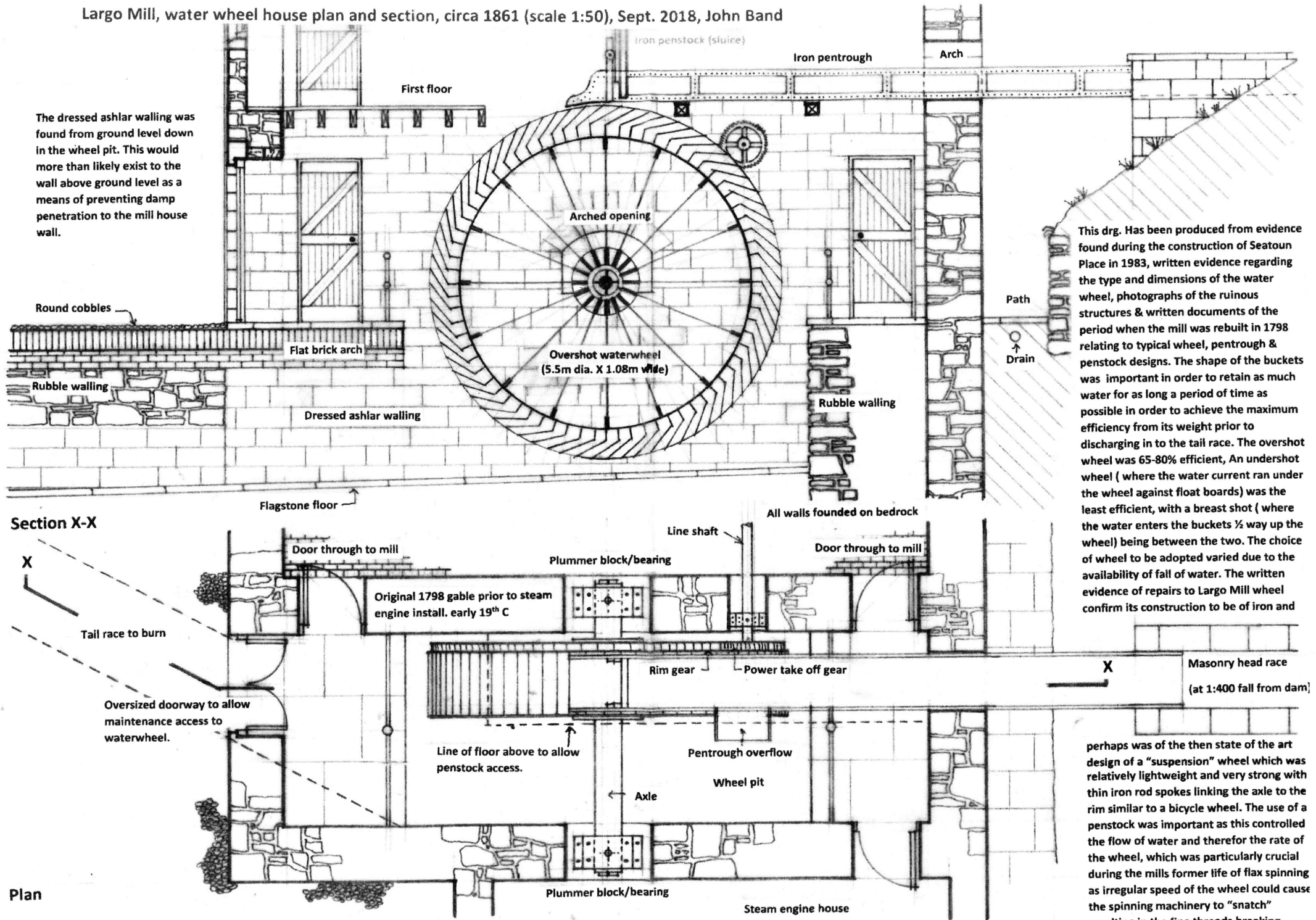


Largo Mill, water wheel house plan and section, circa 1861 (scale 1:50), Sept. 2018, John Band



The dressed ashlar walling was found from ground level down in the wheel pit. This would more than likely exist to the wall above ground level as a means of preventing damp penetration to the mill house wall.

This drg. Has been produced from evidence found during the construction of Seatoun Place in 1983, written evidence regarding the type and dimensions of the water wheel, photographs of the ruinous structures & written documents of the period when the mill was rebuilt in 1798 relating to typical wheel, pentrough & penstock designs. The shape of the buckets was important in order to retain as much water for as long a period of time as possible in order to achieve the maximum efficiency from its weight prior to discharging in to the tail race. The overshoot wheel was 65-80% efficient, An undershot wheel ( where the water current ran under the wheel against float boards) was the least efficient, with a breast shot ( where the water enters the buckets 1/2 way up the wheel) being between the two. The choice of wheel to be adopted varied due to the availability of fall of water. The written evidence of repairs to Largo Mill wheel confirm its construction to be of iron and

perhaps was of the then state of the art design of a "suspension" wheel which was relatively lightweight and very strong with thin iron rod spokes linking the axle to the rim similar to a bicycle wheel. The use of a penstock was important as this controlled the flow of water and therefore the rate of the wheel, which was particularly crucial during the mills former life of flax spinning as irregular speed of the wheel could cause the spinning machinery to "snatch" resulting in the fine threads breaking.

Section X-X

X

Tail race to burn

Oversized doorway to allow maintenance access to waterwheel.

Plan

Flagstone floor

Flat brick arch

Dressed ashlar walling

First floor

Overshot waterwheel (5.5m dia. X 1.08m wide)

Arched opening

iron penstock (sluice)

Iron pentrough

Arch

Rubble walling

Path

Drain

All walls founded on bedrock

Door through to mill

Plummer block/bearing

Line shaft

Door through to mill

Original 1798 gable prior to steam engine install. early 19<sup>th</sup> C

Rim gear

Power take off gear

X

Masonry head race (at 1:400 fall from dam)

Line of floor above to allow penstock access.

Pentrough overflow

Wheel pit

Axle

Plummer block/bearing

Steam engine house