



Mill house first floor plan (spinning flat) "wet" spinning frames

(6). Spinning:- The process of "wet" spinning was a major improvement in the spinning of fine flax yarns & led to a production boom in the early 1830's with a substantial increase in the number of finished spindles produced. The process invented in 1814 first used cold water with the flax being dipped prior to final drawing & twisting into yarn, the water neutralised a gummy substance within the flax called "Pectose". Wet spinning at first was not a great success and was abandoned until improvements were made in 1825, the number of "leas" of flax yarn being produced increased from 20-120 (a lea is a measure of yarn expressed as the length per unit weight, usually the number of leas per pound). The spindles were steeped in water prior to being loaded onto the spinning frame, however care had to be taken as if the spindles were steeped for too long it would destroy the fibres. From 1827 the use of hot water became the preferred method of wet spinning as this caused a chemical reaction to take place, parting the fibres and allowing fine yarn to be spun. The roving on the spindle of the spinning frame continuously passing through a trough of hot water prior to being drawn & twisted into the finished yarn. The traditional process of spinning by hand on a wheel used a basic form of wet spinning, the spinner using their saliva on the fingers while feeding the flax fibres through to the spinning wheel. At Largo Mill the 1851 census lists 43 flax spinners employed with a roughly equal split between males & females both young & old. Some spinners were married couples working alongside one or more of their children.

Stairs:- As there was no sign of any masonry support to form staircases, i.e. The ground floor brick flooring ran through the whole floor area the stairs must have been of timber construction.

Masonry walls:- During the construction of Seatoun Place in 1983 it was discovered that the masonry walls of the mill buildings were founded on bedrock for stability, likewise the foundations of the new houses were built off the same rock using mass concrete fill.

Factory Acts:- From the early 1800's there had been attempts to regulate working hours & conditions. These however were effectively unenforced until the act of 1833 when inspectors were employed. The 1833 act detailed the conditions within which children could be employed; No child under the age of 9 years was to be employed, employers must have an age certificate for children of 9-13 years & they were to work no more than 9 hours per day. Children between 13 & 18 years were to work no more than 12 hours per day, no children were to work at night. Two hours schooling to be provided for each child per day. The regulating of working hours was extended by an Act of 1844, the 1847 Act (known as the 10 hour Act) was demanded by mill workers. The Acts also covered ventilation, sanitation, guarding of machinery, whitewashing of interiors & accident recording. During an inspection of Largo Mill in 1841, J. A. Stuart, inspector found a young person who's certificate of age seemed doubtful they had attained the age of 13, the objection was sustained by the mill owner (lessee David Leslie) and the young person was either dismissed or employed as a child under the age of 13, which by law they were entitled to be.

Fireproof construction:- Although the introduction of gas lighting was a major improvement with regards to the prevention of fires within textile mills, airborne dust & fibres along with the gas lighting still produced a high risk of fire. The first mills to adopt fireproof construction were built in Shropshire & Derbyshire in the 1790's. Cast iron columns supported cast iron beams between which brick "Jack arches" were built, finished on top with flagstones or terracotta tiles. Some mills used iron roof trusses to further minimise the risk of fire spread. Largo Mill as seen in the partly demolished photographs clearly did not adopt fireproof construction with the upper floors and roofs all being of timber construction. This I can only assume was due to the small size of the mill & the additional cost of fireproof construction.

Roofing:- All of the buildings were roofed with clay pan tiles, possibly brought to Largo from the low countries as ballast in ships re-loading with coal or salt. "Pan" is Dutch for tile. The first tile factory in Scotland was set up by William Adam, mason & architect at Linktown of Abbotshall, Kirkcaldy in 1714 which replicated the Dutch tile. The various photographs of the partially demolished mill confirm the roof of the mill house was also "sarked" with softwood boarding on top of the rafters and possibly "pugged" between the tile straps, pugging was a rough plaster coating applied in order to draught proof the roof, due to the attic storey (or flat) being used for working in and the rafters being unlined internally. The roof of the steam engine house however clearly shows no sarking/pugging, this construction would presumably have been adopted in order to ventilate the building and allow the heat produced by the boiler and engine to escape through the open roof structure & tiles which did not lap each other tightly.

Counting house:- The office, where records were kept on flax deliveries, yarn dispatched, shipping chartered, gas & steam coals delivered, employee timekeeping & wages paid out. The Largo counting house is described in 1842 as being "up the brae behind the mill; accessed by a stone stair, with flax warehouse beneath". This was at a later stage converted to a managers house. Having the counting house on the upper storey made it secure. I can remember seeing iron "crucks" for strap hinges on the stonework jambs of one window, presumably to support stout timber shutters, which would be secured from within.