

What was the burnt lime used for?

Burnt lime from Lindisfarne was probably used primarily in agriculture. The alkali-rich slaked lime was perfect for neutralising acidic soil and so improving fertility. It is also likely that some of the slaked lime was used in building mortar.

Both have many other uses:

Quicklime.

To make lime putty and hence lime mortar.**

To destroy infected bodies/carcasses in burials.**

To create "limelight" in theatres.**

In "self-heating" cans of food.

Slaked lime.

To make clay soils more workable and to neutralise acid soil.**

To make whitewash, mortar and plaster.**

To destroy odours in mass burials.**

To make bleaching powder, a disinfectant.*

To make caustic soda used to make soap.*

To purify sugar.*

In papermaking.*

In water purification.

In effluent gas purification.

* Possibly in such use at the time

** Definitely current at time of operation of these kilns.

What happened to the industry?

By the 1880s the lime trade was in decline and by 1900 seems to have ceased production. Activity had only been sporadic through the final years of the nineteenth century. On the 17th September 1883, the Agnes left the Staithes; the last ship to depart Holy Island laden with lime. This ship, along with others of Nicoll's fleet, did return in the next few years but only, it seems, to collect any materials from the island which were needed back in Dundee. In 1898, the writer Edmund Bogg noted that *'There was formerly a very important lime industry [but it had] gradually dwindled away and the houses formerly occupied by workpeople have now almost become buried in the sands'* (Jermy p.38). The kilns were last fired - by island farmers - in 1900.



Masonry still standing in sand dunes near Nessend quarry

An industrial monument

The lime kilns are a Scheduled Ancient Monument - a designation made in recognition of the national significance of the site. They are one of the largest examples of their kind anywhere in the country and certainly the largest actively-conserved kilns in the area.



Close-up view of Beadnell lime kilns containing lobster pots

The Castle Point kilns are cared for by The National Trust who also maintain the earlier coastal lime kilns at Beadnell.

Other lime kilns in the area can be seen at:

Beadnell.

Seahouses.

Little Mill, near Longhoughton.

Peppermoor, near Longhoughton.

Christon Bank, near Embleton.

Further reading:

Roger C. Jermy *Lindisfarne's Limestone Past: Quarries, tramways and kilns* (1992). A comprehensive study of the lime industry on Holy Island, focusing on those at Castle Point.

Edmund Bogg *A Thousand miles of wandering in the border country* (1898).

William Tomlinson *A comprehensive guide to Northumberland* (1888, reprint 1968).

Amanda Gow and Tom Addyman *Lindisfarne Castle Limeworks, Holy Island* (2009). Desk Based Assessment Feb 2009 (project AA.1783) Addyman Archaeology for The National Trust.

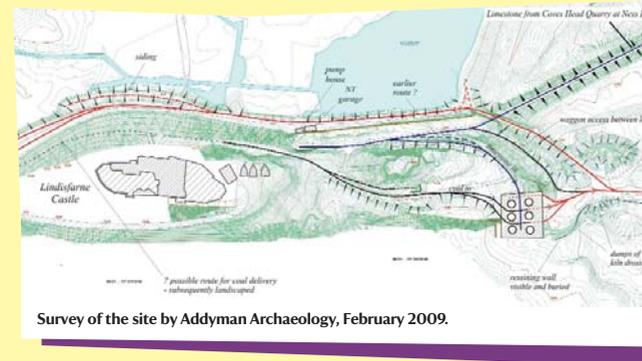
www.brocross.com A website by David Kitching which has an excellent section on lime kilns in England and Wales.

The lime kilns today

Today the lime kilns stand as a monument to the industrial era in a place not usually associated with such activity. In recent times, work has been carried out by the National Trust which has involved parts of the kilns being reinforced and altered. This is most evident around the south western pot, where the brick walls have been removed from above the draw arches and concrete lintels have been installed.

In 2010, the first phase of important improvements to access and interpretation began. The old fences were improved to prevent sheep from gaining access to the kilns, and a floor was laid in the central passageway. A new public access gate was also installed.

Funding for this project came from National Trust Property Raffle sales in the Castle, Gift Aid on Entry money from visitors. Further funding, with thanks, was provided by the Daneway Charitable Trust.



Survey of the site by Addyman Archaeology, February 2009.

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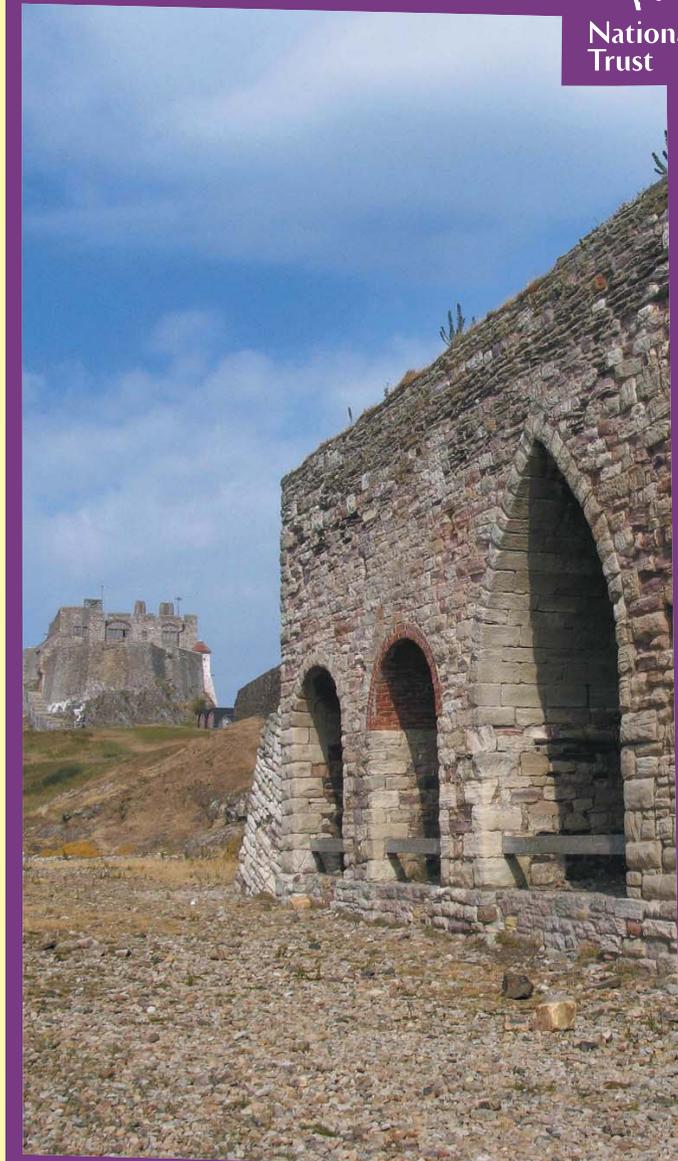
www.nationaltrust.org.uk

Discover

The Castle Point lime kilns



National Trust



Piles of discarded lime near the Castle Point kilns.

Why were the lime kilns built at Castle Point?

The kilns were a replacement for an earlier lime burning operation to the north west of the village on Holy Island. An attempt by the same owner to develop the works at this site had fallen foul of John Strangeways Donaldson Selby, Lord of the Manor of Holy Island and the site at Castle Point was probably chosen as it lay outside his enclosed farmland on the island. Additionally, a route for the tramway from the limestone quarry at Nessend to the kilns could run along the east side of the island outside the farmland. There was room at Castle Point for the works to expand if required and being near the entrance to the harbour would allow a new facility for shipping the burnt lime from the kilns. This was also no doubt a major factor in the choice of site. Being well away from the village may have been another consideration as the fumes from the kilns would trouble few people out at the Point.



Who developed the lime works?

The kilns and associated operations - such as the quarries and wagonways - were developed by William Nicoll and Co. of Dundee, Scotland. Nicoll was born in Scotland in around 1814 and became a Lime Merchant in the late 1830s. He had premises on St Roques Lane and Seagate in Dundee. By the time of his death in 1889, he was the owner of a number of schooners which operated between Dundee and Holy Island. Nicoll set about his work with great enthusiasm, but also insufficient caution; a bank of kilns were built in error on Selby's land and had to be abandoned, at the cost of several hundred pounds. The present structure at Castle Point today replaced these kilns.



When were the kilns built?

Permission for the development of the kilns on the site was given to Nicoll on 24th March 1860. It is not clear how long the building work took, but by the time of the 1861 census there were 35 men employed at the kilns, compared with 8 men in the 1851 census. *The Quarter Sessions Deposited Plans of Holy Island Reclamation of 1865* shows the kilns, associated wagonways and the jetty were all well established by that year.

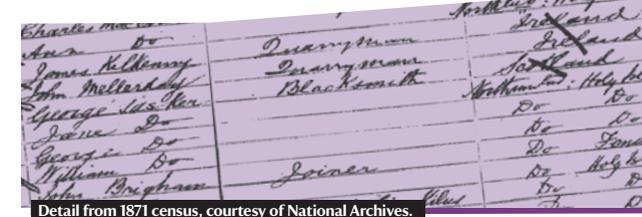


How did the kilns work?

In the kilns, limestone and coal were added in layers at the top of each pot at a ratio of about five to one, to allow for even burning. As quicklime was removed from the drawing arches at the base of the kiln, another layer of stone and coal was added at the top. Once loaded (which took several days) the kilns were lit and the fire would spread upwards. The hottest part of the kiln was the 'burning zone', just above the top of the drawing arches. Air entering the kiln was carefully regulated -

a highly skilled operation. The kilnsman's eye was critical to the success of the venture; too hot or too cold and the desired reaction would not take place. The Limestone (Calcium Carbonate) was heated at between 800-1000 degrees Celsius. This produced quicklime (Calcium Oxide). Adding water to quicklime would result in a violent reaction and produce slaked lime (Calcium Hydroxide). The work was dangerous, and men at the kilns would have often received caustic burns. The dust if inhaled caused lung damage and could in some cases cause blindness.

Who worked at the quarry and the lime works?



By the 1861 census, Nicoll had appointed Robert Dewar as his manager for the Holy Island works, and he in turn was responsible for 33 employees. These included labourers, blacksmiths and an enginesmith, and while most men came from the island, there were a growing number of Irish and Scots being employed. Eventually so many had arrived that a small colony of cottages grew up around the quarry at Nessend.

At the time of the 1871 Census, the industry had begun to decline and this was reflected in the number of employees. 11 men were employed at the quarry and 9 employed at the kilns. John Higgins, reporting to the Crown Commissioners noted (13/9/1870): 'I am of the opinion that W Nicoll has not been successful in his undertaking and that he has... expended more money than he undertook to do.' (Jermy p.36)

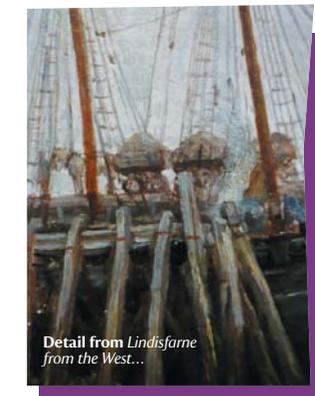
How did the burnt lime get to where it was needed?

The burnt lime was known as "quicklime" (quick = living) as it was known to react violently if it came into contact with water. On one occasion in 1847 a vessel from Berwick - the William - settled on her anchor in Holy Island harbour. Water rushed in through the hole and reached the lime in her hold which caused a fire which was only put out by the incoming tide!



Near the main gate leading into the Castle field are the remains of two wooden jetties which served the lime kilns. A ship could moor between the jetties (or 'staithes') allowing lime to be loaded and coal to be unloaded. Two paintings by Ralph Hedley show tramways running out onto the staithes. Small four-wheeled tubs appear to be designed for tipping. On one, the cargo of coal is being transferred in baskets using a pulley-wheel fixed in the rigging of the ship.

The other painting shows a set of three tubs on the higher staith, with the seaward tub being discharged into the hold of the vessel. Hedley has even captured the dust produced by this operation. The cargo of burnt lime appears to be shipped as bulk or loose cargo rather than in barrels. Slaked lime was used in greater quantities than quicklime, but quicklime is less bulky so most lime was transported unslaked since slaking could be done anywhere.



“There is plenty of limestone of excellent quality on the Island and coal can be readily obtained at a moderate cost...”

J S D Selby 21 December 1839 (Jermy, p.20)