Kalzip and Blackdown

The Ultimate Partnership in Sustainable Roofing

SUSTAINABLE ROOFING IS ONE OF THE MOST IN-DEMAND BUILDING SOLUTIONS IN MODERN CONSTRUCTION. AS DEMAND CONTINUES TO INCREASE, UK MARKET LEADERS IN METAL ROOFING SYSTEMS KALZIP AND GREEN ROOF SPECIALISTS BLACKDOWN GREENROOFS, HAVE BEEN WORKING TOGETHER TO PROVIDE HIGH-PERFORMANCE, ENVIRONMENTAL ROOFING SYSTEMS ON PRESTIGE PROJECTS NATIONWIDE FOR OVER SIXTEEN YEARS, USING KALZIP NATURE ROOF.

Installations of Kalzip Nature Roof rarely come more impressive than Transport for London's Bus Depot in West Ham. The state of the art facility is Europe's largest bus garage and the most environmentally sustainable in the UK, exceeding the Mayor of London's target of 20% on-site renewables generation and utilising eco-solutions such as biomass boilers and a 100kW wind turbine.

It was important that the completed building contribute significantly to the overall regeneration programme of the once highly industrial area. The specification of Kalzip's Nature Roof, with the green element supplied by Blackdown, formed an important part of the Sustainable Drainage System (SUDS) and helped to improve the bio-diversity of the former brownfield site as part of an extensive re-landscaping programme. Kalzip and Blackdown designed the roof in order to meet the architectural requirements whilst ensuring outstanding system functionality. The final design boasts a striking four-span Kalzip 65/400 barrel vault Aluminium Standing Seam Roof, incorporating nearly 4000m² of Blackdown's green roof element on the Eastern and Western vaults.

Kalzip Nature Roof is a fully engineered system with non-penetrative 'zip' technology and outstanding durability, allowing it to provide complete weather protection throughout the lifetime of the building with no risk of leaks. Lightweight and corrosion resistant, Kalzip roofing is the perfect platform for green roofs, with every element of the underlying system being fully recyclable or re-usable.

Kalzip roofing and structural decking sheets were also incorporated into the roof design, with perforated horizontal cladding sheets being installed around glazed areas and Kalzip Fabrications, including eaves fascias, installed at both ends of the barrel vaults.

Blackdown's drainage layer was installed within the seams of the vaults, in preparation for the planting element. For applications such as the West Ham Bus Depot, where an instant result is required, sedum matting offers low level planting with an instant coverage of 95%. The sedum matting grown by Blackdown at their Somerset facility, comprises a bio-degradable base layer (the coconut bi-product Coir is being used increasingly for this purpose), followed by 20-25mm of growing medium, or substrate. Sedum cuttings and seed are then spread onto the substrate and left to grow for about a year. When ready for use, the mat is cut into lengths measuring 1x1.5m, which are then easily transported to site.

The plant layer, comprising air-dried vegetative cuttings and primed seed, was installed onto the roof by hand and then fixed into place by spraying a liquid mulch of seeds and tactifier mixed with paper and organic matter, across the roof area. Over the course of time, the cuttings and seeds will establish, to form a strong plant layer. Hydroseeding was applied in the spring to give the system the longest possible gestation period with an impressive 80% coverage achieved in 15 months.

The inclusion of a Kalzip Nature Roof at The Snow Centre has presented a number of environmental benefits for both the immediate and surrounding areas. The visual impact of the facility has been greatly reduced and a valuable habitat now exists on what would have otherwise been a very large, barren roof area.

The Kalzip Nature Roof will also improve the thermal performance of the building by providing protection against heat loss in the winter and heat gain during the summer. The internal environment is enhanced by more constant temperatures and has a better air quality than buildings that are heavily dependent on mechanical heating and cooling systems. The combined effect of the insulation within the underlying Kalzip system, together with the insulating effect of Blackdown's planting substrate and foliage layer, enhances the thermal performance.

In addition, the plants on the roof absorb carbon dioxide and release oxygen to the atmosphere. At the same time, plant leaves take in and 'lock-up' air borne pollutants such as dust and particles from traffic fumes. In this way, the Kalzip Nature Roof can lead to dramatic improvements in air quality around the building. To get the best possible performance from the plants, consideration must be given to site location, local weather conditions and orientation of the roof, combined with planting options, growing medium, nutrient level, depth of system, appropriate drainage layer, mulching and irrigation requirements. Blackdown are the UK's only green roof manufacturer to be built on a foundation of horticultural expertise and as such, have an established track record in the installation of long-term, highly successful living roofs. The success of the roofs at both West Ham Bus Depot and The Snow Centre will be supported by on-going maintenance contracts carried out by Blackdown.

For projects that can afford a longer period of time for the planting to establish, a popular option is Hydroseeding – a process that was used by Blackdown to create one of the largest and most impressive green roofs in the UK at The Snow Centre in Hemel Hempstead.

The Snow Centre is an extensive leisure facility which replaced the old site in a massive two-year project costing £23million. Its meticulous design incorporates an 8700m² Kalzip Nature Roof covering the entire length of the slope.

As part of Kalzip's continued commitment to sustainable roofing, they also offer two photovoltaic solar solutions. AluPlusSolar panels are the first to enable truly roof-integrated renewable power generation using flexible photovoltaic (PV) laminates, while maintaining maximum freedom of creativity for challenging architecture, whilst SolarClad is a non-integrated alternative offering a retro-fit solution for installations on existing structures or new-build developments.

By working together, Blackdown and Kalzip can offer unsurpassed high quality solutions that will perform collectively for the lifetime of the building.

For more information, please visit www.greenroof.co.uk and www.kalzip.com

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