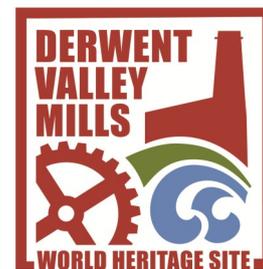


# Belper North Mill

1804

Listed Grade I



*Strutt's North Mill*

Belper North Mill, rebuilt in 1804 by William Strutt on the lower storeys of the earlier mill that had been destroyed by fire in 1803, embodies the knowledge accumulated from all the earlier experiments William Strutt had made into fire-resistant mill structures and from his close participation in Charles Bage's pioneering work at Shrewsbury. William Strutt, 1756-1830, was a mechanic and engineer of the highest distinction. He was the first to tackle systematically the threat of fire in textile mills first by cladding with plaster and then by the use of iron and brick. His work with Charles Bage, who grew up in Darley Abbey and who he may have known from an early age, was seminal in the evolution of fire-proof design.

It was Charles Bage who produced the first iron-framed mill at Shrewsbury in 1796 and then went on to build a further mill in Leeds. William Strutt's Belper Mill embodied much of what Charles Bage had learnt and took further the evolution of these structures from which there emerged, two generations later, the first fully framed building, the Sheerness Boat Store.

The mill is constructed in brick on a stone plinth. The exterior retains the character of the earlier mill and so has the appearance of a first generation Arkwright-type structure. Every aspect of the building was designed to resist combustion. It has a T-shaped plan consisting of a main range of 17 bays and a wing of 6 bays. Housed within the wing is the wheel chamber that occupies the three bays adjacent to the main range.

The wheel pit, which now stands empty, gives some indication of the power once generated to operate this mill. The wheel installed in 1804 was replaced in 1823 at a cost of £1,383; it was constantly repaired as daily use took its toll. In the basement, the former ground floor of the earlier mill, stone piers carry the cast iron columns which support each of the floors above. The massive stone buttresses which were once a feature of this space have been removed.

The floors are composed of brick and tile supported by arches that spring from cast iron beams. The beams are supported by cast iron columns which, in turn, are linked together by wrought iron ties. Clay pots are used to infill the floor arches in the bays above the water wheel so reducing the weight in this area.



*North Mill basement*

Carl Friedrich Schinkel, arguably the greatest German architect of the 19th century and a member of the Prussian Public Works Committee, visited England in 1826. Schinkel described the Strutt works in Belper as "the best in England".

The sheer scale of iron-framed industrial buildings throughout the country impressed him and influenced many of his later designs, notably the Bauakademie, 1831-5 in Berlin. The mill has also attracted more recent attention. Sir Neil Cossons in 1981 described it as "the most beautiful, sophisticated and technically perfect structure of its era".

William Strutt was recognised by his contemporaries as the leading exponent of hot-air heating systems for large buildings and the stove, which was once located in the windowless masonry block occupying the two northern bays of the western end of the North Mill, is of some interest, though it is now recognised that mill buildings of an earlier generation, as for example those at Cromford, had hot-air heating systems before William Strutt's experiments began.

The archaeology of the stove-housing and stoking area in the North Mill have been disturbed in modern times, which complicates the historic evaluation of this area of the structure. A stove which was part of a William Strutt heating system has survived and is now in the National Museum of Science and Industry in London.



*Strutt's North Mill*