

# Restoration of Dalton Castle using Singleton Birch Natural Hydraulic Lime



## History:

Dalton Castle was built between 1314 and 1360AD as a defensive structure to protect the townsfolk of Dalton and the approaches to Furness Abbey from Scottish border raiders. These structures are called pele towers.

The pele tower is a small fortified keep, built along the English and Scottish Borders, intended as watch towers where signal fires could be lit by moss-troopers to warn of approaching danger. An Act of Parliament in 1455 required each Peel Tower to have an iron basket on its summit and a smoke or fire signal, for day or night use, ready to hand.



Apart from their primary purpose as a warning system, these towers were also the homes of the Lairds and landlords of the area, who dwelt in them with their families and retainers, while their followers lived in simple buildings and huts outside the walls. The towers also provided a refuge so that, when cross-border raiding parties arrived, the whole population of a village could take to the tower and wait for the marauders to depart.

Prior to the building's ownership by The National Trust acquired in 1965, it last served as a courthouse and a prison. The tower is built with a rectangular base of 44ft x 29ft, rises approximately 40ft above ground, and has walls up to 6ft thick.

## Project:

The works to the tower primarily consisted of removal of cement pointing and repointing in lime mortar.

## Before:



The National Trust chose an NHL 2 to provide certain durability to the moderately exposed conditions but provide maximum breathability. Samples of mortar analysed by the Scottish Lime Centre showed a mixture of non-hydraulic to eminently hydraulic, but the Trust felt a NHL 2 was a suitable compromise to give adequate strength with the best possible breathability.

**During:**

As the tower is a schedule monument prior approval of a weathered sample was required. Trial panels done using a Singleton Birch NHL 2 were shown to give the right colour and physical properties. Work started in March and was completed in early August using Singleton Birch NHL 2 throughout. All the cement pointing was removed, any large voids were filled with matching stone bedded on the lime mortar and the entire tower repointed.

**After:**

**Location:** Dalton, Cumbria

**Lime Material:** Singleton Birch NHL 2 Natural Hydraulic Lime

**Lime Material Supplier:** P & S Coverdale

**Contractor:** D H Willis & Sons

**Client:** National Trust, NW Region

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