Historic England

Former Cooperage and Store of Hewitt Brothers Tower Brewery, East Street, Grimsby Lincolnshire Historic Building Report

Alastair Coey Architects

Discovery, Innovation and Science in the Historic Environment

Research Report Series no. 31-2019

Research Report Series 31 -2019

FORMER COOPERAGE AND STORE OF HEWITT BROTHERS TOWER BREWERY EAST STREET GRIMSBY, LINCOLNSHIRE

HISTORIC BUILDING REPORT

Alastair Coey Architects

NGR: TA 27217 09387

ISSN 2059-4453 (Online)

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SUMMARY

The subject of this report is the former cooperage and warehouse located on East Street, Grimsby, the only remaining structure of the former Hewitt Brothers Tower Brewery complex. It sits close to the eastern perimeter of the Central Grimsby Conservation Area, south-east of the town centre, and is a non-designated heritage asset, included on the Grimsby Local List. Most of the brewery complex was located on the opposite side of the road, developing throughout the 19th century from the small Pasture Street brewery, which was constructed in 1806. The East Street building was variously used as a cooperage, as a grain store, and for the storage of barrels and, latterly, bottled drinks products. It was built in two main phases: the single-storey wing to the south is the earliest part, built circa 1902 as a coopers' workshop, while the main three-storey triple-gabled warehouse dates from the 1920s, and is a steel-framed structure having an internal floor plan which is generally open to each floor, with some subdivision to the margins on the ground and first-floor. Hewitt Bros Tower Brewery was closed in 1968 following a series of acquisitions and mergers, and was demolished in the 1980s.

This report was commissioned in late 2018 as an action of the Grimsby Heritage Action Zone, and is intended to provide a more detailed understanding of the building fabric and historical context, through a combined programme of physical inspection and documentary research. The first chapter outlines the contextual history of brewing and the associated functions of coopering and bottling. This is followed by a detailed historical analysis of the development of the cooperage in the context of the Hewitt Bros Tower Brewery. Section 4 presents a detailed description of the refrigeration plant and machinery and cold store, and Section 5 presents an assessment of the heritage significance of the building and its industrial heritage value.

CONTRIBUTORS

The research was carried out by Delia Graham (Historic Environment Specialist), whilst the site investigation and measured survey were conducted by Alastair Coey (Director) with assistance from Ashley Turner (Part III Architectural Assistant), all of Alastair Coey Architects. Industrial archaeology expertise, and in particular, research into the refrigeration plant, was contributed by independent industrial archaeologist, Dr Fred Hamond. The report was prepared for publication by Samantha Pace. Work was overseen by Clare Howard of Historic England, and quality assurance was provided by Katie Carmichael, Wayne Cocroft and Emily Cole of Historic England.

ACKNOWLEDGEMENTS

The team would like to thank Jon Pannell (Turner Evans Stevens Property, Grimsby) and Emilie Wales (Engie, Grimsby), for facilitating access, and architects Eznat, for providing floor plans. Thanks is also due to the building's owner, John Pinchbeck, for providing information on the use of the building since it was vacated by Bass-Charrington, and to Peter Chapman for information on the history of the building. Particular thanks are owed to Graham Larn, author of Beer, Hope and Charity: A History of Hewitt's Brewery, and his publisher, Martin Clausen. We would also like to thank Adrian Wilkinson at North East Lincolnshire Archives for his patient and

thorough assistance with archival material. Mr Oscar Lobo of J&E Hall, Leeds was particularly helpful in answering many technical questions on refrigeration which have made a significant contribution to understanding the remaining plant. Also thanks to Paul Travis and Ken Smith of the Brewery History Society, for assistance and providing issues of relevant BHS journals.

ARCHIVE LOCATION

The photographic and report archive has been deposited with the Historic England Archive, The Engine House, Fire Fly Avenue, Swindon, SN2 2EH.

DATE OF SURVEY

05/02/2019

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CONTENTS

LIST OF ILLUSTRATIONS

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Figure 15: Infilling of a previous entrance to the west elevation (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 16: View of warehouse building as seen from East Street (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 17: An aerial image of Hewitts Brewery in 1933 with the warehouse shown within the red square (© Historic England, Aerofilms Collection) Ref. EPW042807

Figure 18: Goad Fire Insurance Plan of 1949 (Reproduced by kind permission of North East Lincolnshire Archives) Ref. 414

Figure 19: Surviving features of fireplace to coopers' store (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 20: Surviving terracotta air vents in the coopers' store (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 21: Variations in brick hue to the existing west elevation (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 22: Cast-iron coach wheel deflector (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 23: Evidence of relocation of the curvilinear gable. Left: Detail of Cresswell's plans of 1900 depicting the gable atop the cooper's store (Reproduced by kind permission of North East Lincolnshire Archives) Ref. 1062. Right: The existing gable to the central bay of the main building. (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 24: East elevation and north-east projection (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 25: Flow diagram of the refrigeration process (© Historic England, photograph: Fred Hamond 2019)

Figure 26: Floor plan depicting the location of refrigeration components (©Historic England, photograph: Fred Hamond 2019)

Figure 27: Looking east along Room GF1A with compressor seen on the right-hand side (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 28: Pressure gauges and motor restart unit (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 29: Vee-belt drive from motor to compressor (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 30: Motor control cabinet (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 31: Oil separator (© Historic England, photograph: Alastair Coey Architects

1. INTRODUCTION

The former Hewitt Brothers Tower Brewery cooperage and warehouse building (National Grid Reference: TA 27217 09387) is situated on East Street within Grimsby town centre, around a kilometre south of Grimsby docks, almost immediately to the north-east of Town Hall Square. It sits in a built-up commercial area on the east perimeter of Grimsby Town Centre Conservation Area – the site is bounded by the railway track to the east, and by low-rise early 20th-century commercial buildings to the north. The site extends to the south to include a small area of scrubby ground. The cooperage building is not listed, although it is on the Local List for Great Grimsby.

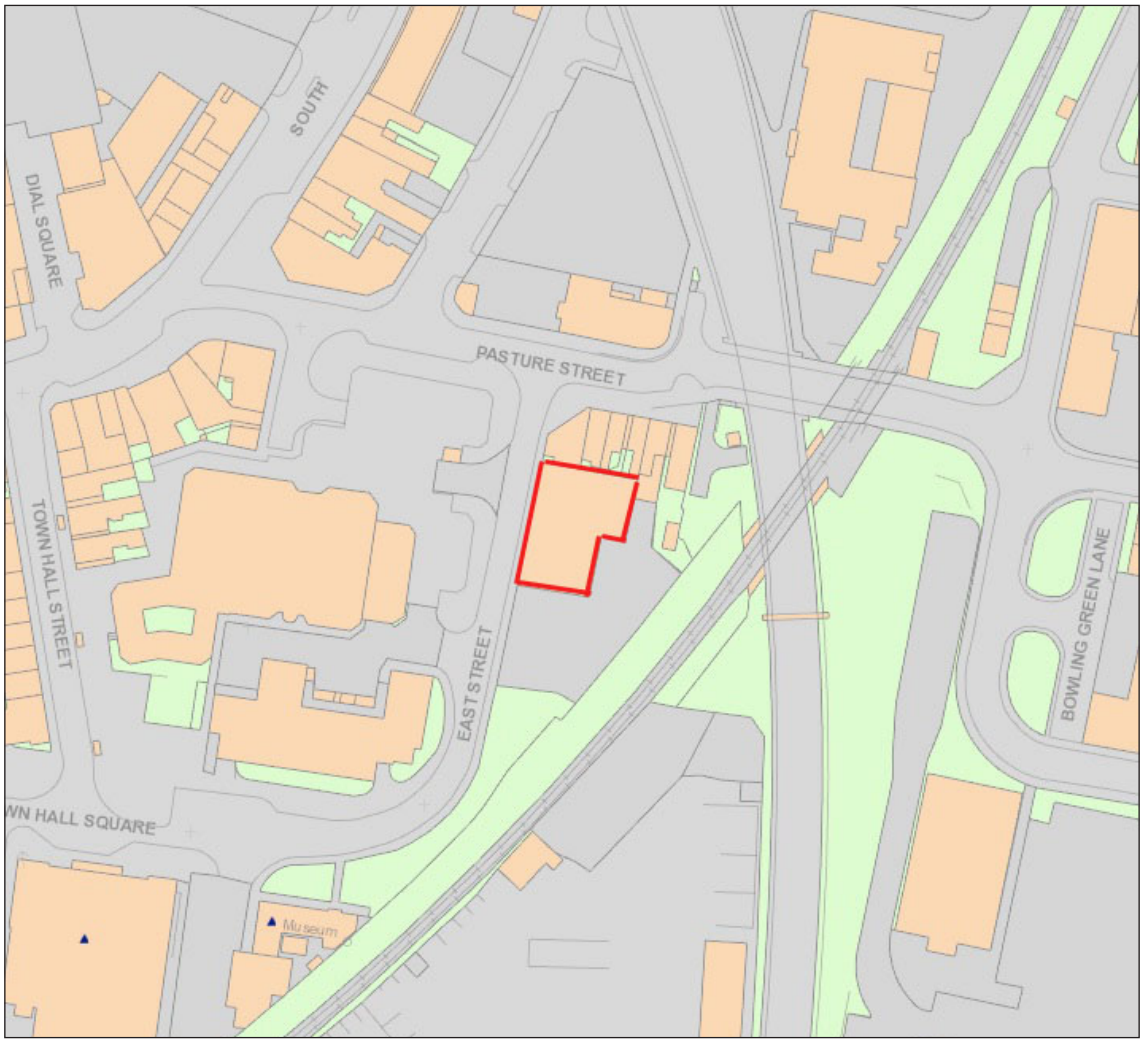


Figure 1: Location map showing the cooperage building outlined in red. (Modern Ordnance Survey mapping: © Crown Copyright and database right 2019. All rights reserved. Ordnance Survey Licence Number 100024900)

The original brewery site lay directly opposite the cooperage building to the west, and was accessed from Pasture Street, to the north. It was in operation from 1806,

acquired by Hewitt Brothers in 1874, and closed in 1968. The complex was subsequently demolished in the 1970s and the site now accommodates Crown and County Court services for Grimsby. The earliest part of the surviving cooperage building is the single-storey mansard wing to the south, which was built *circa* 1901 to designs by Grimsby architect, John J Cresswell. The three-storey warehouse first appears on the 1933 revision of the Ordnance Survey map (see Figure 14) and is thought to have been constructed in the late 1920s, although no specific evidence attesting to its construction has been found.[1]

Since the closure of Tower Brewery, the cooperage has lain vacant, although the warehouse continued to be used as a store for Bass-Charrington until *circa* 1980. Its condition deteriorated over the latter part of the 20th century, and the building was registered as a Dangerous Structure between 1995 and 2011. In 2000 and 2010 planning applications were submitted for its demolition,[2] both of which were refused (the latter both on application and appeal), as the cooperage was deemed to be a key building within the conservation area. In 2011 a Section 78 Dangerous Structures Notice was served, requiring remedial works to remove immediate dangers. In 2012, structural stabilisation was carried out involving the insertion of new steel sections to support corroded parts of the original iron structure and the construction of a new roof, which retained the original iron roof trusses *in situ*. Some reconstruction of the three gables was also carried out at this time. An application for partial demolition was again refused in 2013, on the basis that the proposal involved demolition of the single-storey mansard wing (the original coopers' workshop) which abuts to the south of the main building and is the earliest part of the structure. The envelope of the main structure is in good condition at the time of writing, with the exception of the single-storey mansard wing, which is in a state of partial collapse.

At the time of writing, planning proposals are under consideration to create 20 apartments within the envelope of the cooperage, including construction of two semi-detached properties on the land to the south.[3]

This report was commissioned by Historic England as part of the Grimsby Heritage Action Zone. It is intended to provide a more detailed understanding of the building fabric, fixtures and historical context, through a combined programme of physical inspection and research. The report comments on the significance of the building, in order that decisions about its future can be appropriately guided and framed by the opportunity to safeguard and enhance heritage values, contributing to the heritage-led regeneration of Grimsby under the combined Heritage Action Zone and Town Deal.

Archival research has been carried out in order to inform understanding of the historical development of the building and its use. However, information on the cooperage is limited, as it was a relatively late addition to the site, and lay outside of the main brewery complex. An archive of material relating to Hewitts' Brewery is located at North East Lincolnshire Archives in Grimsby. However, this principally relates to conveyancing and mortgage documents for dispersed properties owned

by the brewery, and was of little help in informing understanding of the cooperage. The National Brewing Museum in Burton-upon-Trent contains the archival record of Bass Ltd, with which Hewitt's Brewery ultimately resided, following a chain of mergers and acquisitions in the mid-20th century. It is possible that this contains material relating to Hewitt Bros, but a request for information yielded no response, and a visit was outside the scope of this report. A number of secondary sources were used, including Graham Larn's useful published history of Hewitt Bros – *Beer, Hope and Charity* (2008) – and articles on Hewitts' and Grimsby breweries in general, from both the journal of the Brewery History Society and an archive of newspaper cuttings held in Grimsby Library.

A Level 3 survey of the cooperage was undertaken as part of this assessment to enhance understanding of the structure, its use and development. This involved a detailed internal and external on-site analysis carried out by both a conservation architect and an industrial archaeologist. Annotated plans were prepared and photographs were taken, which have been deposited with the Historic England Archive in Swindon.

2. CONTEXTUAL BACKGROUND

A brief history of the brewing industry

Although originating in the Middle East, brewing developed particularly in northern Europe around 2000 years ago, as the climate was better suited to the production of crops for brewing than to the growing of vines and associated production of wine. The process is based on the interaction of two raw ingredients, water and barley, in a manufacturing process that remained largely unchanged until the 1960s.

Brewing was initially a domestic industry, but there is evidence for the proto-industrialisation of beer in Britain as early as the 12th century, in the form of early regulations and, in 1292, the establishment of a guild called the Brewers' Company to represent the commercial interests of brewers.[4] Monasteries were well-represented among early larger-scale brewing operations, although these were by and large not commercial enterprises, but producing for the monastery's own consumption. In her thorough analysis of the history and development of brewing in Britain, Lynn Pearson notes that the brewing of beer was well-established in London by 1500, subsequently expanding throughout the country. She distinguishes between the brewing of ale and beer, the latter keeping for longer periods and therefore more suited to large-scale production, although having a longer brewing process and more complex equipment.[5] By the 17th century, commercial brewing continued to be concentrated in London, with a small percentage of brewers located outside the capital, generally producing lower quantities. The regulation of brewing was also developing rapidly during this period, with legislation relating to brewhouse design and equipment, and taxes based on the measurement or 'gauging' of barrels to determine precise capacity.[6] A standard barrel capacity of 36 gallons was introduced at the end of the 17th century, although the business of barrel making and certification of capacity continued to be overseen by the Coopers' Company in London. The mechanisation of brewing began in 1784, and by 1800 almost all processes within the major breweries were mechanised, having mechanical rakes and mashers and steam-powered pumps and mills.[7]

Large breweries began to appear outside London from the 1790s, with the first brewery on what would later become the Tower Brewery site appearing in 1806 (this was a small brewery owned by one John Garniss; for a fuller discussion see Section 3). The Beer Act of 1830 in effect introduced the concept of the licence to sell and brew beer. Any rate-paying householder could apply for such a licence, but small-scale 'beer house' producers were quickly eclipsed by larger scale commercial brewers, and output grew considerably during the 19th century, increasing from just under 8 million barrels in 1830 to almost 30 million barrels by 1900.[8] The market for beer was expanded by the Industrial Revolution, as cities developed and public houses provided an important social and recreational resource for thirsty workers. The modern brewery became a prominent and distinctive feature

within the Victorian townscape. Advances in technology and plant resulted in the growth of specialist architects and engineers who combined a knowledge of architecture with knowledge of brewing production processes and equipment, particularly Scamell & Colyer, Adlam's, Kinder,; and Davison, Inskipp & Mackenzie. The brewing industry peaked in the late 19th century, and this confidence was reflected in brewery architecture and led to the development of the 'ornamental brewery' around the 1880s. Functional accommodation for the brewing processes was combined with architectural devices and decorative features that elevated the architectural presence and stature of brewery complexes within the urban environment. Hewitt Bros Tower Brewery was developed during this period, following the purchase of the brewery by the Hewitt brothers in the 1870s and its expansion though the 1880s (see Section 3).

The latter years of the 19th century were something of a 'golden age' for brewers, but they also ushered in more restrictive legislation governing licenced premises. This was to impact the brewing industry and bring about structural changes, including the gradual shift of most major and large town breweries from family-owned concerns to public companies; Hewitt Bros followed this trend, acquiring a number of 'tied' public houses in the later 19th century. Ale production had peaked in 1900, and thereafter the industry was impacted by economic depression, progressive decline in consumption, and a sequence of acquisitions and mergers and closures, which saw regional breweries such as Hewitt Bros acquired by larger national brewing companies.[9] These companies were keen to rationalise production through centralisation and the resulting economies of scale, resulting in the closure of many smaller breweries in the post-war years. By the end of the 1960s the brewing industry in Britain was generally controlled by six brewing companies: Allied Breweries, Bass Charrington (who eventually acquired Hewitts' Brewery through a sequence of mergers between 1961 and 1967 and were responsible for its closure in 1968), Courage, Scottish & Newcastle, Watney Mann and Whitbread. This centralisation, and the subsequent impact of the Beer Orders of 1989 on Britain's brewers, has meant that brewing operations have generally now ceased to be a feature of urban centres, with the associated buildings abandoned, demolished or, happily, in some cases, repurposed.[10]

Beer Storage and Coopering

The industrialisation of brewing was supported in large part by the development of suitable vessels for storage and transportation of liquid – the traditional stave-built wooden barrel or cask. The craft of coopering arrived in Britain via the Celts during the Iron Age, combining the skills of woodworking and ironworking, to produce a bellied watertight vessel bound by metal hoops. As Kenneth Kilby points out, barrels fulfilled a range of functions, being exceptionally strong, ideal for transportation (being a wheel in themselves), and actively preserving and improving the quality of some of the produce that could be stored in them, including beer.[11]

Casks were traditionally constructed by coopers, who served a seven-year apprenticeship. A 'barrel' is specifically the name for a cask that holds 36 gallons, the most commonly used volume. A correspondent, responding to a call for local information during the course of preparing this report, recalled that the cooperage at East Street in Grimsby worked with four sizes of cask, including the *barrel* (36 gallons), the smaller *kilderkin* (18 gallons), the *firkin* (9 gallons), and a small cask with a capacity of only 4.5 gallons, called a *pin*. This corresponds to the imprints of casks on the second floor of the warehouse (covered in a layer of soft asphalt), which suggest that four separate diameters of cask were stored here (Figure 2). [12]

Figure 2: Cask imprints on the second floor of the warehouse (© Historic England, photograph: Alastair Coey Architects 2019)

The Worshipful Company of Coopers was set up in London in 1492, reflecting the expansion and increasing organisation of trade in the medieval period. As the brewing industry expanded, the Company sought to maintain their monopoly on cask production, by bringing a case before Parliament to ensure that casks would be bought only from independent coopers, rather than breweries setting up their own in-house cooperages; however, although the ruling was in their favour, this had limited impact on the breweries. The highly skilled work carried out by coopers for items such as beer casks was known as wet coopering (indicating a high-quality cask that would be sufficiently watertight to hold liquids), shared between the raiser (responsible for dressing and raising staves, firing the casks and making hoops) and the header, who made the heads and finished the cask, including the insertion of bungs or tap holes. Casks were the principal storage vessel for beer during the

19th century. Beer is a delicate product, affected by light, heat and oxygen, and so the containing vessels needed also to perform a protective function. Casks did not completely protect the beer from spoiling, as once opened, oxygen is admitted, with associated limitations to its shelf-life.[13]

In the 19th century, with the advent of steam power, the process was gradually mechanised; however, a considerable number of machines would be required to make a single cask. The Bass Brewery at Burton-upon-Trent was particularly notable, having a range of machinery powered by two 70 horse power engines.[14] As Lynn Pearson points out, the typical brewery cooperage would be included as a separate building within a brewery complex, along with other ancillary buildings such as stables and stores.[15] This arrangement can be seen in the 1896 Goad plans of Hewitts' Brewery, prior to the relocation of the coopers' workshop *circa* 1901 (see Figure 6). In contrast to the complex multi-storey buildings which housed the various brewing plant and machinery, the coopers' workshop was generally a low-rise building, a design reflected in successive cooperage buildings at Hewitt Bros, shown on the 1896 and 1949 Goad Plans (see Section 3).

Mending casks was carried out by hand, and as a cask could be re-used, lasting for up to 50 years, the majority of the cooper's time would be taken up by repairing and maintaining existing barrels.[16] There is no evidence of any machinery at the East Street building, suggesting that by 1901, a cooperage was required at the Hewitts' site solely for the repair and maintenance of existing barrels. The same correspondent mentioned above also recalls that by the mid-20th century, the East Street cooperage was used mainly for the repair of barrels; further, the fortunate survival of a photograph showing coopers at work in the East Street building (Figure 3) appears to show a barrel in the process of repair, with new staves. A large area was needed to store the casks, which accounts for the ratio of yard to workshop floor space in the early building. The association of Hewitts' Brewery with casks is reflected in the company logo, which was a barrel in the shape of an 'H'.

The use of casks was gradually eclipsed, first by increased mechanised production of bottled beer in the early 20th century and eventually by the invention of the aluminium keg in the late 1940s, differing from traditional kegs in that they are pressurised, ensuring the beer is protected from oxygen.

Bottled beer had been in limited commercial production from the second half of the 17th century. Bottling enabled beer to be kept for longer periods, but was believed to diminish the quality, as indicated by this quote from Thomas Tryon's *A New Art of Brewing Beere*, published in 1691:

> It is a great custom and general fashion nowadays to bottle ale; but the same was never invented by any true naturalist that understood the inside of things ... all such bottle drinks are infected with a yeasty furious foaming matter which no barrel-ale is guilty of ... for which reason bottle-ale or beer is not so good or wholesome as that drawn

> out of the barrel; and the chief thing that can be said for bottle ale or beer is that it will keep longer than in barrels, which is caused by its being kept, as it were, in continued motion or fermentation.[17]

Figure 3: Coopers at work in the East Street cooperage; date not given, but assumed inter-war. (Photograph reproduced by kind permission of Lincolnshire Inspire Libraries Ltd) Ref. 1062

The removal of glass tax in 1845 advanced the use of bottles, and Whitbread introduced the earliest large-scale bottling plant in 1870. However, the use of bottles was still labour-intensive as the bottles needed to be corked by hand. The screwtop bottle was invented in 1879, but it was not until after the First World War that the use of bottles gained traction, rapidly increasing in popularity and fully mechanised in bottling plants by the end of the 1950s.

Hewitts' bottling plant was located outside of the main brewery complex, on the opposite side of Queen Street. Graham Larn suggests that it was built around the 1920s, and was subsequently expanded to reflect the increased popularity in bottled beer after the Second World War.[18] Bottles had their own particular storage requirements, if the product was to achieve its optimum shelf-life, and it was particularly important that they were kept cool. Lager in particular required long-term cold-storage, through mechanical refrigeration. It was bottled products that were stored in the warehouse and Section 5 gives a detailed analysis of the plant introduced at the East Street warehouse after 1949, in order to ensure appropriate storage conditions. The bottles did not entirely replace the need or demand for draught beer, and both continued to be stored at East Street.

3. HISTORY OF THE EAST STREET COOPERAGE AND STORE

A brewery was first established at Pasture Street in 1806, by John Garniss. This brewery was a relatively small concern, and was subsequently bought by John Hobson in 1831. The earliest map of the brewery site under John Hobson is the Rendel/Fowler Plan of the Town and Port of Great Grimsby of 1848 (Figure 4). East Street at this time was relatively undeveloped.

Figure 4: Pasture Street Brewery shown on James Meadows Rendel and John Fowler's Plan of the Town and Port of Great Grimsby, surveyed in 1848 (Reproduced by kind permission of North East Lincolnshire Archives) Ref. 3/611/A1011

John Hobson continued in business until 1863, and thereafter the Pasture Street brewery was leased short-term by Hobson's trustees to Edward Smith & Co. It was not until 1871 that the Hewitt name became associated with the brewery, following the taking on of the lease by brothers William Taylor Hewitt and Thomas Hewitt. William Taylor Hewitt was a grocer, with premises on nearby Old Market Place, and Thomas was at this time a brewer in Doncaster. The brothers bought the brewery in 1874, and W T Hewitt is seen to have spearheaded its growth and development with entrepreneurial spirit, expanding the premises and acquiring a

number of smaller breweries. He is reputed to have travelled from door to door at the pubs in Grimsby, persuading them it would be more economical to get their beer from Hewitts' Brewery.[19] This was a prosperous period for Hewitt Bros, spurred by the efforts of W T Hewitt in the context of the national growth of the brewing industry in Britain, which was being fuelled by technological advancement and the growth of urban centres. Figure 5 depicts the brewery in 1888,[20] one year prior to the Messrs Hewitt registering Hewitt Bros Tower Brewery as a private limited company, with a share capital of £200,000, reflecting the status of the company at this time. This preceded further expansion of the Tower Brewery complex, which continued until W T Hewitt's death in 1902.

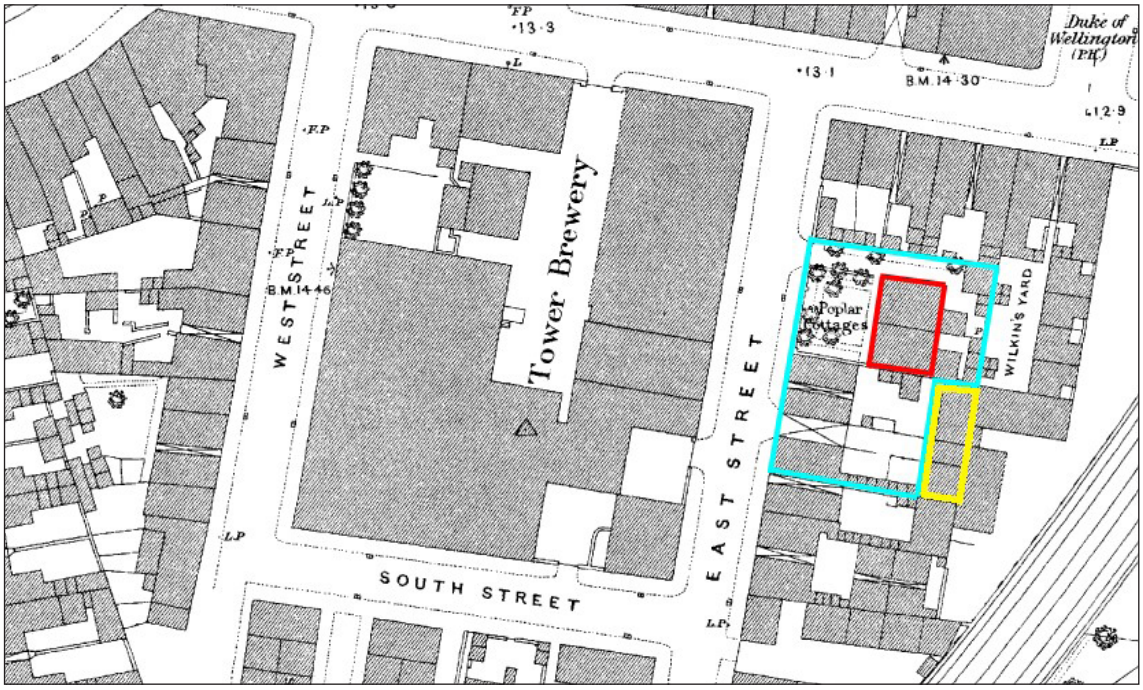


Figure 5: The footprint of the cooperage building and warehouse, reproduced from the Ordnance Survey Map published in 1888, 1:2500 (© Crown Copyright and database rights 2019. All rights reserved. Ordnance Survey Licence Number 100024900) The footprint of the later cooperage building and warehouse is outlined in blue, the former barrel store (later demolished) in red, and the footprint of a later abutment in yellow. The map also shows the former dwellings which architect's drawings indicate were used by Hewitt Bros as a barrel store by 1900, and subsequently demolished.

The Goad Insurance Plan of 1896 (Figure 6) gives a detailed illustration of Hewitt Bros Ltd Tower Brewery in the closing years of the 19th century, and indicates substantial development of the site by the Hewitt brothers between 1874 and 1896. A small single-storey cooperage and two-storey stores are shown at this time within the boundary of the main complex, at the centres of the east side. The site of the later cooperage along the west side of East Street is developed with two-storey brick dwellings, although these are indicative only, and should not be taken to denote an uninterrupted row; the actual layout is shown on Figure 5. A number of residential

properties are also listed along East Street in the *Cook's Grimsby and Cleethorpes Street Directory* between 1896 and 1900. It seems likely that the area available for storage was a primary motivator in the construction of a separate cooperage and store yard, given the restricted open space that is evident on the 1896 Goad plan.

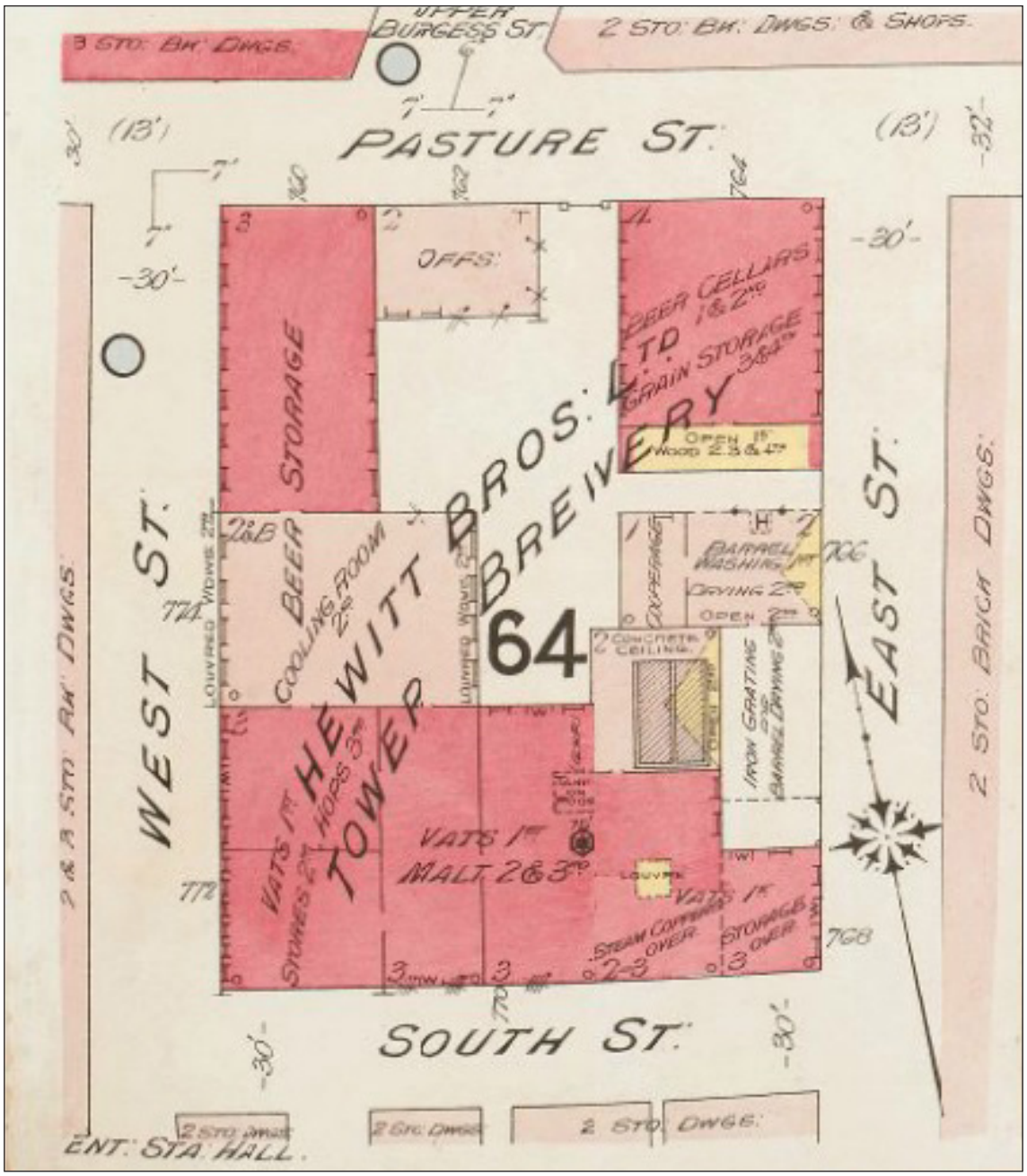


Figure 6: Charles Goad's Fire Insurance Plan, sheet 9, 1896, showing the buildings of Hewitts' Brewery, on the west side of East Street (© British Library Board Maps 145.b.11. (4.), Sheet 9.1)

There is evidence of considerable general expansion of the Hewitt Bros concern around the end of the 19th century, most notably in the form of the impressive 'New Maltings' which was constructed offsite at Victoria Street at this time (the formerly listed building was severely damaged by fire in 1975, and demolished the following year). According to Graham Larn, the bottling plant on Queen Street was also extended at the turn of the century, indicating a diversification away from reliance on cask beer, and a shrewdness with respect to industry changes on the part of the enterprising W T Hewitt.[21] The new cooperage and store yard on East Street appear to have been built in the context of these changes.

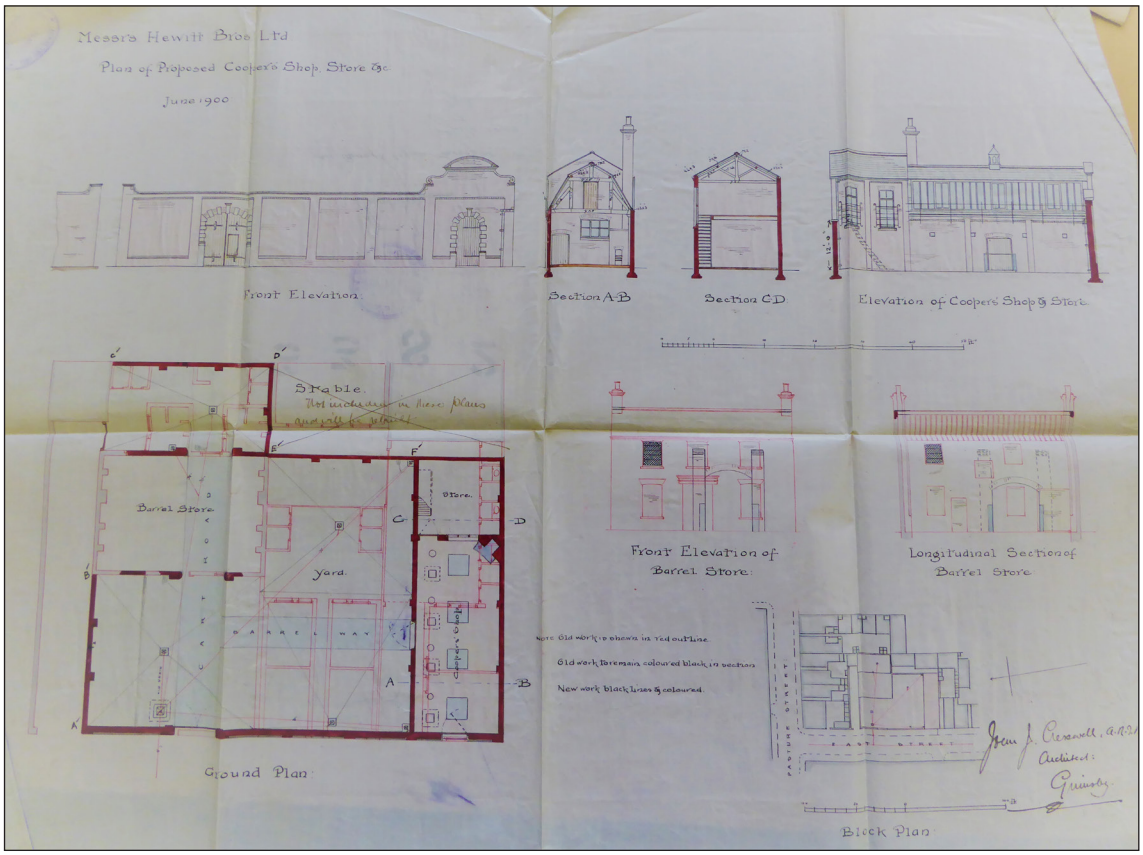


Figure 7: Full 'as-built' approved plans and elevations by John J Cresswell ARIBA of 1900 (Reproduced by kind permission of North East Lincolnshire Archives) Ref. 1062

North East Lincolnshire Archives holds approved plans and elevations of 1900 by John J Cresswell ARIBA, listed in *Cook's Street Directory* of that year at 77 Victoria Street, Grimsby (Figures 7-11). The plans clearly show the original form of the building, which was a linear structure aligned east-west, comprising a tall single-storey with mansard roof. An enclosed store yard corresponds almost to the existing footprint of the warehouse, designed originally with a perimeter wall rising to eaves level of the workshop. The enclosing wall is supported by a series of slightly projecting piers over a plinth, forming five recessed bays; the second bay from the left contains double-leaf vehicular entrance doors (still extant) and other bays are blank at this time, indicating that ground-floor openings were inserted at a later

date and that the building was later extended to the north by a single bay, which incorporates the cold store (Figures 11-12). In 1902, the year of W T Hewitt's death, the building is first listed in *Cook's Grimsby and Cleethorpes Street Directory* as 'Hewitt Bros Ltd, Cooperage'.[22] The physical evidence for these structures is explored in detail in Section 4, below.

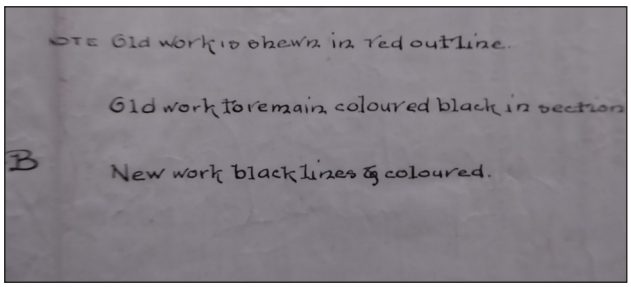


Figure 8: Detail of key to approved plans and elevations by John J Cresswell ARIBA of 1900 (Reproduced by kind permission of North East Lincolnshire Archives) Ref. 1062Library Board Maps 145.b.11. (4.), Sheet 9.1)

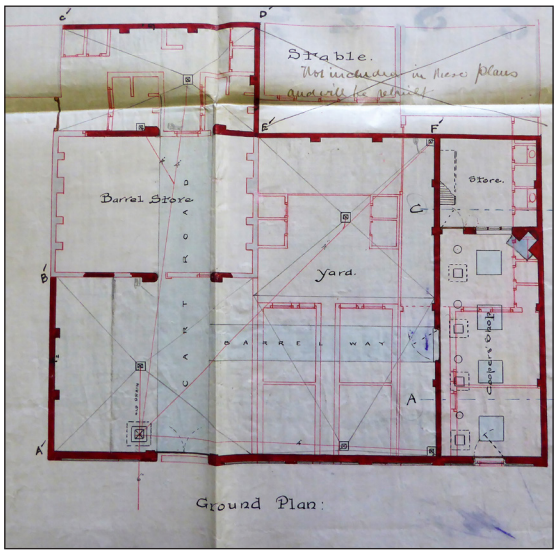


Figure 9: Detail of floor plan by John J Cresswell ARIBA of 1900 (Reproduced by kind permission of North East Lincolnshire Archives) Ref. 1062

Figure 10: Detail of elevation of existing barrel store from Cresswell plans (Reproduced by kind permission of North East Lincolnshire Archives) Ref. 1062

The 1900 plans also show in faint red lines the layout of existing structures on the site, noted on the plan as 'old work'. A stable is shown to the rear (east), with a note that it is to be demolished and rebuilt, and the plans also show the existing barrel store, although note that the returns associated with its former domestic use are not intended to be kept; that the barrel store was retained is confirmed by the 1905 Ordnance Survey revision (Figure 13).[23] The existing cobbled paths are depicted as part of the uncovered yard, captioned as 'cart road' aligned east-west, and a 'barrel way', set perpendicular to the cart road and leading to the coopers' workshop. The plans also show the former north elevation of the coopers' workshop and store, now enclosed within the ground floor of the later warehouse structure.

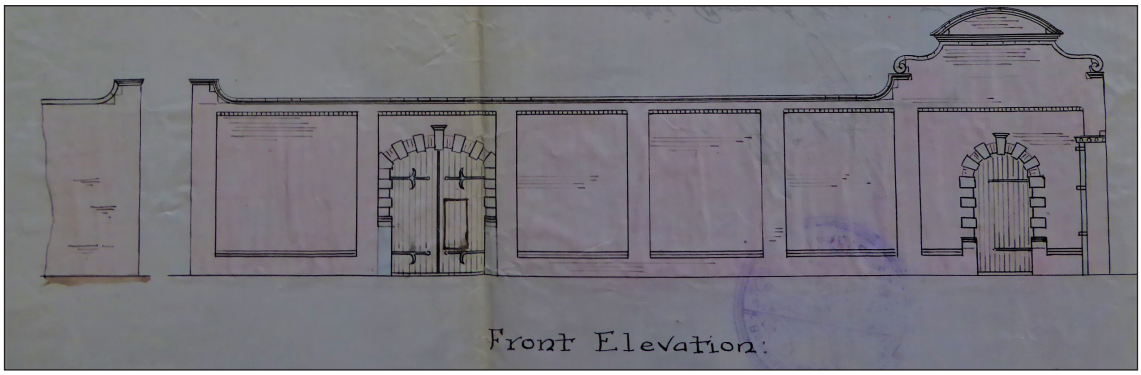


Figure 11: Detail of yard elevation by John J Cresswell ARIBA of 1900 (Reproduced by kind permission of North East Lincolnshire Archives) Ref. 1062

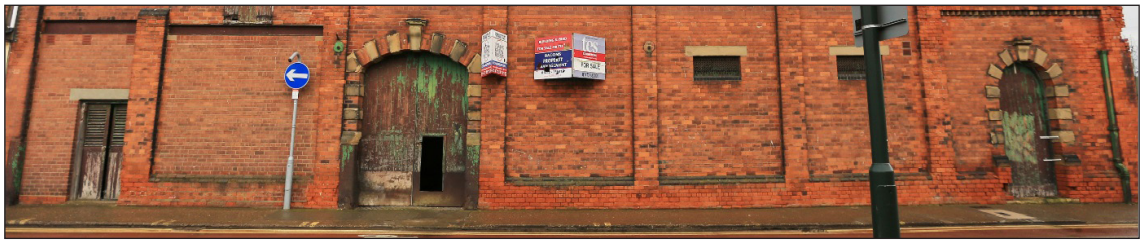


Figure 12: The Existing west elevation. The change in brickwork indicates that the plant room to the north is an extension, probably added at the same time that the building was raised (note that the image includes slight distortion from the wide-angled lens). ((c) Historic Engalnd, photograph: Alastair Coey Architects 2019)

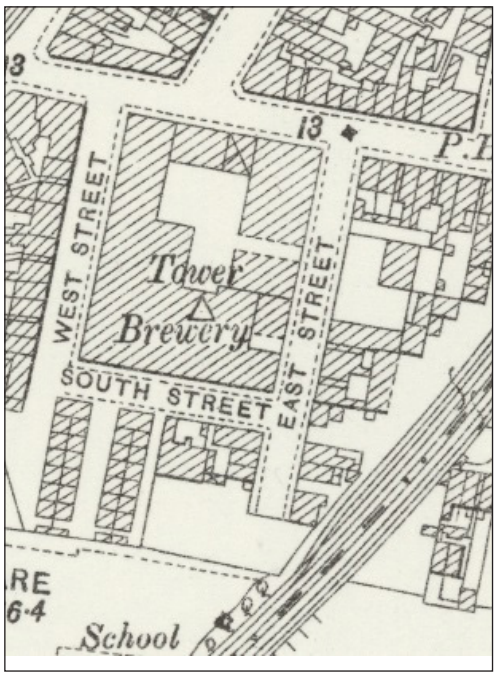


Figure 13: The cooperage building in 1905, reproduced from the Ordnance Survey map published in 1908, 1:2500 (© Crown Copyright and database rights 2019. All rights reserved. Ordnance Survey Licence Number 100024900)

That the plans were executed as shown is supported by the 1905 Ordnance Survey revision (Figure 13), which first shows the coopers' workshop in map form. It appears as a rectangular structure aligned west-east bounding the south perimeter of what is assumed to be the enclosed rectangular yard, vacant with the exception of a rectangular structure to the north-east. This corresponds to a building on Cresswell's plans named 'barrel store', of which no trace now remains.

After W T Hewitt's death in 1902, his son, Thomas William Good Hewitt, carried on his father's interests in the business, and was by all accounts an effective

Director, well-respected by his staff. Thomas William Good Hewitt died in 1930, and the Hewitt Bros estate was inherited by his nephew, Vivian Vaughan Davies Hewitt, who had little interest in the brewing business (incidentally being the first person to fly across the Irish Sea in 1912, aged 24, the farthest flight over water at that date).[24] The estate included the Grimsby brewery, as well as 300 public houses, hotels, areas of Grimsby docks, and W T Hewitt's home, Weelsby Old Hall. The lack of an interested successor was effectively the end of Hewitt Bros as a family-run enterprise, and Tower Brewery was put up for sale. In a move commensurate with the national restructuring of many breweries at that time, as many smaller brewers fell to increasingly large brewing companies, Hewitts' was floated on the stock market in 1934, becoming a public company under the chairmanship of Sir James Calder, a successful Scottish distiller and brewer. A merchant bank, as well as brewers Bass, Ratcliff & Gretton, Worthington & Co, and Whitbread & Co, all took substantial shareholdings in the firm.[25]

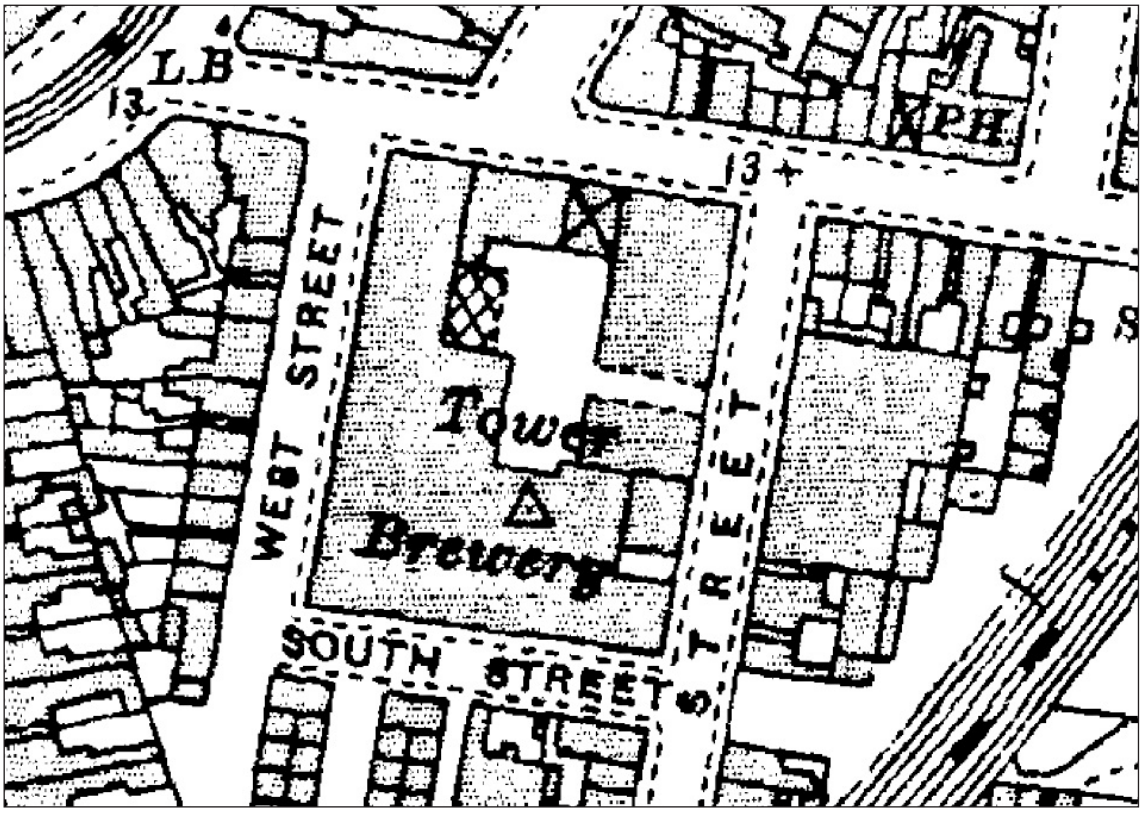


Figure 14: The cooperage building in 1933, reproduced from the Ordnance Survey Map published in 1933, 1:2500 (© Crown Copyright and database rights 2019. All rights reserved. Ordnance Survey Licence Number 100024900)

It is assumed that the building was raised to its current three-storey form and rebuilt as part of the construction of a new warehouse/barley store at some time under T W G Hewitt's direction in the 1920s, prior to his death in 1930. Plan registers from 1901 until 1937 were searched, but no further plans for the site are held by North East Lincolnshire Archives. No definitive date for the rebuilding has

therefore been found. A report prepared in 2013 for a planning appeal suggests without reference a date of 1928; however, this should be treated with caution until the source can be identified.[26] Certainly, the raising of the cooperage and the building of the new warehouse/store on the adjacent site to the north was completeby 1933, as evidenced by the Ordnance Survey revision of that year (Figure 14). The construction of the warehouse infilled what was shown on the original 1900 plans as a yard and entrance area and involved the demolition of the earlier barrel store (*see* Figure 9).

Figure 15: Infilling of a previous entrance to the west elevation (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 16: View of warehouse building as seen from East Street (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 17 shows the extent of the brewery in 1933, in its final year of private ownership. The warehouse is clearly visible in its current form, with the cooperage just visible to the rear, and the full extent of abutments still in existence. The site was not open to the railway, as it is at the time of writing, but was bounded to the east by terraced housing.

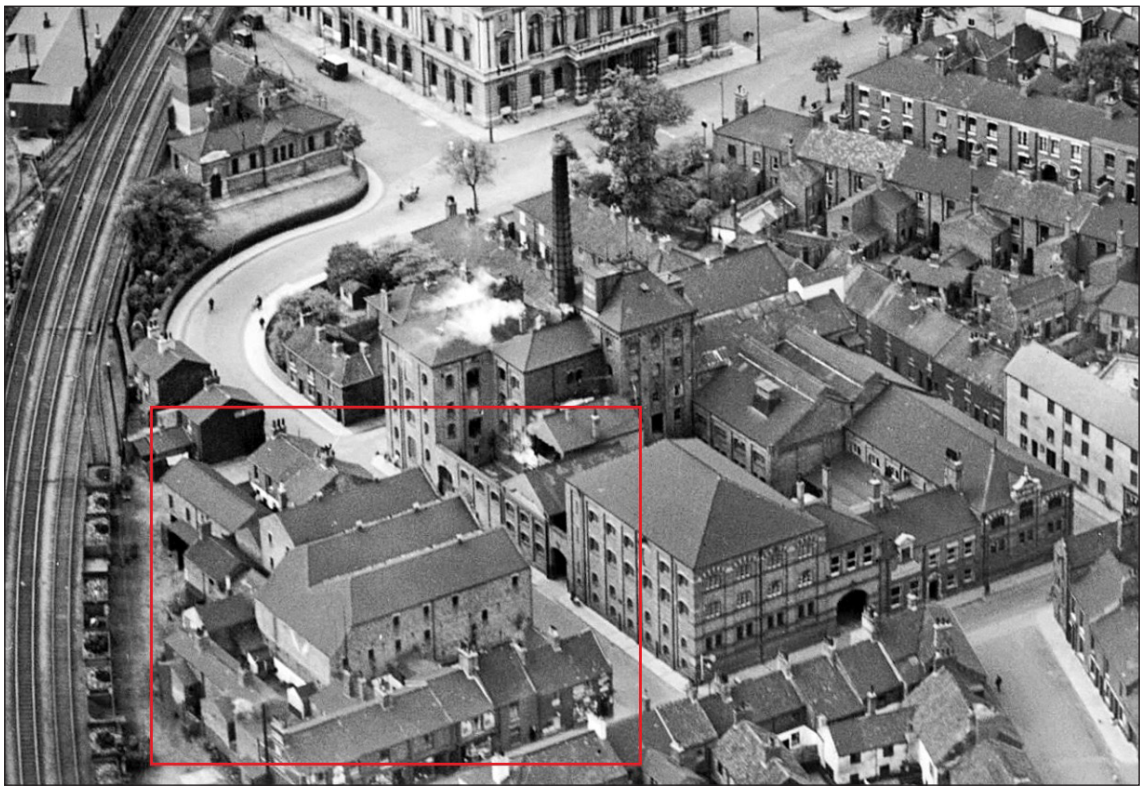


Figure 17: An aerial image of Hewitts Brewery in 1933 with the warehouse shown within the red square (© Historic England, Aerofilms Collection) Ref. EPW042807

It appears that Hewitt Bros was in safe hands with Sir James Calder, and was able to capitalise on changing trends, at least for a time. Graham Larn notes that as beer sales dwindled nationally, Hewitt Bros responded by increasing bottling operations, not only of its own brewed products, but bottling drinks for larger brewers including Bass and Guinness.[27] This shift in emphasis is reflected in the Goad plan of 1949 (Figure 18), which is strongly indicative of alterations to the storage facilities, presumably representing the evolving storage needs of bottled products from the Queen Street site. Changes to this part of the building have been overlaid on top of the previous plan, and appear to represent the last phase of change to the building. This phase in the development of the East Street building is also supported by physical evidence, including cork-insulated walls, and a notably complete refrigeration system within the building, in contrast to the cooperage, which became obsolete at an earlier stage, and retains little historic fabric. These changes are further explored in Section 4, below.

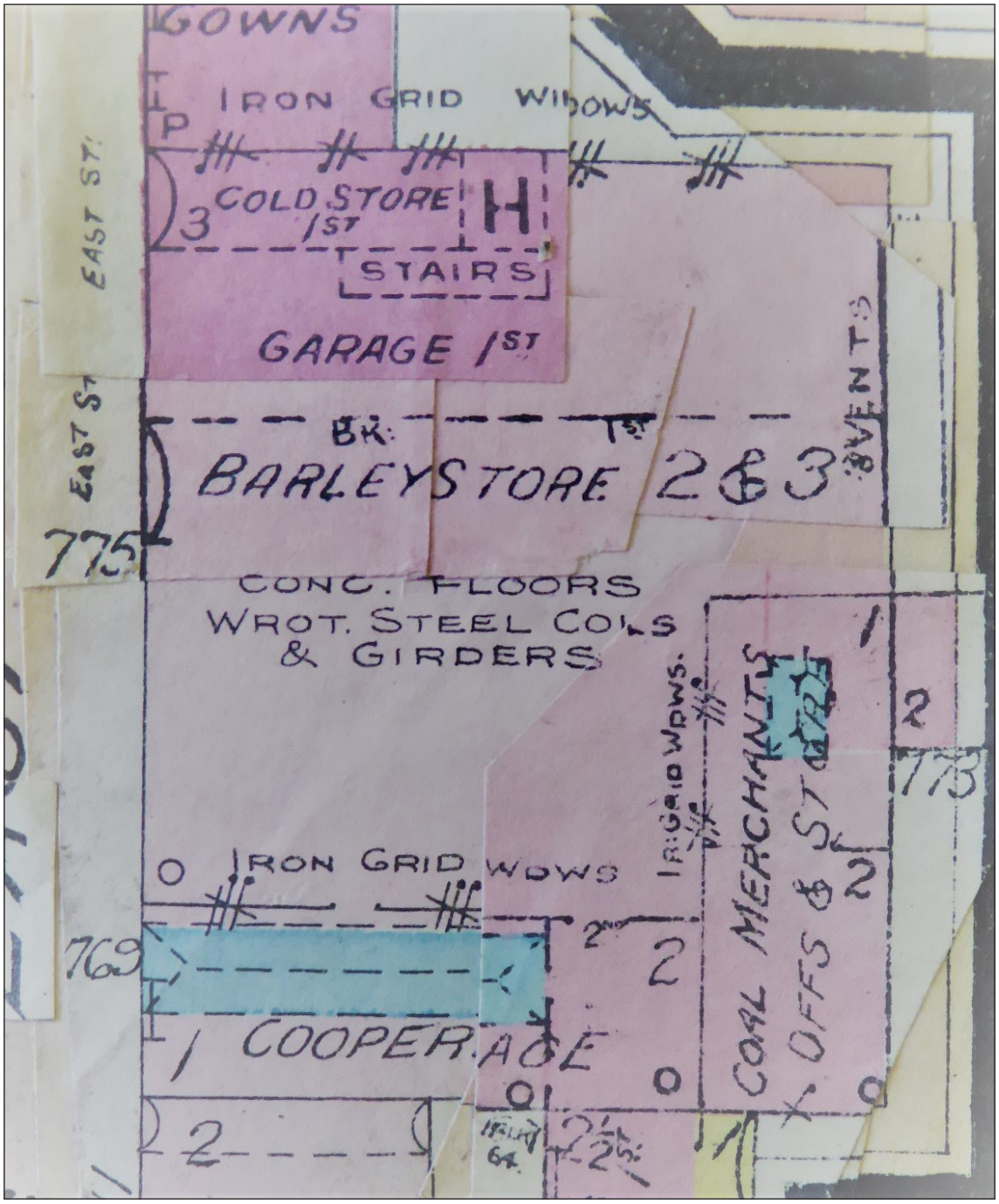


Figure 18: Goad Fire Insurance Plan of 1949 (Reproduced by kind permission of North East Lincolnshire Archives) Ref. 414

The Goad plan of 1949 is somewhat ambiguous, but the balance of evidence suggests that the ground floor was originally used as a garage, at least partially, and the upper floors for barley storage.[28] The rooflight over the cooperage is clearly shown, along with details of the windows and construction. The plan also shows a refrigeration plant and cold store at the north end of the floor. These probably did not exist prior to 1949. If they had, the staircase marked on the plan would have been in the ceiling of the cold store, compromising its performance. It is, however, possible that the staircase may have been adjacent to the cold store. When the cold

store was inserted, the stairs would have been removed and the ceiling void infilled. Indeed, vestiges of the metal frame around this void are still visible on the first floor. It was undoubtedly to keep the bottled beer fresh and extend its shelf life that the refrigeration facilities were installed. The changes are consistent with Larn's history, which states that the production of bottled beer at Hewitt Bros increased at the expense of barrelled draught beer after the Second World War. It is likely to have been the introduction of bottled beers and the increasing expectations of consumers that initiated the installation of the refrigeration plant. As noted in Section 2, above, secondary fermentation of the beer continues after it is casked or bottled and it will eventually deteriorate. Beer stored at 4°C for a year will taste the same as that stored at 21°C for two months or stored at 38°C for a week.[29] The purpose of the cold room was therefore to chill the beer, rather than freeze it, to retain its freshness. Section 5, below, comprises a detailed assessment of this part of the building, and the associated refrigeration plant, which survives. The Goad plan of 1949 also clearly shows the abutments to the south and south-east, which are now gone, but physical evidence for which survives. The caption 'Coal Merchants' suggests a separate enterprise, unrelated to the brewery.

Hewitt's continued to expand during the 1950s, through the purchase of the E F Flowers brewery and an associated increase in its tied public houses in areas such as Sheffield and Nottinghamshire. The 1960s saw an aggressive move by Canadian brewer E P Taylor, who sought to expand his brewing empire into the UK under the name Northern Breweries Ltd. In an attempt to avoid acquisition, Hewitts' voted that year to merge with Moors & Robson of Hull. However, Hewitts' fell to Northern United Breweries in December 1961, for the sum of £7.5 million.

In 1962, Northern United Breweries merged with Charrington's while in 1967, 'Charrington United' merged with Bass to become Bass-Charrington, taking in many local and regional breweries, including Hewitt's. The Chairman for a time was Peter Hewitt, who was a descendant of the Hewitt brothers. Peter Hewitt became Chairman of Canada Dry drinks division, and it is notable that Canada Dry' is one of a number of names hand-written on the wall of the cold store.

In 1967 it was announced that Hewitts' bottling plant would close with the loss of 20 jobs. Shortly after, on 14 March 1968, the *Grimsby Telegraph* reported that Hewitts' Brewery would close the following month. Mr T B Bourdillon, Hewitts' Managing Director, announced that brewing would cease on 19 April 1968. He stated: 'Because of increasing costs and aging plant, it would be uneconomical to refurbish the Tower Brewery'. [30] However, the Pasture Street site continued to serve as the company's headquarters, which continued to trade as Hewitt Bros Ltd.

By 1970 the high tower and brewing hall of the Tower Brewery had been demolished, and by the end of that decade the East Street site served solely as a distribution centre for Bass. The warehouse was increasingly unsuitable for loading and unloading, as modern articulated lorries found it difficult to access the yard, compared with the former dray lorries, and created traffic congestion. As Graham Larn has written, 'By 1980 the unthinkable had happened and the brewery,

cooperage and bottling store now stood empty'.[31] The remainder of the Tower Brewery, with the exception of the cooperage, was demolished in 1985.
John Pinchbeck co-owned the cooperage with the late local architect Rex Critchlow and the sale of the building has been agreed pending planning permission. Mr Pinchbeck and Critchlow bought the building around 1980. They planned to restore the building and attempted to have it listed, but this was unsuccessful. Structural difficulties and market conditions meant that their plans for restoration were also unsuccessful. Further planning applications to amend the building with a new loading entrance to the south, and for demolition, first of the entire site (2000) and subsequently the single-storey mansard wing (2010), came to nothing.[32]

Timeline

1806: Brewery at Pasture Street first established by John Garniss

1831: Pasture Street brewery purchased by John Hobson, who was in business from 1831 to 1863

1867-1868: Brewery leased by Edward Smith & Co from Hobson's trustees

1871: Lease taken by William Taylor Hewitt and his brother Thomas Hewitt

1874: Pasture Street Brewery sold by trustees of John Hobson to W T & T Hewitt

1885: Trading partnership of Hewitt Bros Co. established

1888: Registered as Hewitt Bros Ltd, with W T Hewitt as Director

1902: William Good Hewitt, son of W T Hewitt takes over the business following his father's death

1934: Hewitt Bros Ltd. becomes a public company

From this period until the 1960s, Hewitt Bros expanded, and acquired several smaller brewing establishments and licenced premises

1961: United Breweries acquire Hewitt Bros, subsequently merging with Charrington & Co in 1962

1967: Charrington & Co. merge with Bass to become Bass-Charrington

1968: Tower Brewery closed. Production on closing was 100,000 barrels per year

1975: Former Tower Brewery maltings on Victoria Street badly damaged by fire and demolished, despite being a listed building

1980: The East Street warehouse is vacated by Bass Charrington, and purchased by Rex Critchlow and John Pinchbeck. There follows a series of planning refusals for demolition or re-use of the site

1985: Demolition of Tower Brewery

3. HISTORIC FABRIC ANALYSIS

The site today

The cooperage footprint is roughly rectangular with a narrow projection from the north-east giving it a stunted 'L' shape. To the north are modest two-storey commercial and residential buildings. To the east, a modern two-storey domestic scale brick building, with hipped tiled roof, abuts the north-east corner of the cooperage and further east a triangular plot of waste ground backs unto the railway track. To the south, is more waste ground.

Pre-Cresswell

In 1888, the site which eventually became the cooperage appears to have been mainly occupied by single- or two-storey dwellings, most of which had been built after 1848. Two houses called 'Poplar Cottages', facing East Street, appear to have had a substantial boundary wall with piers bordering their front gardens. At some time before 1900, according to Cresswell's drawings, 'Poplar Cottages' seem to have been converted from two houses into one, on the same footprint, but with a three-bay front elevation and central entrance doorway, while retaining the two original return buildings. To the north of 'Poplar Cottages', a narrow carriageway led to the rear yard of the northernmost cottage. To the east, a row of four, much smaller, terraced houses, accessed through a narrow passage from Pasture Street to the north, faced west onto a space called 'Wilkins Yard' and the rear boundary to 'Poplar Cottages'. This terrace, which backed onto the railway line, survived Cresswell's plans and can be seen in an Aerofilm photograph taken in 1933 which shows the cooperage site in its most complete state (see Figure. 16). To the south-west, three buildings, probably houses, fronted onto East Street. A carriage arch passed between the two southernmost buildings and led into a yard, within which was a line of eight sheds to the southern boundary, four privies and a building (possibly a coach house or stables) which occupied the full width of the yard at the east end. A passageway between the two northernmost buildings led to another yard; this contained several structures including one which occupied the full width of the yard at the east end, which Cresswell labels as a 'Stable'.

Cresswell's Scheme

Cresswell's scheme of 1900 involved the creation of an enclosed site with a coopers' shop and store occupying the full width of the south end and the extensive alteration of the house formerly known as 'Poplar's Cottages', to the north, to create a barrel store. Window openings were blocked, a new central coachway with flanking piers was created to provide access to the east yard and the house's two return buildings (first shown on the 1888 Ordnance Survey map, Figure 5) were demolished.

To the south, the three houses fronting onto East Street were also demolished to

make way for the new premises. A new eastern boundary was established between the new premises and existing buildings to the east, shown as 'Stable to be rebuilt' on Cresswell's plans and depicted as two buildings separated from the new premises by a narrow passageway. The 1905 Ordnance Survey map shows the southern building abutting the east gable of the coopers' store, not separated from it (see Figure 13).

The remainder of the site was taken up by two yards, the larger of which was L-shaped in plan and fronted the cooperage. It was accessed through an archway from East Street; today this archway is the principal access to the main building. The second yard was behind and to the east of the remodelled Poplars Cottages. The rear boundary wall to the east of this yard separated the new premises from Wilkin's Yard beyond. The surface of both yards sloped towards drainage gullies, which survive, and can still be seen on the ground floor of the main building. It is not known how the yards were surfaced with the exception of the north-south cart road and east-west barrel way shown on Cresswell's plans and which survive substantially intact with stone sett paving, albeit partially obscured by concrete overspill.

The Cooperage

The cooperage has load-bearing brick walls constructed in English garden wall bond, limewashed on the inner face. The south wall has inward-projecting piers, presumably because it was built against a pre-existing gable belonging to an adjacent property. Now that this has been demolished, the unfinished nature of the outer face – which is stack-bonded in places with extensive voids between joints and widespread mortar overspill – confirms that the wall was originally blind. The north wall has piers projecting from the outer face, formed into panels, most of which can still be seen from the main building. The walls rise to two storeys at the east end of the store and a tall square chimney serving the forge, now missing, emerged at the interface between the coopers' shop and store.

The coopers' shop and store survived almost intact and unchanged as an annex to the south of the main building, the south wall at first- and second-floor levels of the new building being built on top of the existing north wall of the cooperage. The opening connecting the coopers' shop with the ground floor of the new building appears to date from the construction of the main building (between 1906 and 1931). The westernmost first-floor window of the north wall, as shown on Cresswell's drawing, appears to have been modified to link with the first floor of the main building and the eastern window has been blocked.

Coopers' Shop

The coopers' shop is a double-height space, originally without windows in its

external walls and apparently lit by glazing in the gambrel roof above – as seen in the Goad plan of 1949 (see Figure 18). The original sandstone pediment as shown on Cresswell's elevation was taken down between 1906 and 1931 and relocated as a feature on the central west gable of the main building, while the coopers' shop was rebuilt with a pitched gable containing a new window opening and capped with a simple sandstone verge coping.

It was not possible to examine the floor in detail because of an overburden of debris; however it seems that the surface is concrete. Cresswell's floor plan shows four squares equally spaced on the longitudinal central axis, which may have been blacksmiths' dousing pits. On the north side it is not clear what alternating circular and square symbols on the plans are intended to represent, although the stub of a large square post can be seen projecting from the debris of the surviving structure, the purpose of which is unclear.

Figure 19: Surviving features of fireplace to coopers' store (© Historic England, photograph: Alastair Coey Architects 2019)

The forge grate is located in a diagonal chimney breast in the south-east corner and, while the segmental brick arch over the fireplace has collapsed, the grate bed, fireplace opening jambs and flue survive (Figure 19). The hearth was used to reshape the metal hoops which bound the barrels tightly, ensuring they remained watertight.

There is one window opening on the east wall to the north of the forge which originally contained a segmental arched window providing natural light to the ground floor of the store. This opening was lowered to floor level and the frame removed at some time before the photograph showing coopers at work was taken (see Figure 3; date unknown, but assumed inter-war). There is also a high-level window, introduced above the East Street entrance when the main building was constructed, between 1906 and 1933, and the decorative pediment removed.

There are four original door openings, each of which retain some evidence of original joinery. A round-headed painted timber door opening from East Street is original. It is ledged, framed, braced, and vertically sheeted. The door survives intact and parts of the frame also remain. Original ironmongery including wrought-iron 'T' hinges and thumb latch also survive and the location of the original rim lock can be seen. An opening to the ground floor of the store, on the north side of the east wall, has a segmental brick arch. The timber frame survives and hinge pintles can

be seen on the north jamb. A centrally-located segmental brick arched opening at the first floor of the store contains a vertically sheeted ledged, framed and braced door and frame. This door must have been used for lowering and raising barrel making materials between the store and the shop floor below as it is clear that this door was never approached by a staircase from within the cooper's shop. A square-headed opening in the north wall, which originally opened into the large yard, now opens into the ground floor of the main building. The painted timber, ledged, framed, braced and vertically sheeted door and frame survive intact.

Figure 20: Surviving terracotta air vents in the coopers' store (© Historic England, photograph: Alastair Coey Architects 2019)

Remains of timber battens with protruding iron nails on the walls, roughly 1600mm from ground level, appear to have functioned as basic tool racks and timber shelving projects from the west wall. On the north wall are located two decorative terracotta air vents inscribed 'open', 'shut' and 'No. 130 Vorticone Patent', and stamped with the number 'Pd348635' (Figure 20). The Cresswell drawings suggest two more similar ventilators are missing, although the openings which housed them can be seen in line with the extant ones.

Surviving carpentry of the now largely collapsed gambrel roof construction confirms that it was built very much along the lines shown on Cresswell's drawing. It had two north-south spanning trusses carrying purlins which in turn carried the upper pitch of the roof; this had diagonal sarking boards, to which Welsh slate (360 mm x 260 mm) was nailed. The steep lower pitch seems to have been fully glazed, at least on the north side. This included three openable panels which may have provided some form of access to the balcony overlooking the yard below; this may have been to aid the cleaning of the external glazing. At the time of writing (March 2019) a considerable amount of evidence of the roof structure survives both at high level, where some roof timbers still cling on, and at floor level, where most of the collapsed roof lies. The remains of timber gutters found among the debris are unusual as by the 19th century most buildings had guttering made from cast-iron. These have a semi-circular interior and moulded exterior with a flat base. It is possible that the gutters, which are painted with the same green paint used on the doors, were positioned between the upper and lower slopes of the gambrel roof. It seems that the lower slopes of the roof drained to parapet gutters which, on the north elevation, drained to cast-iron downpipes which survive fixed to the south wall of the main building. The guttering on the south elevation ran along to discharge into a cast-iron hopper on the west elevation, then this discharged into the rectangular cast-iron downpipe

shown on Cresswell's elevation and still extant today.

Store

The store has a concrete ground-floor construction similar to the coopers' shop. The first floor comprises timber floorboards on north-south spanning joists built into pockets in the brick walling with intermediate support from two east-west spanning timber beams. The north-east corner is trimmed to accommodate an open-tread timber staircase and rudimentary timber balustrade, the remains of which can be found among the debris on the ground floor. The double-pitch slate roof has collapsed in its entirety.

The Main Building

The date of construction of the present three-storey main building is not known – except that it was at some point between 1906 and 1933, as evidenced by the Ordnance Survey maps of those years. As noted above, it was said to date from 1928 in an unreferenced report of 2013 (see Section 1). The building was built as a barley store, with garaging and a cold store on the ground floor. It is rectangular on plan with a narrow projection at the north-east. It has brick walls and a slate roof with three east-west spanning double pitches with valleys between, gabled to the west and hipped to the east (see Figure 16). In order to make way for the main building, the existing barrel store (formerly Poplar Cottages) was demolished and the space previously occupied by a narrow carriageway to the north and the small building, roughly square in plan, which it led to was incorporated (see Figures 13 and 14).

There is no doubt that Cresswell's boundary walls to the east and west were (after removal of copings and upper courses of the west wall), at least partially, incorporated into the ground-floor perimeter structure of the new building. This is confirmed by a slight variation in brick colour at first-floor level on the west elevation (approximately four brick courses beneath the string course, Figure 21), the 3,728 mm (*circa* 12' 2.5) floor to soffit of first-floor floor slab dimension corresponds almost exactly with Cresswell's 12 foot dimension of the east boundary wall, extending north from the cooperage shown on his 'Elevation of Coopers' Shop and Store'. Additional evidence survives of original brick piers, recessed panels and ventilation openings on the north elevation of the coopers' shop and store, and of the formerly free-standing brick boundary walls and piers to the main yard and north-east yard behind the barrel store.

Planning permission was granted in January 2012 for a significant amount of works to stabilise the main building.[33] This involved taking down and rebuilding in new brick the three west-facing gables, re-using original sandstone verge copings,

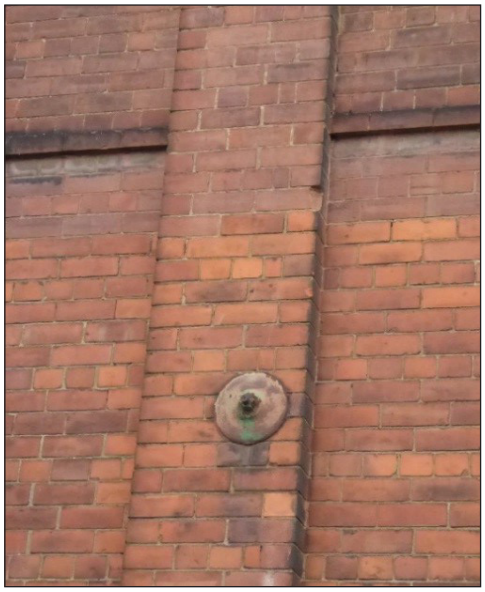


Figure 21: Variations in brick hue to the existing west elevation (© Historic England, photograph: Alastair Coey Architects 2019)

central pediment and rubbed brick voussoirs to the central elliptical and flanking circular window openings. Additionally, the entire original secondary timber roof structure and slate roofing was taken down and a new slate roof on closely spaced modern gang-nail roof trusses was inserted between the (now redundant) original iron trusses which have been retained *in situ*. The heavily corroded bases of original iron columns at ground-floor level were stabilised by encasing in concrete and incorporating flanking steel columns to provide additional support, while decayed original (possibly concrete) lintels were replaced with new sandstone lintels. All of this work has been carefully executed, with minimal impact on the historic fabric, and has undoubtedly been responsible for securing the building in a stable condition.

West elevation

The west (East Street) elevation, which is faced with brick laid in English garden wall bond, has three gables of equal width. Cresswell's boundary elevation was a symmetrical composition comprising four equal-width central panels (each approximately 13 bricks wide) flanked at either end by wider panels (approximately 18 bricks wide), the southern panel being the gable of the coopers' shop (see Figure 11). The panels were separated by equal-width piers (2.5 bricks wide), with the exception of the pier at the north end corner which was three bricks wide. With the inclusion of the carriageway to the north end of the new building, a new, narrower bay (approximately 10 bricks wide) was added to the existing wall and this, combined with the existing wider end pier, disrupts the symmetry of the new elevation (see Figures 12 and 15). The four equal-width recessed panels extend upwards from a plinth capped by two courses of plinth stretchers to the gable base, where they terminate at a single outward-projecting plinth stretcher, while the piers terminate at the same point with an inward projecting plinth stretcher. The pier between the two northernmost panels does not extend beyond ground-floor. The south end of the west elevation projects slightly beyond the south elevation in order to accommodate the original pier width.

At ground floor, from south to north, the three southern panels each contain a small high level opening with engineering brick flush bullnose sills, plain sandstone lintels and a cast-iron grille. These appear to have been added during construction

Figure 22: Cast-iron coach wheel deflector (© Historic England, photograph: Alastair Coey Architects 2019)

of the new building. The original elliptical-headed entrance archway, with sandstone rusticated surrounds and brick jambs and voussoirs, is set in the fourth bay. The fifth bay is infilled with newer brick built on the original plinth and capped with an exposed 300 mm deep steel 'I' section beam. The sixth and final bay does not have a plinth and has also been infilled with newer brick capped with an exposed 200 mm deep steel 'I' section beam. Timber louvred double doors, in an offset opening with precast concrete lintel, provide access to the cooling plant rooms. The infill brick panels and steel beams are undoubtedly related to the creation or expansion of the cooling plant rooms and cold store and probably replaced former garage doors. On the south side of the northernmost pier is a cast-iron coach wheel deflector below a single bullnose brick corner, the purpose of which was to protect the brick structure from the potential impact of coach wheels; its presence is unusual as there is no corresponding wheel deflector to the southern pier (Figure 22). The deflector is identical to the two at the main entrance archway.

At first-floor a single brick string course extends across the entire elevation below the window sills. Each of the four southernmost bays contains a centrally-located, square-headed window opening with slightly projecting bullnose blue engineering brick sill and (recently installed) sandstone lintel. The 16-pane metal-framed windows each incorporate a two-pane top-hung opening section. The northern bay contains, on its north side, a similar window and, to the south side, a loading doorway with timber double doors. The loading door is positioned beneath a projecting crane beam located above similar doors on the second floor.

At second floor a double brick string course, separated by alternating brick headers, extends across the entire elevation three courses below the window sills. The windows are similar in style to those on the first floor, with metal frames, but are not as tall, with 12 panes in three rows rather than the 16 panes in four rows seen below.

All three gables have been rebuilt in modern brick. The north and south gables are capped with re-used sandstone verge copings kneelers and apex stones. Each has a circular window opening which re-uses the original rubbed brick surrounds and contains a window with central diagonal pane. An interesting feature is the apparent relocation of the curvilinear gable to the central bay. This feature can be seen in Cresswell's elevations to have originally adorned the cooperage workshop, but was evidently relocated to the central gable of the raised store, whereupon the

gable of the cooperage was replaced in a plainer style (Figure 23, and see Figure 11). It contains a central elliptical opening with projecting sandstone voussoirs to top, bottom and sides, brick voussoirs and four-over-four metal window.

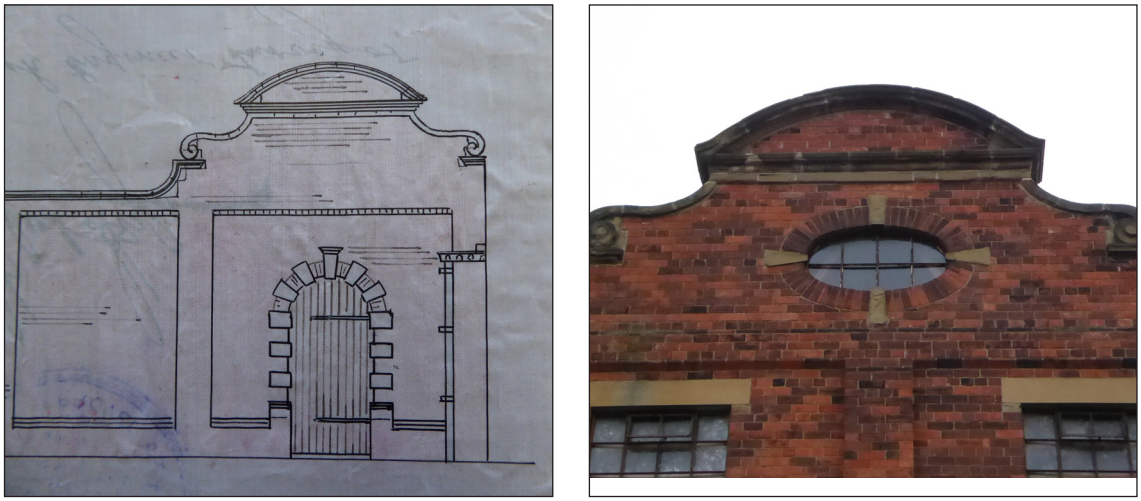


Figure 23: Evidence of relocation of the curvilinear gable. Left: Detail of Cresswell's plans of 1900 depicting the gable atop the cooper's store (Reproduced by kind permission of North East Lincolnshire Archives) Ref. 1062. Right: The existing gable to the central bay of the main building. (© Historic England, photograph: Alastair Coey Architects 2019)

North elevation

The north elevation of the main building is constructed in poorer quality brick laid in English garden wall bond. It abuts a later single-storey building to the north at ground and first floor. At second floor are four square-headed openings each with a precast concrete lintel and bullnose blue engineering brick sill. The opening contains a cast-iron diamond pattern ventilation grille.

East elevations

The east elevations are constructed in poor quality brick laid in English garden wall bond. Physical evidence, including remains of a lead cover flashing, suggests that the ground floor of the re-entrant corner was built against an existing pitched roof building, since removed. The brickwork at first floor differs in colour from that at second-floor but the reason for this is not clear; it may be that the first floor has been more recently re-pointed, which would affect the overall appearance of this section. The cast concrete first-floor floor slab can be seen on the east and south elevations of the north-east projection (Figure 24). The south elevation of the north-east projection contains one cast-iron diamond pattern ventilation grille at first-floor level and the east elevation of the south bay contains two similar openings at first- and second-floor levels.

Figure 24: East elevation and north-east projection with variations in brickwork colour and evidence of the cast concrete first-floor slab (© Historic England, photograph: Alastair Coey Architects 2019)

South elevation

The south elevation is constructed in poor quality brick laid in English garden wall bond. The first and second-floors are built on the original north wall of the coopers' shop and store. The first and second floors each have three cast-iron diamond pattern ventilation grilles. A doorway at first floor, formed in the location of one of the cooperage's former north facing windows, opens into the first-floor store.

Roof

The slate roof is a recent replacement based on closely-spaced modern gang-nail roof trusses inserted between the (now redundant) original iron trusses which have been retained *in situ*. The three double pitches are gabled to the west and hipped to the east and the two northernmost hips continue downwards in a continuous plane as a mono-pitch roof over the north-east projection.

Structural frame

The structural frame comprises wrought-iron columns and beams. Two rows of primary beams, resting on wrought-iron columns, span east-west carrying north-south spanning secondary beams, in the same plane, bolted into their webs.

Columns are spaced at approximately 5 metre centres, primary beams are spaced at approximately 7 metre centres and the secondary beams at approximately 3.15 metre centres. Some of the beams have embossed lettering indicating they were manufactured at the Dorman Long Middlesbrough Ironworks. At ground floor the ends of both primary and secondary beams bear on substantial brick perimeter piers (generally four bricks wide by three bricks deep) built against, but not bonded to, the former yard walls and apparently sized to avoid placing stress on them. The new perimeter walls at first and second-floors are a brick-and-half thick (approximately 330 mm) and the piers are bonded to the walling.

First and second-floor slabs are formed in 200 mm thick cast concrete. There is no evidence of reinforcement. There is no extant staircase serving the upper floors although a straight timber flight was noted lying on the ground floor. The approximate vertical height of this flight seems to correspond with the first-floor level floor to ceiling height. The existing opening in the second-floor slab, three metres long by one metre wide, would accommodate a staircase and its approximate position tallies with an indication of 'staircase' on the 1949 Goad insurance plans.

Ground-floor interior

The ground floor is 3.7 metres high. It seems that when the main building was constructed, the entire ground floor was undivided. It is now subdivided into three major spaces:

- Cooling plant rooms – The refrigeration plant (see Section 5) is housed in a long narrow space to the north which is subdivided into an inner (to the east) and outer room (to the west) accessed from East Street through a set of timber double doors. The outer chamber contains compressor and condenser plant and, mounted on the north wall, the main electricity distribution board. The inner chamber has thickly insulated walls, contains an evaporation plant and is accessed through a thick insulated door located in the west wall.

- Cold store – The cold store is 'L' shaped on plan. Its walls and ceiling have smooth modern plaster. The walls, and presumably ceiling and beams, are heavily insulated with a thick layer of cork (approximately 75mm). It is not clear if the floor is insulated. If it is, the original concrete floor must have been taken up and re-laid on insulation as it aligns with floor level in the main store. Painted timber sheeted rectangular air ducts are mounted at ceiling level on the east, south and west walls and are supplied by a north-south duct distributing chilled air from the inner plant room.

- Main store – The final space, rectangular on plan, with the projection to the north-east, is accessed through a set of timber double gates (incorporating a wicket gate) from East Street. Walls are of limewashed red brickwork. Columns differ from the upper floors by having riveted plates making up the 'I' section. The 'new', beam-carrying brick piers have bullnose corners and the bottom 16

bullnoses are of blue engineering brick. An insulated door (identical to that in the refrigeration plant room) is located in the north wall and provides access to the cold store beyond. The handle to this door is protected from being damaged by vehicles by substantial wedge-shaped timber blocks fixed to the wall. In the south wall is the original door opening into the cooperage. In the south-west corner is a modern toilet block constructed from concrete blocks.

It is not known when the refrigeration plant rooms and cold store were originally formed. The finishes and details suggest the 1960s, although the Goad insurance plans indicate the existence of a cold store of some form in this location in 1949 (see Figure 18).

The floor of the main store is substantially formed in concrete although the north-south sett-paved 'cart road' and east-west 'barrel way' shown on Cresswell's plans survive substantially intact, albeit partially obscured by concrete overspill. The existing drainage gulleys appear to correspond with those shown on Cresswell's plans. The new wall separating the main store from the cold store is constructed in a yellowish brick randomly laid in header and stretcher courses. The exposed cast *in situ* concrete first-floor slab is penetrated by a square opening which has a steel frame and was originally fitted with two upward opening steel trap doors, now missing. Cast-iron drainage pipes penetrate the floor slab and are routed at ceiling level to downpipes secured to timber boards fixed into the column web.

First-floor interior

The first floor is 2.6 metres high. The floor is finished with asphalt laid to fall to drainage outlets cast into the floor and turned up on the perimeter walls. The red brick walls are limewashed and beam support piers are bonded to the external walls and have bullnose corners similar to the ground floor, with bottom bullnoses in blue engineering brick. Cast-iron ventilator openings on the north, south and east walls are each fitted with a single original timber shutter which slides to one side on a timber track to allow ventilation rates to be controlled. The shutters are painted timber, ledged and vertically sheeted with a small square glazed vision. The half-brick thick wall which separates the north-east projection from the remainder of the floor is constructed in yellowish brick similar to that used in the ground-floor cold store walls and presumably constructed at the same time. Two openings, each containing ledged, braced and sheeted doors, lead to the rooms beyond. The room to the south has three storage bins separated by low half-brick thick walls. Vertical parallel timber battens are secured to the west end of each bin, presumably to house removable panels.

The exposed cast *in situ* concrete second-floor slab is penetrated by a square opening which has an iron frame and chequer-plate surround and was originally fitted with two hinged upward opening flaps, now missing. Evidence of the original circular post and chain safety barrier also survives. This opening is aligned with the

floor opening below and presumably they enabled goods to be raised and lowered through the building. A second rectangular opening, possibly the location of the staircase referred to above, is located approximately 3.5 metres from the north wall and 6.5 metres from the west wall. This is trimmed with two 200 mm deep 'I' section joists.

Second-floor interior

The second floor is 1.8 metres to the underside of the structural beams. The floor is finished with asphalt laid to fall to drainage outlets cast into the floor and turned up on the perimeter walls. The asphalt bears circular imprints, presumably caused by barrel storage (see Figure 2). The red brick walls are limewashed and beam support piers are bonded to the external walls and have bullnose corners similar to the ground floor, with bottom bullnoses in blue engineering brick. Cast-iron ventilator openings on the north, south and east walls are each fitted with a single original timber shutter identical to those at first-floor level. Painted timber framed ledged and sheeted double doors open outwards. An overhead crane beam, penetrating the wall above, has been truncated as a result of the new roof installation. However, the inboard steel 'I' section support post remains *in situ* along with some of the pulley operating system. The original iron fink trusses are all exposed, each consisting of flat bar webs in a 'W' formation connecting angle-iron chords through bolted gusset plates.

4. ANALYSIS OF THE REFRIGERATION PLANT

Principles of refrigeration

The aim of refrigeration is to extract the heat from an enclosed space and expel it to the outside atmosphere. The closed space is the cold room and as its air becomes progressively cooler, so does anything stored inside.

The key element of any refrigerator, even modern fridges, is a pipe which carries a refrigerant through five main components: (1) receiver, (2) expansion valve, (3) evaporator, (4) compressor, and (5) condenser (Figure 25).

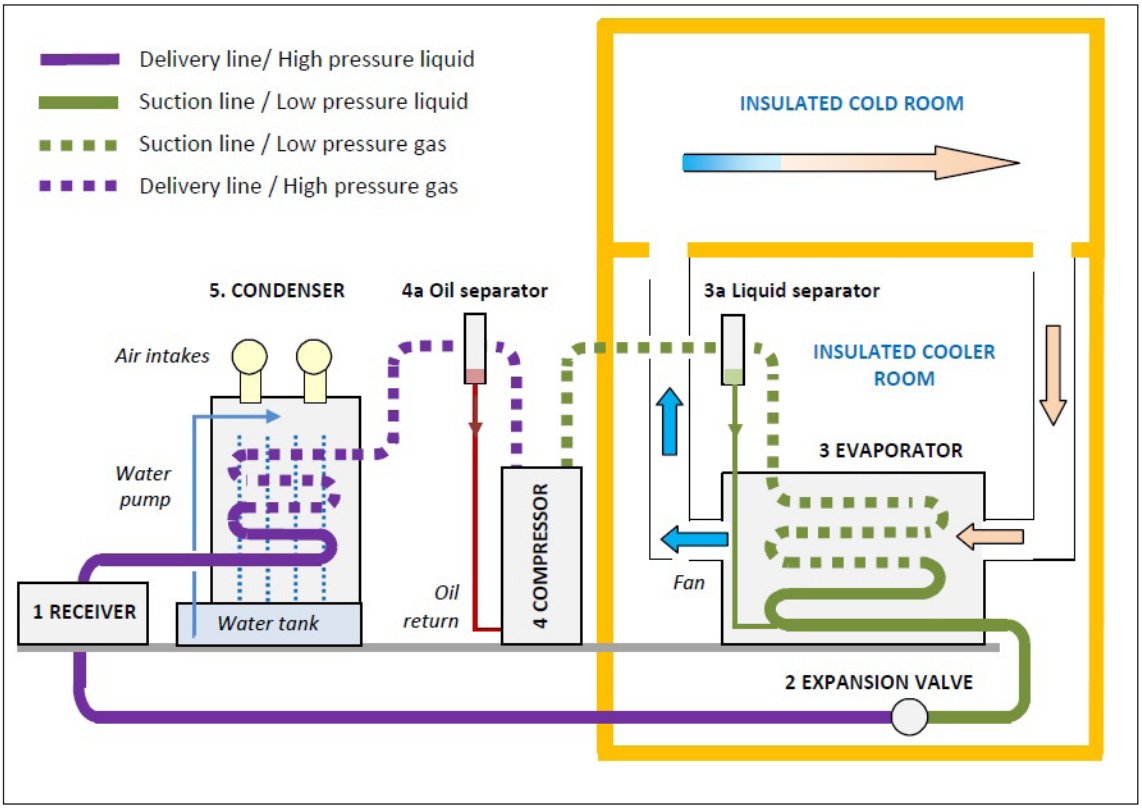


Figure 25: Flow diagram of the refrigeration process (© Historic England, photograph: Fred Hamond 2019)

The *receiver* (1) acts as a reservoir for the refrigerant and it is contained under pressure in liquid form. From here, the liquid is fed along a pipe to the *expansion valve* (2). Because the diameter of the outlet pipe from the valve is bigger than on its inlet side, the pressure in the outlet side is appreciably lower. This makes it easier to vaporise the liquid refrigerant. The valve could be manually set to deliver at a fixed rate and was also automatically regulated according to the temperature in the evaporator.

In turning a liquid into gas, heat is required to raise its temperature to boiling point, and additional heat (known as the latent heat of evaporation) is also required to complete the transformation. The source of this heat is the air contained in the cold room. This air is sucked into the *evaporator* (3) by a fan and thence around the outsides of the internal refrigerant pipework coiled inside the unit. Any warmth in the air is conducted though the walls of the pipework and is absorbed by the refrigerant, thus turning it into gas. The air at the outlet end of the evaporator is thus colder than when it entered as its heat content has been transferred to the refrigerant. This cooler air is then blown back out into the cold room by the same fan that sucked it into the evaporator.

It is essential, of course, that no heat is absorbed through the outside walls of the evaporator as this could heat up the air being sucked through inside it, thus counteracting the action of the cooling pipes. With modern evaporators, their walls are heavily insulated. In the case of older assemblies, such as here at Grimsby, the evaporator is placed in an insulated room with an airtight door so that no warm air can enter from outside.

The refrigerant in the pipe emerging from the evaporator is now in gaseous form, the heat from the cold room air having been transferred to it. However, there may be some refrigerant which has not gasified. It is necessary to remove this residual liquid before the gas reaches the compressor. As a liquid, it cannot be compressed any further, and may burst the compression chamber if allowed to enter. For this reason, refrigerant enters a *liquid separator* (3a). Because the cross-sectional area of its chamber is larger than that of the incoming pipe, the velocity of the refrigerant is reduced. In slowing down, the liquid, being denser than the gas, falls to the bottom of the chamber and is returned to the evaporator.

The gas, now devoid of any liquid, continues onwards to the *compressor* (4), where it is physically compressed and then expelled through the discharge pipe at its other end. Had any liquid refrigerant entered the compressor in the first instance, it may have burst the compression chamber owing to the incompressibility of fluid. The compressor's piston requires lubrication to prevent it seizing up in its cylinder. In passing through the compressor, traces of oil may be picked up by the refrigerant which, if allowed to build up, would compromise its effectiveness. The compressed gas is therefore passed through an o*il separator* (4a). This functions in the same way as the liquid separator: the velocity of the gas-oil mix is reduced, causing the heavier oil to separate out from the lighter gas; the oil is then returned to the compressor's sump.

The compressed gas continues on to the *condenser* (5), the purpose of which is to remove the heat absorbed by the refrigerant in the evaporator. Because the gas is warm, so is its containing pipe which is coiled through the inside of the condenser. The large surface area which the coiled pipe presents is showered with cold water. Because of the temperature gradient between the inside and outside of the pipe, the refrigerant's heat (specifically its latent heat of condensation) is conducted through the pipe's wall and is absorbed by the coolant water. Air is blown through the water

to accelerate its cooling as it falls into a trough below; from this it is pumped back into the condenser. The reduction in temperature effected by the condenser causes the gas to revert to liquid which is then fed back into the *receiver* (1), enabling the cycle to repeat itself.

The longer the equipment runs, the more heat is extracted from the air by the evaporator, causing the cold room to become progressively cooler, even down to sub-zero temperatures in the case of freezers. In the case of beer, however, it was stored between 1°C and 5°C.

It is the action of the motor-driven compressor – - sucking the refrigerant into it on the input stroke and delivering it onwards on the output stroke – which causes the refrigerant to move along the pipe through the various components of the refrigerator. When the cold room reaches a pre-set temperature, the compressor is switched off, either manually or automatically by means of a temperature sensor in the room. This causes the refrigerant to stop circulating and halts the absorption of heat. When the room warms up again, such as when its door is opened to load in a fresh consignment of beer, the compressor is restarted and eventually brings the room back down to the desired temperature. The flow of refrigerant into the evaporator is also regulated by a temperature sensor which adjusts the expansion valve.

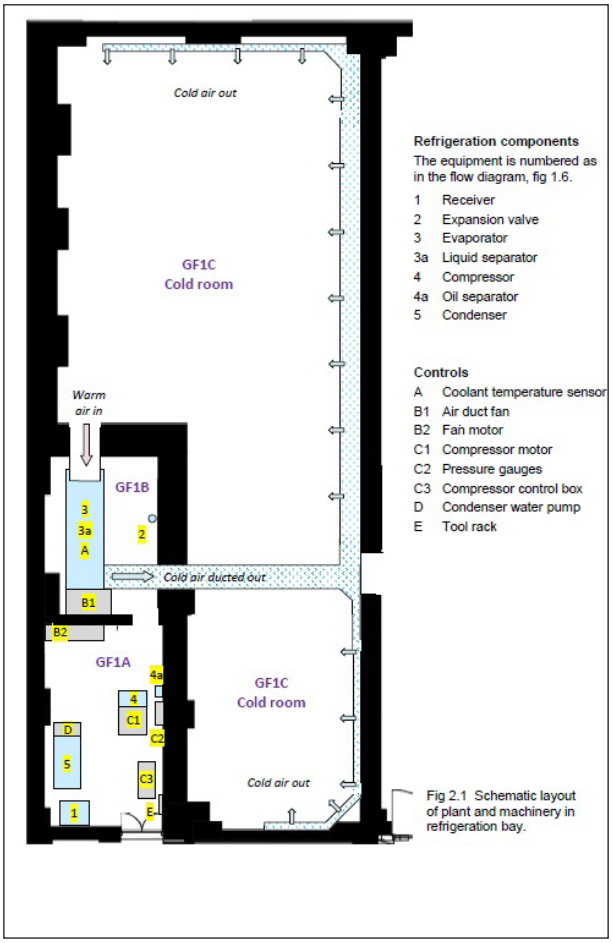


Figure 26: Floor plan depicting the location of refrigeration components (© Historic England, photograph: Fred Hamond 2019)

Refrigeration only works, of course, if the air circulating through the evaporator and cold room is contained in a closed system. To achieve this, the cold room is heavily insulated so that heat from outside is not conducted through its walls. Moreover, the room's door is kept firmly shut whilst refrigeration is in progress so that no warmer air from outside can enter.

Plant description

As noted above, the refrigerator and cold store are housed in the north bay of the ground-floor. The actual equipment is housed in two small

rooms at the north-west corner (GF1A and GF1B), which are both enveloped by the cold store (GF1C) in the remainder of this bay. For present purposes, the equipment is itemised by room. The reader is referred to the appendix for a more detailed sequential description of the refrigeration process, illustrated with photographs.

Room GF1A

This room is accessible only from the street via a double-leaf louvred timber door. The door is vented to expel the air sucked in by fans to the condenser in this room and it would also have allowed any leaking refrigerant to dissipate safely. This room contains various devices for processing the refrigerant once it has passed through the evaporator in GF1B (Figure 26).

Compressor

Figure 27: Looking east along Room GF1A with compressor seen on the right-hand side (© Historic England, photograph: Alastair Coey Architects 2019)

Towards the back of the room, on the right-hand side, is a compressor (Figure 27; item 4 in Figure 26). It bears a maker's plate reading 'J & E Hall Ltd/ Makers/ Reference no 16058/ Dartford/ England'.

Messrs Hall was established in 1785 and began making refrigeration equipment in the 1880s for ice production and food preservation. Initially ammonia and carbon dioxide were used as refrigerants.[34] One of Hall's best known installations are the four ammonia compressors in the Grimsby Ice Factory, dating from 1933 and all of which still survive in what is now a Grade II* Listed Building.[35]

This particular unit sucked in the gaseous refrigerant along an overhead insulated pipe from the evaporator (3) and compressed it. It was driven by vee-belts from a small electric motor (C1) mounted on the same concrete pedestal (Figures 28-30). The motor carries a plate by Crompton Parkinson. This firm was formed in 1927 by the merger of Crompton & Co and F & A Parkinson Ltd.[36]

Mounted on the wall above the condenser is a pair of pressure gauges manufactured by J & E Hall (C2). These monitored the pressure of the gas at the inlet and outlet ends of the compressor. To their right is

a small switch box reading 'Hallmark/ Pressure Out Out/ Raise side bar to reset'. This was used to restart the compressor motor should it have cut out due to excess pressure in the outlet pipe.

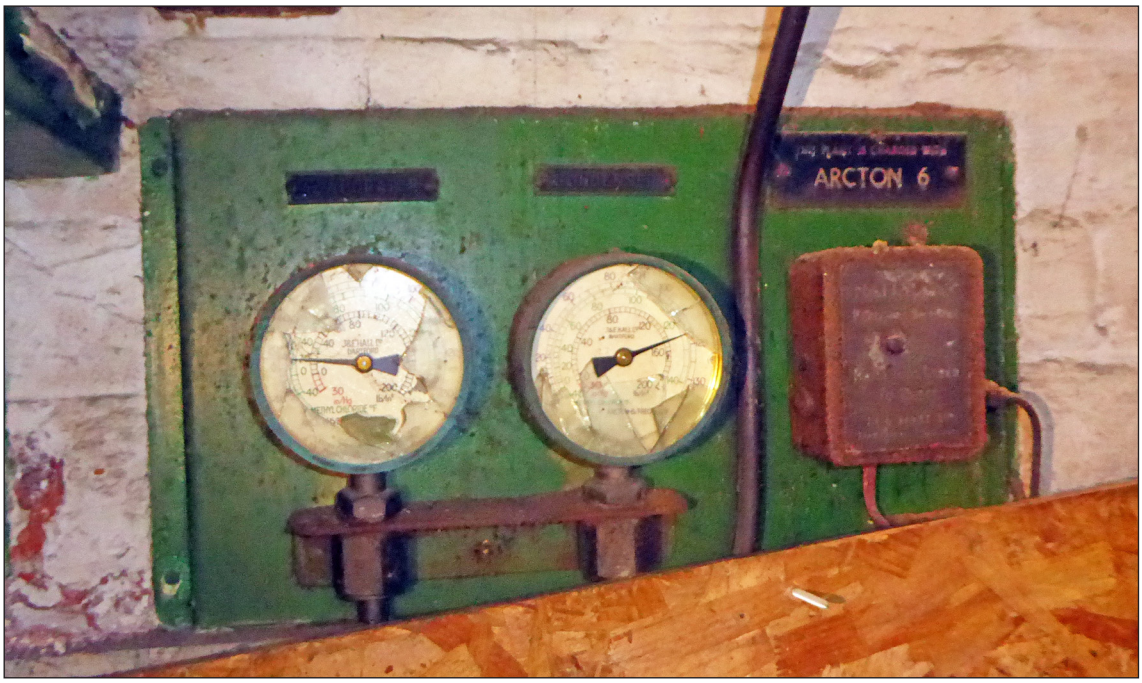


Figure 28: Pressure gauges and motor restart unit (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 29: Vee-belt drive from motor to compressor (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 30: Motor control cabinet (© Historic England, photograph: Alastair Coey Architects 2019)

Both gauges note the refrigerant being monitored as methyl chloride. Also known as chloro-methane, R-40 and HCC 40, this colourless but highly inflammable synthetic gas was once widely used as a refrigerant. Messrs Hall were using it since both gauges note the refrigerant being monitored as methyl chloride. It was in use by the 1920s, if not before.[37] Due to its toxicity and flammability, it was superseded by chlorofluorocarbons (CFCs). Also affixed to the board above the reset box is a later label reading 'The plant is charged with Arcton 6'. Also known as dichlorodifluororomethane, R-12, Freon-12 and Halon, this refrigerant has the advantage over R-40 in being non-flammable gas. It came into widespread commercial usage in the 1950s but is now banned owning to its depleting effect on the ozone.

The compressor motor was controlled by electrical switches and relays housed in a metal cabinet at the entrance end of the room (C3). There is an ammeter (for measuring electrical current) on the top of this unit. It, too, has a maker's plate: 'Watford Electric & Manufacturing Ltd, Watford, England'. This firm was established in 1900 and specialised in control systems for electric motors.[38]

It is uncertain whether the compressor motor was switched on and off manually or automatically to retain a set temperature in the cold room. Opening the door for restocking would have obviously warmed it up and the compressor would have been restarted cool it. Further investigation is needed to determine whether there is a temperature gauge in the cold room and if this was connected to the motor control unit (which would indicate automatic operation).

Oil separator

The oil separator (4a) is set into the deliver pipe above the compressor (Figure 31). Here, any oil picked up as it passed through the compressor was removed and returned to the latter's sump.

Condenser

This water-cooled condenser (5) is on the other side of the room and is basically an open-bottomed galvanised steel box resting on an open-topped metal tank which contained coolant water (Figure 32). No maker's plate is evident but it is very probably the work of Messrs Hall.

At one end of the tank is a pump (D) which circulated the water around the refrigerant pipes inside the box. It bears a plate by Newman of Yate, Bristol, and also gives its technical specifications - ¾hp at 1426rpm/ three phase/ motor number A936501. There is a tap at the bottom of the tank to drain it so that the water could be refreshed and the build-up of mineral solids minimised. These would otherwise have become very concentrated as the water was repeatedly heated and cooled.

Two pipes project from the top of the condenser and pass out through the wall. They would have had fans at their outside ends which sucked in air from outside and blew it through the shower of cooling water to remove the heat extracted from the hot pipes. A separate property now abuts the outside of this wall and its internal inspection would be required to establish whether or not
the fans still survived.

Figure 31: Oil separator (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 32: Condenser (© Historic England, photograph: Alastair Coey Architects 2019)

Receiver

At left on entry to the room is a floor-mounted steel cylinder (1) which temporarily held the liquefied refrigerant which came out of the condenser (Figure 33). At one end of it is a sight glass to monitor the level of its contents. There is no maker's nameplate on this unit.

Tool rack

Mounted on the wall at right on entry is a wooden board (E) which is presumed to have originally held tools for adjusting and maintaining the equipment (Figure 34).

All the plant and equipment in this room appears to be complete and in fair to good condition.

Figure 33: Receiver (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 34: Wooden board for storing tools (© Historic England, photograph: Alastair Coey Architects 2019)

Room GF1B

Figure 35: Room GF1B showing the fan, evaporator, and expansion valve (© Historic England, photograph: Alastair Coey Architects 2019)

This small room is accessed by a thickly-insulated door at the back end of GF1A. It has a clasp latch to ensure that it was firmly shut to prevent warm air entering. Should this have happened, the heat contained in the air would have been conducted through the metal shell of the evaporator and counteracted its effectiveness in chilling the air from the cold store. On the inside face of the door is a button which could be pushed to open the latch on its outside face should anyone have been accidentally trapped inside. The walls and ceiling of this space are heavily insulated with cork to prevent heat from outside being conducted through its walls. The insulation is finished with a skim of painted plaster (Figure 35).

Evaporator

Along the left-hand side of this room is a large galvanised metal box (3) containing the coiled pipework to contain the refrigerant delivered by the expansion valve on the opposite wall.

The air from the cold room was sucked into the evaporator along a wooden duct through the party wall by a centrifugal fan (B1) at its near end (Figure 36). This air was slightly warm due to contact with whatever was in storage. It was chilled by the refrigerant pipes as it passed through and was blown out back into the cold room by the same fan. The fan carries a plate reading 'Sirocco/ Fan no 71600 Works no 15847/ Davidson & Co Ltd/ Makers/ Belfast Ireland'. Established in 1881, this firm was a world leader in industrial fans and tea-drying machinery. It was acquired by James Howden & Co in 1998 and has since closed.[39] Messrs Hall had strong connections with Belfast. Their agent was Charles J Hill Ltd (in Queen Street), and they also supplied refrigeration equipment to the world-famous ship builders, Harland & Wolff.[40]

The fan was driven through vee belts from an electric motor (B2) on a concrete plinth at the north-east corner of GF1A (Figure 37). Mounted on top of the evaporator is what is presumed to be a liquid separator (3a), the purpose of which was to remove any liquid which had not been vaporised before it passed into the compressor. A tap at the back end of the base of the evaporator was probably for draining off melt water when it was being defrosted. The water escaped through a hole in the floor (with a wooden plug).

Figure 36: Intake duct to evaporator with liquid separator (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 37: Fan motor (© Historic England, photograph: Alastair Coey Architects 2019)

Expansion valve

This valve (2) is mounted on the right-hand wall between the receiver and evaporator (Figure 38). On passing through it, the refrigerant's pressure was greatly reduced, enabling it to be more easily gasified in the evaporator.

There is also a sensor (A) taped to the outlet pipe from the evaporator (arrowed

Figure 38: Expansion valve (© Historic England, photograph: Alastair Coey Architects 2019)

in Figure 36). A capillary tube containing either a liquid or gas connects it to the expansion valve. If the sensor heated up due to the air passing through the evaporator becoming warmer (if, say, the cold room door was opened), the pressure in the tube increased and caused a diaphragm in the expansion valve to open. This allowed more refrigerant into the evaporator and thus increased the rate at which it could extract heat. As the temperature of the air decreased, the sensor cooled down and the flow of refrigerant decreased.

Apart from some rust on the surfaces of the refrigerant pipework, the items in this room are complete and in good condition.

Room GF1C

This was the actual cold room in which the beer was stored (Figures 39-41). It is accessible only from the main part of the ground floor (GF2) via an insulated door similar to that into GF1B. Its clasp latch and emergency escape mechanism are also identical to the door into GF1B. There may well once have been a second latch lower down. Like GF1B, its internal walls are also heavily insulated.

Figure 39: Looking east along cold room to back end (© Historic England, photograph: Alastair Coey Architects 2019)

Chilled air duct

An overhead rectangular timber duct runs along both ends and down one side wall of this room at ceiling height. The section running north-south across the centre of the room conveyed the chilled air blown out by the evaporator fan into the duct along the side and ends of the room. Its flow into the room was controlled by sliding shutters along the side of the duct. The air then flowed around whatever was being stored in the room before being sucked back into the evaporator along a duct in the party wall with GF1B.

Figure 40: Adjustable openings in chilled air duct (© Historic England, photograph: Alastair Coey Architects 2019)

Figure 41: Entrance to cold room (© Historic England, photograph: Alastair Coey Architects 2019)

5. STATEMENT OF SIGNIFICANCE

Evidential

The cooperage and store on East Street is of industrial, social and economic interest as the last tangible reminder of the Hewitt Brothers Tower Brewery. Although much of what can be seen today relates to the later phase of building, the existing fabric presents clear evidence of its evolution in two main phases, the first being the cooperage with attached enclosed store yard, built *circa* 1901, and the second phase being the yard walls raised as part of the construction of a three-storey warehouse, possibly in the late 1920s. Its phasing reflects not only the developing use of the building between 1901 and 1949, but also the process of change and evolution of the brewing industry throughout the 20th century, particularly the change from cask to bottled beer. Its construction is representative of the building technologies of the period, being constructed primarily of non-flammable material, the main, later part of the building carried on a riveted steel structure, with cast-iron windows and concrete floors. The building remains largely intact, with evidence of cart roads and original structural systems, including roof trusses, both remaining intact despite later stabilisation works and re-roofing. Evidential significance is increased by the survival of good documentary records relating to the building, particularly original architectural plans (1900) and the 1949 Goad plan.

Of special note is the complete survival of a mid-20th-century refrigeration plant. Although refrigeration has long been applied to controlling the temperature of the brewing process, this is a good example of its application to the storage of beer and is of historical merit for that reason. It is also an interesting contrast, in terms of scale and function, with Messrs Hall's refrigeration plant in the nearby Grimsby Ice Factory. The assemblage is also of technical significance owing to the survival of all its components – evaporator, compressor, condenser, receiver, electric motors and control units. Despite years of disuse and neglect, all are still in a fair to good state of preservation. The survival of the adjoining insulated cold room also greatly enhances the understanding of how it all functioned.

Historical

The cooperage was built in the final years of the predominance of cask beer, and reflects the change in production technology and the drinks market in the first half of the 20th century, as well as the decline of Britain's locally-based brewing industry in the latter part of the century. Although little evidence of its use remains, the cooperage building was part of the now largely-lost craft of wet-coopering, once so important to British industry, particularly brewing.

The cooperage at Grimsby is a modest example, particularly when compared with the large steam cooperages which were being developed in the 19th century, such as those at Burton's famous Bass brewery. However evidence indicates its development

over time, to reflect changing storage requirements – particularly growing reliance on technologies that could facilitate the optimum storage conditions for new bottled products. There is no evidence that any machinery was used for coopering functions on the site, suggesting that all functions were carried out by hand, and possibly that the workshop was used for the mending of barrels rather than their manufacture.

The surviving machinery in the main building exhibits a diverse range of makers: J & E Hall (Dartford (compressor), Messrs Davidson, Belfast (evaporator fan), Crompton Parkinson (compressor motor), Newman, Bristol (condenser pump), and Watford Electric & Manufacturing Co (compressor control unit). Messrs Hall were among the world's leading makers of refrigeration equipment and, in all probability, it was they who assembled and installed all these items, even though it is only the compressor and associated pressure gauges which actually bear their name.

Aesthetic

The original part of the cooperage and attached yard enclosure was designed in 1900 by local architect J J Cresswell, none of whose buildings are known to be listed.[41] Although designed to be a functional structure, aesthetic considerations are clearly evident in the architectural devices employed, particularly the handsome sandstone rusticated surrounds to the primary entrances, and the curvilinear gable, which was relocated from its original position when the warehouse was raised. The facade retains some ornamentation including sawtooth banding and gauged brick stringcourse.

The building is an aesthetically dominant feature which forms part of a coherent group of historic structures on the East Street/ Town Hall Square circuit, including The Doughty Centre and Fire Station (NHLE 1379890) and the Town Hall (NHLE 1379888), which together provide historic context in an area which is otherwise characterised by new development. The building retains a high proportion of original fabric and features in a diverse range of contrasting materials including brick, iron, steel, timber and stone.

Internally, the building is plainly detailed with little of aesthetic significance, although the surviving cast-iron lattice windows and associated timber shutters are attractive features which are tied to the building's original function and design.

Aesthetic significance is eroded by the poor condition of the cooperage, and the exposed walls to south and east, where abutments have been removed, are of poor quality.

Communal

The brewery was one of several industries in the town, including Tickler's Jam, Dixon's Paper Mill, Partington's Yeast Merchants, and of course, the fishing industry for which Grimsby is well known. As such, it is a reminder of the former industrial identity of Grimsby, holding strong memories and associations for local people, including those who worked at Hewitt Bros, and those who would have been familiar with the functioning complex. Accounts given by those who recall the working brewery are striking in terms of the sensory memory it evokes, and the noises and smells that would have characterised the area. For example, in the foreword to Graham Larn's excellent commemorative booklet on Hewitts' Brewery, *Campaign for Real Ale* (CAMRA) (Grimsby Branch) Secretary Denis Lister recalls:

> My daily bike ride home from school would at one time take me past the brewery. It was always wreathed in steam and many are the times that I had to wait whilst barrels were rolled across the street from the cooperage for filling.[42]

The Hewitt Bros premises at Pasture Street and East Street was the centre of production of beers and ales and is well remembered in the consciousness of the Grimsby area, and indeed further afield, with a number of tied public houses bearing the Hewitt's brand. It has associations with the social and recreational aspects of its tied public houses and is representative of over a century and half of Hewitt Bros products. The complex is also of significance for its later ownership by Bass Charrington, one of Britain's 'Big Six' brewery companies by the 1960s.

BIBLIOGRAPHY

Alastair Coey Architects, Project Design for Historic Building Investigation – Former Hewitt Bros Ltd Tower Brewery Cooperage, Grimsby; Belfast; 2018

Chapman, P 2008 'Lots of Bottle', *Grimsby Telegraph*, 20 October 2008

Cook 1902 Cook's Grimsby and Cleethorpes Street Directory, Bedforshire: Archives CD Books

Cornell, M: *A Short History of Bottled Beer* (Web source), accessed at http://zythophile.co.uk/2010/01/15/a-short-history-of-bottled-beer/ (8 March 2019)

Garver, K: How beer storage temperature affects your brew - www.storeitcold.com/beer-storage-temperature-affects-brew/. (8 March 2019)

Grace's Guide to British Industrial History https://gracesguide.co.uk/Main_Page (08 March 2019)

Historic England 2008 *Conservation Principles, Policies and Guidance*. Swindon: Historic England

Historic England 2016 *Understanding Historic Buildings: a guide to good recording practice*. Swindon: Historic England

Kilby, K 2004 *Coopers and Coopering*: Shire; Buckinghamshire

Larn, G 2008 *Beer, Hope and Charity: Hewitts' Grimsby Brewery Remembered*. Century Zero Four: Grimsby

Pearson, L 2010 *Strategy for the Historic Industrial Environment*; Brewery History Society supported by English Heritage; Swindon

Pearson, L 2010 *The Brewing Industry: Archive Report*; Brewery History Society supported by English Heritage; Swindon

Pearson, L 2014 *Built to Brew; The history and heritage of the brewery;* English Heritage; Swindon

ENDNOTES

1 Ordnance Survey map published in 1933, Lincolnshire, 1:2500
2 Application references DC/967/00/MAR and DC/835/12/WMA, North East Lincolnshire Council
3 Application reference DM/0443/19/FUL
4 Pearson 2014, 15
5 *Ibid*. 17-18
6 *Ibid*. 25
7 Pearson2010, 1
8 *Ibid*. 2
9 Pearson 2014, 60
10 *Ibid*. 66
11 Kilby 2004, 4
12 G. Larn, personal communication, (March 2019)
13 Kilby 2004, 29-30
14 *Ibid*.
15 Pearson 2014, 83-84
16 Pearson 2014, 83
17 From Cornell, M: *A Short History of Bottled Beer* (web source), accessed at http://zythophile.co.uk/2010/01/15/a-short-history-of-bottled-beer/ (8 March 2019)
18 Larn 2008, 30
19 Chapman, P: *Lots of Bottle*; Article in the *Grimsby Telegraph*, 20 October 2008
20 Ordnance Survey published 1888, Lincolnshire, 1:2500
21 Larn 2008, 54
22 Cook 1902
23 Ordnance Survey 1905, Published 1908, Lincolnshire, Sheet 22, 1:2500
24 Larn 2008, 22
25 Larn 2008, 25 – note that the 'merchant bank' is unnamed in this source.
26 Web source: Planning reference DC/835/12/WMA Supporting Documentation Accessed at: http://planninganddevelopment.nelincs.gov.uk/online-applications/files/E249F91C812A0CDF887B015DE1B90FC5/pdf/DC_835_12_WMA--835410.pdf (4 February 2019)
27 Larn 2008, 31
28 The grain was undoubtedly contained in sacks rather than loose as there is no evidence of any elevators, augers and conveyors for its bulk handling.
29 Garver, K 2017 'How beer storage temperature affects your brew' Accessed at: www.storeitcold.com/beer-storage-temperature-affects-brew/ (accessed 27 February 2020)
30 'Hewitt's Brewery Closes Next Month – Official' *Grimsby Evening Telegraph* 14 March 1968
31 Larn 2008, 47
32 See planning references DC/967/00/MAR and DC/835/12/WMA North East Lincolnshire Council
33 See planning reference DC/752/11/WMA: Planning permission for the removal of existing roof, install roof trusses and recovering in slate and take down front brickwork to remove rusting steel and rebuild. Fix new gutters and fallpipes
34 *Grace's Guide* www.gracesguide.co.uk/J._and_E._Hall> (accessed 4 March 2020)
35 'Historical ammonia ice production at Grimsby Ice Factory' www.ammonia21.com/articles/4129/ historical_ammonia_ice_production_at_grimsby_ice_factory. For a more technical description, see <www.coolingpost.com/features/frozen-in-time-part-2/ (accessed 4 March 2020)
36 *Grace's Guide* www.gracesguide.co.uk/Crompton_Parkinson(accessed 4 March 2020)
37 A 1929 advert notes the use of methyl chloride in its electrically-driven compressors

(*Grace's Guide*).

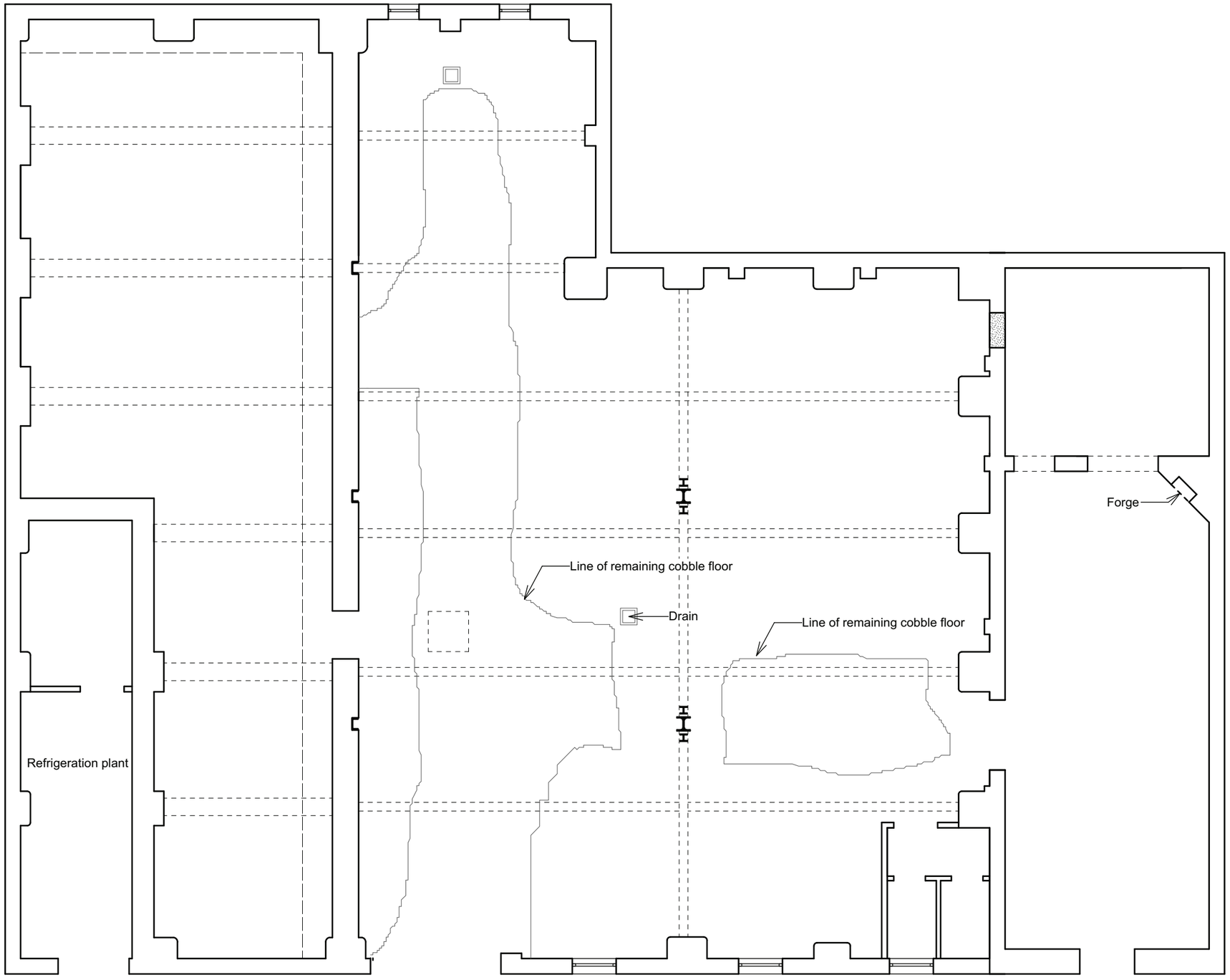
38 *Grace's Guide* www.gracesguide.co.uk/Watford_Electric_and_Manufacturing_Co

39 *Grace's Guide* www.gracesguide.co.uk/Davidson_and_Co

40 Advertisement in *Northern Whig,* 24 May 1950

41 As checked in the National Heritage List for England (NHLE) https://historicengland.org.uk/listing/the-list/ (accessed 4 March 2020)

42 Larn 2008, 7



Existing Ground Floor SCALE 1:100

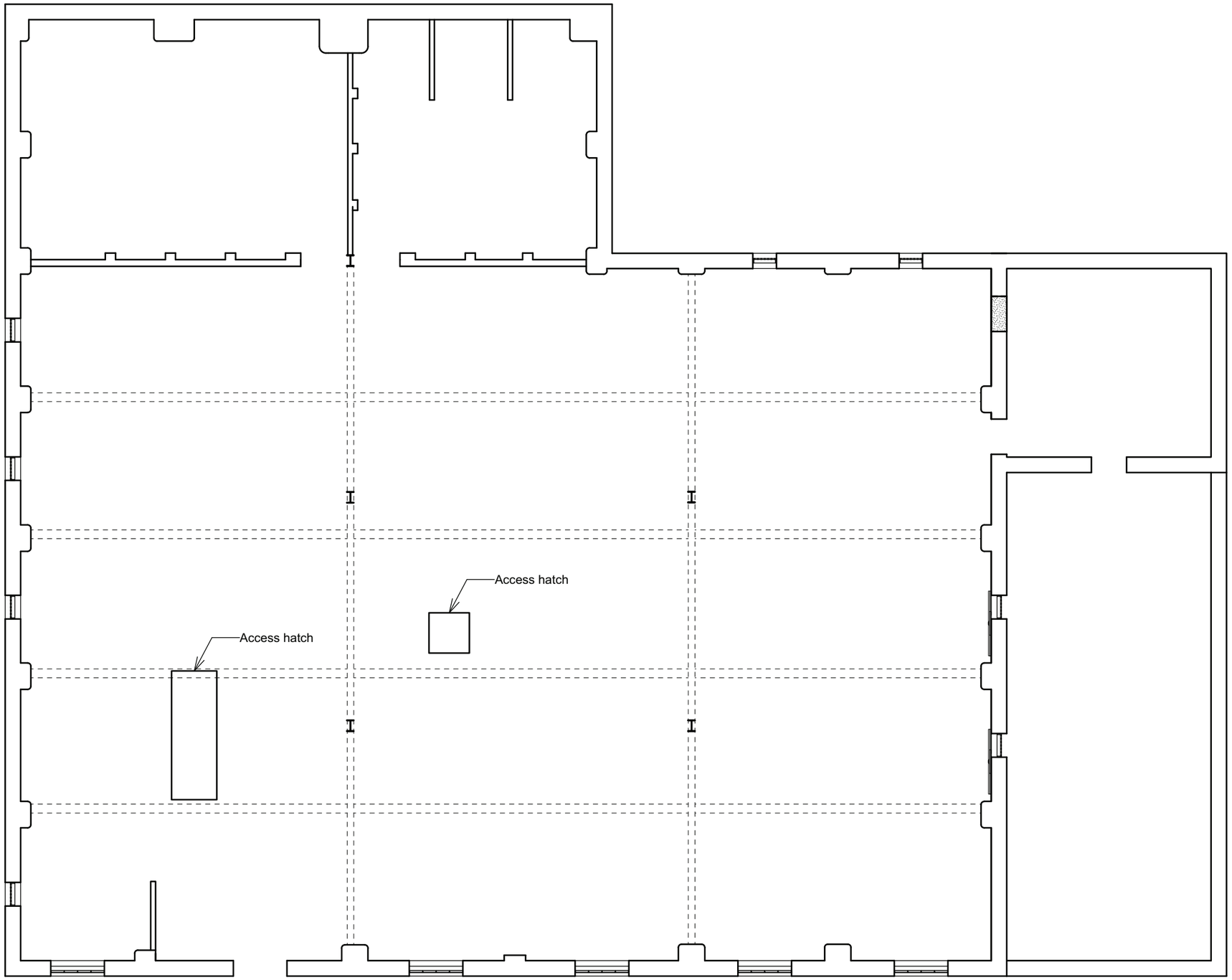
N

1m 5m 10m

Hewitts Cooerage
East Street
Grimsby
North East Lincolnshire

NGR:TA 27216 09391
Surveyed By: ADC, AJT Feb 2019
Drawn: AJT, March 2019
Sheet: 1 of 3

Historic England



Existing First Floor SCALE 1:100

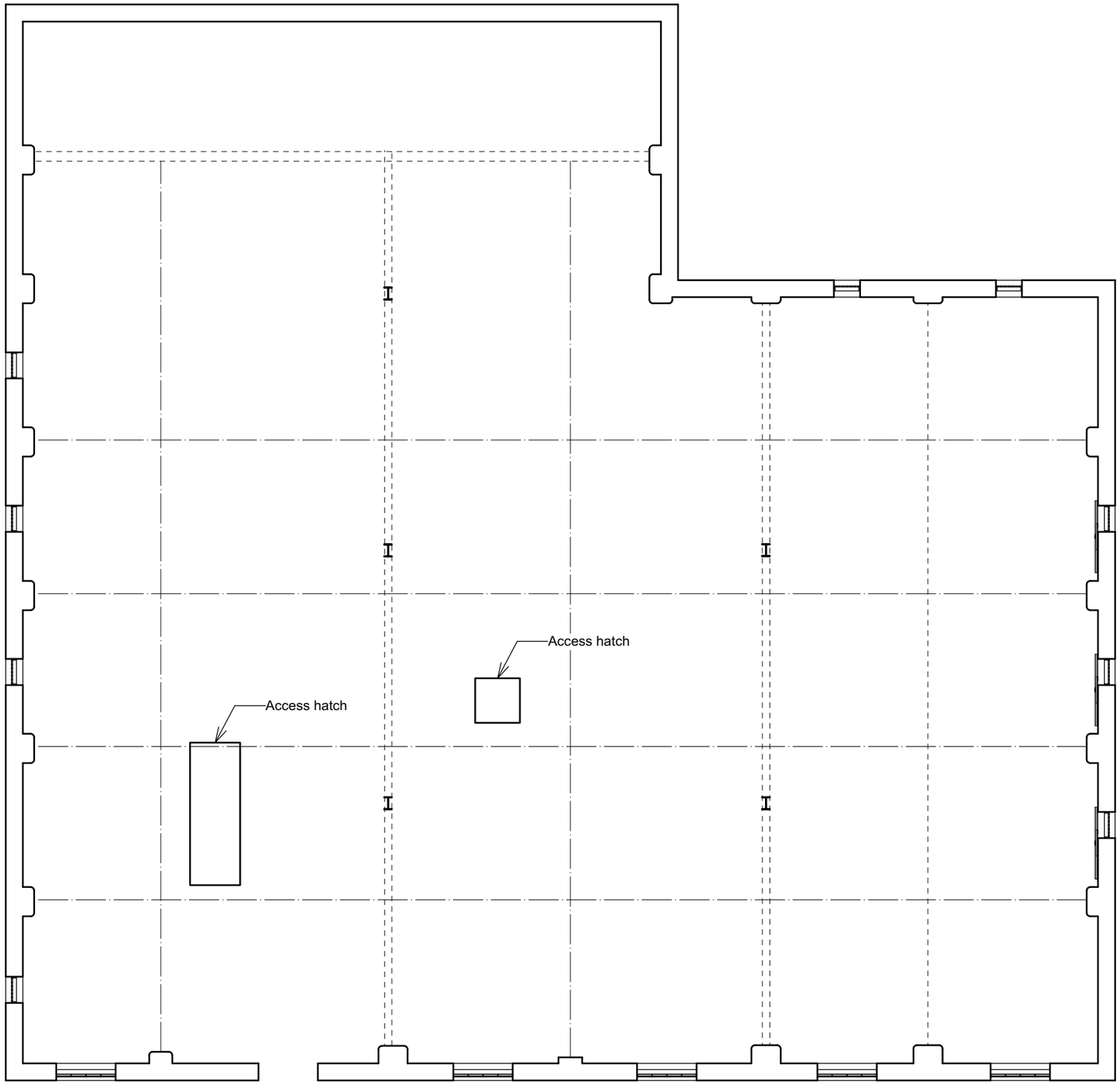
N

1m 5m 10m

Hewitts Cooerage
East Street
Grimsby
North East Lincolnshire

NGR:TA 27216 09391
Surveyed By: ADC, AJT Feb 2019
Drawn: AJT, March 2019
Sheet: 2 of 3

Historic England



Existing Second Floor SCALE 1:100

N

1m 5m 10m

Hewitts Cooerage
East Street
Grimsby
North East Lincolnshire

NGR:TA 27216 09391
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Sheet: 3 of 3

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ISSN 2398-3841 (Print)
ISSN 2059-4453 (Online)