



YORK ARCHAEOLOGICAL TRUST



**BUILDING RECORDING AT
CLEMENTHORPE MALTINGS,
LOWER DARNBOROUGH STREET, YORK**

By Jayne Rimmer

BUILDING SURVEY REPORT

Report Number 2015/31 July 2015



YORK ARCHAEOLOGICAL TRUST



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NON-TECHNICAL SUMMARY

Clementhorpe Maltings is a Grade II Listed Building located south of York city centre on the west bank of the River Ouse. It was constructed in the late 19th century and is a good example of a small, urban maltings. A great deal of the malting equipment and machinery, such as the cistern steep, kiln furnace, double-bucket elevator and dressing machine, is still in situ. The building and its equipment has undergone a number of changes over time, and the H.J.H. King patent kiln furnace dates to the early 20th century. Throughout the 19th century, the west bank of the River Ouse was an industrialised area with a brewery, boat building yard and bone mill operating in the area together with Clementhorpe Dye Works and St Clement's Glass Works. Clementhorpe Maltings is an important survivor of the industrial landscape of modern York and its history and development would make an excellent case study as part of a wider investigation of the malting and brewing industry in York and the surrounding area.

KEY PROJECT INFORMATION

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1 INTRODUCTION

Clementhorpe Maltings is a Grade II Listed Building located south of York city centre on the west bank of the River Ouse between Lower Ebor Street and Lower Darnborough Street (Figure 1). Across the 19th century, Clementhorpe was an industrialised area with Clementhorpe Dye Works, St Clement's Glass Works, a brewery, boat building yard and a bone mill operating in the area. The Maltings was constructed in the late 19th century and is an important survivor of the industrial landscape of modern York. In 1895 it was operated by the Tadcaster Tower Brewery Company Ltd, who owned 280 pubs and off licences across the region (Listed Building Description 2001; Chrystal and Sunderland 2015). It was purchased by them in May 1903 (Swales 1991, 26). Since its closure in the 1950s, it has been used mainly as a storage warehouse. A great deal of the malting equipment and machinery, such as the cistern steep, kiln furnace, double-bucket elevator and dressing machine, is still in situ. Over the course of its working life, the building and malting equipment was adapted and upgraded to meet the evolving demands of the industry.

2 METHODOLOGY

This Level 2 building survey was undertaken in accordance with the guidelines set out in English Heritage (2006), *Understanding Historic Buildings: A guide to good recording practice*. A visual inspection of Clementhorpe Maltings, Lower Ebor Street, York was carried out by York Archaeological Trust on Tuesday 14th and Wednesday 15th July 2015. The Maltings was examined in order to identify the features relevant to its original use and to obtain an overview of the development of the building across time. Discrete areas of the building and all machinery and equipment were allocated reference numbers (A-T) and examined in turn. Written observations were recorded on site on Room Data Sheets, and on plans and elevation drawings of the building.

A total of 252 Digital photographs were taken using a Canon EOS 50D Digital SLR Camera with a Canon Zoom Lens EF 17-40mm. Photographs were taken as RAW (CR2) and JPEG files. A description and the location of each photograph were recorded on a photograph register. Two photographs were taken of each subject; one with a scale (2m, 0.5m or 0.2m, as appropriate) and a chalkboard recording the site name, area, and direction of photograph; and one without. The photographs and photograph register are appended at the back of this report on a Compact Disc. Photograph Location Plans showing the position and direction of photographs can be found in Figures 13-16.

This report was updated subsequent to a meeting at Clementhorpe Maltings on Tuesday 11th August 2015 with Amber Patrick, Nick Beilby and Mark Sissons from the Association for Industrial Archaeology.

The original plans and drawings were produced by Met Geo Environmental Ltd for COG Architecture on behalf of Northminster Ltd.

A hard copy of this building survey report, and an archive-quality digital copy of the report and photographs, has been deposited with City of York Council.

3 LOCATION, GEOLOGY & TOPOGRAPHY

The building is located about 0.8km south of York city centre, 100m west of the River Ouse and 100m south-east of Bishopthorpe Road.

3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1 The development of the Malting Industry

The malting industry across England and Wales has attracted interest from historians and industrial archaeologists alike. A history of the British malting industry from 1830 to 1998 has been written by Christine Clark (1998), which identifies and examines the key milestones in the development of the industry. From the 1880s onwards, developments such as the repeal of the Malt Tax, the influx of cheap foreign grain, and changes in the patterns of beer consumption, were having a profound impact on the way in which the industry operated. Amber Patrick's work on surviving examples of Victorian maltings in England has also shown how buildings, machinery and equipment were adapted and upgraded over time in order to make malt production more efficient and cost effective (Patrick 2006; Patrick 2004). A number of patents were taken out for specialised kiln furnaces. The three main producers of malting kilns were Robert Boby of Bury St Edmunds, Robert Free of Mistley, Essex and H.J.H. King of Nailsworth, Gloucestershire (ibid, 24). Among other benefits, the Malt Tax also led to changes in the design of cistern steepers. Over time, the malting industry also adopted new developments made in other industries, such as changes to power sources and the movement of grain (conveying and elevation). The introduction of conveyors and elevators allowed large quantities of barley and malt to be moved around more quickly than by hand and led to the construction of large, multi-storey maltings. This research suggests that Clementhorpe Maltings was constructed at a time of great change and innovation in the malting industry.

3.2 The Malting Process

The following description is drawn from Clark (1998, 4-10).

The first stage of producing malt involved steeping the barley: the process of immersing the grain in a cistern to absorb moisture and initiate germination. Steeping lasted for a period of between 50 and 60 hours, depending on the weather and the quality of the grain. The steeped barley was then removed from the cistern and couched, a process that was mandatory prior to 1880. The grain was then spread evenly across a floor to allow germination to take place. An even temperature of around 50-58 degrees Fahrenheit was required to ensure germination. This was achieved by varying the depth of grain, modifying the ventilation and regularly turning the grain with wooden shovels. The growing process took between 10 and 15 days, depending on the weather, condition of the barley and the type of malt required. The final stage of production involved drying the germinated grain in the kiln. Kilning lasted between 3 to 5 days; the grain was dried out at around 90-100 degrees Fahrenheit and then the temperature of the kiln was raised as high as 200 degrees Fahrenheit to "cure" the malt. The grain was turned over during the kilning process to ensure that it dried out evenly. The malt was then "dressed" to remove the dried rootlets, which were sold for animal fodder, and the malt was stored in the storage bins for about a month before being dispatched to the brewer.

Maltings were often arranged across a number of floors and comprised two main components: the malthouse and the kiln. Figure 2 shows how a typical early-19th century two-floor malting

was organised and how the barley progressed through the various stages of the malting process.

3.3 Previous Investigations at Clementhorpe Maltings

Clementhorpe Maltings was examined in 1999 by Amber Patrick and the building was listed Grade II in 2001. Patrick's report provides a detailed written description of the Maltings, an analysis of how the malting process worked within the building, and a discussion on how the building was changed and adapted over time. Her analysis ascertained that the Malthouse was probably constructed at the very end of the 19th century, or possibly at the beginning of the 20th century. The lack of evidence for a couch frame suggests that it was constructed after the repeal of the malt tax in 1880. After the repeal of the tax, couching was not mandatory and was often carried out as part of the malting process. Patrick also identified that there had been major structural changes at the north end of the building, possibly due to a collapse. The Listed Building Description for Clementhorpe Maltings can be found in Appendix 1. The Listed Building Description identifies it as a highly-readable example of a small, urban late 19th century maltings, both in terms of its external appearance and its retention of all of the key components of the malting process, namely barley and malt storage, a steep, growing floors and kiln.

The building is shown on the 1891 OS map of York, situated between Lower Darnborough Street to the north and Lower Ebor Street to the south, and identified as "Malthouse" (Figure 3). The Maltings were situated within a rectangular-shaped plot with a passageway to the west. In the yard space to the north of the building was a further two structures including an inverted L-shaped building which abutted the north elevation. Though they no longer exist, these outbuildings are shown on the 1962 OS map and were taken down relatively recently.

The building has undergone a number of changes over time, including the re-building of the north elevation. An Archaeological Watching Brief in 2014 (Hunter-Mann) identified that the side walls at the north end of the building at Ground Floor Level have been thickened internally, and revealed evidence for the original quarry floor tiles below the present concrete floor. This suggested that the northern 8m of the building was altered in the 20th century. A malting kiln tile was also recovered from the trial pits at Ground Floor Level (Plates 45 and 46). This was stamped with Stanley Bros. Ltd of Nuneaton.

The kiln furnace was manufactured by H.J.H. King, and the dressing machine by Nalder and Nalder. This machinery, along with the cistern steep and double bucket elevator, is considered to be particularly rare. H.J.H. King and Co were engineers of Nailsworth, Gloucestershire and operated between 1875 and the 1960s. They made stationary steam engines as well as developing a reputation for manufacturing kilns (Patrick 2006, 24; www.gracesguide.co.uk/H._J._H._King_and_Co). Nalder and Nalder were agricultural manufacturers and constructed threshing machines, malt, barley and other grain dressing and handling machinery as well as elevators and conveyors (http://www.gracesguide.co.uk/Nalder_and_Nalder). They operated from the mid 19th century to the mid 20th century (www.reading.ac.uk/merl/collections/Archives_A_to_Z/merl-TR_NAL.aspx).

5 BUILDING DESCRIPTION

The kiln and malthouse together form a single building, though they have been described here in two separate parts for ease of understanding. In plan, the Kiln is narrower at Ground and 1st Floor Level than it is at 2nd and 3rd Floor Level, though this distinction is not visible on the exterior. The malthouse is semi-sunken at the northern end.

Annotated Floor Plans can be found in Figures 4-7 and Elevations in Figures 9-12. Figure 8 shows an illustrative cross-section through the building. Area A4 was inaccessible and was not inspected as part of this survey. Areas A3 and A5 were inspected from the entranceway only, due to Health and Safety concerns regarding the stability of the floor surfaces.

5.1 Kiln (A)

Exterior

The kiln is positioned at the south end of the building and is three storeys in height. It is constructed out of brick and laid in English Garden Wall Bond with flat terracotta roof tiles. It has a pyramidal roof and a tall, square kiln cowl (Plate 1).

There are a series of original window openings at Ground and 1st Floor Level to the south and west elevations. The window heads take the form of flat segmental arches and several of the cills project out beyond the building line (Plate 2).

At the south-west corner of the building are the remains of a section of wall which would have once projected out from the building in a westerly direction (See Figure 12). It incorporates two sandstone blocks at the top and the bottom, and the remains of iron fixings. It is possible that this once housed a gate at the end of the passageway along the west side of the building.

A change in the character of the brickwork at 3rd Floor Level suggests that the kiln has been heightened or re-built. There are two wall ties present at this level on the south elevation. A further series of wide, shallow windows with concrete lintels are also present on the west and east elevations, and are later additions (Plate 3). Though the large majority of these windows have been blocked with brickwork or boarding, timber shutters are present on the interior. The former positions of three openings are also evident at 2nd Floor Level on the south elevation.

A doorway with a concrete lintel has been inserted at Ground Floor Level on the south elevation, providing direct access to Lower Ebor Street.

Interior

Ground and First Floor Level

The Kiln is open across the Ground and 1st Floor Level (Plate 4). The original window openings are fitted with wooden shutters to the lower part and three horizontal lights above. The later windows are also fitted with wooden shutters. The kiln furnace is situated on a dividing wall between the kiln and the malthouse. The kiln furnace (**C**) is a H.J.H. King patent kiln furnace (Plates 5 and 6). The kiln is very well preserved with the kiln doors, side and top ventilators, furnace, and fire bars all in excellent condition. The fuel would have been anthracite (Patrick, pers comm.).

Access between the malthouse and the kiln is through a doorway at the west end of the dividing wall. Fitted into either side of the door jamb are two low-level timber posts with slots for a grain board, presumably to prevent the grain from spreading from the germination floor onto the kiln furnace floor (Plate 7).

Second Floor Level

As far as it is possible to tell, the kiln is divided into two separate areas at this level; including a narrow corridor to the west.

The corridor is accessed through a cast iron door positioned on the dividing wall between the Kiln and the malthouse (Plate 8). Half way along the corridor is a further cast iron door which appears to provide access into the rest of the kiln. The internal corridor wall appears to have been clad in modern breeze block. To the right of the doorway is a metal holder for a fire extinguisher (Plate 9).

The corridor provided access to the area below the kiln drying floor for inspection and maintenance.

Third Floor Level

The Kiln is open to the roof at this level. The floor comprises a metal wedge wire surface where the green malt was placed during the kilning process (Plate 10). The cowl is positioned at the centre of the pyramidal roof. The fan on the underside of the cowl is opened and closed by means of a pulley system (Plate 11). It is probable that this is a H.J.H. King fan (Patrick, pers comm.).

The drying floor is accessed through a doorway positioned in the dividing wall between the kiln and the malthouse (Plate 12). Fitted into either side of the door jamb are two low-level timber posts with slots for a kilning malt board, presumably to prevent the grain from spreading onto the storage floor of the malthouse when the door was opened during kilning.

A trap in the wire wedge floor allowed the kilned grain to be released back down a chute to the lower levels.

5.2 Malthouse (B)

Exterior

The malthouse is constructed out of brick laid predominantly in English Garden Wall Bond. The gabled roof is aligned at right-angles to Lower Darnborough Street and is laid with flat terracotta roof tiles. The housing for the double-bucket elevator is positioned on the roof between the malthouse and the kiln. It is a later replacement constructed out of timber with weatherboarding and a felt roof.

There are a series of original window openings positioned along the west elevation of the malthouse at Ground, 1st and 2nd Floor Level (Plate 13). Similar to the kiln, the window heads take the form of flat segmental arches, and a number of the cills project out beyond the building line. To the west elevation is a further scheme of later, inserted windows (Plate 14). A series of ventilation holes have been introduced into the building at Ground Floor Level, and at roof height under the eaves, along the east and west elevations. Though some of these

windows have been blocked with brickwork or boarding on the exterior, timber shutters are present on the interior.

The original hoist door (**N**) with hoist hood supported on cast-iron brackets and the remains of a hoist mechanism, is positioned at the north end of the west elevation at 2nd floor level (Plate 15 and 16). Below the hoist door is a metal stay which was possibly used to steady carts or trucks during unloading and loading.

A number of changes have occurred at the northern end of the malthouse (Plate 17). The brickwork to the west end of the north elevation is of a different character to the rest of the malthouse, and is more modern in appearance, suggesting that it has been rebuilt. The brickwork at the north-west corner of the building is ragged from ground to gable-height. There are a number of window openings in this elevation with window heads that take the form of flat segmental arches, and cills that project out beyond the building line. There is a sunken ground-floor doorway at the west end of the north elevation. To the east of the elevation are the remains of a blind end gable of a former building which would have once occupied the yard space at the north of the malthouse. This building was “L” shaped and was identified on the OS map of 1891.

A doorway has been inserted at 1st Floor Level on the west elevation (see Plate 15). It is possible that this entranceway relates to the building’s later uses as a storage warehouse.

Interior

The malthouse is arranged over three floors, with two germination floors at Ground and 1st Floor Level (**F, L**), a boxed storage area at 2rd Floor Level (**Q**), and a further storage area for bagged barley at 3rd Floor Level (**S**).

The germination floors extend across the length of the malthouse. At Ground Floor Level the germination floor is three bays wide with two rows of cast iron columns forming ten bays in length (Plate 18 and Plate 19). At 1st Floor Level the germination floor is divided into nine bays in length. At the north end of the malthouse the cast iron columns were replaced with three sets of H-shaped girders at Ground and 1st Floor Level (Plate 20). A further set of H-shaped girders have been inserted at Ground Floor Level to the south of the bucket elevator. A number of these H-shaped girders are stamped with “British Steel”, which dates them from c. 1948 (Sissons and Beilby, pers comm.). The ground floor surface is modern concrete screed floor. The first floor surface is tiled, though some areas have been replaced with concrete screed. At 2nd and 3rd Floor Level the floor surface is timber boards. Strips of metal have been nailed down over some of the gaps between the boards to prevent the barley from becoming lodged in them (Patrick pers comm. See Plate 38).

Painted onto one of the beams at Ground Floor Level is the mark “W.F.No2H” which probably represents “Working Floor Number 2H” (Plate 43). On the same beam are a series of Baltic Timber marks made by the shippers or importers of timber (Plate 44). At 1st Floor Level is the mark “W.F.No1H” for “Working Floor Number 1H”.

The majority of the window openings to the west elevation are set within wide recesses (Plate 21). The later, inserted window openings to the east elevation do not have recesses (Plate 22). All of the windows are fitted with wooden shutters to the lower part and three horizontal lights above. The shutters are fitted with wooden bolts (or replacement metal bolts in some

instances) to provide security when closed, and iron stays and chains to enable them to be kept open at a number of different angles (Plate 23 and Plate 24).

At 2nd Floor Level a section of floor has been removed at the north end of the malthouse (Plate 25). The staircase from ground to first floor is a later replacement, although it may well mark the position of an original access point between these two floors. The wide timber staircase leading from first to second floor is a later replacement constructed after the section of floor had been removed at 2nd Floor Level. The staircase leading from second to third floor level at the south end of the malthouse is original.

The roof is a Queen Post Roof with raking struts.

6 MACHINERY AND EQUIPMENT

6.1 Steeping Cistern (I) with hatches to underside (E), Water Inlet Pipe (J), Drain stopcock and pipework (D), Wooden Grain Chutes (O, K),

The cast iron steeping cistern is located at 1st Floor Level at the northern end of the building (Plate 26). It is rectangular in shape with a flat bottom, and extends to nearly the whole width of the building. The water inlet pipe for filling the cistern runs along the west wall of the building, starting in the south-west corner of the kiln (presumably where the mains water supply was located) and terminating at the north-east end of the cistern (Plate 27 and Plate 28). The pipe is punctured with holes along the length of the cistern to allow water to be sprinkled down onto the barley (Plate 29). An overspill tank is positioned at the north-west end and is linked to an outlet pipe with a stopcock situated beneath the cistern at Ground Floor Level (Plate 30). The outlet pipe discharges from the exterior of the west elevation (see Figure 12).

The barley was dispensed into the steeping cistern from 3rd Floor Level via a series of wooden grain chutes, which were regulated by wooden paddles (Plate 31 and see Plate 29). Hatches to the underside of the cistern allowed the steeped barley to be deposited directly onto the germinating floor at Ground Floor Level (Plate 32).

6.2 Bucket Elevation and Metal Pipe/Chute Network (G,T)

A double-bucket elevator is situated at the south of the malthouse (Plate 33). It extends from Ground Floor Level upwards through the three floors to the elevator block positioned on the roof. This equipment comprised a continuous chain/belt with attached buckets for conveying the green malt through the floors of the building (Plate 34). The green malt was dispensed into the buckets via access hatches at Ground and 1st Floor Level. It was taken up through the building and deposited directly onto the drying floor of the kiln at 3rd Floor Level via a round metal chute (See Plate 11). A further pipe/chute network allowed the barley to be deposited in the storage area (S) on the 3rd floor (Plate 35). The top section of the Elevator, situated on the Roof of the malthouse, is accessed from a ladder at 3rd Floor Level. A further metal fire extinguisher holder (as observed at 2nd Floor Level (Plate 9)), is located next to this access ladder.

The elevator post-dates the building and is likely to be a later addition; or a replacement of original equipment (Patrick pers comm.). There are no identifiers or maker's marks evident on

the double-bucket elevator. It was latterly powered by electricity, though it was most probably originally powered by oil or gas.

6.3 Pipework (H)

Further pipework was identified at Ground and 1st Floor Level at the south end of the malthouse. The pipework extends upwards to the kiln and would have possibly connected with the trap in the wire wedge floor, enabling the kilned malt to be deposited back down at Ground Floor Level (Plate 36).

6.4 Dressing Machine and Hopper (M,P,R)

A dressing machine is situated in to the northern half of the malthouse at 2nd Floor Level (Plate 37 and Plate 38)). The dressing machine was manufactured by Nalder & Nalder Ltd at the Challow Iron Works in Wantage, Oxfordshire (formerly Berkshire). Dried malt was passed through a dressing machine to remove the rootlets.

The dressing machine is attached to a large hopper suspended over the 3rd Floor by means of a steel pipe (Plate 39). To the north of the hopper is a series of fabric sack fillers or cleaners.

6.5 Storage Bins (Q)

Four large, walk-in storage bins with wooden frames and wooden sliding doors are located at 2nd Floor Level. These could have been used for the storage of barley or malt (Plates 40 and 41). Inside the door frames are grooves for grain boards (Patrick 1999). The storage bins are numbered 2, 3, 4, 5. Storage Bin 1 was removed to accommodate the dressing machine. There is some graffiti to the right of the door of Bin 5 (Plate 42).

The grain was deposited directly into the storage bins from the storage area at 3rd Floor Level via two small trap doors to each bin (see Plate 35).

7 DISCUSSION

In common with other maltings of the period, Clementhorpe Maltings was carefully arranged to enable the malting process to be carried out efficiently (see Figure 8). As far as it is possible to tell, the barley is likely to have arrived to site via Lower Darnborough Street and unloaded from the yard area at the north of the building into the malthouse by means of the hoist door. The barley would probably have been stored at 3rd Floor Level before being deposited directly into the cistern steep via chutes. Once steeped, the barley was dispensed onto the germinating floor at Ground Floor Level via the hatches in the base of the steep, or shovelled out by hand onto the germination floor at 1st Floor Level. Both of these floors would have once been surfaced with quarry tiles.

The double bucket elevator would have transported the grain from the germination floors up to the 3rd Floor Level where it would have been deposited onto the wire wedge drying floor in the kiln. Once the drying process was complete, the malt would have been dropped back down at Ground Floor Level and then elevated back up to be fed into the storage boxes on the 2nd Floor. It is unclear how, or from where, the malt was sent out from the malthouse.

The building and malting equipment has undergone a number of changes over time. The kiln has been heightened and the wire wedge floor is a later addition. The original kiln drying floor

is likely to have been constructed out of perforated ceramic tiles. A number of broken perforated ceramic tiles were identified in the Watching Brief (Hunter-Mann 2014).

The introduction of new H-shaped girders at the north end of the building, along with the rebuilt north elevation, suggests that there were substantial modifications at this end of the building. It is possible that this was the result of a partial collapse (Patrick, 1999).

Good ventilation was crucial to the success of the malting process and it is clear that a number of attempts were made to improve aeration around the building. As originally designed, the malthouse did not have window openings to the east elevation. Over time, additional openings were added to the kiln, and window openings and ventilation holes were added to the malthouse. Given that wooden shutters at the windows are of the same design in both the original and later inserted window openings, they are in themselves likely to be later additions and not original to the building.

The machinery, equipment and power sources appear to have undergone a number of upgrades during the working life of the Maltings. The H.J.H King kiln furnace was probably introduced at the beginning of the 20th century, and the kiln is likely to have been heightened when the furnace was installed. From the 1880s onwards a growing awareness of the role of kilning in determining malt quality led to a number of new and innovative designs in technology (Clark 1998, 8). More advanced kilns featured a bricked-in furnace with a separate heat chamber below the drying floor. The heightening of the kiln at the Clementhorpe site may have been designed with these changes in mind. The double-bucket elevator is also a later addition.

The dressing machine, hopper and sack fillers or cleaners were probably introduced into the building at a later date, as indicated by the removal of Storage Bin 1 to make room for this new equipment. It is possible that, towards the end of the Malting's lifetime, the building was re-fitted with this equipment for the purposes of large-scale grain cleaning and bagging (Patrick 1999; pers comm.).

The history and development of Clementhorpe Maltings would make an excellent case study as part of a wider investigation of the malting and brewing industry in York and the surrounding area. Further research could establish the circumstances of its construction; identify the owners, managers and the day-to-day experiences of the work force; the business history of the site, as well as fine-tuning an understanding of its technological development over the course of the 19th and 20th centuries.

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APPENDIX 1 – LISTED BUILDING DESCRIPTION

CLEMENTHORPE MALTINGS LOWER DARNBOROUGH STREET, YORK

LISTED 4TH DECEMBER 2001

LIST ENTRY NUMBER: 1389599

Maltings. Late C19, with C20 alterations. Red brick with plain tile roofs.

PLAN: Rectangular building aligned north-south with drying kiln at south end, on Lower Ebor Street. Malthouse of 3 storeys, growing floors on ground and first floors, steep at north end of first floor, malt storage bins on second floor, and loft floor for storage of bagged barley. Hoist door at north end of west elevation.

EXTERIOR: South, kiln, front to Lower Ebor Street has inserted central pair of plank doors under concrete lintel, to left a single small window and to right a similar blocked opening, both with brick lintels. Above three openings, those to centre and right have original windows, with wooden shutters to lower part and 3 horizontal lights over. That to left now blocked. All have projecting sills and brick lintels. Wall above has been heightened, with outline of three window openings in brickwork. Pyramidal roof to kiln section topped with tall, square kiln cowl.

West elevation has ragged brickwork to north-west corner. From the left (north) it has a single hoist door on the second floor with hoist hood supported on cast-iron brackets. To right are five small windows, the three to the left with two light casements, the two to the right similar to those in the south elevation, with shutters to the lower part. The first floor has a blocked opening, a modern double door, and three blocked openings aligned with the top-floor windows. The ground floor also has blocked openings aligned with those above. The kiln to the right has blocked openings and a wide, shallow window on the top floor, now boarded over.

East elevation has the kiln to the left. It has a C20 opening to the far left, and a window at ground and middle floor levels, aligned. The malthouse has three irregularly placed windows on both the ground and first floors. All the ground-floor windows to the elevation have shuttered openings below and three small lights above. Those on the first floor are boarded over. On the top floor are grilles.

North elevation is of more modern brickwork. It has small blind gable to left and the remainder is of three storeys. Sunken ground-floor doorway to right and blocked window to left, above two shuttered openings and above again two similar openings both now boarded.

Central elevator block located on roof between kiln and malthouse; weatherboarded with corrugated iron roof.

INTERIOR: Kiln furnace is centrally located against brick wall separating the kiln from the malthouse. Furnace is manufactured by H J H King of Nailsworth, Gloucestershire. Wire wedge drying floor. Brick dividing wall has doorway on west side. Malthouse has two growing floors three bays wide with two rows of cast-iron columns forming nine bays in length. At the north end of the ground floor are three H section girders to each row instead of columns. Stop cock for the steep is located in north-west corner of ground floor. At north end of first floor is rectangular cast-iron steeping cistern, with iron water main brought along length of building

against west wall (partially broken). Top floor is absent between first bay over steep and fourth bay, which now houses dressing machine by Nalder and Nalder. To south are solid wooden malt storage bins with sliding doors facing onto a corridor on west side of building. Loft floor has timber floor and queen post roof with raking struts. Other associated machinery includes a double bucket elevator for moving steeped barley from the growing floors to the kiln.

HISTORY: Clementhorpe Maltings was built in late C19, appearing on the 1892 Ordnance Survey map marked as Malthouse. It is known that in 1895 the maltings was operated by the Tadcaster Tower Brewery Company Ltd, formed in 1882 from the amalgamation of three local breweries. Changes in the external brickwork indicates a heightening of the kiln, probably dating from the early C20 when an H J H King furnace was installed. The replacement of cast-iron columns with H girders on the ground floor of the malthouse indicates a partial floor collapse at an unknown date. The Tadcaster Tower Brewery Company Ltd continued to use the maltings until the late 1950s.

SOURCES: Patrick, A, The Malthouse between Lower Darnborough Street and Lower Ebor Street, York, also referred to as Clementhorpe Maltings (1999, unpublished research report)

REASONS FOR DESIGNATION Clementhorpe Maltings is designated at Grade II for the following principal reasons: * It survives as a highly legible example of a small, urban late C19 maltings, both in external appearance and the retention of all the key components of the process, namely barley and malt storage, steep, growing floors, and kiln * It retains rare machinery relating to the malting process, principally an early C20 H J H King kiln furnace, and a cistern steep, and also related machinery such as a dressing machine by Nalder and Nalder, and a double bucket elevator.

APPENDIX 2 – INDEX TO ARCHIVE

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PLATES



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Plate 2: West Elevation of Kiln (Photograph 245).



Plate 3: East Elevation of Kiln (Photograph 4).



Plate 4: Kiln Ground Floor Level (Photograph 91).



Plate 5: H.J.H. King Kiln Furnace (Photograph 103).



Plate 6: H.J.H. King Kiln Furnace (Photograph 105).



Plate 7: Doorway between Kiln and Malthouse (Photograph 89).



Plate 8: 2nd Floor Level Doorway into the underside of the kiln drying floor (Photograph 195).



Plate 9: Metal Holder to right of Doorway into Kiln, 2nd Floor Level (Photograph 197)



Plate 10: 3rd Floor Level Kiln Drying Floor (Photograph 217).



Plate 11: 3rd Floor Level Kiln Roof (Photograph 216).



Plate 12: 3rd Floor Level Doorway into Kiln (Photograph 214).



Plate 13: West Elevation Malthouse, Window Details (Photograph 230).



Plate 14: East Elevation malthouse, Window Details (Photograph 240).



Plate 15: West Elevation Malthouse, Hoist Door (Photograph 227).



Plate 16: Hoist Door, Detail of Hoist Mechanism (Photograph 229).



Plate 17: North Elevation of Malthouse (Photograph 220).



Plate 18: Germination Floor Ground Floor Level (Photograph 87).



Plate 19: Cast Iron Column, Ground Floor Level (Photograph 72).



Plate 20: H-shaped Girder, Ground Floor Level (Photograph 68).



Plate 21: Windows to West Wall, Ground Floor Level (Photograph 43).



Plate 22: Windows to East Wall, Ground Floor Level (Photograph 21).



Plate 23: Window and Ventilation Hole Detail Ground Floor Level (Photograph 77)



Plate 24: Window Detail 1st Floor Level (Photograph 145).



Plate 25: Removed Section of Floor at 2rd Floor Level (Photograph 125).



Plate 26: Steeping Cistern (Photograph 155).



Plate 27: Water Inlet Pipe, West Elevation of Kiln, Ground Floor Level (Photograph 97).



Plate 28: Continuation of Water Inlet Pipe along West Elevation, 1st Floor Level (Photograph 127).



Plate 29: Water Inlet Pipe above Steeping Cistern, punctured with holes and grain chutes (Photograph 159).



Plate 30: Outlet Pipe and Stopcock for Steeping Cistern Ground Floor Level (Photograph 53).



Plate 31: 3rd Floor Level showing grain holes above Steeping Cistern (Photograph 167).



Plate 32: Hatches to Underside of Steeping Cistern (Photograph 66).



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Plate 34: Double Bucket Elevator mechanism and inspection chamber, Ground Floor Level (Photograph 83).



Plate 35: 3rd Floor level showing pipes attached to Double Bucket Elevator (Photograph 207).



Plate 36: Pipework to the south end of the Malthouse (Photograph 139).



Plate 37: Dressing machine, 2nd Floor level (Photograph 174).



Plate 38: Dressing machine, 2nd Floor Level (Photograph 181).



Plate 39: Pipe attachment from Dressing Machine to Hopper, 3rd Floor Level (Photograph 202).



Plate 40: 2nd Floor Level, Corridor and Storage Bins (Photograph 187).



Plate 41: Storage Bins 2nd Floor Level (Photograph 192).



Plate 44: Baltic Timber marks to left of "W.F.No2H" (© Mark Sissons).

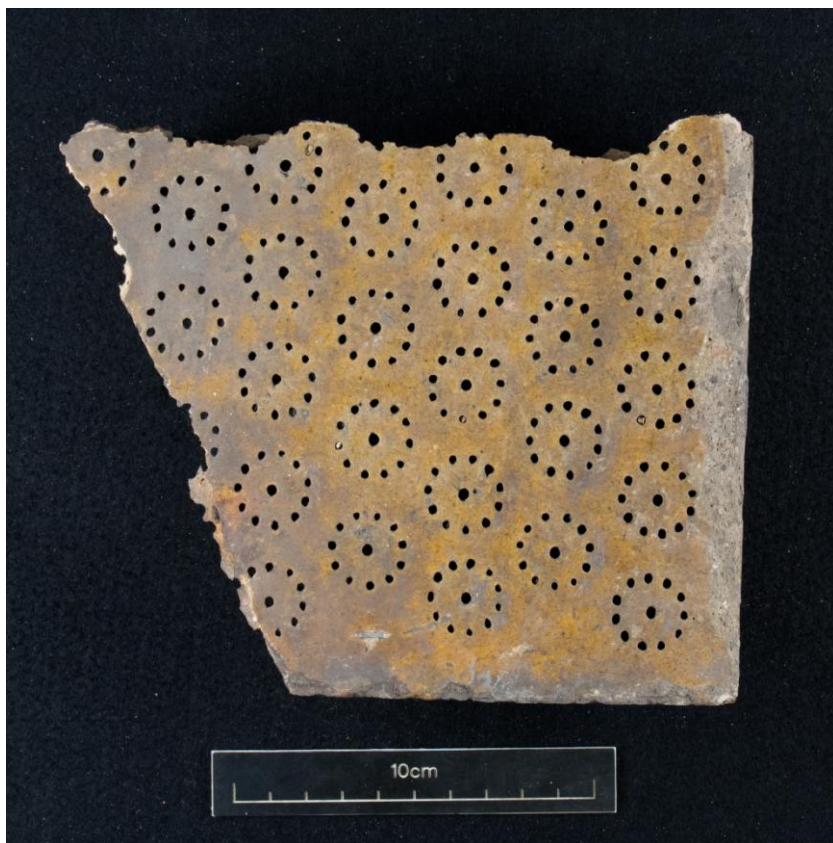


Plate 45: Kiln tile



Plate 46: Kiln tile (underside).