R.N.L.I. storeyard at 27 Broomfield Street, Poplar, E14

by Philip Purkis

In September 1977 some members of GLIAS surveyed the former storeyard of the Royal National Lifeboat Institution for the Preservation of Life from Shipwreck. This was situated at TQ 375816 beside the Limehouse Cut in Poplar, now within the London Borough of Tower Hamlets, and was in use by the Institution from 1878 to 1938.

The yard was founded for the storage of reserve lifeboats, but ultimately developed into a highly organised centre for the servicing of the R.N.L.I. fleet. During the 1920s and early 1930s, when about 80 people were employed there, the storeyard had the capacity to make almost everything the lifeboat coxwain needed in the way of lifeboat or machine parts and ancillary provisions. Over 12,000 items were stocked, from oil skins and wooden barricoes to crab winches and coir bow puddings (fenders of coconut fibre), any of which could be despatched day or night. Its facilities included a dry dock, claimed to be the smallest in the world at the time.

The buildings were being demolished at the time of the survey, having served two occupiers since the R.N.L.I. vacated them for larger premises in Borehamwood, Hertfordshire. Subsequently the R.N.L.I. moved to its present headquarters in Poole, Dorset.

History and location

Before 1878 the R.N.L.I. had no central storeyard for the reserve fleet – spare boats were kept at various places on the coast. Unlike the Borehamwood depot which superseded it, the original storeyard needed to be accessible from the sea and for that reason a site was selected in Poplar adjacent to the Limehouse Cut of the River Lee Navigation. The 'pulling and sailing' lifeboats could be sailed up the Thames, through Limehouse Lock, and then to the storeyard by way of the Cut, where they were hauled out of the water by a hand-powered crane.

The location of the site in Broomfield Street is shown in Fig.1 (based on the 1893 Ordnance Survey). When the storeyard was opened the Institution had 272 pulling and sailing lifeboats. (It was not until 10 years later in 1888 that the first experimental powered lifeboat was built, and these did not come into wide use until the 1920s.) An early engraving (Plate 1) shows storage for 11 boats and their carriages in two sheds, a rigging loft, storeroom and riggers' cottages.

The storeyard remained much the same for 30 years. In 1913 the site of the adjacent chemical works was taken over (Fig.2), and over the next few years new buildings were erected and the facilities improved. It appears that the earlier buildings were all replaced. The last major addition was the Machine Shop in 1926. At that time there were 81 employees including 15 clerical staff. Boats were still brought by water but increasing use was made of the railways.

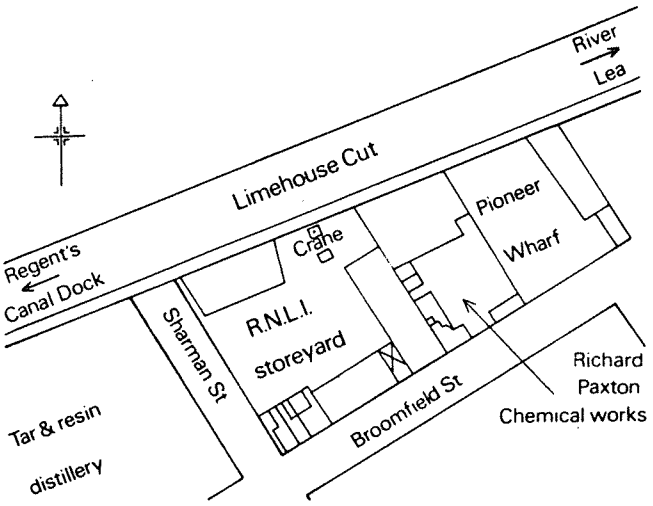


Fig.1. *Plan of storeyard in 1893/4 (based on Ordnance Survey). Sharman Street is now a short cobbled cul-de-sac (with no indication of its name).*

The Cooperative Wholesale Society (later the London Cooperative Society Ltd) took over the site in 1939 and milled spices there. Some of the buildings were badly damaged in the War, with considerable loss of life. After the War the site continued in the ownership of the C.W.S. until 1968 when Bryan & Mullinger Ltd took over. They named their factory 'Royal Oak Spice Mills' and remained there until 1976, when the buildings were vacated prior to demolition.

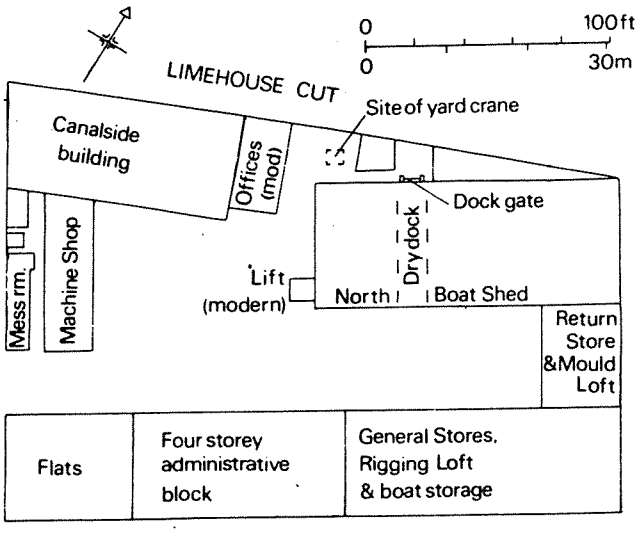
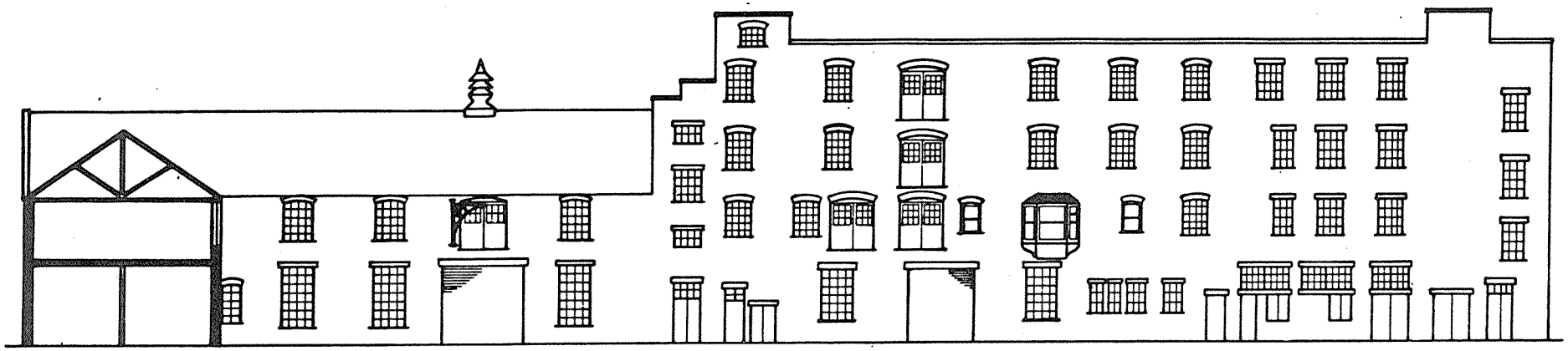
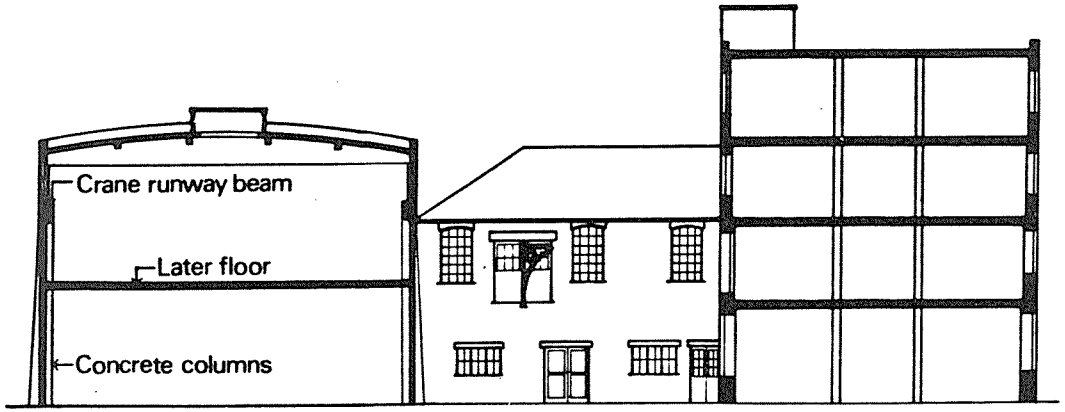


Fig.2. *Plan of storeyard at time of visit in 1977 but with names of buildings current in late 1920s.*



Looking south from yard. From left to right: Return Store and Mould Loft, General Stores and Rigging Loft, four-storey administrative block, and flats.



Looking east from yard. From left to right: North Boat Shed (section showing intermediate floor added after 1939), Return Store and Mould Loft, and four-storey administrative block.

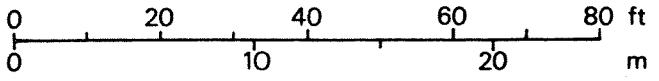


Fig.3. *Elevation and sections of storeyard in 1970s, with names and uses of buildings current in the late 1920s.*

Site description

At the time of the survey (1977) there were several buildings grouped around a central yard (Figs.2, 3 and the plates). The layout of the buildings and their external appearance had not changed significantly from the late 1920s, except for the ordinary windows and doors which replaced the roller shutter doors for entry of the lifeboats.

North Boat Shed. This building was the main feature of the expansion of the storeyard which started in 1915. It was constructed partly on the site of the adjacent chemical works acquired in 1913. Some land adjacent to the canal continued to be used for open storage. The hand-powered crane shown in Plate 2 was in use in 1910 and remained in position after the North Boat Shed was erected.

The shed was purpose-built for the repair of lifeboats and was equipped with a small dry dock, 15 metres (50') long, and an overhead travelling crane; see Plate 4. Lifeboats arriving by canal could be floated straight into the shed, the dock being pumped out after its gate had been closed. The electric pumps were housed inside the shed. The dry dock, gate and some of its mechanism survived until demolition. The gate was raised and lowered by a pair of racks and pinions. The pinions shared a single shaft on the end of which was a bevel gear — no other parts of the mechanism were found (Plate 3). It is understood that the gate was worked by hand from inside the shed, perhaps by a continuous loop of chain hanging from a wheel.

The building, three storeys in height, was constructed with an exposed reinforced concrete frame, a relatively early example of this, and in sharp contrast with the buildings of similar date on the remainder of the site. The structural form was evidently determined by the overhead travelling crane and the uninterrupted space required beneath it, and perhaps also by war-time shortages of materials such as steel and bricks. The construction exhibited certain features not generally found in later reinforced concrete framed buildings in Britain.

The concrete roof slab took the form of a shallow circular arc, facilitating drainage, supported on concrete beams spanning the width of the building, a clear distance of about 14.5 metres (48'). The columns in the side walls were of very elongated cross-section and flared outwards towards the bottom like buttresses, full confidence perhaps not being placed in simple portalframe action for the building's stability. The nature of the foundations is not known. The non-loadbearing 23 cm (9") brickwork walls were supported on beams at each storey, with additional columns in the gable walls. Across the heads of windows, these beams were chamfered, as was common practice with concrete lintels in the later 19th century (Fig.3 and Plates 2 and 5).

An upper floor was inserted in 1946 to make the building more useful for food processing; it was connected by a downward-sloping ramp to the adjacent Mould Loft. Rolled steel H-section columns supported the floor which had a wooden parquet surface. An electric lift was installed at the same time and additional windows fitted at ground level, while the first floor windows had to be reduced in height. The dry dock was covered, but a manhole left for access. The dock was found to be flooded in September 1977.

Return Store and Mould Loft. The R.N.L.I. had no foundry at the storeyard but made their own wooden patterns for local foundries to cast the various metal parts of a lifeboat. None of these patterns was discarded — they were kept in the Mould Store on the first floor of the eastern block. The name was a misnomer because the actual sand moulds, which were made from the patterns, were of course destroyed when the castings were knocked out. Engine patterns were kept in the Mould Loft even though the storeyard was not involved in the manufacture of engines.

The first engine-powered lifeboats were steam driven, but although successful never came into widespread use. The first of these, in 1888, was the *Duke of Northumberland*, after the founder of the Institution. Petrol engines began to be used in the 1920s after experimental work during the First World War, and were subsequently replaced by diesels. All the early waterproof engines were designed by the Institution and were made by the Wayburn Engineering Company and Ferry Engine Company of Dalston.

The Return Store, as its name implies, was where worn, damaged and time expired chains, shackles, pulley blocks,

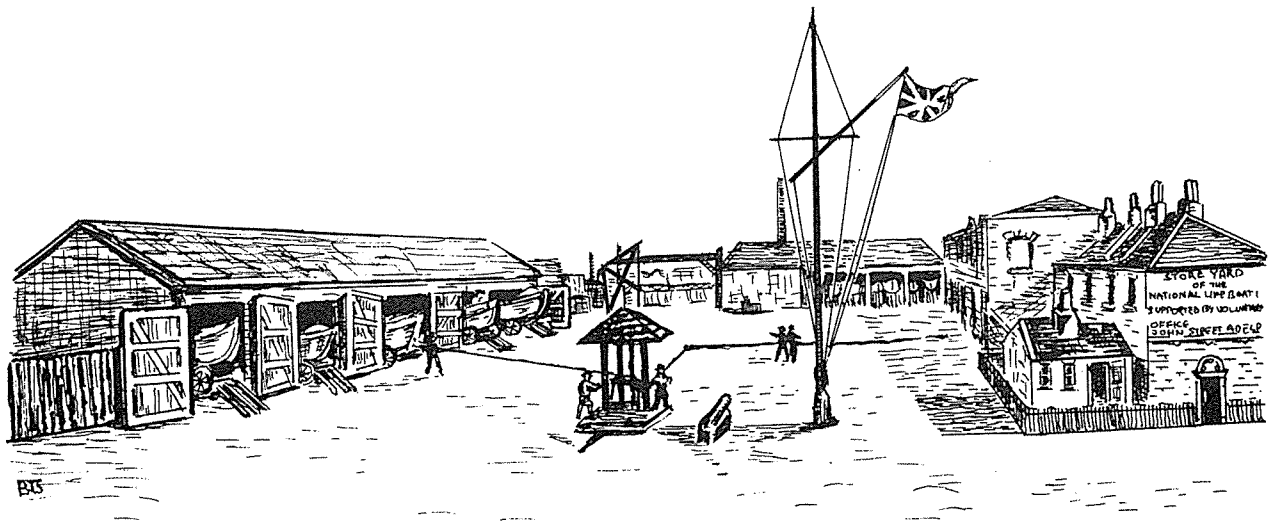


Plate 1. *Sketch taken from engraving (c.1885?) showing the storeyard. Limehouse Cut runs behind the boatshed on the left-hand side.*

Plate 2. *R.N.L.I. photograph taken after the construction of North Boat Shed (c.1925?) looking towards Limehouse Cut. Clayton tractor is being attached to boat carriage.*

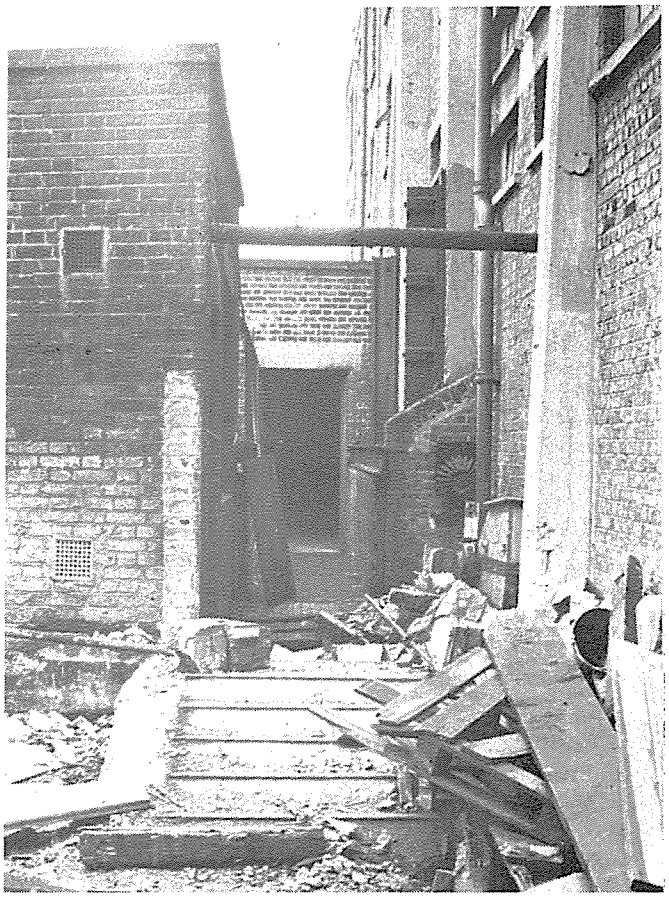


Plate 3. *Footbridge over dry dock entrance, and bevel gear of dock gate mechanism in September 1977. Carriage wheel store on left and North Boat Shed on right.*
(photo David Thomas)

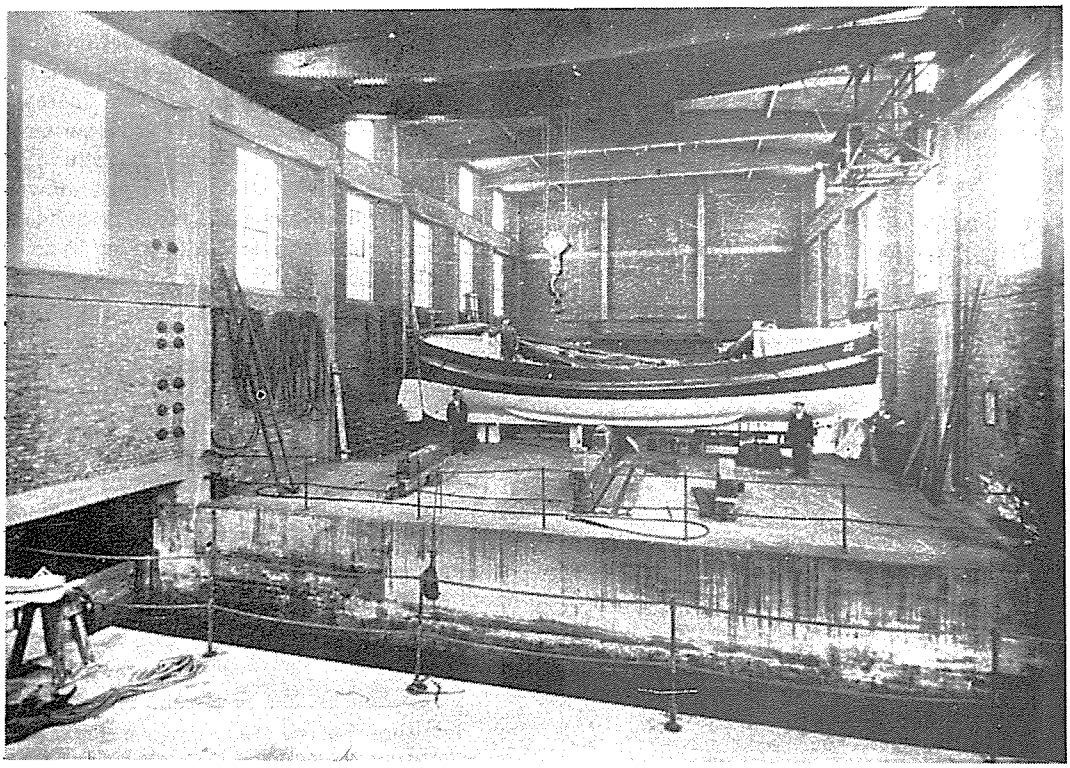


Plate 4. *Inside North Boat Shed (c. 1925?) showing dry dock with entrance on left-hand side, and overhead travelling crane. R.N.L.I. photograph.*

ropes, bow heaving lines, fire extinguishers, lamps and other provisions were returned. Chains could be annealed, examined, and re-used, fire extinguishers refilled and other repairs effected, but the remainder would have been sold off for scrap.

The dating of this block presented difficulties. It is unlikely that it was inherited from the previous lessees of the plot, Richard Paxton & Co., chemical manufacturers, because the general stores and rigging loft, which were very probably built at the same time, would have obstructed their road access (Fig.1). Moreover, the shape and size of the buildings on the 1893 map do not correspond to the R.N.L.I. buildings. It appears that when the R.N.L.I. took over the old buildings were demolished. Trade directory entries for Richard Paxton terminate in 1905, and it seems the site lay disused until 1913, when on 14 July the R.N.L.I. Committee 'decided to purchase ground for additional accommodation for the storeyard'. This must have referred to the chemical works as this was the only direction in which the site could have expanded, being bounded on the other three sides by streets and the canal. Thus the date of construction of the Return Store and Mould Loft is a late one for its style, and other evidence indicates 1918 or 1919.

The construction of this two-storey building was traditional, with brick walls, a wooden upper floor, wooden king-post roof trusses and a hipped slate roof. The metal-framed windows were similar to those elsewhere on the site, with segmental arched heads.

When the C.W.S. took over in 1939 plans were made to utilise the Mould Loft for cloakrooms and toilets. Alterations commenced after the Second World War and according to 1946 plans the new facilities were intended for 300 people. This reflects the change from a moderately-sized male craft labour force under the R.N.L.I. to a large, predominantly unskilled female staff under the C.W.S.

The rectangular duct running horizontally at first floor level (Plate 5) contained hot water or steam pipes for the heating system installed after the R.N.L.I. vacated the site, and could be as recent as 1968 when additional space heating was provided.

General Stores and Rigging Loft. The construction of this two-storey brick building differed from that of the Return Store and Mould Loft, with H-section rolled steel columns, rolled steel beams and secondary beams supporting an upper floor of concrete. The roof was of steel truss construction. Wide doorways for the entry of boats originally faced the yard at ground level. This block was built at around the same time as the Return Store and Mould Loft.

There had always been a general stores but with the expansion of the fleet and the increasing complexity of the lifeboats a larger store was required. This was featured in the expansion of the site and stocked most of the 12,000 items needed to service the fleet which were kept at the storeyard. which were kept at the storeyard needed to service the fleet. The chief storesman had a flat on site (described below) and was available 24 hours per day by telephone. Next to the General Stores was the Rigging Loft, which was adjacent to the Mould Loft. The ground floor was used for boat storage.

Rope and canvas were the raw materials in the Rigging Loft and such varied articles as breeches buoys, boat covers, sea anchors and rigging were made there (Plate 6). The making up and splicing of wire ropes were also undertaken.

When the C.W.S. took over the site the boat access doors were bricked in and windows installed. A feature of these comparatively recent windows is their straight lintels contrasting with the brick arches of the originals (Fig.3). By September 1977 the first floor had already been removed as part of the demolition. However the ground floor contained one item of machinery: a rotary sieve and a control panel for other machinery, which had included belt and worm conveyors and nutmeg and pepper mills.

Four-storey administrative block. This was built during 1921 and 1922. As with the adjoining General Stores and Rigging Loft the ground floor was used for the storage of up to four lifeboats.

The first floor housed the administrative offices, including that of the Deputy Chief Inspector of Stores, who was responsible for the storeyard. His office had a bay window from which he surveyed the yard and kept watch on the men. One notable Deputy Chief Inspector during the 1920s and early 1930s was Captain Hope Bevan, who was much revered by his men, and made considerable use of the bay window. In 1928 approximately 15 clerical staff worked in these offices.

On the second floor was the rope store and above that the Flag Day Department. ('Flag Day' was conceived in the last century as a means of raising money, and had been run from Broomfield Street since the early 1900s.) Women, many of them wives of men who worked at the storeyard, would be taken on during the winter to renovate the flag day collecting boxes and arrange for their distribution. There was a stock of approximately 4,000 collecting boxes which were sent out, with trays, emblems and flags, on average 2½ times per year. The stock of paper flags approached 10 million.

This building was of brick construction with rolled steel joists supporting concrete floors. It had a flat roof and teagle* openings at all upper floors. There was a wall crane on the right-hand side of the third floor teagle opening and the electric hoisting machinery was still in position at the time of the survey, although it is not known whether this was original. The existence of a teagle opening on the first floor is not altogether consistent with its use as an office, and it is possible that it was designed for storage or processing.

Under the C.W.S. a lift was installed at the eastern end of the building and the floors converted to production. The boat access doors were bricked up and conventional windows and doors provided (see Plate 5 and Fig.3). At the time of the survey the positions of machines were apparent from the mountings, especially on the second floor which was probably used for bottle filling. On this floor there were two areas with overhead pipe-work and machine mountings within an area bounded by a low retaining kerb. In common with other buildings on the site, the floors had holes for gravity chutes and conveyors.

* Teagle opening: one of a vertical line of doorways in the side of a building, for loading goods from below. The term is used in the Factories Acts and originates in Lancashire, where the projecting beam carrying a pulley above such openings is called 't'eagle', because it often terminated in a carved eagle head.

Plate 5. *Storeyard in September 1977 with North Boat Shed on left, Return Store and Mould Loft and horizontal duct in Centre, and on right General Stores and Rigging Loft and four storey block.*
(photo David Thomas)

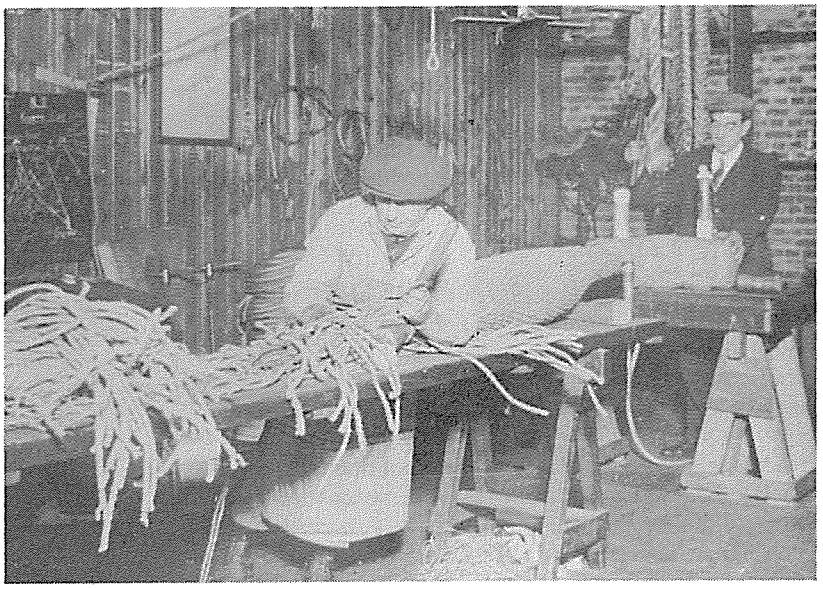


Plate 6. *Rigging Loft. R.N.L.I. photograph (c.1930?) of the making of a bow pudding (woven fender).*

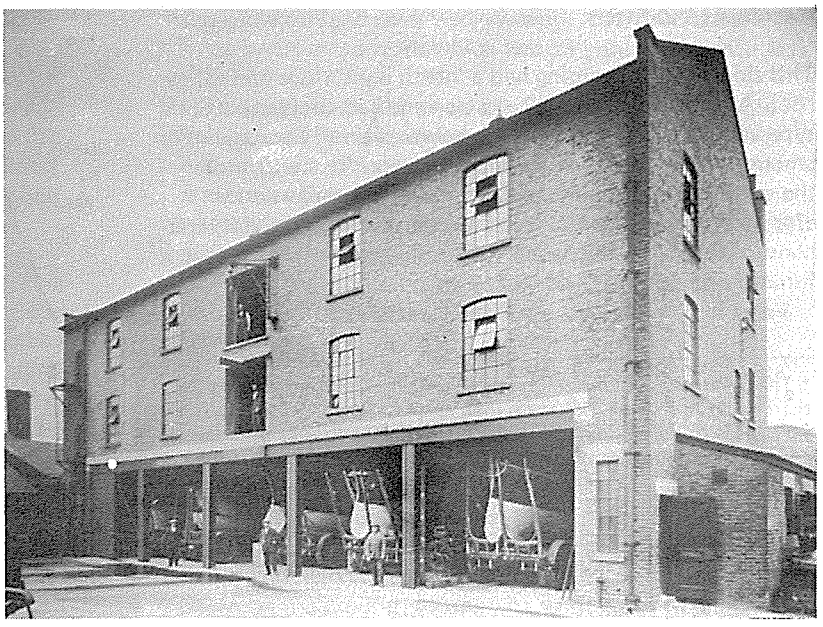


Plate 7. *R.N.L.I. photograph of canalside building in 1926 before construction of Machine Shop.*

Flats. Built about 1922, this block replaced earlier cottages and provided accommodation for the Chief Storeman, Assistant Chief Rigger and Yard Foreman. These duty officers were available outside the normal working hours of 7.30 a.m. to 5.00 p.m. during the week and 7.30 a.m. to 1.00 p.m. on Saturdays.

The four floors of this building corresponded to the four floors of the administrative block. The building was of brick with a flat roof. It is said to have sustained considerable bomb damage during the Second World War and was largely rebuilt afterwards. Original windows had curved brick arches whereas the corresponding windows in Fig.3 have flat lintels.

At the time of the survey the interiors of this block and the administrative block were found to be connected on each floor – presumably modifications made when this block was rebuilt after the War. When used by Bryan & Mullinger Ltd it housed offices, a canteen and a quality control laboratory. The ground floor accommodated the heating plant which was converted to oil in 1968. Overhead pipe-work connected the plant with the former Machine Shop.

Machine Shop. As petrol engines came into general use in the early 1920s there was a demand for engineering facilities at the storeyard. In 1926 the new Machine Shop was completed and many spare parts could be made, among them heat exchangers for engine cooling, and navigation lights. These particular components required the facilities of brazing and enamelling, which were carried out in the canalside building (see below).

There was an electrical section in the Machine Shop where dynamos, starters and magnetos could be repaired and tested. Another important function of the Machine Shop was the maintenance of the boat carriages and the tractors† used for hauling them.

The machinery in the Machine Shop was powered via overhead line shafting from an electric motor located by the carpenter's shop inside the building. A petrol engine was available as reserve. There were three small centre lathes, a capstan lathe and a long-bedded lathe for propellor shafts; also milling and drilling machines and several grinders. The workshop area extended into the ground floor of the canalside building (see below) and employed about 18 machinists and fitters.

This single-storey building had a 'north light' ridge and valley roof. Alternate apexes of the gable ends had circular porthole type ventilators. Large windows below allowed the maximum amount of light to reach the working area. At the time of the survey there were indications of some reconstruction after war damage. The southern end of the building was later converted to a gatekeeper's office with a reception window, a function for which it was ideally suited.

† The Institution purchased twenty five 35 hp Clayton tractors after the First World War, which were then adapted for work at the coast. To cope with partial immersion their petrol and oil tanks were raised and other modifications made (Plate 2).

Between this building and Sharman Street were three narrow sheds, the two smaller of which were toilets. The longer shed was a carpenters shop before 1926 but then became a messroom; under Bryan & Mullinger Ltd it reverted to a maintenance workshop (Fig.2).

Canalside building. This was the earliest building on the site, dating from about 1908, and the ground floor was used for tractor and boat storage (Plate 7). Machinery was stored on the first floor, and oil skins, life belts and breeches buoys on the second. The paint store was also on the second floor and included facilities for stove enamelling small parts such as navigation lamps and flag day metal collecting boxes. The machine shop included part of the ground floor of this block, although before 1926 there was a machine shop on the first floor.

This three-storey brick building bore a resemblance to the Rigging Loft and General Stores, with a pitched slate roof on steel trusses and concrete floors on rolled steel beams and columns. There were windows in all four walls and teagle openings on the yard side with a small electric wall crane. As can be seen in Plate 7 the ground floor had large openings with roller shutters for boat and tractor access.

Many windows were added after 1939, and at the eastern end of the building a staircase and lift were installed and a two-storey extension built. Partition walls were erected for offices and the storage areas equipped for spice production and packing. Chutes were installed between floors.

Yard. The only items of interest in the yard were the underground petrol tank and the weighbridge. The indicator for the weighbridge had been sited in a small concrete shed in the centre of the yard but this had been demolished before the survey. The petrol was used for the tractors and the reserve machine shop engine.

Conclusion

The storeyard performed an invaluable service for 60 years and gave the people of the East End a proud link with the sea and the noble work of the Institution.

It is interesting that the original purpose of the storeyard – a central store for reserve lifeboats – no longer exists; spare lifeboats are now kept at various places on the coast, as they were before 1878.

Acknowledgements

I should like to acknowledge the great contribution, including photographs, made to this article by Mr Jack Chambers, who started his lifelong and continuing career with the R.N.L.I. at Broomfield Street. My thanks are also due to Allan Goode for drawings, Glen Drewett, David Thomas, Malcolm Tucker and other members of GLIAS.