# THE NAILSWORTH BREWERY MALTINGS, TETBURY LANE, NAILSWORTH, GLOUCESTERSHIRE

## Amber Patrick

## Introduction

The Nailsworth Maltings on Tetbury Lane were once part of the substantial Clissold's Nailsworth Brewery. This paper is the result of a visit I made to the site in October 2005 with the permission of the then owner and at the request of Stroud District Council to determine what significant malthouse features survived, to show what their importance was in relation to the published sources, and to assess the importance of them as maltings in a local and a national context. The maltings were not listed at the time of my visit, however as a result of the report provided to the Council who in turn submitted details to the DCMS, they were listed, in February, 2006. I have not undertaken any additional research on the site. This paper is thus intended as an introduction to the site. More research remains to be done, as does a full measured survey of the buildings (1). A general description of the malting process is given in Appendix 1.

## The Site

The Nailsworth Brewery Malthouses, of which there are two on this site, are situated on the southwestern side of Tetbury Lane, some distance, and across the main Bath Road, from the brewery site in Brewery Lane, Nailsworth. The malthouses are more or less parallel to each other but with a sizable and spacious yard in between them The malthouses run back from the lane, and have their kilns away from the road. The lane slopes up from the Bath Road and in consequence both malthouses are to some degree built into the slope. Originally the site included stables at the southwestern end beyond the malthouse nearest the brewery (Malthouse No 1). Malthouse No 2, the one furthest away from the brewery, had in part been converted to residential accommodation. Also on the site although not visible as such were two water storage cisterns under the uphill slope in front of Malthouse No 2.

# History

The Nailsworth Brewery was operated by the Clissold family. It had been established by Joseph and Samuel Clissold in about 1800 as a family concern. Samuel died in 1842 and Joseph's son, W. G. Clissold, then joined the business. The Brewery was registered as a limited company in August 1889 to acquire the business known as Clissold and Sons. The company took over two other breweries, the Eagle Brewery, Stroud, in 1897 and the Grafton Brewery, Cheltenham, in 1899 before it in turn was taken over by the Cheltenham Original Brewery Co Ltd of Cheltenham in 1908, and it ceased to brew in May of that year when it went into liquidation. The owner in October 2005, Mr Davis, has indicated that his family bought the maltings in 1902/3, so it would seem that the brewery had ceased to produce its own malt before it was taken over in 1908.

An early mention of the Clissold family is in *Pigots Trade Directory* for 1830 when Ann Clissold is recorded as maltster at Nailsworth, but no brewers are mentioned. Unfortunately no address is given. It is not know whether the Tetbury Lane maltings are on the site of those of 1830.

There are two references which show the importance of the maltings. The first is in 1883 in the *Brewers' Journal*, to the work being undertaken by Messrs H. Stopes and Co (Henry Stopes was the pre-eminent malting engineer of the last quarter of the 19<sup>th</sup> century), who were

"engaged in adapting to their plans the malthouses and kilns of Messrs Clissold & Sons, Nailsworth".

The second reference to the maltings is in the prestigious work of Alfred Barnard. A record of his visit, which was unusual in that it was to a small town brewery, is to be found in his *Noted* Breweries of Great Britain and Ireland. There is a good description and an illustration (Fig. 1) of the two malthouses in Tetbury Lane, and it is worth giving some of the details here before a description of the malthouses as they were in 2005. Barnard noted that there were two malthouses located some 100 yards from the brewery and that they were of 15 and 30 quarter steep capacity. The No 2 malthouse had been recently built and was 80 feet in length and 32 feet in width and contained two cement steeps (2). The floors in both malthouses were laid with asphalt and they were lighted with eight ventilating windows. The ceilings were supported on stout cast iron columns. Over the growing floors were spacious barley garners and malt stores. The kiln was a double one and both drying floors were laid with Hermann's patent wire flooring, and the green malt was delivered by a chain hoist worked by a gas engine "placed in another part of the building". In the roof was a gangway on which the barley was wheeled in bins. No 1 [malthouse] kiln logie contained two open furnaces enclosed in brick chambers which were fitted with patent draught regulators and heat dispersers. It should be noted that Barnard's descriptions have generally been found to be accurate but where two buildings are close together, it can be difficult to decide which building is being described at any one time - he seems to switch between the two. Barnard also noted that there was a barley kiln with a wire floor, a Nalder screen and Boby's patent barley screens, and that the malthouses were connected by a bridge at each end. The accompanying illustration clearly shows the two bridges and the louvered cowl of the barley kiln in the later extension (see below).

The Ordnance Survey 25 inch map of 1884 shows that both malthouses were in existence by then. This helps confirm the *Brewers' Journal* entry indicating that work was taking place on the site in 1883. It also shows that Malthouse No 2 is significantly smaller than Malthouse No 1, and that there was no projecting barley kiln (3) which is however, shown on the 1902 Ordnance Survey 25 inch map. The barley kiln was thus a later addition but was in existence by 1889/1896 as it is specifically mentioned by Barnard.

Finally there is a reference in H. J. H. King's 1906 catalogue to one of their heat regulators being used at Nailsworth Brewery, unfortunately the accompanying photograph could be of any malting (Fig. 2). The description refers to a double regulator being fitted below the bottom floor of a double floor kiln of 25 quarter capacity. The date of the catalogue is dated January 1906 but it is the third edition, so the regulators may have been fitted well before that date. Also, there is no indication as to whether regulators were fitted to just one or both kilns, however, Barnard does refer to "No 1 kiln logie ........ which is fitted with patent draught regulators ....". Could these be the King's heat regulators, but in that case did this kiln, too, have two drying floors?

# The Buildings

As indicated above the two malthouses are parallel with each other but either side of a spacious yard. The malthouse nearest the brewery was Malthouse No 1 (the malthouse on the northwest side of the yard), and the malthouse on the side furthest from the brewery is Malthouse No 2, (it is on the southeast side of the yard).

## Malthouse No 1

## Exterior

This malthouse is on the right hand side of the yard as one enters from Tetbury Lane. The building has its kiln at the far end, that is away from the entrance. The maltings has been reused, in particular the kiln, but is otherwise largely unaltered. It is built of coursed stone blocks with dressed stone quoins at corners and surrounding doors. The windows are of four lights and have stone cills and nicely curved stone lintels as have the doors, and dressed stone quoins surrounding them. It has a magnificent plain tile roof. The kiln which was conical has been truncated and is now roofed in corrugated iron. There is a block, extending eastwards, a cross wing, at right angles to the main building. It has a single gable roof of plain tile.

The malthouse is of nine bays and the kiln occupies a tenth bay broader than those of the malthouse. The north west elevation displays a typical malthouse elevation of regularly spaced windows in every other bay.

The south east access is far less regular with door access to the immediate north of the kiln, and to the upper growing floor by a door midway between the cross-wing and the end of the building, and at the northeastern end of the malting via robust external steps constructed of brick with stone treads and a kennel space underneath. The door off these steps is a double one, although the halves are not of equal width, with the northern one being broader than the other. The mid way door was obstructed by a skip and debris but was not a double one. At the southern end was modern wide roller door access to the kiln. It has completely obliterated any original access that there may have been to the kiln at this level.

The eastward cross wing extension has a door facing north, the entrance to the office, and in the south east elevation it has a door at first floor level and one at ground floor level which now has a roller door. There are no apertures in the south facing elevation.

There is a separate door to the part of the building under the steep which has no other access. This north east elevation thus has a door at ground floor level and above at first floor level two windows now blocked by bricks and in the apex of the roof a narrow window. There is no window to the second floor which is completely within the roof structure.

Beyond the kiln was the stable block now represented by a single storey building with a door and a window in the south east elevation and a window in the south west elevation.

# Interior

There were two growing floors with asphalt surfaces (as mentioned in Barnard). The bottom floor is almost a basement level floor. The ceiling height of both floors was lower than in Malthouse No 2. The upper floors are carried on substantial beams supported by a single central row of robust cast iron columns. There is a large (deep) pad/pillow between the column and the beam. The ends of the beams rest on stone corbels, and are chamfered and stopped.

The steep was on the upper of the two growing floors and does not survive, although its location can be clearly established by the scar left as a result of its removal, and by the deep brick walls which went round the inside of the outside walls at the northern end of the building. In front of it, in the floor, was a row of four hatches to enable the wetted barley to be dropped to the bottom growing floor. There was also a fifth hatch slightly further out from the steep than the row of four hatches. It was not clear whether this was original. In the north west corner of the bottom growing floor there was door access to the kiln furnace area. There was a

step up between the growing floor and the kiln furnace room. In other words the door was not at the floor level of either the growing floor nor the kiln furnace floor. This arrangement did ensue that the wetted grain did not spill into the furnace area. This growing floor had a stone skirting board.

The original access between the two growing floors was by vertical ladder adjacent to the steep. The modern access was by modern stairs in the third bay from the road or north eastern end, adjacent to an equally modern hoist system. There was stair access from the upper germination floor up to the two storage floors at the kiln end of the building

The upper two floors which are entirely within the roof space are of timber. The lower of these two has its wall lined with tongue and groove boarding and was clearly a high quality grain storage area. The roof timbers are so exposed as to form the individual bays for storage.

The upper floor is more of a gangway but is quite broad with a substantial number of traps in the floor and a hoist with a pulley wheel complete with rope in the fourth bay from the road or north eastern end (Fig. 3). It should be noted that the steps which provide access from the top germination floor upwards terminate at a sort of platform in front of a door which provided access to the kiln drying floor. This door is on the kiln side of the wall which separates the kiln from the malthouse. Immediately above this door is what can only be described as a large hatch. It too is on the kiln side of the wall. The cill of this hatch or the lintel of the door is a broad wooden board-like a shelf. The top of the hatch is formed of a single row of header bricks in the form or a segmental arch. The kiln structure above this hatch is built of brick unlike most of the kiln which is constructed of stone. The steps which go on up to the attic floor rise up from this platform and are therefore at right angles to the other steps and do not directly run on from them.

It should be noted that there have been some fairly substantial alterations in the area of the malthouse between the two storage floors where they abut the kiln. There is some brick in-fill in the kiln wall and what may be the remains of floor joists in the kiln wall, thereby indicating that the upper storage floor once ran up to the kiln wall on the southwestern side. Also, the vertical timber which formed part of the roof structure has been sawn off, and it may be that other timbers in this area of the building have been removed.

The roof structure is a robust pegged A frame, a type more usually associated with the late 18<sup>th</sup> or early 19<sup>th</sup> century.

The room under the steep is now so low that one cannot stand up in it, but that may be due to the debris on the floor. It is divided into three sections: an entrance lobby and two 'rooms' on either side. The 'rooms' have a vaulted ceilings constructed of brick. On the northwest side there is a layer of stone between the brick arch and the brick vertical outside wall whereas in the southeast side there is still the brick arch but its support is entirely of stone. Some perforated tiles were stored in the south eastern side.

In the cross wing was the office on the ground floor with timber paneling and a glazed half door or office window door (six lights). Plans show that there was stair access to an upper floor.

#### The Kiln

The exterior of the kiln in the south east elevation is dominated by the relatively recently inserted large metal roller door. The original roof has been truncated and has been replaced by a corrugated iron one. To the south of the door are two buttresses. There is a window in the northwest elevation. The south west elevation is attached to what were the stables, although there is an external door on the western side of the stable block providing access via the back of the site.

Access to the kiln furnace area is now by wooden door from the bottom growing floor (see above). The door opens into the growing floor area and is hinged on the outside wall side. In the furnace area there are ladder steps up in the corner between the door from the growing floor and the small door giving access to the furnace area. There was originally an external access to the area at the back of the stables, and there is a window in the north west elevation opposite the furnace. The kiln is a brick lined furnace in an otherwise stone built room, although the floor in front of the furnace is of brick. The kiln still has the remains of the fire basket with its fire bars, and the ventilation system. There is evidence that the furnace front has been removed. To the north of the furnace, a small wooden round topped door gives access to the inside of the kiln under the drying floor, which does not survive. Inside the kiln furnace area there are modern brick piers supporting the upper floor as well as columns which appear to be original and support some of the original iron beams which would have supported the drying floor. In the kennel under the external steps up to the upper growing floor, and in the chamber under the steep, perforated ceramic kiln tiles were found indicating that this drying floor was probably originally of kiln tiles.

In the area in front of the kiln at more or less the level of the bottom storage floor, in the wall between the kiln and the malthouse was a rather narrow door, the purpose of which was not apparent, although it may originally have provided access to the storage floors.

There was door access to the original kiln drying floor. It is a robust wooden one hinged on the western side. The hinges are rather narrow long ones. Immediately above it is another door or a large hatch. Below the level of the door is a roughened edge which may indicate the position of the drying floor. There was also a smaller hatch at the south western end with a wooden cill. The door and the hatches are thus set in smoothly plastered walls. Access was not obtained to the modern concrete floor and the rooms off it.

# Malthouse No 2 Exterior

This malthouse is on the left hand side of the yard as one enters from Tetbury Lane. It is shorter than Malthouse No 1, and of the long elevations, only the north west one was visible as the south east one is virtually built into the hill side. The building has its kiln at the far end, that is away from the entrance. The part of the malting next to the entrance, and all of the barley kiln have been converted into residential accommodation, which has truncated that part of the malthouse

The main building is constructed of coursed stone blocks with dressed stone quoins at the corners and as door surrounds, and it has a plain tile roof. There is door access at the southern end of the building to the malthouse - at ground floor level to the bottom growing floor and by stairs to a first floor door to the upper growing floor. The windows have the same arched lintels and dressed stone surrounds as Malthouse No 1.

There was separate door access to the kiln which has had its conical roof structure truncated

and replaced by corrugated iron. A modern window has been inserted in the kiln at approximately first floor level (Fig. 4) and below there is an RSJ or I shaped beam over the door and what is probably a new window, although the stone cill suggests it may be original or an old one re-used.

The barley kiln (Fig. 5) was a later addition and although stone built, with corners of dressed stone quoins, it has a very clear straight line joint with the rest of the malthouse, and one side of the quoins that form the corners of the original malthouse building can be seen abutting the new building. The northwest elevation of the barley kiln has an area of later brick in-fill, probably where the bridge (mentioned in Barnard) linking it to Malthouse No 1 was located. The windows are less distinctive than the main part of the building, having stone cills and straight timber lintels.

## Interior

The malthouse has also been reused but a number of original features still survive, notably the asphalt floors and the central row of cast iron columns on the bottom two growing floors. These iron columns, of reasonable height, support stout beams which at their ends rest on stone corbels. The beams are nicely finished with chamfers and stops. There is no pad/pillow between the top of the column and the beam. On some of the beams there is "malting numbering" and later chalk graffiti. The bottom floor has a door from the yard and from the kiln, and the stone walls between these two doorways besides being plastered are also thickened or battered at their base, in particular the outside wall. The result is a half concave area. The upper growing floor of asphalt is laid on robust laths on the joists.

The upper floors are timber and would have been for storage of barley and malt (separated). Some of the columns have grain board slots. As in Malthouse No 1, the stair access to these floors changes to one adjacent to the kiln so that it comes up to the door access to the kiln drying floors. The joists of the top floor are cross braced on the underside of the floor.

In the apex of the roof is a gangway with rollers, and at the kiln end a pulley survives. The roof structure is a robust queen post with iron strapping.

## Kiln

The kiln which has lost its conical roof is built of stone. There is door access from the yard and a window to the south of it and a modern framed window above that. The roof is of corrugated iron. The south west elevation abuts the hillside but there is a window at more or less attic level. There are no features in the south east elevation which faces the hillside, except for a roof light.

The door from the yard gives on to an area in front of the furnace. There are now two arched doorways into the furnace area under the drying floors. One large one, and a small one with surviving iron door, hinged on the eastern or furnace mouth side, on the malthouse side of the main one. The main arch was probably the kiln furnace mouth, but subsequent alterations have superficially removed all trace of the furnace. The arch of the furnace mouth is of dressed limestone blocks and is a fine doorway. Inside the furnace, there is one feature which survives and is worthy of comment. It is a small iron hatch cover, side hinged, which shuts off the bottom of a chute. Its purpose is not known. The floor surface in front of and inside the furnace is modern cement screed. It hides and replaces any earlier floor and features.

The most interesting feature is the double kiln floor of wedge wire. The lower floor supporting grid survives but no wire is apparent. The upper floor grid and wire both survive.

The base of the kiln's cone consisted of two rows of bricks on the southern side.

# The importance of the Maltings in the local and national context

These two malthouses form an attractive group with Malthouse No 1 being somewhat more attractive than Malthouse No 2. They do not have the long elevations with regularly spaced windows that are so typical of malthouses. Nevertheless they are still recognisable as malthouses. The kilns have lost their attractive conical roofs, of a type still found on former maltings in Hertfordshire - West Street, Hertford, Essex - Boyes Croft, Great Dunmow, and Devon - St Bartholomew Street West, Exeter, being three examples, and are not now easily recognisable as kilns. The Nailsworth malthouses are, however, more typical of the stout compact, usually stone, maltings found in the Cotswolds and Gloucestershire of an 18<sup>th</sup> century date, for example Brockhampton, Gloucestershire and Eastcourt, Wiltshire being two stone built examples. (There is no suggestion that these maltings at Nailsworth are of an 18<sup>th</sup> century date.)

The importance of these malthouses lies in the survival of their interior features: growing floors, storage floors, hoist equipment, pulleys, pulley wheels and chutes, and "malthouse numbering" on the main beams of the growing floors. The cast iron columns are typical of many malthouses, but it is also clear that a pride was taken in the construction of these buildings with the main beams resting on stone corbels and being chamfered and stopped.

However, the most notable features, and the most important, are the kilns and their floors, in particular that of Malthouse No 2. There are two drying floors in the kiln of Malthouse No 2, an upper and a lower. Although two floor maltkilns were promoted by Stopes and some other malting engineers, they were still a fairly rare feature in even large malthouses and were even rarer in small ones. Examples of other double kiln floors include those at Merchants Road, Gloucester, in the former ABM maltings, but these were built in 1899. A known Stopes kiln was at Ditherington in Bage's Flax Mill when it was in use as a maltings. Thus this example in Malthouse No 2 at Nailsworth is a rare survival, and because of the information available from reliable sources can also be attributed to Stopes, the pre-eminent malting engineer of the last quarter of the 19<sup>th</sup> century. Therefore it is nationally important. Also of importance from a local point of view is the link with the nearby firm of H. J. H. King malting engineers.

#### **Discussion and Conclusions**

A number of points are raised in considering both the importance and the history and development of these maltings.

Firstly, there is sufficient evidence to support a date of 1883 for the construction of Malthouse No 2, and sufficient evidence to show that Malthouse No 2's kiln and its wire floors are the surviving design work of Henry Stopes. The reference in the *Brewers' Journal* is of 1883 and Barnard noted that Malthouse No 2 was newly built in 1889/1896. There is no reason to doubt this specific reference in the *Brewers' Journal* because where it is known that works have been carried out, the *Brewers' Journal* reference tends to pre-date the building work. There is a clear end date of 1884 because of the Ordnance Survey map evidence which clearly shows that both malthouses were in existence by that date. The maltings were sold in 1902 and it is unlikely that the kiln drying floors would have been replaced by then, and even if the wedge wire was replaced, the iron grid upon which it rests would be original. Therefore Malthouse No 2 has a build date of 1883 to 1884 with a double kiln which was designed by Henry Stopes.

It is rare to be able to both date a malthouse and kiln so precisely and to associate it with a

pre-eminent malting engineer of the last quarter of the 19th century.

They are also of interest because some of the kiln metal work was by the local Nailsworth malting engineering firm of H. J. H. King. What is not clear is whether the kiln of Malthouse No 1 was also redesigned by Stopes and whether it had two kiln floors. There is a line around the inside of the kiln walls which might indicate that there was a second floor, but as there is no evidence of a door or hatch at this level, it seems unlikely. There are higher level hatches but with these there is no indication of an associated floor level. The presence of perforated ceramic kiln tiles on the site indicates that at one time the drying floor was of tiles as opposed to wedge wire, however, this should not on its own be taken to mean that there was only one floor. That the tiles were still on site in 2005 probably indicates that they were in situ until relatively recently.

In conclusion, the importance of these malthouses lies not in their external appearance but in the survival of a number of internal features, in particular the Stopes double wedge wire floored drying kiln of Malthouse No 2. This is a rare and interesting survival in both Gloucestershire and nationally. Further work both in adequate recording and in researching its history is still needed.

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# **Notes**

- 1. According to Richmond and Turton some records are to be found in the Gloucestershire Record Office. It is not known whether they relate specifically to the maltings.
- 2. A check of Barnard's measurements against the Ordnance Survey map shows that the width agrees, bar a few inches, but the length is not so accurate, with a difference of several feet. However, it cannot be Malthouse No 1 which is too long by about 20 feet.
- 3. The List Description refers to this projecting building as a counting house whereas Barnard refers to a barley kiln, and the illustration shows a barley kiln in this later extension. Throughout this paper the counting house will be referred to as the barley kiln.

# **Appendix 1.** A General Description of the Malting Process

Malt is artificially germinated grain. Malting was and to some extent still is a seasonal process and historically took place between the months of October and May. Barley is usually the raw ingredient for making malt. It has to be stored and often dried prior to use to ensure dormancy is broken. Barley also has to be cleaned of dust, small stones and loose husks.

The first stage in the malting process after any drying and the necessary cleaning was and is the steeping of the barley in the cistern to begin germination. The water in the cistern was ideally about 54 F (12.5 C). Lower than this and growth would be retarded, and higher more water would be taken up. The steeping period lasted between 60 and 72 hours.

During this time the water was changed several times and the barley was rested for periods varying between eight and twelve hours. The aim of steeping was to give the barley sufficient moisture to ensure perfect and regular germination. The moisture content of the barley after steeping should be 40 to 45 per cent.

The next stage prior to the repeal of the Malt Tax in 1880 was couching. The couch was a rectangular frame in which the soaked barley was put in order that the excise men could measure its volume. The barley stayed in the couch for twenty four hours. Couching was still practiced after the repeal of the Malt Tax but it did not have to be undertaken in a frame, nor did it have to be for a set number of hours.

From the couch or the steep, the soaked barley was spread out onto the floor to grow. In the later nineteenth century the growing of the barley to the point where it was ready to be kilned might take as long as fourteen days. The depth of the grain on the floor would vary from four to eight inches depending upon the weather conditions. The temperature on the floor ranged from 56 F (13 C) to 65 F (15 C) or even 70 F (22 C) with the higher temperature being reached at the end of growing. As growing progressed the rootlets began to grow, and it was necessary to turn the growing grain to prevent it from matting together and to ensure the growth was/is even. Originally this was done by hand using a broad flat bladed shovel. Later ploughs, which were three pronged flat bladed 'forks', were used and more recently, in the twentieth century, mechanical shovels were introduced.

When the green malt, as partially germinated barley is called, had reached the required extent of growth, it was ready to go to the kiln. In the kiln the green malt was laid on the floor which was often of perforated ceramic tiles, a foot square. By the end of the nineteenth century the drying floor was often of wedge wire, although earlier, drying floors of woven wire were used. The depth of the green malt on the kiln floor was usually about eight to twelve inches (20 to 30 cm). It was turned during kilning, by hand in the early days, or later on by mechanical turners. The malt was on the kiln for three or four days. The temperature varied according to how well the kiln was constructed and the type of malt being made, but could be as high as 220 F (105 C). The fuel used in malt kilns by the nineteenth century was mainly anthracite or coke, and as the combustion products usually passed directly through the malt, a fuel of low arsenic content was essential. The kilning of the malt arrested germination and therefore halted the breakdown of the starch molecules. It also reduced the moisture content to about three per cent, which was necessary for safe storage and produced an ideal grain for grinding to grist in the brewing process. Kilning also gave colour and flavour to the malt.

Finally, the kilned malt was dressed (the rootlets removed and the grain cleaned) and then stored until it was required for brewing. It was usual to store the malt for at least a month before it was used.



Fig. 1 The Nailsworth Brewery maltings as illustrated in Barnard's Noted Breweries [taken from the south west].

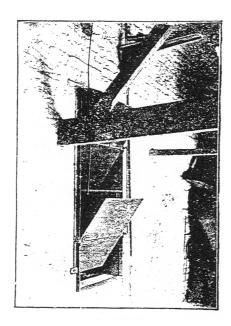


Fig. 2 H. J. H. King's double regulator fitted below the bottom floor of a double floor kiln - 25 quarter capacity.

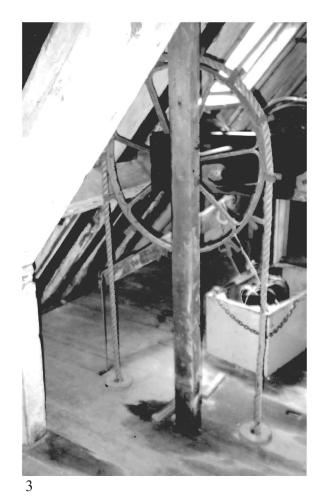






Fig. 3 Hoisting gear including roped wheel, top attic floor of Malthouse No 1.

Fig. 4 The barley kiln attached to Malthouse No 2. Note the brick in fill where the bridge to Malthouse No 1 was located.

Fig. 5 The kiln of Malthouse No 2. The completely truncated roof of the kiln is now covered by corrugated iron.