

# Building control go the extra mile – up Snowdon!



To construct a new visitor centre on a level site with good access is a challenge. To construct one at 3,560 feet, on a confined site, in extreme weather conditions, with material being conveyed to site on a five mile long rack and pinion railway built originally in 1896, is almost inconceivable... but a new visitor centre at the top of Mount Snowdon, Snowdonia is now complete

The first phase of the project, which included the erection of the large framed structure and its envelope, was built 60 miles from site, within a large building at the Corus Steel Plant at Deeside.

During this time, regular meetings took place with Flintshire and Gwynedd Council Building Control with regard to design issues and conformity with the regulations.

Many tests were undertaken, including a severe weather test where conditions at the top of the mountain

were replicated to ensure the weather resistance of the structure.

Once all tests and building methods were agreed and completed, the structure was then carefully dismantled and transported 60 miles by road to the foot of the mountain at Llanberis.

During the spring of 2006, work had commenced on the demolition of the original structure at the summit, and also the construction of a Bailey bridge at the compound in Llanberis to facilitate the loading of material onto the mountain railway flatbed carriage.

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Work on the summit commenced in the spring of 2007, with Gwynedd Council Building Control working closely with the contractor, architect and representatives from Snowdonia National Park Authority.

It was evident at this stage that it was going to be immensely difficult to construct in such severe weather conditions, an issue compounded by the transportation of materials – five miles up a mountain on a train travelling at a speed of five miles per hour.

Over the next 18 months, the contractor ensured that bi-weekly meetings took place between building control and all other parties. This was to ensure that any Building Regulation issues, or construction difficulties, were resolved at an early stage to ease construction planning issues or downtime.

The design of the building is unique. Bespoke precast foundation units were used to decrease construction time, and reduce the use of in situ concrete due to the transportation difficulties. Due





to the weather conditions and wind loadings at the summit, the steelwork frame bracing were positioned to be as orthogonal as possible, and the connections providing sufficient stiffness to allow a partially constructed building to stand up under full loading, without the need for temporary support. Stainless steel columns have been placed to support the large glazed viewing area area, providing a dual function of aesthetics and durability.

By autumn 2007, the frame had been erected and the external envelope of the building almost complete. This

was essential due to the deteriorating weather, and the building site being inaccessible.

The site closed down in November 2007 due to heavy snow and strong winds, and did not re-open until mid-March 2008 – snow was still visible on site on the second week in May.

2008 saw the fitting out of the building with mechanical and electrical work. The electricity is being generated via a combined heat and power unit, from which the waste heat will provide heating and hot water to the building. Rainwater will be stored in

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large tanks, and re-used to limit the amount of water which has to be carried up on the mountain railway train. Window shutters have been placed on all windows to reduce light pollution.

Work was completed in October 2008, with the building opening to the public in April 2009. The project has been a total success and particularly the partnership working between the contractor Carillion, Gwynedd and Flintshire Councils, Snowdonia National Park and Ray Hall Architects.

The contractor worked diligently in weather conditions where wind speeds reached gusts of 120mph at times, with freezing rain and snow for many months of the year.

Close co-operation, during design stage and then during the construction process, ensured that no time was lost, and all technical queries were resolved to the satisfaction of all parties.

