

How far does quarry bank mill demonstrate the methods

[History](#)



Under the domestic system, in textile production the entire process took far longer and was much less efficient than under the later industrial system. This was due to a number of reasons: the fact that the work was carried out from the homes and therefore there were flexible working hours, the equipment and processes were far less advanced and efficient; due to the cost and size of better equipment, the workers were clearly not all in one place, so moving textiles between sites was inefficient but necessary and finally there was the textile merchant.

These were the people who bought and sold the textiles to the workers in various states: they bought cotton and sold it to houses, bought it back as cotton thread, sold it back (often to the same house) and bought back cloth etc. These were some of the major reasons why the domestic system was badly flawed. In the industrial revolution the first thing, which was accomplished, was to build factories designed to house new machines, which were far more efficient and faster albeit larger and more expensive. This was why the switch to factory-based systems took place. Richard Arkwright built the first one in Cromford. Style followed later.

These factories were ideal for mass production because everything was under one roof and organised by one body. The industrial system pulled efficiency into the equation. The purpose of this essay is to show how well and to what degree the Quarry Bank Mill site incorporates methods and machines introduced in the industrial revolution, including how the mill was built to house these new ideas, inventions and processes and therefore how well it demonstrates a 18th to 19th century mill. The quarry bank mill was

built between 1783 and 1784 right next to the river Bollin. In its early form it was built on a single, solitary rectangle of land.

The building had many windows; to let much light in, so workers were able to see what they were doing. In this period there was one water wheel driven by a channel, which came off the river Bollin. This drove all of the machinery inside the building. The power reached the machines through spinning shafts hung from the ceilings. These were all managed by a gear system that was connected to both the wheel and all of the shafts. These systems were so heavy that beams had to be placed right through the building to prevent walls from buckling: to tie the walls together. They are visible due to endplates on the outsides of the mill.

There were many machines in the building, all spinning frames at this time. In 1796 a new extension had been built and a bell tower placed in front of old section of mill, completed the previous year. The new bell tower also had many metal bars, which went right through it; in this case they prevented it from coming away from the main building. Inside the new section a new water wheel was housed. This was a bigger wheel (12ft) and had a new drainage trench. This drainage system was also taken advantage of in other ways, i. e. a buttress was constructed over it with privies inside it.

The machinery and power shafts were very much the same as the original stretch of mill. The new section added another 5 27ft bays to the 12 in the original. On the outside it was not the greatest of joining jobs, however. It is simple to see where each section stops due to a crack in the roof and a long mark down the brickwork. The mill in 1818 now incorporated a brand new

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wheel, this time a very large 32ft. Over this was the next part of the mill. It was wider than the other parts of the mill, already built and incorporated a 'mansard' roof, which was a roof, which went up at two angles; to maximise space.

The power transmission and types of machinery remained the same though this period also. After 1818 there were numerous changes. Greg built cleaning, packing and sorting rooms near to the river. He also built a new warehouse for cotton storage. Around the same time as this (1830) a new cottage was built near the warehouse for the senior of the mill to live in. Plus the wooden bridge across the Bollin was replaced with a stone one. When Greg's son took over he immediately decided upon installing looms. (They had increased profit elsewhere.) Between 1836 and 1842 the warehouse was demolished and replaced with a weaving shed.

In 1846 a new cloth warehouse was created behind the section of mill with the 'mansard' roof. This was required because they were producing so much cloth now. In 1865 a proprietary gas system was installed, which was later superseded by the national gas system, from Wilmslow in 1904. In 1810 a 10hp engine was installed behind the first spinning mill, along with a boiler. This was installed to allow work on low river water days. In 1836 a new one was installed alongside: a Boulton and Watt 20hp. They used the same boiler until 1843 when a new one was installed for the new engine.

Between 1853 and 1870 the boilers were increasingly enlarged. Another engine, by Martin and Smethurst was implemented in 1871: a horizontal engine. Then in 1875 the large 40ft chimney was introduced to dispense with

the smoke and steam produced by all the engines. The mill in Styal was small compared to many mills of the period. For example, Cromford. Cromford was the model for which all mills were based. And was much bigger. Quarry Bank Mill did not move on quickly enough, for example it did not immediately take up weaving to create more income, however it did regularly update its machines, and implemented steam power.

The major problem with creating a mill in the countryside is simply the lack of workforce you could find in a city. Due to it being so secluded. In 1790 Greg built the apprentice house, this was how he got out of the workforce problem. Apprentices were children indentured at an early age; they essentially belonged to Greg. They lived at the mill, so there was always a workforce and plus they were children (mainly girls) so they were easier to manage. Greg did actually treat his apprentices well, which he didn't have to, because there were no checkups. Adults were obviously required as well, so he did a similar sort of thing.

He built cottages in Style and engineered a village community, which was good to be part of, the houses were good too, so the workers liked it and wanted to stay. Styal mill was typical of all / most mills of the time due to the fact that the workforce no longer worked from home. This was difficult for them, undoubtedly, but he clearly made it easier for them because he supplied them with nice, clean, strong and new houses. They also had to comply to times now, whereas before they worked their own hours.

Throughout Quarry Bank Mill's life it constantly updated technology and machines.

This means that it stayed in a fairly good position as far as technology was concerned. So in this sense it would be very useful when developing an understanding of factory production methods between the 18th and 19th centuries. At one point, however it did lag behind, and this was with weaving. Style was originally a spinning site, so up until when this was built; it only demonstrated some of the factory production method. The weaving part had to be taken care of elsewhere. Plus it was slow to adopt the new spinning machines. Although once it did, Style demonstrates the factory production methods of the 18th / 19th century very well.