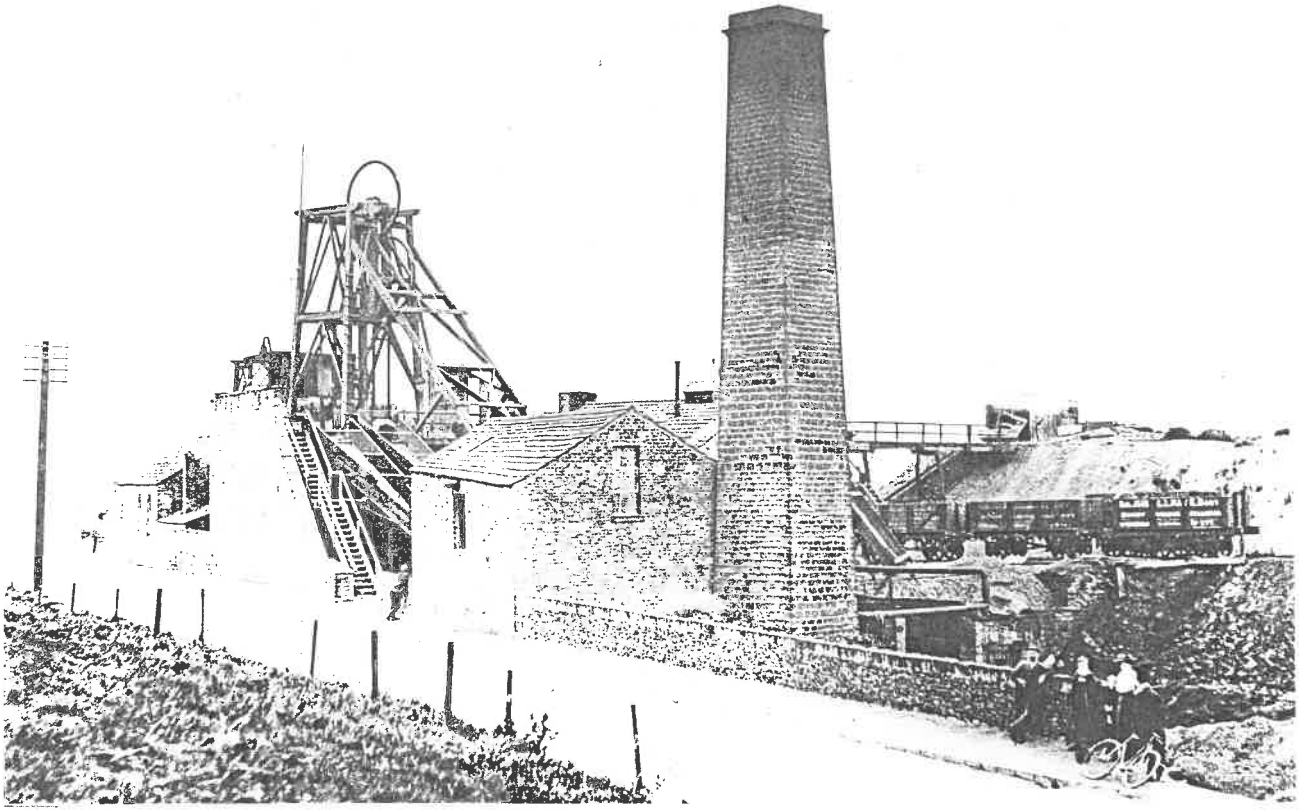
National Coal Mining Museum for England

Caphouse Colliery, Wakefield



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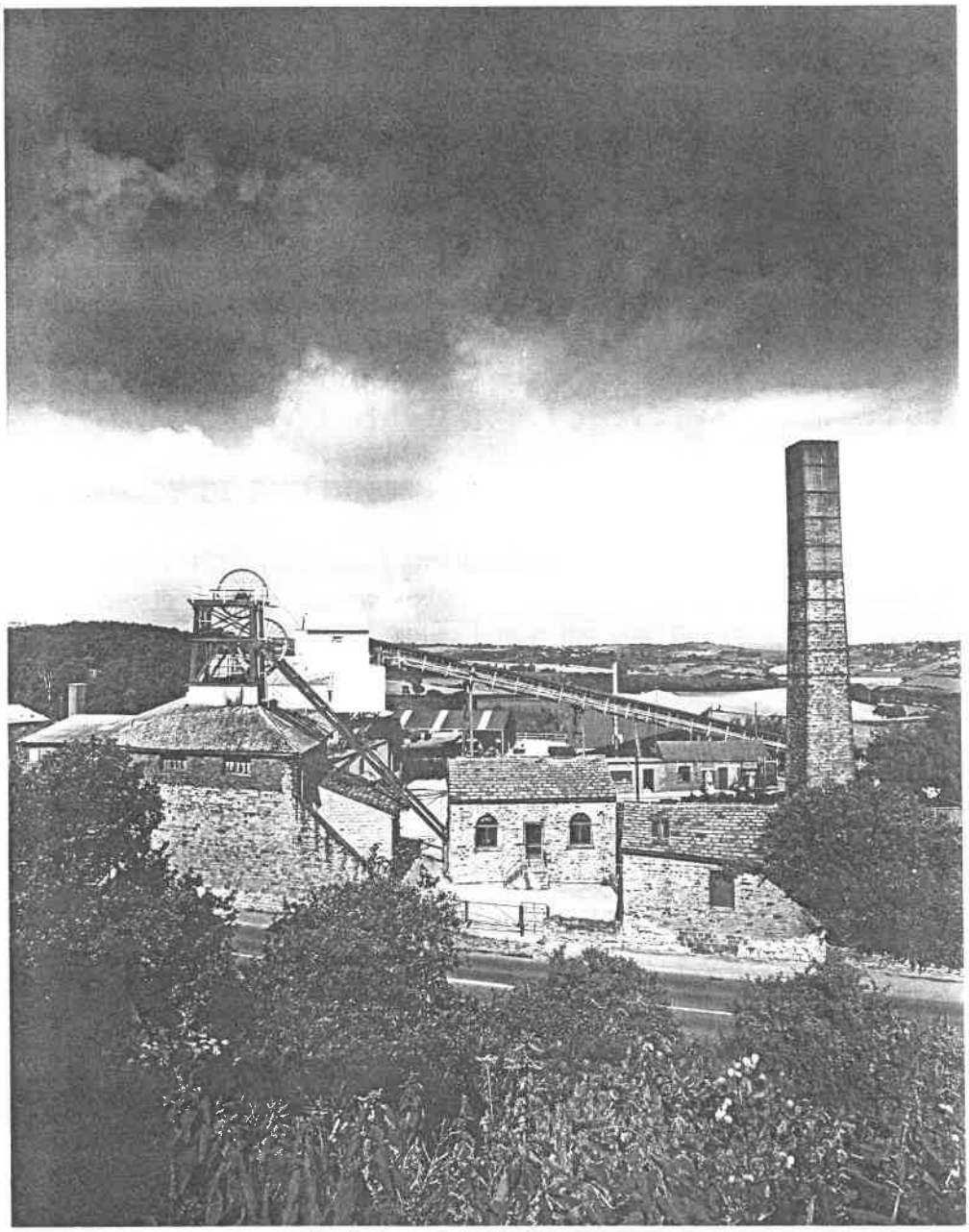

General view of Caphouse Pit
RCHME AA97/4947

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SUMMARY

Caphouse Colliery, opened as the Yorkshire Mining Museum in 1988 and designated the National Coal Mining Museum for England in 1995, incorporates three sites, Caphouse Pit, Hope Pit and Inman Shaft. Caphouse Pit was sunk in the late 1770s or 1780s by James Milnes who, in the customary manner of the time, sank a series of individual shafts down to the coal, then abandoning them when the accessible coal was exhausted. In 1827 the lease of the coal was taken by Sir John Lister Lister Kaye of Denby Grange, the neighbouring estate on which coal was already exploited, its individual pits known collectively as the Denby Grange Colliery. Sir John inherited four working pits in 1827 but by 1851 he had sunk or reopened a further 14, few of them having long lives. Caphouse Pit and Hope Pit were among the coal pits which were sunk and then reopened, Caphouse Pit from 1828-33 and again from 1851, Hope Pit from 1832-3 and again from 1841 when the Inman Shaft was opened to pump water from its workings with a steam-powered beam engine augmented by a horse gin. Inman Shaft may have originated as two coal pits.

The 1840-1 beam engine house at Inman Shaft survives, its lower half hidden by a raised ground surface, but the associated boiler house and chimney, and the horse gin and horse engine, have gone. Little trace remains of the colliery railway, part locomotive hauled, part rope hauled, built in 1853-4 to link Caphouse, Hope and the other pits with the Calder and Hebble Navigation and the Lancashire and Yorkshire Railway at Calder Grove, five miles away. Intended to provide more convenient and ultimately cheaper transport for the coal mined by the Denby Grange Colliery, the railway was not finally closed by the colliery until 1942. None of the mid 19th-century buildings at Hope or Caphouse Pits survives - the latter included a heapstead, steam winding engine house and boilers built in the mid 1850s - but at Caphouse the steam winding engine house, boiler yard, chimney and stone heapstead at the top of the main shaft, together with a second ventilation shaft, all evidently completed in 1876 for Emma Lister Kaye, survive as does a small store built shortly afterwards. A further phase of investment is reflected in work undertaken in the period 1905-1911. At Caphouse Pit the timber headgear of the main shaft was renewed and a substantial timber-framed screens building erected nearby, whilst the shaft at Hope Pit became the air shaft to both pits, with new surface buildings which included a fan house and electric winding engine house. Denby Grange Colliery was sold in 1907 and over the next 25 years the new owners built coal drops and doubled the number of sidings at Caphouse, erected an administration block at the same time, 1937-8, as the pithead baths funded by the Miners' Welfare Fund, and erected a substation at Hope Pit. The site was reorganised by Lockwood & Elliott between 1943 and 1946, with buildings and plant upgraded, and this work was continued after Nationalisation, a major development being the opening of a drift mine in 1974. The colliery closed in 1985.

THE HISTORY OF CAPHOUSE COLLIERY

Caphouse Colliery[1] is used in this report as the overall name for a site which includes Caphouse Pit, Hope Pit and Inman Shaft. All three of these locations at one time had two shafts. At Caphouse and Hope the shafts were certainly associated with mining coal, as they may have been at the Inman Shaft, although here the first known documentary reference is to the shaft being utilised by a steam pumping engine, augmented by a horse gin, to draw water from the workings at Hope Pit.

The following historical account of Caphouse Colliery is drawn from the published and unpublished sources quoted in the footnotes and listed in the Bibliography.[2] A series of maps and plans, generally referred to in the report by their date of survey, were consulted. The earliest is a plan of 1791, updated to 1795 and 1801,[3] and there are also auction sale plans of 1858 and 1863 (Fig 1),[4] a series of Ordnance Survey maps (Figs 2-4)[5] and some National Coal Board surface plans.[6]

Location

Caphouse Colliery stands in the civil parishes of Sitlington[7] and Austonley in the county of West Yorkshire, the former in the area of Wakefield District

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[1] Caphouse Colliery stands on New Road in the civil parish of Sitlington, West Yorkshire. Its grid reference is SE 1648 2534. RCHME's archive on the site, which has the National Buildings Record number 91090, and aerial photographs, are held at the National Monuments Record Centre, Great Western Village, Kemble Drive, Swindon SN2 2GZ.

[2] Archive deposits consulted were the Public Record Office, London; The John Goodchild Collection, Wakefield; the Registry of Deeds, Wakefield; and those at Caphouse Colliery, the National Coal Mining Museum for England, Wakefield. Plans relating to Caphouse Colliery, held in November 1997 by the British Coal Collection's Ackworth Records Centre and due for imminent transfer to the Leeds District Archives of the West Yorkshire Archive Service, were not examined.

[3] See footnotes 13 and 14.

[4] See footnotes 21 and 22.

[5] For Caphouse Pit, Hope Pit and Inman Shaft: Ordnance Survey 6" map, Sheet 247, surveyed 1850-1, published 1855. For Hope Pit and Inman Shaft: Ordnance Survey 25" map, Yorkshire, Sheet CCXLVII.15, surveyed 1892, published 1892; revised 1904, published 1907; revised 1914, published 1919; revised 1930, published 1932. For Caphouse Pit: Ordnance Survey 25" map, Yorkshire, Sheet CCXLVII.16, surveyed 1892, published 1893; revised 1904-5, published 1907; revised 1914, published 1919; revised 1930-1, published 1933.

[6] Two undated plans are held in the archives of the National Coal Mining Museum for England. They both show the drift which was completed in 1974 and are likely to date from the mid to late 1970s.

[7] The spelling Shitlington was used until 1922.

Council, the latter in that of Kirklees District Council. Prior to 1974 it was in the West Riding of Yorkshire, and under an earlier administrative system its pits were in the townships of Shitlington and Upper Whitley respectively. Caphouse Pit is halfway between Wakefield and Huddersfield: the 1904-5 map indicates that the distance, recorded on a milestone opposite the entrance to the pit, as six miles to Wakefield and seven and a half miles to Huddersfield.

Communications

Caphouse Colliery stands on the north side of the A642 Wakefield to Huddersfield road, on a length of former turnpike road called New Road.[8] The Wakefield and Austerlands road had been made into a turnpike or toll road under an Act of 1759, prior to the sinking of the pits which came to form the colliery. In this part of its length the road ran along the ridge above the site of the pits but in about 1830 the route was improved by the construction of an entirely new and easier line between Denby Grange and Horbury Bridge. The original road, now called the Old Road, but particularly the new road, still called New Road, ran close to the original pit at Caphouse and enabled coal to be carried either to the Calder and Hebble Navigation at Horbury Bridge or in the other direction towards Huddersfield. Royal assent for the Calder and Hebble Navigation had been granted in 1758, although the canal, which opened to Horbury Bridge in about 1762, was prohibited by a clause in the Act from carrying coal downstream. This clause was omitted from the Calder and Hebble Act of 1769, and the full Navigation, which reopened in 1770 after floods, followed the line of the River Calder from Sowerby Bridge to Wakefield where it connected with the Aire and Calder Navigation and thence gave access via the river system to more distant markets.

Good transport was essential to the success of collieries, but for a long period Caphouse was not well served. The turnpike road, even after its improvement in about 1830, was still an impediment to the colliery's commercial activity and its need to gain efficient and economic access to distant markets. Caphouse lacked easy access to water transport. The adjacent Flockton Colliery had constructed a waggonway to the Calder and Hebble Navigation during the 1780s, and the decision of the Lister Kayes in the early 1850s to expand their number of working coal pits, known collectively as Denby Grange Colliery, included the construction of a colliery railway which linked Caphouse and Hope Pits, among others, both to the long-established Navigation and to the Lancashire and Yorkshire Railway, opened as recently as 1840. The colliery railway, in conjunction as necessary with road transport, was used for almost a century and was only abandoned in 1942 when the colliery was taken over by a company with an established lorry service.

[8] Goodchild 1983, 9.

Geology

In geological terms, Caphouse Colliery stands in the area of the Coal Measures which consist of alternate strata of sandstone and shale, and divide into the Middle and Lower Coal Measures.[9] The coal becomes relatively thicker and more frequent as the Coal Measures are ascended, and for much of its life Caphouse Colliery exploited the seams in the Middle Coal Measures, particularly the Flockton Thick, Flockton Thin, Old Hards, New Hards and Wheatley Lime Seams (Fig 5). It was not until 1942 that the Beeston Seam in the Lower Coal Measures was worked. Drainage of the workings was a constant requirement, and a significant complication was geological faulting which threw the coal seams about 30 metres deeper at Caphouse Pit than at Hope Pit. The Wheatley Lime Seam and New Hards Seam were also occasionally badly affected by 'washout areas' in which the rock roof intermittently intruded down into the coal, making it difficult, if not impossible, to work.

The early mining history of the Caphouse area[10]

Caphouse Colliery is set in the middle of one of the best preserved landscapes of early coal and iron mining in England with some 1500 shafts and bell pits within a five mile radius, some of them certainly medieval in origin. Coal had been worked in areas close to Caphouse since at least the fourteenth century, and on the adjoining Denby Grange estate certainly in the 16th century. Court leet records indicate that coal was being dug at Flockton, a village about 1.5km (1 mile) south west of Caphouse, in 1515. Several seams of coal outcrop here, making them easy to work by primitive methods, and two coal seams found, and mined, throughout much of the Yorkshire coalfield, the Flockton Thick and the Flockton Thin, are named after the village.

Coal production was, for a long time, small in scale and produced for local needs. It was, however, possible to make a modest fortune from it, as was the case with Richard Carter, a 17th-century coalmaster who built and endowed a chapel-of-ease in Flockton and endowed a school and founded almshouses there. In the later 18th century, however, pits were sunk for more than local sales, the re-opening of the Calder and Hebble Navigation in 1770 affording the prospect of more distant waterborne sales. On the Denby Grange estate of the Lister Kaye family, Timothy Smith, part-owner of collieries elsewhere in the West Riding and a partner with the Fentons, the 'Coal Kings of Yorkshire', in their various interests, worked the coal and by 1775 was shipping coals to the Navigation for transport downstream. It was

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[9] Holmes 1967, 9-11; Faull and Moorhouse 1981, 34-36.

[10] The information in this section is taken from Faull 1991, 4-5; Goodchild 1983, 9-8; Holmes 1967, 22; Schofield 1991; Thornes 1981, 42-50; Till 1987, 46-8.

in this economic environment that Caphouse Pit, as it came to be known, was sunk in the late 18th century.

Caphouse Pit was sunk by James Milnes whose father, Richard, had in 1772-5 developed the Old Flockton and Emroyd collieries, stimulated by the opportunity to supply coal to distant markets offered by the new Navigation. During the 1780s[11] Richard Milnes constructed the wooden waggonway from Flockton to Horbury Bridge on the Calder and Hebble Navigation. In 1778 James Milnes took a lease from Mary Wortley, Countess of Bute, to mine two seams in an area close to the existing Flockton collieries, and among the pits subsequently sunk was what was evidently the original pit at Caphouse, which became No. 1 Shaft there.[12] A plan, nominally of 1791 but showing workings made since 1789, updated in one copy to 1795[13] and in another to 1801,[14] shows a series of shafts, and that marked 'Pit No. 17' has been identified as being on the approximate site of the No. 1 Shaft. The two copies of this plan, which shows workings in what was almost certainly the Flockton Thick Seam, show that the method of working coal was to sink shafts vertically to the coal about 200 to 250 metres (220-270 yards) from each other and to extract the coal within a radius of about 100 metres of each shaft.

James Milnes died in 1803 and his business was carried on by his wife Mary Ann. The workings in the Flockton Thick Seam seem to have been exhausted at the beginning of the 19th century, and by 1812 it appears that this part of the coalfield had been given up so far as its working was concerned. In 1827, however, a new lease of it was taken by Sir John Lister Lister Kaye, owner of the adjacent Denby Grange Collieries, and its development was resumed.

Green Lane Shaft, a short distance north west of Caphouse Pit, gives a good indication of the scale of these early workings (Fig 6). The timber headframe survives above one of the two shafts, with the waste from coal mining creating a substantial heap on the adjacent valley side.

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[11] Thornes 1981, 47.

[12] James Milnes also leased other areas for coal and iron working including Dial Wood from the Wortley estate and Emroyd Common from Sir George Armytage.

[13] 'Plan of a Colliery near Overton belong'^{g} to the Right Honble Mary Wortley Countess of Bute & held under Lease by Mr. Jas. Milns & C°. taken Sep. 8. 1791'. Copy updated to 1795 reproduced in part as cover of Goodchild 1983 (original in the Denby Grange Colliery MSS, The John Goodchild Collection, Wakefield).

[14] 'Plan of a Colliery near Uverton belonging to The Right Hon^{ble} Mary Countess of Bute & held under Lease by Jas Milnes Esq^{r} taken September 8th 1791'. Copy updated to 1801 reproduced in Yorkshire Mining Museum, no date, Map 1 (original in the National Coal Mining Museum for England, Caphouse Colliery, Wakefield).

The Denby Grange estate[15]

The Lister Kayes, whose involvement with what became Caphouse Colliery began with their taking of the lease in 1827, owned the Denby Grange estate to the immediate south and west of Caphouse. In the early sixteenth century the land in the area belonged to Byland and Rievaulx abbeys, and on the Dissolution it was acquired by the Kaye family. The estate had been bought by Arthur Kaye, who died in 1574, and by 1636 the old house at Denby Grange had been repaired and added to. A successor, John Kaye, was created baronet in 1642, and the fourth baronet, on inheriting the ancestral estates of the Listers of Thornton in Craven, added the name of Lister to Kaye. In 1810, when the sixth baronet died without issue, the baronetcy expired.

In 1789, on the death of Sir John Lister Kaye, the fifth baronet, ownership of the estate but not the baronetcy had passed to the elder of his two illegitimate sons, John Lister. John Lister married Lady Amelia Grey, daughter of the fifth Earl of Stamford and Warrington in 1800, took the additional name of Kaye in 1806, and was created first baronet of a new creation in October 1812. Sir John Lister Kaye lived in style in Denby Grange (Fig 7), a now-demolished mansion which drawings and photographs show had clearly been rebuilt as a substantial Georgian house in the late 18th century, though evidently retaining some earlier parts. From 1820 to 1840 he also occupied Fairfax House in York. He inherited extensive and widespread estates in Yorkshire, and at Denby Grange took over hitherto leased-out coal rights. During the late eighteenth century, as noted earlier, coal on the Denby Grange estate had been worked by Timothy Smith, and when he died in 1803 the colliery was run by his son, Charles. By 1817 Sir John Lister Kaye evidently had the colliery in his own hands and was employing John Blenkinsop of Middleton Colliery near Leeds as consulting engineer. Between 1750 and 1830 Middleton Colliery had been changed from a varying cluster of pits working coal at a depth of 35 yards into a subterranean town 400 feet below ground. The commercial success of Middleton must have appealed to Sir John, and it was under Blenkinsop's oversight that the new colliery on the Denby Grange estate was developed.

Caphouse Colliery, 1827-1871[16]

Sir John Lister Kaye, the first baronet of the new creation, died in 1827 and was succeeded by his eldest son, Sir John Lister Lister Kaye, born 1801 and married 1824. The new baronet took an immediate interest in his home estate

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[15] Information in this section comes from Brown 1989, 79; Goodchild 1983, 8; Goodchild 1988, 1-2; Rimmer 1955, 7.

[16] Information in this section is taken from Caley 1995, 1; Goodchild 1983, 9-15; Goodchild 1988, 3-4; Schofield 1991; Yorkshire Mining Museum, no date; and from personal research and knowledge kindly made available by John Goodchild and by John Schofield.

and in addition to taking over the existing Denby Grange Colliery[17] he added to the area by leasing additional coal, particularly that previously leased by James Milnes and including the pit which came to form Caphouse Colliery.

In April 1827, two months after he had succeeded as second baronet on the death of his father, Sir John Lister Lister Kaye (1801-1871) took a lease of a 216½ acre area of coal adjoining his estate and coalfield of Denby Grange. The lease was granted by the Countess of Bute's successor, John Stuart Wortley, Baron Wharncliffe, and was of the area previously worked by the Milnes family, which included Caphouse. Its terms specifically included the thick and thin coals and brick clay. John Blenkinsop continued in employment as consulting engineer and is said to have drawn up plans for the development of Caphouse, Hope and Blossom Pits before retiring from the consultative work, due to ill health, in 1830. The diversion and improvement of the Wakefield and Austerlands turnpike road past Caphouse is likely to have been associated with the development of the pits of the Denby Grange Colliery. Sir John Lister Kaye, the first baronet, had invested £3,000 in the turnpike under the renewal Act of 1821 which gave the turnpike trustees powers to divert the road within one hundred yards of the old road without further permission, though providing compensation. Under the Act major diversions were made, including a new route from Denby Grange to Horbury Bridge, a route with the gentle curves and gradients typical of turnpike improvements, and one which greatly assisted the development of the Denby Grange Colliery. A ledger of 1829-1835 includes many references to coal sales, with many customers in cartage distance of the pit heads, but also much widespread and distant custom, most notably in the East and North Ridings of Yorkshire, and in north Lincolnshire. Very little coal went towards Huddersfield at this time. The sales were both landsales, that is coals carried by land transport, and coals transported for sale by waterway.

Denby Grange Colliery, typically for its date, consisted of a considerable number of shafts, and during the second quarter of the 19th century Sir John Lister Lister Kaye both deepened existing shafts and sank a large number of new ones. When Sir John succeeded his father in 1827 the colliery was in Chancery and he had to pay £4566 to recover it for his benefit. The colliery consisted of four working pits, and between 1828 and 1851 he sank a further ten. Most had short lives, generally between one and four years, and four of them were reopened after they had been closed. Shafts were deepened by about 15 metres (16 yards) from the Flockton Thick Seam down to the Flockton Thin Seam, including that which evidently became No. 1 Shaft at Caphouse Pit. This shaft, called Wellington Shaft at the time, no doubt after

[17] Denby Grange Colliery is here used as the collective name given to the fluctuating number of coal pits open on the Lister Kayes' Denby Grange estate. The name appears with this usage on the 1850-1 map, but in the early 20th century it was applied to a single pit. The original usage persisted, adapted to the name Denby Grange Collieries Company, which in 1942 sold Caphouse Colliery to its new owners.

the victor of Waterloo,[18] was sunk in 1828, closing in 1833, and was located at the side of the New Road. Among the new pits which were sunk was Hope Pit, later to become part of Caphouse Colliery.

The Flockton Thick Seam outcrops at the surface in the vicinity of Hope Pit, and when Sir John Lister Lister Kaye began sinking the pit in 1827 it was to the Old Hards Seam at a depth of 49 yards. Hope Pit opened in 1832 and closed in 1833, but from 1839 it was sunk deeper to the New Hards or Cromwell Seam, opening on 22 April 1841. Sinking of new shafts was complicated by geological conditions and by drainage problems, the latter being addressed by providing a steam pumping engine which may have utilised a deepened existing shaft, later called the Inman Shaft, to pump the water to the Old Hards levels 54 yards above the new workings. As part of the same investment, a major contract for coke supply was signed with the Manchester and Leeds Railway Company in 1841 and coke ovens were built close to Hope Pit.

The 1850-1 map (Fig 2) shows two coal pits and some buildings at Hope Pit, an L-shaped building at the unnamed Inman Shaft, and in between them two long rectangular structures set in line and annotated 'Coke Ovens'. An unnamed 'Coal Pit' further east, with small buildings depicted to its north and south, is what became No. 1 Shaft at Caphouse Pit.[19] The survey for this map must have taken place as the reopening of the presumed Wellington Pit as Caphouse was being planned since the latter opened in January 1851. The Lister Kayes invested a considerable sum in the new pit, which involved deepening the shaft from the Flockton Thin Seam to the Old Hards Seam. New surface buildings were constructed since the structures shown on the 1850-1 map bear little resemblance to those depicted on plans drawn up in connection with the sale of Lord Wharncliffe's estate in 1858 and 1863 (see below and Fig 1).

After the retirement in 1830 of John Blenkinsop, supervision of the Denby Grange Colliery had been taken on by Joseph Pickard, who was both colliery and estate manager, and then by John Wilson who died in 1851. From 1852 to 1856 redevelopment was overseen by John Marsden, a lawyer in practice in Wakefield who had, from the 1840s, built up a considerable business in the management of local landed estates. Several of these were coal-bearing, among them those of the Armytages of Kirklees Priory, the Wentworths of Woolley Hall and the Winns of Nostell Priory. Marsden's first work in connection with the Denby Grange Colliery was to persuade Sir John Lister Lister Kaye to improve its communications, to negotiate new and renewed

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[18] The Lister Kayes were often patriotic in naming their pits; others included Waterloo Pit, Nelson Pit, Victoria Pit, Prince of Wales Pit and Alexandra Pit.

[19] The building across New Road from Caphouse Pit, now the Reindeer Inn, and built beside the original turnpike road, is called 'Cop House' on the map, with 'Cop House Quarry' nearby. This spelling is not found on subsequent maps which use the form Caphouse.

coal leases, and to raise the considerable sums of money involved in these proposals. From the late 18th century the Milnes pits at Flockton had had the advantage of a railway, the Flockton waggonway, which connected with the Calder and Hebble Navigation at Horbury Bridge. This railway, clearly shown on the 1850-1 map a short distance east of some of the pits which made up the Denby Grange Colliery was, for commercial reasons, not available to the latter. Access to the Navigation at Horbury Bridge and to the railway opened there in 1840 was a problem faced by the Lister Kayes who, though benefiting from the improved turnpike road, had to pay tolls at toll bars at Overton and Horbury Bridge. In different months of 1849 the lessees of the turnpike's tolls were paid between £55 and £85, and the men who led the coal, most apparently working under contract, also had to be paid.

Working with the speed of John Blenkinsop under an earlier baronet, within months of John Marsden's appointment consideration was given to colliery expansion. In August 1852 Sir John borrowed £12,000, and between October and December that year discussions took place with the Wakefield and Austerlands turnpike trustees about the construction of a tunnel under their road as part of a scheme to build a private railway from Caphouse Pit down to the Calder and Hebble Navigation and the Barnsley branch railway near Calder Grove. Negotiations were in hand between December 1852 and February 1853 for obtaining wayleave leases from a number of landowners, and a much enlarged coal lease, to run for 31 years from January 1853 was signed in May 1853 with Lord Wharncliffe. The lease of the Caphouse area was also renewed.

The railway[20] was built in 1853-4. Nine building contracts were let in 1853, the first of them in March. Chairs for the rails were purchased from William Jarvis's foundry at Middlestown, and in 1854 Jarvis was paid 'for Engines etc.' and for 'Castings etc.', and Richard Caldwell of Durkar was paid for 'railway Spikes etc.' and for 'wood etc.'. The first recorded delivery of coals to the Barnsley branch railway was in May 1854, while the last payment to leaders of coal on the turnpike were made in the half year ending June 1854. A contract for supplying the Lancashire and Yorkshire Railway Company, which owned the Barnsley branch and the main line up the Calder valley, had been entered into in November 1853. The colliery railway, a mixture of locomotive haulage and rope haulage, had its terminus at Caphouse and then ran five miles to the Denby Grange Colliery's railway siding at Calder Grove.

The construction and opening of the railway enabled the colliery operations to be reviewed. Older parts of the concern were run down, the shafts at Caphouse Pit and Hope Pit were deepened, and shafts were sunk to create Victoria Pit at Little London, Prince of Wales Pit (later Denby Grange Colliery) at Midgley, and Kaye's Drift (later Bullcliffe Wood Colliery) at Bullcliffe. Over some thirty years workings in Flockton and Whitley Upper

[20] For a detailed account of the colliery railway see Goodchild 1983, 12-13 and Till 1987.

townships were all either leased off or closed down, and Blossom Pit was abandoned in 1885. From 1854 an increasing proportion of the Denby Grange production appears to have come from pits on the Wharncliffe estate, which included Caphouse Pit. Hope Pit was on the Denby Grange estate.

The work at Caphouse Pit involved deepening the shaft again, this time from the Flockton Thin Seam which was exhausted to the Old Hards Seam. The deepening was accompanied by major rebuilding on the surface since, as noted earlier, the structures shown on the 1850-1 map bear little resemblance to those depicted on plans drawn up in connection with the sale of Lord Wharncliffe's estate in the township of Shitlington in 1858 and 1863. The first attempt to sell the estate by auction on 23 and 24 July 1858 left some lots unsold, and these, including Caphouse Pit, were offered for auction again on 4 June 1863. The Plan and Particulars drawn up in connection with the 1858 Sale[21] shows the estate running from near Caphouse Pit at its northern end, up past New Hall, over the colliery railway, past Midgley and on to Bank Wood in the south. The plan, at six chains to the inch, depicts the buildings and land subdivisions at Caphouse Pit but these are shown more clearly on the plan at two chains to the inch drawn up for the 1863 Sale (Fig 1).[22] The caphouse property comprised Lot 4 which, the Particulars record, had a total area of 13 acres 0roods 10 perches. Plot 11, called Wood Pasture, was occupied by Jese Kaye, the remainder by Sir John Lister Lister Kaye. Plots 12 and 13 were called 'Garden, now Pit Hiil', plot 14 'Railway and Site of Caphouse Pit', plot 15 'Part of Bank', and plot 16 'Cottage'. The 1858 Particulars are identical but for the occupant of Wood pasture, which was then in the occupation by Matthew Charlesworth. At Hope Pit it is possible that a heapstead was built over the northernmost of the two shafts. This pit was on the Lister Kayes' own land, so it is not depicted on the Sale Plans, but the 1892 map, though identifying Hope Pit as 'Disused' does show a distinctive boundary around the shaft.

John Marsden remained in charge of the collieries until the end of 1856, having overseen their major extension and modernisation, and was succeeded as consultant manager by J T Woodhouse. In 1866 J O Greaves, a colliery owner and mining engineer, was appointed general manager. The Old Hards Seam was exhausted in 1865, and it appears that there followed a break in

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[21] 'Particulars and Plan of Valuable Freehold Estates, situate in the Township of Shitlington, in the Parish of Thornhill, And West Riding of the County of York, which will be offered for Sale by Auction by Mr. Edward Lancaster, at the Strafford Arms Hotel, Wakefield, On Friday and Saturday, July 23rd and 24th, 1858...'. Denby Grange Colliery MSS, The John Goodchild Collection, Wakefield.

[22] 'Particulars and Plan of Valuable Freehold Property situate in The Township of Shitlington, in the Parish of Thornhill, and West-Riding of the County of York, which will be offered for Sale by Auction, By Mr Edwd. Lancaster, At the Strafford Arms Hotel, Wakefield, on Thursday, The 4th of June 1863...'. Denby Grange Colliery MSS, The John Goodchild Collection, Wakefield.

production for about ten years, in the Caphouse area, before a decision was made to sink even deeper to the New Hards Seam, which continued to be mined at Hope Shaft during this period. It is probable that during this period the water drainage of the whole colliery was rationalised by constructing a new Y-shaped water level, sometimes called a sough, from both the Inman Shaft and No. 1 Shaft at Caphouse and, sometimes utilising existing roadways in Flockton Thin, Old Hards and Green Lane Seams, providing a single outlet for all pumped mine water into the valley below.[23]

Caphouse Colliery, 1871-1905[24]

Sir John Lister Lister Kaye died in 1871, the estate passing to the senior male member of the family, his grandson, Sir John Pepys Lister Kaye, who had lost his father at the age of two in 1855. Denby Grange Colliery, however, was inherited by Miss Emma Lister Kaye, the eldest of his six daughters and the only spinster among them, and she was sole proprietor of it until her death in 1905. The day to day work was carried out by a manager: J O Greaves of Wakefield, appointed manager in 1866, continued in his position until he was succeeded by his son, Percy Christian Greaves, in 1891. The latter, on Emma Lister Kaye's death in 1905, was left as acting executor.

In August 1872 Emma Lister Kaye agreed to take a lease of land, cottages, railway and coal from Digby Caley, her brother's recently appointed estate Receiver, while further coal leases were taken by her from her brother's estate in 1879 and 1890. In order to bring Caphouse Pit back into productive use she authorised a major programme of investment, completed in 1876, which involved the replacement of most of the structures erected in the 1850s. The existing shaft, now No. 1 Shaft, already deepened several times, was deepened for the last time to the New Hards seam, a new heapstead, CAP 1,[25] being constructed at the top of the shaft with a timber headframe and cast-iron pulley wheels. A second shaft, now No. 2 Shaft, was sunk close by to the same horizon to form an upcast shaft to assist ventilation, maintenance and escape, if necessary. This shaft also had a timber headframe, but the original shaft was the main winding shaft, equipped with a pair of cages wound by a steam winding engine set in a stone-built engine house. The engine house, CAP 2, is inscribed with the initials of Emma Lister Kaye and the date 1876, and has its own double boiler yard, associated coal bunker and chimney, CAP 3 and part CAP 7, all evidently newly built at this time. A workshop, part of CAP 6, was probably built at the time. All these buildings are of stone, albeit that the workshop was evidently only of stone towards the

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[23] Information on drainage supplied by John Schofield.

[24] Information in this section is taken from Goodchild 1983, 15-20; Goodchild 1988,10-11; Schofield 1991.

[25] The numbers CAP 1, HOP 1, etc., refer to the annotated drawings in Volume 1, Part 2 of the Conservation Plan. Block plans showing the numbering appear as Figs 9 and 60.

road, and most were consciously placed around an entrance yard which opened directly off the New Road. Coal was delivered through chutes from the top of the heapstead to carts drawn up in this yard, as well as into railway wagons which passed to the rear, where the colliery railway constructed in 1853-4 terminated. Spoil was transported on a timber tubway gantry across the railway to a growing heap on its north side where the land fell towards a watercourse.

After the initial investment at Caphouse Pit during the mid 1870s, little more building work was carried out during the remainder of Emma Lister Kaye's life. A store, CAP 5, was built close to the entrance, in part over low boundary walls, probably shortly after 1876 since its likely function was as a general purpose building for the storage of spare ropes, tools and other prerequisites for underground working. Otherwise there only appear to have been small-scale additions to the workshop, CAP 6.

There appears to have been a shortage of working capital at Denby Grange by the 1890s, since in 1891 it was proposed to form a limited liability company. The prospectus described the situation rather hopefully, recording 'A most important feature in connection with the value of the Collieries and for the economical working thereof, is the private railway, about six miles in length, running from the two Colliery Shafts now in operation...giving the Collieries the double advantage of direct railway and water communication with all parts of the country'.[26]

No structure survives at Hope Pit from this period. The Hope Pit New Hards Seam was exhausted in 1885 and the pit was then deepened to the Wheatley Lime Seam, which was itself exhausted in 1943. The first mine plan of Hope Pit's Wheatley Lime Seam shows that two shafts were sunk to it. The 1892 map, though showing buildings, notes the site as 'Hope Pit (Disused)', and identifies the coke ovens as 'Kilns'. 'Disused' is probably a misnomer. A mine plan of 1887 shows that following the deepening of Hope Pit a connecting underground roadway was made from the Wheatley Lime Seam there to the Caphouse Pit New Hards Seam, and it is possible that this was used to convey all the coal worked at Hope Pit to No. 1 Shaft at Caphouse as well as to provide fresh, intake, air in the other direction. The 1892 map clearly shows that the northern shaft was the more important of the two shafts at Hope Pit at this time, and this may have been because it had been the winding shaft for the now-exhausted New Hards Seam, with the tubs of coal pushed from the pit bank to a tippler on top of the curved stone retaining wall beside the siding off the railway. The 1904 map shows a slight reduction in the extent of the buildings, with the coke ovens shown but not identified. The Inman Shaft is not named, though the L-shaped pumping engine house, boiler house and chimney are shown unchanged on both these maps.

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[26] Quoted in Goodchild 1983, 19.

Caphouse Colliery, 1905-1917[27]

Emma Lister Kaye lived at Overton Lodge, not far from Caphouse Pit, until in about 1902, for health reasons, she left there, dying in Cannes in October 1905. Denby Grange Colliery was then taken over by Sir John Pepys Lister Kaye, who came into a personal fortune of £24,000 and some £1,000 worth of securities. Sir John was a spendthrift who was declared bankrupt in November 1914, the Colliery was disposed of to new owners in 1917, but it flourished under his managers for much of the period of his ownership. Output increased from 154,400 tons in 1905 to 189,134 tons in 1911-12 when some 80 per cent of the coal was machine cut, a very high proportion for the period. As early as 1905 the Colliery was using some patented improvements in coal drilling machines.

The use of up-to-date machinery in working the coal underground was only part of a major investment programme. It is likely that it was at this time that the underground workings at Caphouse Pit and Hope Pit were connected together, with one of the previously disused shafts at Hope Pit utilised as the upcast shaft to the downcast shaft at Caphouse Pit. The southernmost of the two old shafts at Hope Pit was brought back into use with a new brick heapstead and electric winding engine house as well as everything needed for ventilation, namely a fan house and fan drift linking it to the shaft, and an air lock at the external entrance to it, HOP 1 and 2. The function of Hope Pit in relation to Caphouse Pit is clear from the 1914 map which identifies the new buildings at Hope as 'Air Shaft'. At Caphouse Pit the new shaft sunk in 1876, No. 2 Shaft, lost its function as the upcast shaft, though when it was sealed is uncertain since the workshop was not extended over it until between 1930 and 1943. The original shaft, No. 1 Shaft, remained as the downcast shaft, and its new function as the point at which coal from both the pit workings was brought to the surface is confirmed by the renewal, almost certainly at this time, of the timber headframe and headgear, CAP 1, and the construction of the substantial screens building, CAP 4, where coal and spoil were separated and the former graded. Maps indicate that the screens building was erected between 1904 and 1914, but the banning of the use of timber for the construction of headframes, part of the Coal Mines Act of 1911, implies a pre-1911 date. Minor building work during this period included a small rebuilding of the workshop, part of CAP 6, at Caphouse Pit, the construction of a now-demolished engine shed on the mineral railway there, and the clearing of the remains of the old coke ovens at Hope Pit. The Inman Shaft continued to be used to pump water from the workings during this period.

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[27] Information in this section is taken from Goodchild 1983, 21-22; Goodchild 1988, 11-12.

Caphouse Colliery, 1917-1942[28]

Sir John Pepys Lister Kaye's financial difficulties involved four London banks and six London solicitors, and they meant disposing of the Denby Grange Colliery which was sold in 1917 to a company put together by Percy Greaves, its former manager. £4,000 was paid in cash with an agreement that half of the net profits would also be paid over to Sir John's creditors until the total amounted to £20,000. A half share was bought by Sir Ernest J Fawke of London who is said to have sold out and made a substantial profit. A further company, Denby Grange Collieries, was formed in 1921-2 and in 1928 Greaves' own Old Roundwood Colliery company took over Denby Grange Colliery under the title of Terry Greaves & Lister Kaye. The new company of 1928 had a nominal capital of £210,000 in £1 shares, its board representing the Greaves and Lister Kaye families. The firm survived until Nationalisation, but in 1942 the older pits of the Denby Grange Colliery, Caphouse and Hope, were sold.

During the period 1917-1942 there were changes to the underground workings, the colliery only working the Wheatley Lime Seam, with access via inclined drifts from the New Hards Seam. Above ground investment seems to a large extent to have concentrated on more efficient means of disposing of mined coal, with maps indicating that between 1914 and 1930 new coal drops and additional sidings were constructed at Caphouse and new sidings and what was probably a wagon repair shop and saw mill (HOP 5) were built near Hope Pit. Work at Caphouse Pit after 1930 included the addition of bunkers to the screens building and the construction of a new boiler house; at Hope Pit an electricity substation was built. An outside influence came from the Miners' Welfare Fund who paid for the construction of pithead baths in 1937-8, the colliery company paying for the contemporary and adjacent administration block with its lamp room, wages room and manager's office.

The external funding of the pithead baths was a consequence of the Mining Industry Act, 1920, which imposed an obligation on colliery owners to contribute 1d per ton on the output of their collieries to a welfare fund.[29] The fund was administered by a Central Committee in London and a given proportion of the proceeds was allocated to each colliery and was administered by a District Committee in each county. Money could only be expended on welfare schemes for the benefit of the men working at the pits and living in the colliery villages, but there was a fairly wide choice of schemes to which the fund could be applied. Pithead baths such as that at Caphouse Pit soon became a common item of expenditure and a specific Baths Fund was created

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[28] Information in this section is taken from Goodchild 1983, 21-22; Goodchild 1988, 14; Schofield 1991.

[29] The information about the Welfare Fund is taken from Fairley 1927, 11, 13.

by the Central Miners' Welfare Committee.[30]

Caphouse Colliery, 1942-1946[31]

On 1 October 1942 Caphouse Colliery, which comprised Caphouse Pit, Hope Pit and Inman Shaft, was bought from the Denby Grange Collieries Company by Arthur Sykes of Lockwood & Elliott of Fenay Bridge south of Huddersfield. The new owners already owned Shuttle Eye Colliery near Huddersfield, where the first coal, in the Old Hards Seam, was worked in 1862,[32] and they bought Caphouse Colliery in order to own two collieries which were conveniently situated in a highly industrialised area with a need for coal for domestic and industrial use.

In the Estimate of Value drawn up in 1947 under the terms of the Coal Industry Nationalisation Act, 1946,[33] Lockwood & Elliott are recorded as stating that when they acquired Caphouse Colliery in 1942 it was out of date and producing a mere 70 tons of coal a day, having run for many years without making any profits. They reported that it was badly equipped, requiring a complete and expensive reorganisation to put it into shape for dealing efficiently with much bigger outputs. They immediately undertook a preliminary reorganisation. Until 1942 all coal disposals from the colliery was said to have been by rail, but the long railway and sidings were immediately dispensed with and disposals of coal were changed to landsale services worked in conjunction with the landsale lorry service operated for the Shuttle Eye Colliery. Direct current supply was changed to alternating current, and new alternating current was installed in the power house at Hope Pit. A complete reorganisation of the surface plant was begun early in 1943. In 1944, since the shaft equipment was considered incapable of dealing with the required future outputs, it was decided to close the pit in order to repair and improve the shaft generally and to increase the size of the cages to take two five-hundredweight tubs. The colliery therefore ceased coal production entirely for four months whilst the shaft at Caphouse Pit (No. 1 Shaft) was enlarged for a distance of 50 yards in the middle where it was both narrow and out of plumb, causing cages to rub during winding operations. The wooden shaft guides were replaced with guide and rubbing ropes, the pit bank (the top of the heapstead) was lifted for banking (discharging) at a higher level, steel back legs were fitted to the headgear which was reconditioned and

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[30] See, for example, Miners' Welfare Fund 1938, 94.

[31] Information in this section is from the source quoted below and from Goodchild 1983, 22.

[32] Information from John Schofield. In the Estimate of Value submitted by Lockwood & Elliott on Nationalisation (PRO COAL 37/248 39765, 1) they stated that the colliery had been developed in about 1830 by the grandfather of one of the directors.

[33] PRO COAL 37/248 39765.

raised, and new steel drums were fitted to the winding engine. On the surface the steam-driven screens were replaced, reinforced concrete and steel gantries were made from the pit top to the boiler house and the spoil tip, and to the screens, with a full tub creeper chain installed on the last gantry. Conveyor belts were installed from the new screens to convey coal to the existing steel landsale hoppers, which were capable of storing about 200 tons of coal into which spirals were fitted to minimise degradation of the coals. Between 500 and 600 tubs of five-cwt capacity were acquired to replace the old three-cwt tubs.

Coal winding recommenced towards the end of 1944, but reorganisation of the surface continued. The colliery yard was remade with five inches of reinforced concrete, a 20-ton weighbridge on the site of CAP 13 was installed, a new joiners' shop, part of CAP 9, was built, and the smithy or workshop, CAP 6, was extended. To deal with future mechanical repairs, additional machinery was installed in the shops. The compressor house at Hope Pit, HOP 4, was created by reconstructing an existing building, and two compressors capable of dealing with future pit loads were installed. The nearby locomotive sheds, HOP 5, were reconstructed to accommodate the motor lorries and motor lorry repairs shop. Concrete roads were laid to the garage and a central heating system, electric petrol pump and a 1,000 gallons capacity petrol tank were installed. When completed the garage accommodated 20 five-ton motor vehicles.

During 1945 and 1946 improvements were carried out to the pumping arrangements at the Inman Shaft, HOP 7, where water had previously been collected at the bottom of the shaft. Two ten-horse power electric pumps were installed in the pit bottom and a 15-horse power winding engine and headgear were erected at the pit top.

From 1942 to 1946, therefore, an almost complete reorganisation of Caphouse Colliery was carried out, largely out of revenue from Shuttle Eye Colliery, as a result of which the output was increased more than four times and an increase in output per man shift from 18 cwts to 32 cwts all employed was attained. The reorganisation and expenditure in the years before 1946 consequently depressed the profits, but with the reorganisation over, profits were expected to increase considerably.

The building works noted in the above submission by S G Lee for Lockwood & Elliott can, in the main, still be seen among the buildings as the Inventory of Buildings below indicates.

Caphouse Colliery, 1946-1985[34]

Nationalisation saw Caphouse Colliery taken over by the National Coal Board,

[34] Information in this section is taken from Schofield 1991.

later British Coal, and its subsequent closure in 1985.

A range of works was undertaken between 1946 and 1985, among them the installation in 1960 of a new upcast fan at Hope Shaft. This shaft was also used to wind men and materials, a new steel headframe being erected over the early 20th-century brick heapstead and a stockyard being established on the ground outside the entrance to the air lock and the shaft.

One of the major works undertaken between 1946 and 1985 was the completion of a surface conveyor drift to the Beeston Seam in 1974. Prior to this coal was moved by conveyor up a one in six drift to the New Hards pit bottom of No. 1 Shaft where it was transferred into 3.5 cwt (176 kilos) tubs and wound to the surface by the steam winder installed, and albeit subsequently improved, in 1876. After 1974 No. 1 Shaft was used for pumping and ventilation only, men and materials using Hope Shaft, and materials as well as coal being transported in the surface drift. The coal was transferred by a long conveyor gantry to an adapted screens building where it was sorted on internal conveyors. Washing, an alternative method of coal preparation, was never carried ouit at Caphouse, perhaps because the output was not high enough.

Caphouse Colliery, 1985-1997[35]

The last coal was brought up the Caphouse drift in 1985 and the mine was closed that year. The Yorkshire Mining Museum Trust had been set up in 1983 and work began on converting the colliery to a museum in February 1986. The shaft and pit bottom were ready a year later, and once the underground displays were ready the site opened to the public on 6 June 1988 as the Yorkshire Mining Museum. In June 1995 it was designated the National Coal Mining Museum for England.

The buildings which survived at closure in 1985 have been retained, with only limited interference to adapt or use them for Museum purposes, and the site has been laid out to meet the need for public access (Fig 8). The new reception block, built on to and incorporating in partially remodelled form the stores and former offices of the electrical and mechanical engineers, was modelled on the architecture of the modern buildings of the Selby complex of collieries with brick construction, brick paviours and exposed roof beams. Parking facilities for cars and coaches was provided in the vicinity of the reception block and additional buildings erected to meet storage and other Museum needs. Three of these buildings, CAP 19, 20 and 21, are similar to stores at other collieries, the first two being buildings moved from other collieries. Others include the open-arched stores, CAP 22 and 23, and the garages, CAP 25

[35] Information in this section is taken from Faull 1989,7; Faull 1991, 6; Schofield 1991.

INVENTORY OF BUILDINGS

CAPHOUSE PIT

A Block Plan showing the disposition of the buildings at Caphouse Pit appears as Fig 9. The maps, archive drawings and photographs of the buildings form Volume 1, Part 2 of the Conservation Plan, while the plans, elevations and sections drawn by Allen Tod Architecture Limited are part of Volume 2.

No. 1 Shaft, heapstead and headgear (CAP 1)

No. 1 Shaft, with the heapstead and headgear over it, is evidently a deepening of the original coal pit at Caphouse. This pit was probably dug in the late 1770s or 1780s and has been identified as 'Pit No. 17' on the 1791 'Plan of a Colliery near Overton...' when it was on land then owned by Mary Wortley, Countess of Bute, and was leased by James Milnes.[36] The shaft, annotated 'Coal Pit', is shown on the 1850-1 map, and though two small buildings are shown in its vicinity it is evident that it did not then have the heapstead and headgear over it. These were, however, built in time for the reopening of the pit in January 1851.

The major investment by the Lister Kayes in their colliery in the early 1850s included the construction of a colliery railway in 1853-4, the deepening of the shafts at Caphouse and Hope Pits, and alteration and new building at the pitheads. At Caphouse Pit these alterations, on the evidence of the Sale Plans of 1858 and 1863 (see above and Fig 1) included the construction of an H-shaped heapstead around the No. 1 Shaft, with steps ascending on one side, and, set some distance to the north east, what appears to be a boiler yard with a large near-square building attached on one side and smaller structures on or close to two other sides. The boiler yard is shown with a pair of boilers occupying more or less its full length. A single-track railway runs into the site, next to the boundary with the New Road, dividing into a complex of three sidings with cross-overs and a short bypass line as its nears the heapstead.

All the buildings of the 1850s at Caphouse Pit appear to have been replaced in the 1870s when further investment to bring the pit back into use led to the deepening of the existing shaft, No. 1 Shaft, and the rebuilding of its heapstead and headgear (CAP 1), the sinking of a second shaft, No. 2 Shaft, partly as a furnace ventilation shaft (now within CAP 6), and the rebuilding of the steam winding engine house, dated 1876 (CAP 2), and its associated boiler yard and chimney (CAP 3a,c), all in a compact group around an entrance yard which opened directly off New Road. A workshop block, (part of the much extended CAP 6), was also constructed as, a little later, was a

[36] For reproductions see Goodchild 1983, cover; Yorkshire Mining Museum, no date, Map 1.

store (CAP 5). These buildings are all shown on three photographs (Figs 10-12) taken about 1890-1900.[37]

The heapstead is a stone-built structure, square in plan, built with an open centre around the pit shaft. Its walls are of coursed roughly squared rubble, some rock-faced, some scabbled. The corners of the masonry at each angle are dressed back for decorative effect.[38] The north and west side walls both have two-metre wide round-headed openings which give access to the cage or cages which over time the shaft contained. The west opening has brick sides. These openings enabled the materials needed for the maintenance of the pit to be put directly into a cage from ground level, although the furnace upcast shaft, No. 2 Shaft, might also have served the purpose. The top of the heapstead was flat, and as well as providing the base for the timber headframe it also extended out to provide a working area, sometimes called the pit bank, where tubs of coal arriving at the surface could be removed from the cages and dealt with as appropriate, where empty tubs could be marshalled for return underground, and where miners could enter or leave the pit. The photographs taken about 1890-1900 show that the tall wall beside New Road, with its steep stone-coped slope down to the entrance yard and its coped parapet wall at the top of the heapstead, served both to screen the heapstead and support the working floor along its eastern side. A long steep flight of timber steps, broken at a half landing, and with a timber handrail, rose just within the entrance gateway up to the top of the heapstead. These steps must have been used by miners and other colliery workers to reach the entry to the shaft and they reinforce the importance of the entrance yard as the focus of the pit's activity since it was also used for the disposal of landsale coal. The early photographs show a pair of coal chutes descending from the north side of the heapstead to empty into carts which would have drawn up below. The chutes were renewed in between the taking of two of the photographs (Figs 10 and 12). The photograph from within the pit, (Fig 11), which is contemporary with the earlier external photograph taken from the roadside, shows a number of chutes positioned to deliver coal into wagons on the colliery railway constructed in 1853-4. The chutes can be recognised on the 1892 and 1904 maps. The heapstead and screen wall survive, but the chutes have gone, the headframe has been renewed, and various additions have been made to the side and top of the heapstead (compare Figs 10-12 with the Frontispiece and Figs 13-14).

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[37] On the basis of changes to the form of the timber headframe over the pit shaft, Figs 10 and 11 appear to be contemporary and to predate Fig 12. This order is confirmed by other details on the photographs taken from the roadside since the workshop beyond the heapstead was altered and extended in between the taking of Figs 10 and 12. Fig 11 appears to show the workshop block as it appears on the 1892 map, not in the rebuilt form shown on the 1904-5 map, so a date of about 1890-1990 seems tenable. The photographs all predate the construction of the screens building, which must have taken place between 1905 and 1911.

[38] The base of the south corner has been cut away to create a way through to the workshop range.

The working area on and around the top of the heapstead was originally open: the early photographs clearly show this, although they do show some vertical planks crudely set up and no doubt intended to keep out some of the wind and driving rain. Most of the original floor around the heapstead has been lost, but a length of it survives along the west side where it takes the form of a timber structure with a pair of posts rising to a rail which supported the ends of four beams, set in cast-iron shoes, running in to the heapstead and supporting substantial floorboards (Fig 15). An iron tie rod, in conjunction with a timber mid rail and V-shaped struts, brace the posts. The beams and shoes survive incompletely, and nor have any of the other supporting posts and rails survived.

The headgear on top of the heapstead is shown on the early photographs, its components being a timber headframe, probably of pitch pine, which supported the cast-iron pulley wheels used in association with the ropes and steam winding engine to raise and lower cages up and down the shaft. The headgear shown on these photographs is not the one which survives today, although the latter was very closely modelled on its predecessor. The original headframe had four tall slightly inclined corner posts with mid and top rails and inverted V-shaped braces. A pair of beams across the top supported the upper pulley wheel, while the lower was set in two posts in the upper part of the north face of the frame. Timber backstays or legs, with intermediate cross rails and back legs, ran down to the base of the winding engine house wall. Comparison of the early photographs shows that two from opposing directions show it in the same condition, but that the third, from the roadside, shows V-braces added to the backstays, perhaps an indicator that the frame was beginning to fail.

The present timber headframe is an early 20th-century renewal similar in form to its predecessor. Comparison of the existing headframe with that shown on the early photographs confirms that they are different structures, and the existing headframe must have been renewed as part of the major alterations undertaken, on map evidence, between 1904 and 1914 when the adjacent timber-framed screens building was erected. The construction can be dated more precisely since the Coal Mines Act of 1911 banned the building of timber headgear, although existing collieries were allowed to keep any already in use.[39] The present headframe is of pitch-pine, a timber praised at the time of its construction:

> In the choice of wood for pit-frames nothing will be found to give better results than pitch-pine. It is hard, strong, straight grained, and contains a large quantity of resin, which latter property renders it exceedingly suitable for use in this class of work.[40]

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[39] Thornes 1994, 32.

[40] Thornes 1994, 32, quoting W S Boulton, *Practical Coal Mining* (1908), 82.

The headframe has four tall slightly inclined corner posts rising from cast-iron sockets set on top of the heapstead (Fig 16). Rigidity is given to the frame by the four beams across the top and by the horizontal rails and inverted V-shaped braces which vary in form according to the side of the frame and the stresses the frame had to withstand. The east and west sides are identical and each have two rails, one at mid height, one at a higher level, with V-shaped braces rising to each, while the south side, at the back, has just a mid rail with V-shaped braces rising to it and to an upper rail across the head of the frame. The north face was constructed differently. It lacked any bracing, having instead two closely-spaced rails near the centre with paired posts both between and above these. This framework was needed to support the upper ends of the timber back legs which ran down from the headframe to the engine house, bracing it and enabling it to withstand the forces applied when the rope ran from the winding drum of the engine, round the pulley wheels, and raised and lowered the cages in the shaft. The outer timber back legs were replaced in steel in 1944, but empty mortices in the inner posts indicate where a second set of back stays, replicating the arrangement on the original headframe (Figs 10 and 12), once existed. The design of the headframe reflects its function, which was to support the winding gear, but detail was afforded it by way of chamfers and stops to all the timbers except the four beams across its top, and they all have, or once had, decoratively-shaped ends. Iron bolts hold the structure together in places, and some have square roves with hollow corners and bolts with square heads with chamfered corners.[41] In 1944, following the purchase of the Colliery in 1942 by Lockwood & Elliott, the shaft was improved in readiness for future work levels. This work included reconditioning and raising the headgear, fitting new pulleys or sheaves, and fitting new steel backlegs.[42]

Iron rails for two cages run into the shaft entrance on top of the heapstead, and next to them is a cabin (Fig 17), entered from the rear, with a window in the wall facing the shaft entrance. The cabin, which has a timber structure with tongue and groove boarding attached to the outside, is of at least two phases, the later being a heightening of 47cm. Battens across the front have numbered hooks for the attachment of tally numbers.

The enclosure of the top of the heapstead followed the construction of the new headframe since the hipped roof is poorly attached to the corner posts and is not properly carpentered into it. The first roofed structure had walls with timber posts and wallplates which survive incompletely, and a hipped roof which in contrast survives almost completely. The steel and concrete of much of the present floor, and the steel of some of the walling, probably dates from the major reorganisation of 1944 which included lifting the pit bank, that is

[41] The carpentry detailing of the headframe contrasts with the p;lain and highly utilitarian form of the timber frame of the apparently contemporary screens building, CAP 4.

[42] PRO COAL 37/248 39765, 4, 21.

the top of the heapstead, for banking at a higher level.[43] The 1947 schedule describes the headgear as 'of square pitchpine with angle iron bracing on stone foundations, with 9 ft. rope pulleys, 8 - 1¼ inch dia. conductors, 2 - 2 inch rubbers all lock coiled ropes, capped and weighted', and the pit bank heapstead as 'built around headgear, with steel concrete decking, asbestos sheeting, wooden weigh cabin, with machine, turntable, etc., Full tub creeper gantry; tipplers and platforms, empty tubs gantry and retarders, etc., etc. All completely equipped for efficient working. Empties gantry complete, above screens'.[44]

Steam winding engine house (CAP 2)

The steam winding engine house, a freestanding gabled building to the north of No. 1 Shaft (CAP 1), whose cages it worked, was built in 1876. A datestone in its east wall bears the raised inscription ELK 1876 for Emma Lister Kaye, owner of the mine from 1871 to 1905. The engine house is of one storey over a basement, the raised ground floor serving as the engine house floor with the engine bed below, and it is built of coursed roughly-squared rock-faced rubble with a stone slate roof. It is a building of some architectural pretension. Stone steps, contemporary with the building, and with a wrought-iron balustrade, approach the original ground-floor entrance door in the centre of the elevation (Fig 18) which faces the entrance yard from New Road. This doorway has a rock-faced stone surround with interrupted jambs and a rectangular lintel. The flanking round-headed windows, the pair in the rear, west elevation (Fig 20), one of which was subsequently converted into a door, and that in the centre of the north gable wall, all have similar surrounds incorporating impost blocks, archivolts, keystones and projecting sills. Of these windows, the two east windows and the southern window in the west wall all retain the original radiating timber glazing bars and small-pane glazing within their semicircular heads, but otherwise the timber casement frames below them, with their plate glass, are secondary, as is most of the window frame in the window in the north gable. The original openings in the south gable wall have been much altered as a result of changes to the winding engine. It is clear that there was originally a window set at a high level in the west half of the gable through which the engineman could observe the headgear from within the winding engine house. The projecting sill of a window survives, as does much of its west side with its interrupted jamb, but the rectangular lintel has been lost, as has the other jamb. Brick blocking indicates where the original masonry was removed in order to install the new winding drum, and the rope hole where both the original and subsequent ropes once passed from the drum of the winding engine to the pulley wheels on the headframe. The upper rope evidently passed through a chimneystack-like block on the top of the end gable, a feature which is clearly visible above the

[43] PRO COAL 37/248 39765, 4.

[44] PRO COAL 38/456 39765: Form D, Serial Number 12; Plan III/3.

ridge of the later store, CAP 5, in the early photographs (Figs 10,12) from the roadside. At the base of the brick blocking there is a wide original doorway, its sides coursed in with the rest of the wall, but the blocking above indicates a lost semicircular brick head no doubt similar to that which still survives as the head of the doorway in the base of the north gable wall. The southern opening rises from the ground level outside through the ground or engine house floor, and it clearly provided access for maintenance work on the drum of the winding engine. The wide, arched north opening just alluded to gave access to the engine bed, enabling maintenance to be carried out there. The base of this doorway is several metres below the ground level around the other three sides of the engine house, a reflection of the dramatic changes of level on the site, part natural, part the result of making-up levels with spoil.

The engine house, which retains a horizontal steam engine, has a floor of sheets of iron supported on cast-iron beams which run between the outside walls and the engine beds. The floor is visible from underneath; the upper surface is now covered with composition flooring. The interior of the engine house (Fig 19) has walls which are unplastered, and the inner arches of the windows contrast with the exterior in being of brick. The roof is supported on two queen-post trusses, each with substantial tie beams, queen-posts bolted through the ties, and diagonal struts up to principal rafters which each carry two sets of trenched purlins. There is a plank ridge, and the underside of the roof is lined with horizontal boards. A ventilator with louvred sides set towards the north end of the ridge appears on the early photographs. It does not look, from its carpentry, as if it is original, and is therefore likely to be an early addition. Substantial ashlar blocks, set on the piers of masonry which form the engine bed visible at a lower level, support the horizontal steam engine, a type of engine which superseded the beam engine in many of Yorkshire's textile mills, after 1870 becoming the most common type of new installation.[45]

The steam engine at Caphouse Colliery, a double cylinder horizontal engine with a 36 inch (91 cm) stroke and 16 inch (40 cm) bore, is cast with the manufacturer's name 'DAVY BROTHERS LIMITED SHEFFIELD'.[46] It is not dated, although it must be of 1872 or later since Davy Brothers did not become a limited company until that year,[47] but it is likely to have been

[45] Giles and Goodall 1992, 141.

[46] Details of the steam engine and its capacity, as well as photographs taken of it in 1970, are held in the George Watkins Collection at the National Monuments Record Centre, Swindon.

[47] Information kindly supplied by John Goodchild.

installed when the engine house was built in 1876.[48] The steam engine drove a drum from which ropes hauled the cages. In 1945 a new drum, drum shaft and brakes were fitted by Worsley-Mesnes of Wigan, and in 1957 brakes and control gear by Black were added and a Baker-Davis safety detaching hook was fitted.[49] The insertion of the new drum, etc., involved taking out much of the masonry in the centre of the south gable wall, as the new infill brickwork and rolled steel joists, by 'DORMAN LONG & CO LTD', reveal. The conversion of the north window in the east elevation into a doorway, approached by external stone steps, was probably undertaken in the mid 20th-century when the use of this corner of the engine house changed. It is certainly after 1930-1 on map evidence, and probably after 1947. The door itself is double leaf, each leaf having two lights in two heights above a panel. The steps have been realigned and a concrete ramp added since the site became a museum.[50]

Boiler yard, chimney, boiler house and coal bunkers (CAP 3 and CAP 7 (part))

The plans of Caphouse Pit in 1858 and 1863 (Fig 1) both show a boiler yard, little larger than the two boilers it housed, more or less on the site of the present but evidently larger boiler yard. They also show a near-square building, presumably a steam winding engine house, attached to the south-west side of the yard. There is no sign that either survives in the area of the present boilers and engine house (Fig 20). The winding engine in the 1876 engine house (CAP 2) is steam powered and the boiler or boilers which provided its steam were installed in an open yard (CAP 3 G1) to its north which had a coal bunker (CAP 7 G1 and G2) at its west end and a chimney (CAP 3 G3) at its north-east corner. The boiler yard sufficed until a new boiler house (CAP 3 G2) was built during the 1930s. The boiler house continued in use until the closure of the pit in 1985; a new boiler room was then built to serve the Yorkshire Mining Museum before it opened in 1988.

Boiler yard (CAP 3 G1) and coal bunker (CAP 7 G1 and G2)

The boiler yard created in 1876 to generate steam for the contemporary

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[48] Goodchild 1983, 15 and Schofield 1991 both record that the engine was brought from a textile mill, John Schofield (personal communication) giving his source as the Colliery Engineer, Eric Swift. The acknowledged small size of the engine, perfectly adequate for the needs of the colliery in 1876, would have been lost in most textile mills of the period. In addition Davy Brothers, though only recently established, became specialists in colliery and mining engines.

[49] Details on information panel in the engine house.

[50] A plaque records 'The National Coal Mining Museum is grateful to Tarmac PLC for sponsorship of this ramp'.

winding engine is on the north-east side of the engine house, but as a result of natural changes in level, compounded by changes caused by the dumping of spoil from decades of mining, the boiler yard floor, where the boilers sat, was considerably below the ground level on the other three sides of the engine house (Fig 21). As a result, except where the gable wall of the engine houses stood, it was necessary to build revetment walls around the yard, with low parapet walls surmounting these where it was necessary to protect the drop. These walls, of coursed roughly-squared rubble, survive largely unaltered. To the east of the engine house, towards the road, the masonry of its end wall and of the revetment wall course through, although the parapet wall abuts the former, while to the west, the revetment and parapet walls abut it. All of these walls are nevertheless part of the same building campaign, and the different relationships reflect structural requirements rather than separate phases of development. East of the engine house the revetment and parapet walls extend towards the road before returning north towards the chimney and then east to the road edge. The parapet wall between the entrance yard and the boiler yard retains its triangular-shaped capping stones, but those on the other walls must have been removed when the store (CAP 5 G1) was built over them. The entrance through the wall, and the steps down into the south-east corner of the boiler yard, are probably original. The 1892 map indicates the existence of the first flight in much the same way that it shows the engine house steps, and there was in any case no ready alternative to this access point given the surroundings and use of the rest of the yard, so well shown on the early photographs. The first flight of steps here led down to a path along the top of the brick seating of the boilers which was also the level of the floor of the engine bed. The final flight of steps down to the firing place did not originally interfere with the boilers: it was only widened after they were superseded by those in the boiler house. A parapet wall survives around all three sides of the coal bunker at the west end of the boiler yard.

The 1892 and later maps show the boiler yard as a defined trapezoidal-shaped area, but it is clear from the two early photographs of the site, (Figs 10,12), that there was no roof over the boilers. Although it would have been unusual, after the early 19th century, to find boilers on a textile mill site just set in a simple brick casing without a roof,[51] partly because of the use the heat could be put to, it was not an unusual occurrence in the coal industry. It was common at a small pit like Caphouse, but not uncommon on larger sites. Maltby Colliery in South Yorkshire, for example, where coal production only commenced in 1911, had by the mid 1930s a row of eleven Lancashire boilers generating steam, all of them set in the open air.[52] No detailed early documentation relating to Caphouse has been located, but the size of the boiler yard indicates that it was intended to house two boilers. It now contains a

[51] Giles and Goodall 1992, 145-50.

[52] RCHME Historic Building Report, Maltby Colliery, Tickhill Road, South Yorkshire. NBR No. 92154.

pair of Lancashire boilers, redundant for steam generation since the construction of the boiler house in the 1930s, and these may be original. They are set parallel to each other, with the firing place to the west, and are identical in basic form. Each is cylindrical with flat end plates, that to the firing place with the customary two flues and the ash pit under. Both boilers are constructed of steel plates with overlapping and riveted joints, and have been stripped of their water and pressure gauges and the valves and other attachments necessary when they were in use. In 1947 they were recorded as being water tanks,[53] and a photograph taken in 1981 (Fig 21) shows that most of the openings which housed the original valves and alarms, which survive more completely on the later boilers in the adjacent boiler house, had been capped. The pipes shown in 1981 include some introduced to enable the boilers to serve as water tanks.

The coal for the boilers was stored in the bunker at the west end of the boiler yard. This was originally open the full width of the yard but it was subdivided when the coal drops (CAP 7 G3-8+) were built some time between 1914 and 1930 and a stone pier was erected to support the railway line serving them. The bunker is clearly visible on the two early photographs of the site, in the earlier with little coal in it, but in the later one completely full. The photographs show a timber partition incorporating a door with a pair of open lights in its top half holding the coal back from overwhelming the firing place, and they also show the inclined chute which delivered coal to the bunker. It is clear from the 1892 map that a raised gantry supporting a tubway led due north from one corner of the heapstead to terminate in the chute serving the boiler yard. The gantry must have been dismantled when the coal drops were constructed and an alternative method of delivering coal was pursued. In addition to the chute, coal could also have been fed into the bunker through a hatch off-centre in the rear, west, parapet wall. The hatch retains a top-hinged cover of ledge and batten construction which opened into the bunker but was blocked when the coal drop pier was built. It must therefore have been used before the drops were created.

Chimney (CAP 3 G3)

The chimney (Fig 20) evidently dates from 1876 and was built to serve the boilers which provided steam for the engine in the winding engine house. It is built of coursed roughly-squared rubble with scabbled tooling and has a square base which rises to a projecting band above which the shaft tapers gently. The waste gases from the boilers in the boiler house, and those in the modern boiler room, enter the flue through an opening in the west face of the chimney base. This may be the original opening into the flue.

Early photographs (Fig 20) show the chimney with a simply-moulded cap which was largely removed when it was heightened in brick, almost certainly

[53] PRO COAL 38/456 39765: Form D, Serial Number 14; Plan III/10.

when the boiler house was built in the 1930s. On heightening, the concave-sectioned moulding around the cap, and the masonry above it, were all removed, leaving just a single slightly-projecting stone course at the bottom of the new brickwork. This brickwork is laid in English bond, usually three stretcher courses alternating with one of headers, and forms a square shaft which rose without a taper to a moulded cap. Photographs taken as late as 1981 show the cap, but it was subsequently dismantled when the structural condition of the chimney made it necessary, a circumstance reinforced by the number of iron bands which bind various levels of the shaft.

Boiler house (CAP 3 G2) and coal bunkers (CAP 7 G3 & G4)

The boiler house, which stands immediately north of the original boiler yard, was probably built in the 1930s. It is not shown on the 1930-1 map, but had been built by 1947.[54] Since the colliery changed hands on 1 October 1942, and the Estimate of Value drawn up in 1947[55] makes no reference to its construction by the new owners, a date for construction between 1930-1 and the outbreak of war in 1939 seems most probable.

The boiler house is a tall single-storey structure gabled to east and west (Fig 22). The low, side walls encase two Lancashire boilers, and above them a steel-framed superstructure with brick infill supports a steel span roof with a long-ridge ventilator which is covered with corrugated asbestos sheet. The walls which case the two boilers are of red brick laid in English bond (in varying numbers of stretcher to header courses), with a top course of headers creating a sound base for the steel-framed superstructure. The western half of the north wall is of slightly different build, butting the brick to its east. It represents a stage in the construction of the boiler house, not a later alteration, since it supports the superstructure above. The north and south side walls of the superstructure are each three bays long, the central bays having eight-light windows occupying the full width of their upper half. The steel framework comprises four upright I-section posts which rise and are bolted to an I-section wallplate which runs the length of the boiler house in two lengths, the two joined through bolted plates positioned over each window. Squared U-sectioned steel sills bolted to the upright posts run along the base of the four end bays and as the sills of the central windows, serving both to give rigidity to the structure and a secure base for the full-height brick panels. Three short lengths of inverted U-sectioned steel are bolted to the underside of the wall plates in all the end bays in order to secure the top of the infill brickwork which is all in stretcher bond. The windows have T-sectioned steel glazing bars. The steel wallplate bears the name 'FRODINGHAM IRON & STEEL CO. LTD. ENGLAND 6 x 4½ BRITISH STEEL', the latter within a cruciform frame.

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[54] PRO COAL 38/465 39765; Form D, Serial Number 13, 14; Plan III/13.

[55] PRO COAL 37/248 39765.

The roof of the boiler house has four identical triangulated trusses made from rectangular and T-sectioned lengths of steel which are bolted together through shaped plates. The equivalent of the tie beam, which is in three lengths and is slightly cambered, and the two struts up to the apex, are all rectangular in section, while the struts up to the principal rafters, as well as the rafters themselves, are T-sectioned. L-shaped steel brackets doubled-bolted to the rafters support four timber purlins on each side, while cranked brackets support the purlins which carry the curved roof covering over the ventilator which runs the full length of the roof. The west end of the superstructure, which was built up against the pre-existing coal drops, is open, but at the east end corrugated tin sheeting closes the gable wall where the chimney does not serve this function.

The two boilers are each set in their own brick casing with a single joint in the brickwork between them. They are set parallel to each other, with the firing area to the west, the southern boiler in line with the two boilers in the boiler yard, the northern one set back in order to allow access past the pre-existing pier of the coal drop. I-section steel beams act as lintels over the north and south entrances to the firing area, the former opening now blocked in its eastern half. At the rear of the firing area the stone walls and piers of the coal drops (CAP 3 G3 & G4) served as individual coal bunkers for each boiler until mechanised feeding superseded manual feeding. The boilers (Fig 23) were originally an identical pair, but the renewal of various fittings has introduced some variety. Each boiler is 28ft long, 8ft in diameter, and is manufactured from steel plate with overlapping and riveted transverse joints between the five sections and broad plates double riveted down the length of each section. Fittings along the top of the southern boiler, from the east, are an oval manhole; a high and low water alarm with a gadrooned casting, cast by '....WAKEFIELD', supporting a counterbalanced arm with solid cylindrical lead weights; the main stop valve cast by 'SPURINMAN WAKEFIELD'; and the deadweight safety valve, the only part of the raised inscription readable being 'DEAD WEIGHT SAFETY VALVE FIG 20'. The northern boiler's fittings, from the east, are a deadweight safety valve, its top flange cast with 'HOPKINSON PATENT.... DEAD WEIGHT SAFETY VALVE 1900 FIG 2C'; an oval manhole cover; a main stop valve; and the high and low water alarm, its top casting not gadrooned, and the two weights both by Hopkinson of Huddersfield. Steam pipes, with valves to enable each boiler to be isolated, lead from the main stop valve of each boiler to a junction from which a pipe runs across the boiler yard and into the base of the winding engine house through the arched opening into the engine bed. At the east end of the casing around the boilers there are a pair of dampers, tall rectangular plates operated from the firing end by metal ropes on pulleys which were raised to allow the exhaust gases from the boilers to pass into the economiser and thereafter into the chimney.

The economiser, sited at the east end of the boiler house, utilised the exhaust gases from boiler furnace to heat boiler feed water, thus reducing the energy required to produce steam. The economiser is noted in 1947 as a 'Greens

economiser plant with all equipment'.[56] The production of economisers was dominated by Edward Green of Wakefield, and an economiser house (that at Caphouse has not been seen) comprised stacks of metal pipes arranged in the flue between the boiler and the chimney.[57]

The two boilers were originally manually fired, but after Nationalisation each was fitted with automatic hopper feeds, the plates bearing the identification 'JAMES HODGKINSON (SALFORD) L^{TD} "LOW RAM" STOKER PATENT N^{O} 628031 MANCHESTER ENGLAND'. Pairs of chutes (Fig 24) lead down into the firing chambers of each boiler from a two sheet-steel hoppers (Fig 25) set at yard level, one directly over the bunker which originally contained the coal for the northernmost boiler, the other encroaching on the yard surface. Cranked handles operate vertically sliding doors at the head of each chute, from which coal descended from the hoppers above which rise above the level of the coal drop.

Store (CAP 5)

A two-storeyed building (Fig 26), the store stands in an important position on the road frontage and on the north-west side of the entrance to the colliery as reconstructed in 1876. It does not date from 1876 since its rear and north gable walls are built over stone parapet walls associated with the boiler yard (CAP 3 G1) of that date. Its general-purpose function, serving the pit, implies that it is likely to date from soon after 1876. It is shown on the 1892 map. The importance of the store's position is reflected in its appearance: the east wall to the road and the south gable wall to the entrance yard are both built of coursed roughly squared rubble with scabbled tooling, while the walls hidden from view, that is the west wall to the boiler yard and the north gable wall, where built over existing masonry, are of red brick laid in English bond with occasional intermittent courses of through stones. The existing masonry in the last two walls represents earlier boundary walls, the former acting as a parapet wall to the drop to the boiler yard beyond, the latter defining the edge of the entrance yard to the pit. At both corners the masonry returns for a short distance, for structural stability, the full height of the building. It is evident from the early photographs of the site that the boundary wall to the road was dismantled in order to build the front wall of the store, in marked contrast to the retention of earlier masonry in two of the other walls, and its retention along much of the road frontage beyond the entrance. The building has a stone slate roof, the rake on the edge to the road front reflecting the building's unusual shape.

As first built the store had one door and one window to each of its floors. The ground floor was entered from the yard through a door which had a

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[56] PRO COAL 38/456 39765: Form D, Serial Number 14; Plan III/13.

[57] See illustration from a 1909 manual in Giles and Goodall 1991, fig 247.

concrete lintel inserted while the building was in colliery use, though whether the opening has been widened is uncertain. The first floor has a taking-in door in the centre of the east wall along the road; the hole over the lintel originally contained a projecting timber hoist beam which is visible on early photographs. This door was used to offload heavy loads from carts without the need to enter the busy entrance yard. The ledge and batten door is probably original, like the door frame which is chamfered and stopped to the opening. The lintel of the taking-in door is rectangular and rock-faced, as are the lintels and sills of the two original windows, namely the ground-floor window in the centre of the west wall and the tall first floor window in the north gable. The frames of both windows have been renewed, but the earliest photograph to include the gable-end window shows it to have had a hung sash with small-pane glazing, several of the panes broken in the photograph. Light was clearly inadequate inside the building since the same photograph shows a roof light in the slope towards the south end; whether the small roof light in the west roof slope is as early cannot be told. However that be, two small windows were later rather crudely inserted in the first-floor rear wall.

The interior of the store is spanned by two substantial beams which support joists which run into the gable walls to north and south. The joists are all rectangular in section, although some have been removed, together with the floorboards on them, to enable the building to be used for a museum display. A timber stair which rises up in the north-west corner is an insertion; the position of the original stair or ladder is uncertain. The roof is supported on four trusses each with a straight-sided king post, through-bolted to the tie beam, with notched-in diagonal struts and principal rafters supporting two sets of tusk-tenoned purlins per side. The roof has some later purlins, no doubt inserted to support the weight of the stone slate roof.

The store was usefully positioned to serve the needs of the pit. At some date a small engine was inserted in its south-west corner. Oil stains leaching through the west wall, around a blocked wall box close to the floor, and near the window, together with a pair of hook-like brackets attached to the roof, suggest a pulley wheel and drive belt up to a line shaft across the building. Bolts and hooks which project from the south gable wall and from most of the tie beams belong to the period when one of functions was as a rope store.

Workshops, No. 2 Shaft and engineers' shop (CAP 6)

This range (Fig 27), built along the west side of the New Road, contains some of the earliest masonry on the site, as well as fragments of some of the earliest buildings, although it has been progressively extended, altered and rebuilt to reach its present state. The earliest masonry belongs to a boundary wall, with a wide gateway into a field, which was probably built shortly after the New Road was driven through in about 1830. The gateway was subsequently infilled, perhaps when the small building shown on the 1850-1 maps was built a short distance from the 'Coal Pit' which became No. 1 Shaft at Caphouse Pit. No. 2 Shaft was sunk immediately north of the building,

evidently in 1876, and the building was extended and altered in stages at the end of the 19th century and during the early 20th century before being more comprehensively rebuilt in 1947.

Boundary wall

The New Road, an improved course of the Wakefield and Austerland Trust turnpike road, was created in about 1830 between Denby Grange and Horbury Bridge, and a length of boundary wall built along it survives in the roadside wall of the workshop building (CAP 6) and in the wall sheltering the heapstead (CAP 1). The boundary wall is built of coursed roughly shaped rubble, and straight joints, combined with upright stones and larger blocks of stone indicate the position of a wide opening into a field.

Workshop range

A small square building shown on the 1850-1 map on the road frontage a short distance south west of the 'Coal Pit' which became No. 1 Shaft at Caphouse Pit can probably be identified as the building, already extended to the south-west, which is shown on the 1892 map and is included on the earliest photographs of the site from the north east. The original building had a small window in this wall, a door in the return north gable wall, and a tall chimney inset from the front wall and evidently over a blacksmith's hearth. This established a use for the building on this site which continued to closure in 1985. Only the front wall to New Road now survives, but examination of the masonry shows that it was built half-way across the gateway in the field boundary wall. The north half of this opening was blocked, part of the jamb also being rebuilt and capping stones run across to the corner of the new building. The window in this wall has been blocked and cut through, but the timber lintel and the south jamb survive. By 1892 the building had been extended south by a building with a single-pitch roof, and by the time of the next photograph, which was taken before 1904-5, the original single window had been replaced by the present two larger ones (which have identical stone sills and thin timber lintels), the chimney had been removed, and a narrow addition (narrow because of the existence of No. 2 Shaft, but with a tall chimney stack), had been built against its north wall. Neither of these additions survives, but a photograph showing the main building and the southern addition from within the pit shows the earlier building with a fenestrated brick rear wall and a timber gable wall, with the lean-to with timber side and rear walls.

The 1914 map indicates that the southern lean-to building had by then been rebuilt and replaced by what survives as an unfenestrated length of wall. The added north end of the range was rebuilt in stages, in brick, between 1930-1 and 1944, the date of a map and the comprehensive rebuilding of the workshop range by Lockwood & Elliott who had acquired Caphouse Colliery in 1942. It is recorded that in 1943 the surface workshops had been rebuilt

and enlarged (another entry lists the smithy as being extended after 1944)[58] and the style of the building is consistent with such a date. The building work of 1943 saw the south gable wall of the building taken down, a two-bay long extension added at that end, and the whole of the rear elevation rebuilt up to the line of a gable which included the by then capped top of No. 2 Shaft within the workshop. The extension is single storeyed and built of red brick with flush rectangular stone sills and lintels and windows with steel frames with pivoting opening lights. The roof is of Welsh slate with ceramic ridge tiles. The two-bay addition is of pier and panel construction to the front and gable end, the recessed panels which housed the windows having chamfered brick sills and double stepped heads, the lower one dentilled. The rear wall is plain, having six windows, one with a door adjacent. The reason for the special treatment of the front and end walls was for display, since there was an entrance to the site at this point. The modern store has been built across it, but the redundant curving kerbstones incorporated in the present footpath confirm access at this point. Inside the workshop (Fig 28) the roof is carried on five queen-post trusses with queen posts, strainer beams, and struts rising to the principal rafters. The rafters support two sets of tusk-tenoned purlins per side except in the south bay where the purlins are set in cast-iron shoes. A brick-built blacksmith's hearth with a flue which rises through the roof from a stepped base remains as evidence of the former use of the building.

At some time shortly after Nationalisation an office was created within the south-west corner of the workshops. It was used as the Colliery Mechanical and Electrical Engineers' office until the early 1960s. The office used the existing end and rear walls as two of its sides, but its other walls are new and of brick, and it has a flat concrete roof. It is divided into two interconnected rooms. The smaller room against the gable wall has a window and an inserted but now-blocked external door in the rear wall, while the large room has a rear window, a door and window into the workshops, and a window since converted into a door, in the end wall into the building.

No. 2 Shaft, incorporated in the rebuilt workshop, was capped, a narrow brick ventilator shaft being constructed up what was once the inner face of the end gable wall of the workshop. The shaft was evidently sunk as an upcast shaft to draw stale air out of the mine, but once Caphouse Pit and Hope Pit were linked underground, and the latter became the upcast shaft, it was redundant. An early photograph shows the timber headgear it once had.

Engineers' workshop

The engineer's workshop added at the extreme south end is modern and was built in the late 1970s at the same time as the new stores building and engineers' office (part of CAP 14). It has low brick walls supporting a steel frame clad with profiled metal sheeting, with gables to the north west and

[58] PRO COAL 37/248 39765, 5, 20.

south east and a window along much of the centre of the south-west wall. A tall door gives entry from within the colliery, and an adjacent door opens into a lobby.

Screens building and associated bunkers (CAP 4)

The screens building, which stands immediately west of the heapstead (CAP 1), and was built, according to map evidence, between 1904-5 and 1914, straddled the existing rail lines of the mineral railway. It must, therefore, have been constructed during the ownership of Sir John Pepys Lister Kaye who took over Denby Grange Colliery on the death of his aunt, Emma Lister Kaye, in October 1905 and was declared bankrupt in 1914. The gantry which ran along the north side of the screens, across to the spoil tip, was remodelled between 1924 and 1930-1; by 1947 steel bunkers and conveyors had been added to the building's west side, with a further one constructed before the colliery closed in 1985; and major alterations were made in 1974 to take the conveyor from the drift.

The screens building

The screens building (CAP 4 G3-13, F1,3), built between 1904-5 and 1924, is a timber-framed structure, L-shaped in plan, partly two and partly three storeys high (Figs 29-31). Its structure comprises a series of posts 24 cm (9½ ins) square, most of which rise the full height of the building, and its exterior is covered with corrugated and profiled metal sheeting pierced by a small number of windows. The sheeting is attached to timber battens which are nailed to main structural posts.

Overall the building is seven bays long north-south and five bays wide east-west, although only the easternmost two bays are the full seven bays in length, the others running back just four bays from the north front. On the ground floor the railway lines of the existing mineral railway ran through the three easternmost bays, and although the first floor extended over the whole building, it was this section which was just two storeys high and was roofed with a single-pitch roof which sloped down to the east. The remaining four-bay long, two-bay wide section to the west rose through a third floor and was gabled to north and south. The building has a series of windows on each floor. The exterior of the screens building is now covered with corrugated sheeting under a corrugated asbestos roof, but the nature and extent of the original covering is uncertain.

Internally the first and second floors were the main working floors, and the structure of the building reflects this in the nature of its construction. On the ground floor a series of beams face-bolted to the posts support, either directly or through further beams, beams which carry the floorboards (Fig 32). The scantling of the timbers, and their number, with its concentration on a well-supported first floor, reflects the use of the floor with its heavy screens and the considerable weight of the coal and spoil on it. Most of the iron bolts

used have square heads and nuts, and rectangular roves, the latter the plates which prevented the iron pulling through the wood. The beams which survive in the three westernmost bays are set in cast-iron shoes.

The first floor is principally where the screens and the picking belts on which the coal and waste were separated, and the coal was sorted by size, were situated. The roof over the three easternmost bays (Fig 33) slopes gently down from the west, its rafters bolted to the posts and carrying the purlins to which the roof covering is attached. The floor beneath it now lacks any machinery, although there must once have been a conveyor to link with that outside this part of the screens building. The longer part of the building still houses a conveyor (Fig 34) which rises away from the pithead. The conveyor belt carried coal past lines of pickers, but it is a secondary feature set above earlier metal jiging screens with holes to grade the coal and waste.

The second floor (Fig 35), gabled to north and south, has five posts down each side and one in the centre of each gable wall, that in the north gable removed when the conveyor from the drift was inserted in 1974. The posts down the side have small tenons projecting from their upper surfaces which served to secure the broad but thin wallplates. Five identical trusses support the roof, although the insertion of the conveyor has led to some being moved from their original position over a post. The trusses each have a tie beam, principal rafters and an iron king-rod bolted through the tie beam and attached at the top an inserted V-shaped strap, itself bolted through the rafters. Broad boards sit on the trusses and act as purlins to support the roof covering. The presence of the trusses on this floor means that the central row of posts stop at the floor below, leaving an uninterrupted interior.

The original internal arrangement of the screens building is uncertain, but in 1947 Lockwood & Elliott, who had purchased the site on 1 October 1942, were recorded as having replaced the steam-driven screens with modern Plowright screens.[59] The building was described thus in 1947 'SCREENS HOUSE Timber and corrugated sheeting, asbestos roof, wooden stairways, with 15 H.P. motor, completely equipped screens as follows:- 48" - Best coal shaker screen and picking belt etc. Belt to storage bunkers with 4 H.P. motor, etc., etc. 30" Slack belt with all equipment. 20" Singles belt with all equipment. 20" Doubles belt with all equipment. 20" Bests belt with all equipment. All covered with asbestos roofing'.[60]

The constuction of the drift, opened in 1974, involved major alterations and additions to the screens building, a steel-framed tower clad in corrugated sheeting being built out from and rising above the tallest part of the original building. This addition received the top of the conveyor gantry from the drift,

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[59] PRO COAL 37/248 39765, 5.

[60] PRO COAL 38/456 39765: Form D, Serial Number 12, Plan III/4.

and within the building new conveyor lines, powered by electric motors, were created to cope with the considerable quantities of coal which were produced.

Gantry from heapstead to waste heap (CAP 4 F2)

The early photographs of Caphouse Pit (Figs 10-12), taken before the construction of the screens building, show a timber gantry running west from the heapstead to the waste tip beyond the colliery railway. The gantry, which carried a tubway, is shown on the maps of 1892 to 1914, but by 1930-1 a different structure is shown running along the north side of the screens building, now carried over five, not three, railway lines. The nature of the gantry is not known, but in 1947 Lockwood & Elliott, who had purchased the site in 1942, were recorded as having made 'reinforced concrete and steel gantries from the pit top to the boiler house and dirt tip' in 1943.[61] The plan accompanying the Schedule of 1946-7 shows the gantry,[62] but the subsequent construction of hoppers (CAP 4 G15/F6) immediately west of the screens building curtailed it.

Bunkers north and north west of screens building (CAP 4 G16/F7 and G15/F6)

Over the last few decades of its working life a series of bunkers was constructed on the north-west side of the screens building, fed by an evolving series of conveyors and used for the segregation and removal of coal and waste. The earliest (CAP 4 G16/F7) was evidently constructed in the 1930s, the other (CAP 4 G15/F6) after Nationalisation.

In 1930-1 there were no buildings west of the screens building, just the spoil heap, but by 1947 a plan shows conveyors leading to this bunker. The description accompanying the 1947 plan records '4 - Steel storage bunkers of 50 tons each. R.I. [Reinforced] Concrete flooring on top with asbestos roofing and brick panelled walls, fitted with chutes and all necessary equipment'. The plans show no fewer than four conveyors described as 'various steel gantries and conveyor belts, etc.' connected with the bunker, as well as a 'wind breaking 9 inch brick wall 30 ft. x 15 ft' along its western edge.[63] Lockwood & Elliott, who had purchased the colliery in 1942, recorded that in 1943 'Conveyor belts were installed from the new screens to convey coal to the existing steel landsale hoppers, capable of storing about 200 tons of coal into which spirals were fitted to minimise degradation of the coals'.[64] The wording implies that the bunker pre-dates their purchase of the

[61] PRO COAL 37/248 39765, 5.

[62] PRO COAL 38/456 39765: Plan III/19.

[63] PRO COAL 38/456 39765: Form D, Serial Numbers 13 and 14; Plan III/5, 7 and 20.

[64] PRO COAL 37/248 39765, 15.

site, indicating a date in the 1930s.

The bunker (CAP 4 G16/F7) is a tall and dominating building, gabled to north and south, steel-framed with some brick panel infilling, and with a corrugated asbestos roof. One of the steel beams was made by 'DORMAN LONG & CO LD MIDDLESBROUGH ENGLAND' and also bears the logo 'BRITISH STEEL' within an elongated cruciform frame. The bunker has four I-section posts at each corner, and to north and south a deep I-section girder is bolted between them to create a tall, open ground floor through which lorries could drive and be loaded with landsale coal. Above the girder an I-section steel post rises to the apex of the gable and further I-section beams span between it and the corner posts, two across the floor occupied by the hopper, others at second floor level and across the base of the gable. To the west the 'wind breaking' wall closes the otherwise open ground floor, but above it there are two floors of brick infill in the steel frame. The east wall has lattice bracing at ground floor, a pair of beams across the hopper level, and a brick-infilled top floor pierced by a conveyor gantry. The four hoppers set in the brickwork have steel sides and bases, the latter taping to a sliding cover. One incorporates steel with the name 'SKINNINGROVE' and the 'BRITISH STEEL' logo just noted.

A double bunker, CAP 4 G15/F6, was built after 1947, and was probably erected in the mid 1960s to deal with increased production as a result of mechanisation. The area of concreted yard on the waste tip was also greatly extended at the same time to accommodate coal stocks and the large number of lorries visiting the colliery from that time. During this period waste ceased to be tipped at Caphouse because of the fear of slumping towards the stream, which was gradually being pushed northwards. The waste was instead taken by dumptruck to the Grange Ash Colliery. The two bunkers are separate structures, that to the north described on two National Coal Board Surface Plans (undated but of the mid to late 1970s) of Caphouse Colliery as a 'Dirt Bunker', that to the south indicated by dotted lines but neither numbered nor described.[65] The northern bunker, the dirt bunker which was used for waste material isolated during screening, has a steel frame with I-section corner posts and rails, the steel by 'DORMAN LONG'. The hopper is rectangular in shape, with sheet steel sides, only the long sides of which taper to the discharge point in the base. The southern bunker has a steel frame with I-section corner posts and rails by 'CARGO FLEET ENGLAND'. I-section girders also used to give support to the hopper whose lower half tapers in on all sides to the discharge point in the base.

The conveyor gantry constructed between 1947 and the mid 1970s, leading

[65] National Coal Board. Surface Plan. Caphouse Colliery. Building 24. (Two successive, undated plans of the mid to late 1970s).

north west from the screens building to the 'Foreign Coal Bunker',[66] has been demolished, the stub of the curtailed, covered conveyor showing clearly projecting into space (Fig 31).

Coal drops (CAP 7)

The coal drops were built, on map evidence, between 1914 and 1930-31 and were part of the enlargement of the mineral railway which saw two extra lines run through the western two bays of the screens building (CAP 4) and on, and an extra line, taken off the easternmost line and continued north over a series of coal drops. The 1930-1 map shows a railway line passing over the existing coal bunker to the boiler yard, and then over a series of seven bays which were part of the coal drops. The coal drops have walls incorporating substantial blocks of stone rubble, with smaller rubble at times used for the structural walls to the rear. In the area of the coal bunker serving the boiler yard of 1876 (Fig 21) it was necessary to insert a pier dividing the area, but elsewhere (Fig 38) the work is all new and was built very well. The three northernmost coal drops have been demolished and are now the site of the former cycle shed, now the stables (CAP 7 G8a-c), with the explosives store (CAP 24) added beyond what was the last pier. The piers presumably support a timber superstructure on which the railway ran, but this was all dispensed with by Lockwood & Elliott, who purchased Caphouse Colliery in 1942. They changed all coal disposals from railway to landsale services worked in conjunction with the landsale lorry service operated from their Shuttle Eye Colliery. Among others, reinforced concrete and steel gantries were made from the pit top to the boiler house,[67] and they were also no doubt responsible for the concrete and steel over the drops. The gantry is described in the 1947 Valuation as a steel gantry (pit bank to boiler house) with a reinforced concrete floor, tippler bar, etc., etc, and is shown on the accompanying plan extending as far as the fifth bay of the coal drop (CAP 7 G5).[68] A photograph, taken on 13 February 1972, shows the now-demolished gantry to have had steel legs with lattice-bracing above a rail at the top. Only a single hopper is visible, at the outer end, with a heap of coal on the ground below.[69] In 1947 the six coal bunkers were listed as '3 - Stone built with concrete tops'.[70]

Pithead baths, administration block, medical centre and safety office (CAP 8)

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[66] Structures 22 and 43 on the National Coal Board plans of the mid to late 1970s.

[67] PRO COAL 37/248 39765, 5.

[68] PRO COAL 38/456 39765: Form D, Serial Number 14; Plan III/6.

[69] NCMME photograph.

[70] PRO COAL 38/456 39765: Form D, Serial Number 14; Plan III/14(b).

The pithead baths were built in 1937-8, with funds from the Central Miners' Welfare Committee, on land north-east of the main block of colliery buildings, set back from but parallel to the road. They used the entrance previously created for access to the coal drops, built during the previous decade, and their construction formalised this as the miners' entrance to the colliery. At the same time that the baths were being constructed, an L-shaped block was built to their immediate south containing a lamp room, wages room and manager's office. After Nationalisation further offices were added to this, a medical unit was built against the north end and a safety office immediately in front of the baths.

Pithead baths (CAP 8 G15-22a, LG11-16)

The pithead baths at Caphouse Colliery were built by the Central Miners' Welfare Committee which in 1937 made a grant of £5,410 for their construction; no money came from the District Fund. The building was just a baths block, no canteen being included, and it was designed to provide accommodation for 240 people at a pit recorded as employing 229 people.[71] The baths were opened in 1938, the event recorded on a plaque which reads 'MINERS' WELFARE COMMITTEE Caphouse Colliery Pithead Baths These baths erected by the Miners' Welfare Committee in pursuance of the Mining Industry Act 1936 were opened and handed over to the Trustees on the 5th November 1938'.

The pithead baths, a single-storey flat-roofed building over a basement, is built of red brick and reinforced concrete, the concrete beams inside cast with chamfers and stops to simulate timber. The front elevation (Fig 37), which faces the road, is a near symmetrical composition with recessed doorways at either end flanking a row of seven windows. The windows are steel-framed, all of them three panes high, the outer ones two panes wide, the remainder three panes wide. The composition has been compromised by later alterations, but the recessed door at the north-east corner retains its original form with low brick walls framing the approach to the door and the corner of the flat concrete roof forming a canopy. The rear elevation (Fig 38) was near symmetrical at its upper level but it originally only had basement rooms at its south end. The windows on the rear elevation, as on the front, have concrete surrounds (lintels, sides, mullions and sills) and steel frames, those at the rear simpler in form and deeper than those at the front. In a number of places small circular openings with concrete surrounds contain the fans which ventilate the interior of the building. The skyline of the building is broken by the flat roof over the locker rooms whose ceiling rises above those of the surrounding rooms, and by the tall, square water tower with its flat concrete roof and external ladder.

At the south end of the pithead baths there was originally an open passage

[71] Miners' Welfare Fund 1938, 104.

between it and the contemporary administration block. This passage could be reached from the end wall of the baths at either the front or the back, and at the latter a low concrete wall closes the gap between the buildings, creating what would originally have looked like a balcony. The rear corner is supported on a concrete pier, leaving the underside clear to enable access to be gained to the original boiler room. The basement of the building, only under the rear part where it utilises the sharp drop in ground level, has brick walling in the south part and originally had an open concrete frame to the north.

The interior of the pithead baths is well-planned. Miners coming to work entered the door at the north-east corner, passing through an entrance lobby into the clean locker room with its rows of metal lockers for their day clothes and on to the dirty locker room (Fig 39) in which pit clothes were stored in similar lockers. A door opened off this latter room into the attendants' room, beyond which was a lobby with a room with a long sink in which water bottles could be replenished. To the rear of this room was another, later used as a dust mask centre, which led to the covered passage and to an opening into the wages and time office in the rear of the administration block. To the front, by contrast, was a room with boot cleaning equipment, a side door to the toilets, and the front door out of the building. The front door opened into a covered open area with a door and window in the side wall of the front room, the lamproom, of the administration block. On returning from a day's work miners repeated the journey through the building in reverse sequence, except that in this case, after changing out of their dirty clothes, they used the communal showers set across the front of the building. The clothes in the lockers were dried by a flow of warm air circulated round the whole building from the basement boiler plant with its plenum fan. A door in the lobby with the sink opens on to a ladder stair down to the basement calorifier room.

The internal structural details and fittings of the baths, like those of the exterior, reflect the date and function of the building. The brickwork of all the internal corners within the building is rounded, and the base of the walls in the shower room and locker rooms are curved to ease cleaning. A drain covered by a perforated metal grille runs down the side of the passage through the locker rooms and across the rooms at the end nearest the administration block. Doors are of timber with sheet metal covering to counter the damp atmosphere. A number of signs remain in the building, including the board above the door from the clean locker room into the attendants' room. This has, in stainless steel lettering, the notice 'ATTENDANT LOST PROPERTY AND MINOR INJURIES'. Similar lettering is used for the sign over one of the doorways out of the shower room which reads 'TO CLEAN CLOTHES LOCKERS', and the instruction 'PULL' on the inside of some doors.

The original locker rooms have rows of galvanised sheet-metal lockers, each with two tiers of fifteen lockers. Single banks of lockers back on to the end walls of each room, with three double rows in between (Fig 40). The lockers in the clean and dirty locker rooms are all individually numbered, and each

locker has a door with a number plate and ventilation grille at the top, and a handle attached to a lockplate. Inside there are hooks for clothes, etc., a slot which supported the soap tray which was taken to and from the showers, and across the bottom a grille in a flue which allowed warm air to pass into the locker to dry or air clothes left in it. Hot air for this purpose, as well as for heating the whole building, was provided by a plenum plant in the basement. This survives (Fig 41) and the fan bears the maker's plate of 'R K WEBSTER & CO ENGINEERS PURLEY LONDON'. The fan blew hot air through sheet metal ducts, set just below the ceiling, which run the length of the locker rooms and of all the rooms along the front elevation. Grilles in the side of the ducts passed heated air into each room, and in the lockers the end bay was part of this ducting with air led off in flues along the base of each tier of lockers. In order to control the atmosphere in the pithead baths, electrically-powered fans were installed in concrete-bound circular openings in the outer walls of the two locker rooms and of the shower room. The inner mountings of the fans are circular with three lugs, and they are cast with the maker's name 'KEITH BLACKMAN ENGINEERS LONDON'. The individual electric motors have plates naming 'James Keith & Blackman Co Ltd, Engineers, London', and giving technical details.

The wall of the dirty locker room backing on to the shower room has a white-glazed drinking fountain set into it. The shower room, set along the front of the building, has two doorways, one from the dirty locker room, the other into the clean locker room. Its floor is one step down from the access passage, and it has a central shoulder-height wall covered with white-glazed tiles with chrome shower fittings, ten to each side, attached to it (Fig 42). Hot and cold water pipes descend in pairs from the ceiling to taps from which a central shower pipe rises to curve round in a semicircle to a rose. Each tap fitting has settings marked COLD, TEPID and HOT, and just above it a clip projects from the shower pipe to hold the soap tray. A drain runs along the bottom of the central pier. The attendant's room next to the showers has a hatch between it and the shower through which the attendant sold soap, etc. The room has wooden cupboards and a wall-mounted metal cabinet entitled 'LOCKER KEYS'. Beyond the clean locker rooms the room with the metal steps down to the calorifier room has a washbasin against its end wall, with a shoe clean machine and fire fighting equipment in the lobby inside the front door. The lavatory also opens off this lobby and it is subdivided by three brick partitions and contains a white glazed urinal with its original cast-iron water cistern with the name 'ADAMSEZ LTD' and two white glazed toilets with round plastic water cisterns.

The basement under the rear part of the baths was used for services and storage at its south end, and originally had an open north end wall with concrete piers.

The closure of collieries such as Grange Ash and Crigglestone in about 1965-6 led to an increase in the workforce at Caphouse Colliery, and this made it necessary to increase the number of lockers which were provided. These

were accommodated by extending the two inner bays of both the clean and the dirty locker rooms out to the rear. Like the earlier building the extension is of reinforced concrete and brick. At basement level, concrete piers and lintels support a brick superstructure with concrete coping around the wall head. Four rear windows which light the locker room extension differ from the original ones which were not reset from the original rear wall. A concrete lintel runs across all the windows, concrete sills under each pair, with brick mullions between every one. The window frames are of steel.

Administration block (CAP 8 G1-14,17a, G2-9)

The miners started and finished their working days at the pithead baths, and it was therefore logical that an administration block should be sited here. The building (Figs 37-8) was built in three main stages, the first, which included a lamp room, wages room and manager's office, being contemporary with the baths. Infill of the narrow open passage between the two buildings entered from ground level at the front may date from about the time of the rear extension of the locker rooms of the baths, namely the mid 1960s. It was certainly before April 1973 when it is shown on a photograph (Fig 43) which also shows the newly constructed conveyor from the drift. The drawing office and other offices added to the south end of the administration block date from 1975. Lockwood and Elliott's survey office prior to this date was at Shuttle Eye Colliery.

Lamp room, wages room and manager's office (CAP 8 G6-13, LG5-9)

The first part of the administration block, which included on its ground floor the lamp room, wages room and manager's office, was built immediately south of the pithead baths, being separated from it by a narrow passage. This new building, which was contemporary with the pithead baths of 1937-8, was L-shaped and of one storey over a basement. It is a reinforced concrete and brick structure with a flat concrete roof which oversails the wall faces. The appearance of the building before it was extended south, though after the passage to the north had been infilled, is known from a photograph taken in April 1973. This shows an external door in the south wall of the room on the east front, which was lit from windows in its east and north walls (the latter is now blocked), and a flat-roofed porch in the re-entrant angle. This porch opened into a lobby lit from a pyramidal skylight off which principal rooms opened to north and south and toilets to the rear. The room to the north and the toilets were lit from the north, the south room only from the east. Later work, including the construction of a south extension, has seen the door and window in the re-entrant angle blocked and the porch demolished. The blocked door has a concrete lintel and the original windows which survive all have concrete surrounds and steel window frames. The basement has been subdivided to create toilets, but it originally included a garage for the manager's car directly under his office. This still retains the curving groove in the concrete floor for a sliding door and the inspection pit in the floor.

The addition of the offices to the south end of the building blocked the front window of the manager's office and this may have been the reason why the concrete surround of the rear window was removed to create as large a window as possible. The window frame, unusually, is of timber, and it is set under a brick soldier arch atypical of the rest of the building.

Wages room extension and passage (CAP 8 G14,17a, LG10,10a)

The space between the first part of the administration block and the pithead baths was originally open but was later infilled, probably in the mid 1960s.

The infill used an existing concrete walkway along the south end of the pithead baths as its ground floor, and hence in order to create a room here it was only necessary to enclose either end in brick and set a flat concrete roof over the two, piggy-back fashion. The infill has two rooms, that to the front a passage which provided covered access into and between the baths and the lamp room, and to the window to the rear room from where wage packets were issued. The front wall, which has a door with a concrete lintel and a window with a concrete surround and steel-framed windows, runs across both the passage and the recess in front of the doorway to the baths. The rear room had a rear window, now blocked and a door into the wages room; the door into the baths is likely to have been infilled for security reasons.

At basement level the passage was unaffected by the changes above since it continued to provide access to the doorway into the calorifier room in the basement of the bath. The inset partition which now closes off the passage is much later.

Office addition (CAP 8 G1-5, LG2)

The final addition to the administration block was at its south end where an L-shaped building interlocked with the original building to produce, in conjunction with the baths, a long rectangular structure. The addition, probably built in the mid 1960s, is of one storey over a basement. It is built of reinforced concrete and brick with a flat concrete roof which oversails the wall face. The brick is laid in stretcher bond, the entrance door has a concrete lintel and the windows, three each to the front and side, two to the rear, have concrete sills and steel-framed windows. The front door leads into an L-shaped corridor. The door off this into the lamp room was retained, only later being blocked and replaced by the present door further in, as was the door directly ahead into the top-lit lobby. The return arm of the corridor has doors into the rooms along the front, the first being the chief clerk's office, the second the undermanager's office, while the door at the end opens into a large room, well-lit from the side and rear, which was the survey and drawing office, with a smaller room, the unit surveyor's office, off to its front. Timber steps within the drawing office descend against its north wall to a basement room which served as a print room and is lit by a small rear window.

Medical centre (CAP 8 G23-26)

The medical unit, later called the medical unit, was added to the north end of the pithead baths comparatively recently. Erected on a concrete base built out over sloping ground (Fig 44), it is a single-storey brick building, the bricks laid in stretcher bond, with timber window frames and a flat roof constructed of timber and with deep timber fascia boards. A door inserted in the north end wall of the pithead baths gives access to a long narrow waiting room lit from a window set high up in the end wall. Two doors open off the rear wall of this room, one into a toilet and washroom, the other a sluice with a sink. All three rooms have their own windows. A single door in the front wall of the waiting room leads into the treatment room (Fig 45), the largest room in the unit, lit from a three-light window which occupies almost the full width of the north wall. The room, which has light green-glazed tiles almost the full height of its walls, has all the medical furniture and equipment required for its purpose. A drug cupboard with a double door opens off one corner; one door has a small safe inset in it bearing the label MORPHINE. The waiting room entrance took walking patients but the wide double doors in the front elevation, which opened into a lobby with a store off one side, must have been used for stretcher cases.

Safety office (CAP 8 G27)

The safety office (Fig 44) was built in front of the baths, close to its north entrance and to the medical centre, probably during the 1970s. A rectangular single-storey building with a flat roof constructed of timber, it is a prefabricated building with walls of pre-cast concrete panels with surface chippings and deep fascia boards. It is well-lit from timber-framed windows in three walls, has a door close to one corner, and is set on a concrete base.

Control room (CAP 9)

The control room (Fig 46), as it is now called, stands in an isolated position to the north of the screens building. It was constructed in two stages, and map and other evidence indicates that the earlier part, which was the joiners' shop, was built between 1930-1 and 1942, probably therefore during the 1930s, to serve the colliery railway. It was extended in the early 1960s and became the Colliery and Mechanical Engineers' offices. When the Surface Drift Gantry was built and opened in 1974 the area became very dirty and dusty and the new office block was built. The building then became the television control room and surface foreman's office.

Examination of the 1930-1 map indicates that the earliest part of the building was built in a vacant space between the tracks of the mineral railway terminus at Caphouse. This map shows the second railway line from the west stopping before the others, and this appears to be the position of this building. Its original use is likely, therefore, to have been related to the railway, perhaps in part just as a gathering place for workmen. Its use in 1947 is unknown

since though it is shown on the map it is not identified in the schedule.[72] It is unlikely to have been used for its original purpose in 1947, however, since when Lockwood & Elliott purchased Caphouse Colliery in 1942 they dispensed with the railway and sidings and changed to lorry sales. Indeed the 1947 map includes no railway lines.

The original building is a single-storey brick structure gabled to north and south and with a Welsh slate roof. Its brickwork is in English bond, the doors have concrete lintels and the windows rectangular stone lintels, projecting stone sills and timber frames, the last not original. Projecting bricks at the eaves support the gutters. The original internal arrangement is uncertain, although a chimneystack rising from the south-west corner indicates a one-time corner fireplace here.

Undated but post-1974 National Coal Board plans show the building with its south extension. The original building is called a Cabin on one of the plans, and on both the extension is called the Television Control Room. The latter may, therefore, date from the 1960s. It is a single-storey, brick structure, the brick laid in stretcher bond, with concrete lintels and sills to the door and window in the east wall and the window in south wall.

Drift (CAP 10, 11 and 12)

In 1974 a major step in improving the productive capacity of the colliery was taken with the completion of a conveyor drift from the surface down to the Beeston Seam. The entry to the drift was close to the north corner of the site, at one of its lowest points, its position also determined by the need for the coal drawn up to be conveyed to the screens building. Above-ground structures associated with the drift are the switch room (CAP 10), the drift entrance (CAP 11), the haulage house (CAP 15) built later to enclose the haulage engine, and the conveyor gantry (CAP 12) which leads up to the screens building (CAP 4) which had of necessity to be significantly adapted.

Switch room

The switch room, CAP 10, constructed in association with the conveyor drift completed in 1974 stands immediately east of the mouth of the drift. It is an arched single-storey structure (Fig 47) which takes something of the appearance of a Nissen hut. It is constructed with five arched trusses each with a depressed head and straight sides, and each made from two lengths of I-section steel strapped and bolted together at their apex. The north end has timber double doors with sheet-iron facing set in a timber framework secured to the outer frame through bolted iron straps. The infill around the arch is red brick while the sides of the building are covered with corrugated iron sheets. The interior of the building was not examined, nor was the single-storey

[72] PRO COAL 38/456 39765: Plan III/9.

breeze block addition at the inner end.

Drift mouth

The drift mouth, CAP 11, completed in 1974 (Fig 47) has a wide rectangular opening at the head of the drift with side walls and a flat roof of reinforced concrete, the roof structure incorporating at its base a series of I-section steel beams overlaid with corrugated sheeting. The opening, and the drift beyond, is wide enough to take on one side the cast-iron rails for the trucks which carried maintenance materials in and out of the mine, and, on the other, the conveyor for the mined coal. The iron rails have a 52 cm gauge with shaped plates welded to their ends to act as buffers, and with a track out to a siding by the haulage house. The haulage house is secondary: orognally there was just an electric haulage engine, in the open, which drew the trucks to the surface. The conveyor which rises up the drift has a steel frame with steel sheets bolted to the upper surface and supporting the inclined rollers which guide the conveyor belt. The machine which drives the conveyor was made by Huwwood Limited of Gateshead on Tyne. Identifier plates bear their name, and give technical information. The conveyor which runs up the last length of the drift delivered its coal into an inverted conical-shaped hopper constructed from plates of sheet steel. A flight of cast-iron steps with a tubular steel balustrade rises to an inspection gantry on one side of the conveyor.

Conveyor gantry

The conveyor (Fig 49), which rises unbroken to the screens building, conveying coal brought up from the drift, starts some metres beyond the hopper from which the mined coal is delivered on to it. The conveyor is carried up the slope on a gantry supported by a series of eight steel legs, each with gently inclined legs with one, two or three sets of lattice bracing. The conveyor belt is guided by inclined rollers set on a steel-framed structure which includes support for a curved roof of corrugated-iron sheeting bolted to lengths of angle-iron. Some of the steel carries the name 'SKINNINGROVE ENGLAND'. The conveyor belt occupies the west half of the gantry; the east side is occupied by a walkway with a timber floor and plank sides attached to a balustrade with angle-iron uprights and two tubular rails.

Haulage house

The haulage house (Fig 48) was erected in about 1980 to enclose a new, larger electrically-powered haulage engine. It is a small, rectangular, single-storey building with a single-pitch roof running back from the front elevation. Its walls are of breeze block construction and incorporate a double-leaf front door and a window and door in the east side wall. The walling over the front door is of red brick and the roof is covered with profiled metal sheeting.

Fan house

The fan on top of the drift mouth was added when after the mine closed and the site was converted into a Museum. The fan serves a broad rectangular-sectioned sheet metal duct which, after it emerges from the drift, curves back on itself and splits into two conical mouths which run into the fan house, a tall rectangular breeze block structure set directly above the mouth of the drift.

Explosives store (CAP 24)

The explosives store was built immediately beyond the outer end of the long row of coal drops, CAP 7. The last three bays of the coal drops have since been demolished, their position taken by a cycle shed and, after the closure of the colliery, by stables for pit ponies. The explosives store was built at ground level, at the foot of the last of a series of substantial stone piers, in a position which was, for safety purposes, distant from the main working area of the mine.

The explosives store (Fig 50) is built in the rear corner of a long, narrow compound, originally with gates across the front, bounded by the stone end pier of the coal drops on one side, and on the other two by thick walls, largely of brick but with some masonry, their outer faces rendered. The store itself is square in plan, with brick walls, a thick concrete roof, and a locked steel door. A brick blast wall built in front of the door abuts the compound wall and is evidently a later addition.

Weigh office and weighbridge (CAP 13)

The weigh office and weighbridge (Fig 51) are sited to serve the entrance off New Road which was created by the National Coal Board after the last workshop extension (CAP 6 G1,2) was built in the late 1970s, blocking the earlier entrance at the south end of the workshops rebuilt in 1943 (CAP 6 G3-6). It was enlarged in the mid 1960s to accommodate the much larger lorries used for Power Station supply.

The weigh office (CAP 13 G1) is a rectangular single-storey building which is gabled east-west. It has an outer covering of corrugated iron to its sides and roof but its interior is plastered and its frame is obscured. The building has a door towards the south end of its rear wall as well as windows in every wall. The window overlooking the weighbridge occupies the full width of that wall and the other windows, by no means small, are each four lights wide and two high. They all have timber frames. The window overlooking the weighbridge has a steel-framed canopy, supported on inclined brackets and covered with corrugated iron and placed centrally below it is a former hatch. The interior is featureless.

The weighbridge retains its weighplate which takes the form of cast-iron plates with lattice patterns, for grip, in their upper surface. No maker's name can

be seen.

Stores and offices (CAP 14)

The stores and offices which stand at the south end of Caphouse Colliery, set back from the road, have been extended as the Museum's reception and exhibition block (Fig 8), but they include one of the latest buildings built on the site by the National Coal Board prior to the mine's closure in 1985. National Coal Board plans, undated but of the mid to late 1970s, show the buildings to have included a new stores block at the north end and, running south from it, a single-storey range including toilets, the electrical engineer's office, the plant records office, and the mechanical engineer's office. An oil and paint store was subsequently infilled in the angle between them. These added stores have been heightened and extended, and extensions added to the other buildings since the conversion of the site to a museum. Most of the main buildings were single-storeyed, built of brick, and had flat roofs.

Electric winding engine house (CAP 16)

The electric winding engine house (Fig 14) was built by the Yorkshire Mining Museum during its preparation of the site as a museum between 1986 and 1988. It was built to house a small winding engine to raise and lower a cage in No. 1 Shaft and is a tall single-storey building of covered rock-faced rubble with a single-pitched roof covered with stone slate. The two doorways in the north and east walls have ashlar surrounds whose interrupted jambs, impost blocks and keystones take their inspiration from the detailing of the 1876 steam winding engine house (CAP 2). Inside an electric motor drives a hydraulic power pack which in turn drives a hydraulic motor, and this rotates the winding drum which raises and lowers the modern single cage through a shaft depth of 140m (450ft). The winding engine was made by Needham Bros and Brown Ltd, a firm with over a century of experience in supplying first steam engines and later electric winders to the mining industry.[73]

Education buildings (CAP 17)

The two portacabins (Fig 38) which stand behind the pithead baths and administration block, CAP 8, and are used as education buildings and offices, were supplied second hand to the Yorkshire Mining Museum by South Yorkshire British Coal from South Kirkby Colliery, Wakefield District. They are single-storey flat-roofed structures, that to the north east square in plan, that to the south west narrower and rectangular.

Rope haulage (CAP 18)

The rope haulage railway line with the shed (Fig 48) to house the train and

[73] Information from panel attached to building.

the associated workshop and storage area were constructed by the Yorkshire Mining Museum in 1990. They are built of breeze blocks and have a roof which slopes very gently down to the north east. A plaque on the building reads 'This rope-hauled railway line was inaugurated by H R H the Duke of Gloucester, GCVO, on 22 October 1990 '. The track of the paddy train runs south west from this building along the boundary of the Museum site.

Exhibition building (CAP 19)

The building which houses the exhibition and the reconstructed blacksmiths shop was erected by the Yorkshire Mining Museum, a plaque on the building recording 'This building was opened on 13 February 1993 by The Right Honourable Betty Boothroyd, M.P. Speaker of the House of Commons. Jointly funded by British Coal, the European Community and the Museums and Galleries Commission'. The building (Fig 52) was brought to the Museum from Shireoak Colliery near Worksop and has a steel frame, the steelwork bearing the letters BSC AF GT BRITAIN, red brick walls to the ground floor and profiled metal sheeting covering the upper walls. It is outwardly a tall gabled building, rectangular in plan, with wide and narrow doors in one gable and one side wall. The narrow door in the gable wall, set within a porch, is the principal visitor entrance, opening on to the foot of a flight of stairs leading up to a first-floor display. The pair of doors in the side wall are set behind a three-bay deep open-fronted forebuilding constructed with four inverted U-shaped steel trusses covered with profiled metal sheeting.

British Coal Collection building (CAP 20)

The building in which the British Coal Collection is stored (Fig 53) was brought to the National Coal Mining Museum for England from Wentworth Stores and was re-erected in July to October 1996. It had been designed as a screens building for an opencast site but had never been erected. A plaque attached to it reads 'This building has been part funded from the European Regional Development Fund. This project is supported by the National Lottery through the Heritage Lottery Fund'. The building has brick walls and above them it is clad with profiled metal sheeting. The interior is environmentally controlled.

Store (CAP 21)

The store, erected in the mid 1980s by the Yorkshire Mining Museum west of the screens buildings and bunkers, close to the site of the former Foreign Coal bunker, is a rectangular single-storey building with a gabled roof. It has a steel frame clad with profiled metal-sheeting, with a wide door in the north-east gable end and off-centre narrow doors in both long walls. The interior is divided into two sections, one of which is environmentally controlled.

Open-arched store (CAP 22)

A long narrow single-storey store (Fig 54), open at its south-east end, erected in about 1996 by the National Coal Mining Museum for England next to the British Coal Collection store, CAP 20. The store has 14 identical steel-arched trusses each with a shallow arched head strapped and bolted to inclined, cranked uprights at each side. Tie rods running between I-sectioned steelwork give the structure rigidity. The store is clad with profiled metal sheeting, two courses of breeze blocks infill the base of each bay and the north-west end is closed by an inset breeze-block wall.

Hay Store (CAP 23)

A long narrow single-storey store, open at both ends, erected in about 1966 by the National Coal Mining Museum for England north of the store, CAP 20. The building is similar in form and detail to the open-arched store, CAP 22, but is slightly shorter. It is used as a store for hay for the pit ponies and horses.

Garages (CAP 25)

The two garages, both erected by the National Coal Mining Museum for England, stand north of the screens building, CAP 4. The eastern garage is a three-bay long single-storey structure with six arched trusses of I-sectioned steel and sides covered with profiled metal sheeting. The trusses are each in three parts, bolted together, their uprights inclined. the western garage has double doors fronting a steel-framed structure with a single-pitch roof sloping down from back to front, and sides covered in profiled metal sheeting.

Demolished buildings

The surviving buildings at Caphouse Pit reflect the growth and necessary replacement of industrial buildings over an extended period. It is known that a number of buildings have been demolished, and attention is drawn to these below.

Cottages

No mining settlement developed in the vicinity of Caphouse Pit, most of the miners instead living in existing hamlets in the locality. Two cottages did, however, stand close to the pit, one to the south west, the other to the north east

The cottage to the south west of Caphouse Pit, called 'Toppingtail' on the 1850-1 map, also appears on the 1858 and 1863 Auction Sale plans and on the 1892 and 1904-5 maps, but had been demolished by 1914. The detailed plan (Fig 1) accompanying the 1863 Auction Sale Particulars shows the building as number 16, which is recorded as a 'Cottage' in the occupation of 'Sir John

Lister Lister Kaye, Bart'. It was number 30 in the Particulars of the 1858 auction, when the occupier and description was the same. The cottage appears to equate with what is identified as the 'Site of old stables' on a sketch (Fig 57) of a field used at one time for putting out lame and sick pit ponies.

The cottage to the north east of Caphouse Pit, set beside New Road in its own enclosure, and called 'Cabins' on maps of 1850-1, 1892 and 1904-5, appears un-named on the 1914 map but by 1930-1 neither it nor the enclosure are shown. An old photograph (Fig 55) shows the cottage to have been a single-storey building with walls partly of stone rubble, partly of brick, with a pair of tall brick chimneystacks, their height dictated by the high level of the adjacent road which must have affected the draw of their fires. the cottage has a stone slate roof which, together with the configuration of the front wall, suggests a two-stage growth.

Powder magazine

The mid 20th-century explosives store (CAP 24) has already been noted, but there had long been the need to store explosives at the pit. The 1892 map, but not those before nor those after, shows a small building called 'Magazine' next to the field boundary running down the slope due west of Caphouse Pit. It is also shown as an arched structure and called the 'Powder Magazine' on a sketch of the Caphouse Muck Stack (Fig 56); its site is noted on another drawing (Fig 57).

Weigh office and weighbridge

The weigh office and weighbridge, CAP 13, at the south-west end of the site dates from the latter end of the working life of Caphouse Colliery, but at an earlier date there was another at the north-east end of the site. Coal was taken from Caphouse Pit by the colliery railway constructed in 1853-4, but it was also removed by road and the maps of 1892 to 1930-1 all show a building by the roadside a short way north east of the pithead buildings. The 1892 and 1904-5 maps annotate it as 'W M', that is Weighing Machine, and a sketch (Fig 57) shows a small single-storey weigh office with its back to the road, a door and window in the gable-end wall looking towards the pit, and a wide window, with a scale arm behind, overlooking the weighbridge.

Engine shed

The colliery railway which ran from Caphouse Pit to Calder Grove was built in 1853-4, but maps of 1892 and 1904-5 show no engine shed at Caphouse Pit. By 1914, however, not only had the large screens building (CAP 4) for sorting coal been built here, but an engine shed, with its own siding, had been erected to its south west. Its construction was no doubt necessitated by the greater use made of the railway as productivity increased and the amount of

shunting of wagons grew. This increased use is reflected in a doubling of the number of sidings show on the 1930-1 map, one of them now running through the engine shed and under and beyond the screens building.

HOPE PIT

A Block Plan showing the disposition of the buildings at Hope Pit and Inman Shaft in 1997 appears as Fig 60. The maps, archive drawings and photographs of the buildings form Volume 1, Part 2 of the Conservation Plan, while the plans, elevations and sections drawn by Allen Tod Architecture Limited are part of Volume 2.

Introduction

Sir John Lister Lister Kaye commenced sinking Hope Pit in 1827, the pit opening in 1832 but closing in 1833. A deeper sinking was started in 1839, the pit reopening in 1841, its workings drained by a steam engine installed in the nearby Inman Shaft. The 1850-1 map shows two coal pits at Hope Pit, both of which are also shown and identified as 'Shafts' on the 1892 and 1904 maps. The 1914 map, however, identifies the northern shaft as 'Old Shaft' but identifies the southern shaft as an 'Air Shaft' and shows it as part of a newly-built complex of buildings. The buildings were a U-shaped cluster (HOP 1) which included the shaft and the heapstead over it, the associated fan house and air lock, and a structure later remodelled as an electricity substation, with a winding engine house (HOP 2) freestanding to the south. The 1932 map repeats much of the 1914 cartography.

The identification of the new structure as an air shaft indicates that it had become the upcast shaft working with the downcast shaft at Caphouse, the underground working seams of the two pits having been connected. In this arrangement fresh air was drawn down the downcast shaft at Caphouse, the stale air being extracted through the upcast shaft at Hope Pit with the assistance of a fan. The upcast shaft was commonly used to take materials down a mine for maintenance, leaving the downcast shaft free for coal extraction and miners. It was unusual to wind men up and down an upcast shaft, although it was available in case of emergencies. After the Hartley Colliery disaster of 1862, where 204 men and boys lost their lives, legislation was passed in 1867 making two shafts or other exits from a mine compulsory both to allow escape and to enable sufficient air to enter and leave the underground workings.

Shaft, heapstead, fan house, fan drift, air lock, headgear (HOP 1)

Shaft, heapstead, passage and air lock, fan house and fan drift

The building (Figs 61-2) which was constructed over the southern shaft at Hope Pit when, between 1904 and 1914, it was utilised as the air shaft of

Caphouse Colliery, has a number of component parts. Built over the existing shaft is a brick heapstead (HOP 1 G1) approached from the north by an access passage (G2) with an air lock (G3), later extended (G4), at its outer end. The fan house (G5) is linked by a short tunnel, the fan drift (G6), to the shaft. The fan house is part of a more extensive building which includes what may have been a workshop (G7) with a further room, (G8), subdivided probably when the building was partially rebuilt as a substation with an upper floor (F1).

The old shaft within the heapstead is circular in section and at ground level it has a red brick lining capped by a course of stone blocks with further brickwork above. Most of this is likely to be repair work undertaken when the shaft was brought back into use between 1904 and 1914. The heapstead and headgear over the air shaft differ from those at Caphouse because of the need to enclose the head of the shaft to ensure that the ventilation fan only drew air up the shaft from the underground workings, and not directly from the atmosphere. The same factor lay behind the air lock at the working entrance to the shaft.

The heapstead is a red brick tower, square in plan, built around and above the circular shaft. It is built with two stages, the upper stage narrower and less tall than the lower, and both capped with concrete. The brickwork is in the same bond, namely a repeating pattern of three stretcher courses alternating with one of headers, as the lining of the shaft. The lower stage of the tower has steel double doors in its north face which provided access to the lifting and braking systems which operated the cage. The pulley wheel over which the rope passed from the winding engine house to the cage would have been on top of the upper stage. A hatch in the west face of this upper stage is an insertion. In the schedule drawn up in 1947, before the steel headframe was added, the heapstead and headgear were described as a 'Rectangular brick structure, with 6 ft. single rope pulley and detaching hook plate, conductor ropes, etc.'.[74]

Access to the shaft for maintenance men, and for materials brought from the adjacent stockyard, was through a passage, protected by an air lock, approached from its north side. Construction of this entrance evidently involved enlarging the opening into the shaft, whose cut-back sides are very roughly shaped. The passage is of red brick with a steel beam and concrete roof, with the air lock at its outer end. Here the inner and outer cross walls of the air lock each have outward-opening wooden doors with substantial iron closing handles (Fig 63). Each door is carried on three strap hinges and is of triple thickness with horizontal tongue and grooved planks sandwiched between vertical planks. Each door has a sliding inspection hatch incorporated in it, and the air lock itself has a window (now blocked) in its east wall. This has, to the outside, a brick flat-arched head, rounded corners, a bullnose brick

[74] PRO COAL 38/456 39765: Form D, Serial Number 15; Plan IV/pt. 5.

sill, and a small-pane steel window frame. An additional outer room has been built in front of the original outer door of the air lock.

Ventilation in the mine was provided by a fan, set at the south end of the fan house, which drew air out from the shaft, through the fan drift, and out through the chimney above it. The fan house is a single-storey building of red brick with a Welsh slate roof (replaced after 1981). Its front, east, elevation has a wide central door set between a pair of windows, all three openings having rounded corners and segmental brick arches. The windows have stone sills and small-pane timber frames. Doors in both the east and north walls are insertions. The roof has two king-post trusses. The king-posts, through-bolted to the tie beams, have expanded heads and support a ridge plank; the principal rafters support one set of purlins per side, cast-iron shoes supporting them on both sides of each rafter. In a schedule drawn up in 1947 the fan house was described as a 'brick building with concrete floors and slate roof, etc., containing:- Sirocco fan, 60,000 cu. ft. at 2 inch W.G. 50 H.P. Electric motor with all switchgear etc. Recording gauge, evase chimney, etc.'.[75] A photograph of the interior of the fan house (Fig 64) taken in 1981 shows the interior, including the fan, before it was stripped out. The sheet metal covering of the fan is visible, as is the belt drive to the electric motor on its rectangular bed.

The fan drift is a rectangular tunnel with brick side walls and a concrete floor and roof, the floor supported on steel girders. It runs east from the brick heapstead, at a level above the shaft entrance (Figs 65-6), into the brick chimney, with the fan at its base, sited at the end of the fan house.

The building immediately north of the fan house, the electricity substation, was largely rebuilt in the 1930s and it incorporates brickwork from an earlier single-storey building which can be equated with what is known to have been built between 1904 and 1914. The older building has darker bricks than those used in its rebuild, and they are laid in a different bond, namely English bond with five stretcher courses alternating with one of headers. The bricks used for the surviving original openings, all of them doors, have square corners in contrast to the rounded corners used in the later rebuild. The north wall survives to its original height, the west wall nearly so, but only the lowest few courses of the east wall remain and they only run as far as the north side of the wide doorway in that wall. The south wall is difficult to observe. The building may have been a garage or store: the north wall had two wide openings at either end, both of which retain two stone blocks set in each jamb and intended to take the hinge pivots which supported double doors. The I-section steel lintels over these openings appear to be insertions, as is the wide central opening and the ventilator over it. The west wall has a door with a stone lintel, its underside shaped to the opening, close to the corner in a

[75] PRO COAL 38/456 39765: Form D, Serial Number 16; Plan IV/5. The evase, correctly the évasée, chimney was the outlet chimney for the fan ventilation system.

position which allowed easy access to the buildings when the double doors were closed. The east wall has no opening in its surviving length, but that is all that can be said for its original form.

Electricity substation

The electricity substation at the north end off the range which includes the fan house probably dates from the 1930s and, as noted above, incorporates substantial lengths of walling from the original building constructed between 1904 and 1914. The substation is built of a brick which is more orange than the brickwork of the earlier building, and which is laid to a different bond with five stretcher courses alternating with one of alternate headers and stretchers. The wider and deeper north end of the substation is of two storeys, the narrower wing to the south being only single storeyed. All walls have stepped eaves courses whose middle row is of cogged bricks, and both blocks have flat concrete roofs.

The ground floor of the substation retains the original openings from the earlier building in its north and west walls but otherwise the openings are mainly of the 1930s and are distinctive in having rounded corners and segmental brick heads which are of three header courses on the ground floor and of stretchers on end on the first floor. All the windows have projecting stone sills and steel frames. A feature of all parts and floors of the building was the provision of natural ventilation: louvred rectangular vents serve the ground floor of the storeyed block, being set just below ceiling level in the north, east and west walls, and smaller vents are set in the other walls. The function of the building is indicated by the four panels set just below the eaves at either end of the east and west elevations of the storeyed block. The panels, set between stone sills and lintel, have three insulated holes through which electricity wires passed.

Inside the building all floors have ceilings with I-section girder supports and reinforced concrete (Fig 65). A flight of concrete steps, continued by a steel flight, rises up to the first floor close to the south-east corner of the storeyed block. Balustrades of tubular steel run up the stairs and along the void at first floor. The switchgear inside is modern.

Headgear

The headgear over the shaft, with its steel headframe and cast-iron pulley wheels (Figs 61-2, 66-7), was constructed after Nationalisation since the schedule drawn up in 1947 describes the headgear as a 'rectangular brick structure, with a 6 ft. single rope pulley and detailing hook plate, conductor ropes, etc. Fan drift built on to above with air reversal doors, etc., etc.'[76]

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[76] PRO COAL 38/456 39765: Form D, Serial Number 15; Plan V/pt.5.

The steel headframe is built around, over and is in places threaded through the earlier brick heapstead. It was built after 1947 and has vertical corner posts and enclosed back legs which are linked on opposing sides by mid rails and strengthened with lattice and V-bracing. The platform at the top, originally reached by a fixed metal ladder, supports a pair of pulley wheels or sheaves set in tandem.

Electric winding engine house (HOP 2)

The electric winding house stands immediately south of the headgear over the shaft at Hope Pit and although it occupies the site of a similarly sized building shown on the 1914 map, it appears to be a later rebuild. It is a single-storey building (Figs 66-7) of an orange brick closer to that of the electricity substation (HOP 1) and its bond, with five stretcher courses alternating with one of alternate headers and stretchers, is identical to that building. Most of its original west wall was taken down when a narrow extension was added, but its east wall has two original windows with rounded brick jambs, projecting bullnose brick sills and segmental brick heads. The north window retains its original small-pane timber glazing; the frame in the south window has had its central part renewed. The door at the north end of this elevation is an insertion; the original door must have been in the now-lost west wall. The original stone slate roof has been replaced with a modern covering since the closure of the site in 1985.

The interior of the engine house (Fig 68) has a concrete ceiling inserted when it was extended to serve the post-Nationalisation headgear. A pair of I-section girders which run north-south to support block and tackle for moving machinery have painted on them the limit of 'S.W.L. 5 CWTS'. In 1947 the schedule described the winding up house of 'brick construction with slate roof and concrete engine beds equipped with:- 62 H.P. Electric winder by M. B. Wilde with drum, winding rope, gears and all essential equipment'.[77] The present machinery is of later date, installed when the present headframe with its tandem pulley wheels was erected over the shaft at some time after 1947. In order to house the wider winding drum and the electric motor a narrow flat-roofed brick extension was added along much of the west side. The extension is in the same bond as the original build but the door and windows in its west wall have concrete lintels. The window is steel-framed, the doorway has double doors. A brick-built toilet with a flat concrete roof has been added to the south end of the extension; it is entered from outside the engine house.

New fan house and fan drift (HOP 3)

In 1960 a new fan house and fan drift with a Tornado Air Reversal mine fan (Fig 69) was built to the south-east of the shaft and the original fan house.

[77] PRO COAL 38/456 39765: Form D, Serial Number 15; Plan IV/6.

The new fan house, HOP 3 G1, is a single-storey brick building with a flat concrete roof. The north-facing front elevation has a wide door and a window, the rear elevation two windows, and the west wall, toward the fan drift, a door and a blocked opening in line with the drift and a demolished link block. All these openings have concrete lintels, sills and steps, and the windows are steel framed.

The fan drift, HOP 3 G2, is a reinforced concrete structure, square in section, with steel air lock doors in three places. The fan duct mounted on top of the concrete drift is of metal plate construction and has a top-hinged door across its east end. A panel on the side bears the text 'Tornado A R MINE FAN Keith Blackman Ltd Engineers London. SERIAL NO R 1098'.

The fan drift was driven through the hillside and into the walls of the shaft below the ground level of the original fan house. The nature of the fan enabled it either to introduce new air or extract stale air.

Compressor house (HOP 4)

The compressor house (Figs 70-1) originated as a building associated with the colliery railway constructed in 1853-4 but was reconstructed for a new use in 1944. The original building, not shown on the 1850-1 map, is shown on the 1892 map sited within the shunting curve of the colliery railway, on the line running towards the tunnel under the New Road. The building is in two parts, the earlier (HOP 4 G1) being the longer and higher northern part. The original building is a tall single-storey structure, gabled to north and south, its north and east walls rebuilt in 1944. The apex of the south gable wall may also have been reconstructed in 1944. Both roofs had stone slate coverings in 1981; they have since had to be replaced with profiled metal sheeting. The original masonry of the south and west walls is of coursed rubble with a pronounce external batter. The doorways at the north end of the west wall and east end of the south wall are both insertions; neither wall has a window. The added south part of the building (HOP 4 G2,3) is single-storeyed and has stone rubble walls and a single-pitch roof. It has a door in its west wall and a door and window in its south wall. A modern breeze-block wall divides the interior into intercommunicating east and west rooms. Both parts of the building appear on the 1892 map, and drawings by Cyril Schofield (Figs 75-77) indicate that earlier in the 20th century the original building was a blacksmiths shop and the addition a paint shop. Whether these were also the original uses is uncertain but by no means impossible.

The acquisition of Caphouse Colliery in 1942 by Lockwood and Elliott led to the reconstruction of the building in 1944 as a compressor house. The north and east walls were rebuilt to the original height with a stone outer face and a brick inner one. The roof had stone slates recently replaced with profiled metal sheeting. The east wall has a regular appearance with windows flanking a wide and tall doorway with a small window immediately over it. The windows have rectangular stone lintels, the southernmost retaining its stone

sill; the door lintel is an I-sectioned steel girder. The windows have been blocked but the two lower ones retain their steel frames behind the blocking, each frame being four small panes wide and tall with the four central panels opening and pivoting horizontally. The interior is comparatively plain, a scar on the inner face of the north wall indicating a lost flue. The roof is supported by two king-post trusses which are likely to date from 1944. The king-posts are through-bolted to the tie-beams and have diagonal struts and principal rafters notched into their sides. The rafters support two sets of tusk-tenoned purlins.

Two compressors were installed in the reconstructed building in 1944 to deal with the future pit loads, one a 570 cubic feet per metre air compressor with a 130 horse power motor, the other a 480 cubic feet per minute air compressor with a 100 horse power motor.[78] The 1947 schedule of the site describes the compressor house as a 'stone built house with concrete beds, slated roof, stone flagged floor, etc., containing '- 1 - Ingersoll Rand 750 cu. ft. m. driven by 130 H.P. electric motor. 1 - Ingersoll Rand 570 c.f.m. driven by 100 H.P. electric motor. 12 ft. Air receiving tank'.[79] The compressors have been removed from the building, only their concrete beds surviving as well as a series of three I-section girders to support lifting gear. The girders have the restriction '4 TONS SWL' painted on to their flanges. The air receiving tank of the schedule is a reused egg-ended boiler set on stone piers next to the west wall of the building and it is presumably one of the two boilers, last insured in 1934, which served the beam engine in the Inman Shaft engine house. The 1947 Schedule[80] lists no boilers at the Inman Shaft: Lockwood & Elliott had probably dismantled the boiler house fittings after acquiring the site in 1942.

Garages (HOP 5)

The garages (Figs 70, 73) are the product of a long evolution from the mid 19th century, although much of what now survives is of 20th-century date. No building is shown on their site in 1850-1, although by 1892 there were two conjoined structures, that to the west attached to the coke ovens which are shown and identified on both maps, that to the east entered by a railway line of the colliery railway. The buildings on the 1892 map are also shown on the 1904 and 1914 maps, but by 1930 the narrower eastern block had been rebuilt to double its depth with a small projection to the north out towards a length of railway track evidently laid to serve it as well as the Inman Shaft.

The use of the 19th-century buildings is not known, and only a small fragment of the south-east corner of the larger western building survives, incorporated

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[78] PRO COAL 37/248 39765; 5, 20.

[79] PRO COAL 38/456 39765: Form D, Serial Number 16; Plan IV/4.

[80] PRO COAL 38/456 39765: Form D, Serial Number 17; Plan IV/1.

in the alternate rebuilding of the first two structures. The surviving fragment of wall is of coursed small rubble externally and of red brick internally. Map evidence indicates that major rebuilding took place between 1914 and 1930, with the eastern block rebuilt to more than double its depth. The physical evidence of the building itself indicates that it was rebuilt in two stages, the first being of a shed (HOP 5 G1), identified as a wagon shop on drawings by Cyril Schofield (Figs 75-77), the second (HOP 5 G2) being another shed identified as a saw mill. A narrower range (HOP 5 G3) attached to the west end of the wagon shop was a joiners shop.

The wagon shop, with a railway line entering it from the north east, was evidently used for repair work. It is a tall gabled single-storeyed building, the south wall towards New Road being stone faced for effect, its inner face, like both faces of the other walls, being of brick. It is four bays long with a wide entrance in the front wall; the north side wall was largely taken down on or after the building was extended. The windows have segmental brick arches, bullnose brick sills and timber frames. The interior (Fig 74) is an open space, its roof carried on three queen-post trusses. The junctions of the queen posts with the principal rafters are strapped with iron, and the three purlins per side are carried in cast-iron shoes bolted to the principals. A wide opening in the end wall of the wagon shop indicates that the railway track evidently ran through into the joiners shop beyond.

The saw mill added to the north side of the wagon shop is of similar form to it being a tall gabled single-storey structure of brick with segmental-arched window heads but no sills. It is five window bays long with a wide entrance to the east and has three king-post trusses, the king posts with expanded heads and the single set of purlins per side set in cast-iron shoes.

The joiners shop added to the west of the wagon shop is also a rebuild. It is less tall than the other buildings, is just three short bays long, and has been subdivided. It is built of brick with rectangular rock-faced stone lintels on the elevation to New Road. The roof has two king-post trusses rising from shallow piers projecting from the walls, each truss with two sets of tusk-tenoned purlins set in cast-iron shoes and a plank ridge beam.

When Lockwood & Elliott purchased Caphouse Colliery in 1942 they dispensed with the colliery railway and sidings and changed to a landsale lorry service worked in conjunction with that already operated from their Shuttle Eye Colliery. The wagon shed, saw mill and joiners shop were reconstructed, offices (Hop 5 G4,5) added in the angle of the two, and garages (HOP 5 G6) added in 1944 to accommodate a motor lorry repair shop and house the lorries. Concrete roads were laid to the garage, a central heating system with its own boiler house was installed, as was an electric petrol pump and a 1,000 gallon capacity petrol tank. As remodelled the former wagon shop and saw mill each had an inspection pit in their floor, and an eight-bay long garage was built on to its north side. The garage is single storeyed with a flat concrete roof incorporating I-section girders. Sliding doors close the front,

and inside there is a single inspection pit with a travelling hoist above it. The garage accommodated twenty five-ton motor vehicles, an increase on the former capacity of 15-16 lorries.[81] The building as rebuilt is shown in outline on the plan which accompanies the schedule of the site drawn up in 1947, although there is no description in the schedule.[82]

The building was sold in 1972 and it became a plant hire depot known as Hope Garage. It was derelict and unoccupied in 1997.

Treatment house (HOP 6)

A tall, single-storey brick building with a low office wing at the rear, the mine water treatment house has a flat concrete roof over both parts. Doors and windows, the doors of sheet iron, have concrete lintels. Double doors open into the main room which has a steel-framed gantry at its rear. A photograph taken in 1981 (Fig 70) shows the cylindrical metal silo, since dismantled, which stood to its immediate west and fed chemicals into the plant with the building. The treatment plant is shown only on the later of the two National Coal Board plans, that probably of the late 1970s, which also shows the two rectangular lagoons to the east in which the water settled before discharging into the stream. One of the lagoons occupies what had previously been a stockyard for Hope Pit.

Inman shaft (HOP 7)[83]

The Inman Shaft, named after Jack Inman who was for 80½ years an employee of the colliery, and who worked the pumping engine here, is the northernmost of two shafts which may have originated as coal pits in the late 18th century. No documentary evidence has survived for them at this date, and nor was there mention, when one was used for the pumping engine, that it was utilising a deepened, existing shaft. Nevertheless there is every reason, given the number of old coal workings in the area, to suspect an earlier origin or these shafts.

Between 1839 and 1841, when the nearby Hope Pit was deepened to the Old Hards Seam, the Inman Shaft was sunk down to a dip in the new seam in order to drain water away. The water was lifted by means of a beam engine housed in a stone-built engine house erected immediately east of the shaft. Drawings and old photographs (Figs 75-6, 78-9) show that the boiler house and chimney were attached to the east side of the engine house, with a horse gin and horse wheel immediately west of the shaft. The 1850-1 map shows the engine house, boiler house and chimney as an L-shaped building and

[81] PRO COAL 37/248 39765, 4, 5, 21.

[82] PRO COAL 38/456 39765: Plan IV/3.

[83] Information taken from Goodchild 1983, 15.

although it is at too small a scale to show the two shafts, the larger scale maps of 1892 to 1930 show greater detail.[84]

The original beam engine house and related structures

The old photographs (Figs 78-9), said to date from the early 1920s,[85] were taken when the structures were complete and in use, and when the horse gin and horse engine, both of timber, also survived. What survives now (Fig 80) is just the engine house, its lower half now hidden by a raised ground level. The engine house, as built, was a tall rectangular building gabled to east and west, with walls of coursed squared rubble with distinctive channelled tooling. The west wall has two round-arched openings both with voussoired heads, the voussoirs with radial channelled tooling within a plain margin. The lower, smaller opening lit the bottom of the engine house, while the larger, upper opening, as the early photographs show, supported the central pivoting point of the cast-iron beam of the beam engine. The opening retains the substantial cast-iron sill with paired flanges which held the support for the beam. The present entrance to the engine house, in the south wall, has been made by enlarging an original window opening, as comparison of old and recent photographs (Figs 78, 80) shows. This elevation originally had a door and window at the ground level as it was in 1839-41, as well as an upper window: the lower window lit the engine bed, the upper one the engine bed. The door had an ashlar surround with interrupted jambs, while the windows, with small-pane frames evidently of cast iron, had rectangular stone lintels and projecting sills. The lintel and sill of the upper window were both removed on it recent conversion into a door. The east wall has a round-arched opening, now blocked, and similar in form to the upper opening in the wets wall, level with the later south door. It is close to the south-east corner of the engine house, to use the space left by the inset end of boiler house. It was probably a window. The north wall has three small windows, all with rectangular stone lintels and projecting sills, stepping up the wall and lighting the interior. The top one has a timber shutter; the other two are blocked with bricks.

No details about the beam engine have been found, but the old photographs (Figs 78-9) clearly show a pivoting cast-iron beam to the outer end of which was attached the mine pump rod which descended the shaft. At the surface a timber gantry with surrounding balustrade projected west from the engine house wall level with the cast-iron beam, and a timber superstructure supported and guided the pump rod, etc.

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[84] None of these maps names the building, and annotations vary. The 1892 map is annotated 'Shaft', that of 1904 'Shafts', while that of 1914 identifies the northern shaft as 'Shaft' but the southern one as 'Capstan'. The 1930 map repeats the northern annotation but the site of the southern shaft is hidden by the cartographic symbol for a benchmark. The last two maps also identify the chimney as 'Chy'.

[85] One is reproduced in Goodchild 1983, fig 2; the other is in the archives of the National Coal Mining Museum for England.

As has been noted, the old photographs show a timber horse gin and horse wheel capstan west of the engine house. The horse gin worked by a single horse, or a team of horses, walking round in a circle and turning a drum on to which the winding rope was wound, had become the most commonly used method of raising coal by the mid 18th century.[86] It was later superseded or augmented by the steam engine, but at the Inman Shaft, in the mid 19th century, the position was probably reversed, the horse gin probably augmenting the beam engine. The steam-powered pump only drew water part way up the shaft, and the gin is likely to have been used to draw the water needed for the boilers and for the condensers. It may even have been sufficiently efficient to stand in for the steam engine when water inflow was not great. The horse gin at Inman Shaft took the form of a drum mounted around a vertical shaft, the shaft set in a frame consisting of a beam supported at either end by trestles, the latter linked by further beams to a frame supporting a pulley wheel over the shaft. In the foreground of the photograph (Fig 79) planks cover the top of the southernmost of the two shafts shown on maps. The curve of the rim of the shaft projects left of the planks, and beside it is a horse wheel capstan, three of whose four arms are complete, and to which one horse or more was attached to turn it.

The boiler house was attached to the east side of the engine house with a chimney at its north-west corner. The boiler house may originally have been open to the air, like that which served the 1876 steam winding engine house at Caphouse Pit, since it has a single-pitch roof supported at its outer corners on brick piers. Timber boarding gave some protection at least at the south end (Fig 78). A sketch plan (Fig 75) shows two boilers in the boiler house, annotated 'egg-ended boilers', and this confirms the known fact that two 15 horse-power boilers in it were insured until 1934.[87]

The chimney. which has been demolished, had a square stone stack which tapered gently to a simply-shaped cap (Fig 78).

Alterations to the beam engine house, etc., after 1942

Lockwood & Elliott acquired Caphouse Colliery in 1942 and during 1945 and 1946 they carried out improvements to the pumping arrangements at Inman Shaft, installing two ten-horse-power electric pumps in the pit bottom and erecting a 15 horse-power winding engine and headgear at the top of the shaft.[88] The 1947 Schedule calls the beam engine house the winding engine house, describing it as a 'Stone building, slate roof, concrete floor, engine bed, etc., complete with Electric Winder by Needham & Brown (Barnsley) with 20 H. P. motor, gears, visual indicator, overwind gear and all necessary

[86] Thornes 1994, 2 4.

[87] Goodchild 1983, 15.

[88] PRO COAL 37/248 39765, 5.

equipment.' Adjacent was a 'Capstan gear on beds, 2 ft. drum. driven by 6 H. P. motor, complete with gearing and ropes, etc.' and the headgear was noted as a 'Rectangular brick structure, with entrance doors, etc., etc. 3 ft.diameter pulley, detaching plate, etc.'.[89] In 1997 the interior of the beam engine house had a floor level with the threshold of the door in the south wall and retained no significant fittings.

Demolished buildings at Hope Pit

Storage and service buildings

The major investment at Caphouse Colliery between 1904 and 1914 which saw Caphouse Pit serve as the winding shaft for men and coal and Hope Pit as the service and air intake shaft led in the late 20th century to the development of storage and service buildings at the latter site. The mid to late 1970s National Coal Board plans of the Hope Pit area show a large stockyard immediately north of the pithead buildings (Fig 62), as well as a smaller one taken over by the lagoons when the mine water treatment plant was installed. A saw shed and a deisel store on the north side of the larger stockyard have been demolished, as has a pump house near the still-surviving reservoir, and the explosives store built next to the site boundary at the head of the shunting curve of the colliery railway. None of these demlished buildinsg is shown on the 1930-1 map.

Cottages

Three miners' cottages were built on the north side of New Road, south of Hope Pit, map evidence indicating that they were built between 1914 and 1930. The latter map shows two semi-detached cottages west of the railway cutting and a single cottage to the east, an arrangement confirmed by sketches made of them (Figs 81-2). These sketches show that the cottages, which still stood in 1946-7 but had been demolished by the mid 1970s,[90] wer gabled, single-storey buildings with weatherboarded timber frames. Each pair of semi-detached cottages had the same plan with a door and window, door and window arrangement, with just one heated room, while the detached cottage appears to have had an entrance hall with heated rooms on either side of it.

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[89] PRO COAL 38/456 39765: Form D, Serial Number 17; Plan IV/1.

[90] PRO COAL 38/456 39765: Plan IV/7; undated National Coal Board plans.

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ABBREVIATIONS

NCMME: National Coal Mining Museum for England
PRO: Public Record Office
RCHME: Royal Commission on the Historical Monuments of England

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