

Hydro Ness, Inverness

PROJECT TEAM

Architect: **Leslie Hutt Architect**
Structural engineer: **Hasson Engineering Solutions**
Steelwork contractor: **M.Hasson and Sons Ltd**
Main contractors: **Bradley and Company, Hydro NI**
Client: **Highland Council**



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The inspiration for this interestingly shaped structure is to be found in the motif of the salmon, making its way upstream along the beautiful River Ness. The idea was conceived by local artist, Claire Maclean, and further developed by Inverness architect, Les Hutt. The intention from the outset was that this structure would be aesthetically pleasing whilst also signposting the benefits of renewable energy sourced from a historically and ecologically important river.

End client, The Highland Council, had partnered with the Science Skills Academy (SSA) that delivers science, technology, engineering, and mathematics (STEM) activities to school pupils from across the Highlands of Scotland. The Hydro Ness scheme offers a unique and accessible opportunity for young people to visit and better understand key STEM skills and learning in practice.

The scheme is expected to generate approximately 550,000 kWh of renewable electricity annually and reduce carbon emissions by over 140 tonnes per annum.

The structure is highly visible from one of the main arterial routes into and out of

Inverness City, and tremendous care was taken to deliver a finished structure worthy of such a prominent and beautiful location in the Capital of the Highlands.

The process of transforming the original vision into a structure suitable for fabrication and erection relied on extensive use of parametric modelling, finite element analysis and detailed BIM modelling. The doubly curved structure, which included blended circular and elliptical arcs, presented numerous challenges in terms of achieving a smooth and visually pleasing faceted surface whilst developing details that were practical to fabricate and erect.

The main frame comprises curved UC sections, all of which were curved to differing radii. The framing for the cladding panels is all made from SHS, welded into co-planar triangles. In total there are 384 cladding panels, with each of these being unique. All the conventional structural steelwork used throughout this project was galvanized to ensure longevity. The cladding panels which complete the canopy are all made from stainless steel with a swirl finish to enhance the architectural intention of 'looking like scales of a fish'.

The safe, accurate completion of Hydro Ness illustrates the quality, versatility, and efficiency of structural steel and is a tribute to the skill of the steelwork contractor, working closely with the architect, the engineer, and the main contractor to deliver what it is hoped will become an iconic and renowned symbol of Inverness, worthy of its stunning Highland setting.

Judges' comment

This unusual steel structure houses a small hydroelectric unit producing renewable energy and providing schoolchildren with a practical educational opportunity. Its eye-catching form is of a leaping salmon with stainless steel perforated panels representing fish scales on an arched skeleton. A small but significant project demonstrating the versatility of steel.