NEWPORT STATION

KALZIP LIMITED

Over 1,000 individual Kalzip aluminium standing seam sheets have been installed on Network Rail's stunningly designed new station at Newport, South Wales. As well as straight, tapered and smooth curved Kalzip sheets, many revolutionary Kalzip XT profile sheets of various shapes and sizes were used for significant parts of the link footbridge and concourse buildings where the aluminium cladding is curved both on plan and in section.

Lead consultant Atkins with Grimshaw were responsible for the futuristic design of Newport's impressive and intriguing new station which was built by Galliford Try Rail for client Network Rail and use by the travel operator, Arriva Trains Wales.

Experienced Teamkal approved contractor, CDW Ltd installed all the Kalzip roofing and cladding sheets together with a multiplicity of aluminium building elements that were specially designed, manufactured and supplied for the redevelopment project by Kalzip's Fabrications Department.

The tremendous versatility of Kalzip XT profiled sheets combined with the company's sophisticated computer modelling software and advanced computer controlled roll-forming technology makes it possible to transform computer generated designs and structural principles into reality. Kalzip XT is capable of achieving a wide range of complex shapes from ellipses, cones, prisms, spherical caps and other convex / concave classical geometries to more free-flowing contemporary designs.

Chris Crombie, Grimshaw's Associate in charge of the project says, "Kalzip XT profiled aluminium sheets were ideal for Newport Station because their flexibility and functionality enabled us to achieve the 3-dimensional contouring and free-flowing building shape we required using an extremely durable, lightweight standing seam system.

"Perhaps the most crucial and important aspect of the project was to build the station with minimal disruption to the operational railway line. Working in conjunction with the engineers, contractors and key suppliers, we determined that the solution lay in producing pre-clad modules on-site so everything above and between the tracks could then be lifted into place and made secure in the very short time necessary to keep track closure to a minimum.

This was achieved by dividing the very long footbridge into two main spans with a separate module constructed for each span and a third module for the staircase which runs down to the central platform.

The modules comprise a structural steel frame clad in Kalzip aluminium standing seam with a continuous band of pneumatic ETFE cushions at high level on the footbridge. The

three fully clad modules were then lifted onto specially pre-prepared bearing pads and secured into position in little more than two days as planned."

Encircled by triangular faceted planar glazing at ground level, the Kalzip clad concourse buildings contain ticketing facilities, retail outlets, lifts and expansive staircases under ETFE roofs to provide optimum daylight - the ETFE cushions follow the spiral form of the building and culminate with a circular oculus cushion at the highest point. The adjacent Kalzip roofed ancillary buildings contain waiting rooms and toilets together with a variety of offices for the rail station and associated staff members.

The amazing array of bespoke fabrications designed, manufactured and supplied by Kalzip included complex curved gutters, down-pipes, fascia and soffit panels, tapered louvres, façades and numerous curved aluminium elements in pre-coated PVF² coil and PPC sheets coated to RAL 9006 and RAL 7015.

Within this requirement for literally thousands of mill finish, stucco embossed, stainless steel and colour coated items, Kalzip was also able to satisfy the architect's request for bright yellow panels coated to RAL 1018 with slotted perforations to encase the lift shaft located in the middle of the link bridge.

Kalzip fabrications worked very closely with CDW, Grimshaw and Atkins which resulted in a number of innovative, cost-saving solutions to many challenging design issues that were faced in the redevelopment of the new station that has understandably become an iconic landmark building for the city of Newport.

www.kalzip.com