

Scottish Fact Of The Week: The Falkirk Wheel

Source: scotsman.com

Published: April 9, 2014



The Falkirk Wheel. Picture: Robert Perry

A marvel of Scottish engineering, the Falkirk Wheel in central Scotland, completed in 2002, is known as the world's first and only rotating boat lift.

Set with the task of making the historic Forth & Clyde and Union Canals of Scotland accessible, the 'Millennium Link', as the project came to be known, offered a corridor of regenerative activity through central Scotland. However, the problem of a 35 metre height difference between the lowly Forth & Clyde canal and the higher Union canal proved a stumbling block. Previously these canals had been connected by a staggered series of 11 locks over a mile, but these locks had since been removed. A solution therefore was the world's first rotating boat lift.

Rotating boat lifts had first been conceptualised in the 19th Century, but it was not until 1994, in Falkirk, that it was taken seriously. Ideas for the Falkirk Wheel included concepts such as see-saws, rolling eggs, and monorails but the final structure was one that included both suitability and design.

The Falkirk Wheel was constructed like one giant Meccano set at Butterley Engineering's Steelworks in Derbyshire, England. 35 lorries then transported the pieces up to Falkirk before putting it all together once again. It required 45,000 bolt holes and 15,000 bolts in order to make it secure, with each bolt being hand tightened.

The wheel works by taking a boat down in the gondola containing the water it came with, whilst the same weight comes up from the opposite side. Due to the use of the water's weight and the balance of each end, it takes as little as 1.5kWh of energy to turn the wheel, which, to put into context, is less energy than it takes to power a washing machine.

Since its construction in 2002, the Falkirk Wheel has become a popular tourist destination with around 400,000 visitors coming to see the structure every year. 10 years after its construction, 4.4 million people have gone through the visitors centre's doors, with 1.3 million taking a boat trip on the wheel.
