottom up) installation capability is not only innovative, but it is also very quick to install - this can have a really positive impact on the site programme and allow for more flexible project scheduling. When working around onsite obstacles such as scaffold connections, individual panels can be omitted and simply affixed once the scaffolding has been removed. Installed on aligned, vertically fixed modular click rails, a key feature of the FC system is that each lightweight panel is simply hooked at the top and then 'clicked' into place at the bottom - quick, easy and ingenious!

Being a non-penetrative rainscreen system, no rivets or screws are used to install the Kalzip FC panels and there are no visible fixings. Suitable for installation onto all common substructures from existing masonry to lightweight steel framing, this rear-ventilated, metal rainscreen system is equally suitable for internal applications. Supplied with edge folding as standard, panels are available in various cover widths ranging from 250mm - 500mm and in lengths of up to eight metres.

Architect: HLM Architects
Main contractor: Peter O'Hare Ltd
Approved Teamkal contractor: LA Ltd

Potential pitfalls of specification... a consultant's point of view

A simple decision on a typical working day such as substituting one component for another can have far reaching consequences and could cost a company millions of pounds in damages and legal costs should it be the wrong decision.

Specifications are often a chore to prepare and frequently get cut and pasted from a similar job; however similar will not be good enough if the matter goes legal. Tenders are scrutinised forensically, as area drawings and minutes of meetings as well as conversations.

Once the situation gets into the legal system every word, nuance, sketch and comment is analysed in minute detail and is likely to be subjected to detailed cross examination by legal professionals trained to make a case for their clients. A simple, but critical, response to a question from a member of the design team, sales team or subcontractor will be examined in fine detail. A query to a member of the sales team or to a member of the technical department may well get a different response which may prove critical and costly should legal proceedings ensue.

It will never be possible to get everything right; at best you can limit your exposure. The specification of the roofing and cladding works needs to be carefully considered and should involve a manufacturer or, for impartial advice, a roofing and cladding consultant who will also be able to assist in analysing tender specifications, commenting on the sub contractor's drawings and carrying out inspections of work on site.

Specifiers will often spend time selecting the key items of roofing and cladding systems, for example a built up roofing or a composite panel system. However, the many products considered as the 'bits and pieces' can make a huge difference to the success or failure of a project. These include fasteners, sealants, spacers, insulation and flashings all of which have been known to contribute to failures and therefore costs, which can be significant. Every item of the roof or wall from the supporting steelwork to a seal can have a massive impact on the success of or failure of a project. It is vital that all of the components are compatible and able to perform adequately.

Commercial considerations, especially in today's climate, are key factors in the decision making process, sometimes at the expense of the project. How many specifiers are aware of the subtle differences in fasteners, sealants or spacers to be able to select them or do they leave that to others? It may be there is a request to change the whole roofing and cladding system for 'value engineering' reasons. Many of these decisions will not be thoroughly examined and rarely are the cost savings passed back to the client.

Continued...

MCRMA membership

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HS Butyl Ltd
Knauf Insulation Ltd
Latchways plc
Premier Sealant Systems Ltd
Rockwool Ltd
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SFS intec Ltd
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Independent consultants

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Barry Jackson Associates
Building Sciences Ltd
David Hicks Consultants
Keith Kendal Consultants
Michael Kilbey Associates Ltd
Roofconsult Ltd
3RD Dimension Designs

Potential pitfalls of specification... a consultant's point of view

(Continued)

Manufacturing members of the MCRMA spend huge amounts of time and money on research and quality control which shows in the designs and durability of the products that they supply. The majority of problems and failures are not product failures but are caused to some extent by inappropriate design and primarily by site installation. Once the product has left the factory the manufacturer has virtually lost control and the success or otherwise of their reputation lies in the hands of others. Some of these will be 'safe hands' but unfortunately others will not - being controlled by inexperienced design knowledge, expediency, cost and untrained or unsupervised labour who may well be hired on a job by job basis.

Specifiers, be they architects, engineers or design and build contractors, need specialist advice and assistance to help them make the key decisions on grounds other than cost. They need a detailed, tailored specification, a carefully examined subcontractor's tender and considered comments on the subcontractor's working drawings. Fees are under

huge pressures, the number of site visits is limited and specifiers are frequently involved in other aspects of contract administration than to check whether an operative is using the right kind of tool to cut a sheet or tighten a fastener.

These are the areas on which a specialist roofing and cladding consultant can advise. They may know little about foundations, electricity, plumbing or the many other elements of a building; but they are specialists in a narrow field which will be of key importance to the success of the building envelope.

Specifiers may feel that they do not need the advice of an independent consultant before or during the construction process and it is hoped that they will not need them later in a legal process; however they are a vital part of the team who can help get it right in the first place - it costs a lot less then than afterwards.

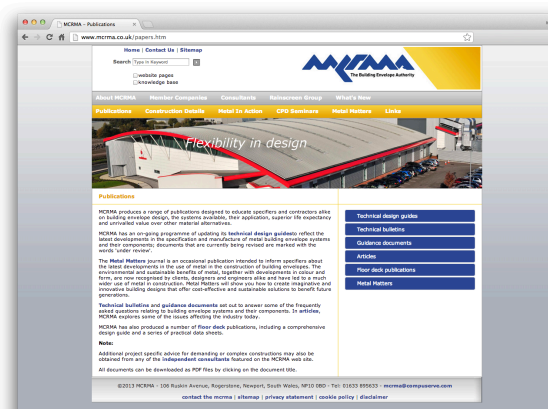
Written by Barry Jackson, an independent consultant member of MCRMA

New look publications page

A number of changes have been made to the web site to make it easier to navigate the range of MCRMA publications. The new look page now features a series of drop down menus which feature technical design guides, technical bulletins, guidance documents, articles and Metal Matters.

In the technical bulletins and guidance documents MCRMA sets out to answer some of the frequently asked questions relating to building envelope systems and their components. In articles, MCRMA explores some of the issues affecting the industry today.

MCRMA produces a range of publications designed to educate specifiers and contractors alike on building envelope design, the systems available, their application, superior life expectancy and unrivalled value over other material alternatives.



Metal Matters is an occasional publication intended to inform specifiers about the latest developments in the use of metal in the construction of building envelopes. The environmental and sustainable benefits of metal, together with developments in colour and form, are now recognised by clients, designers and engineers alike has led to a much wider use of metal in construction. Metal Matters will show you how to create imaginative and innovative building designs that offer cost-effective and sustainable solutions to benefit future generations.