

**Lea Quarries
Much Wenlock
Shropshire**

**Archaeological Record
and
Heritage Assessment**

November 2009

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Lea Quarries, Much Wenlock, Shropshire

ARCHAEOLOGICAL RECORD and HERITAGE ASSESSMENT

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Lea Quarries, Much Wenlock, Shropshire

Archaeological Record and Heritage Assessment, 2009

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Lea Quarries, Much Wenlock, Shropshire

Archaeological Record and Heritage Assessment, 2009

SUMMARY

Birmingham Archaeology was commissioned in 2009 by The National Trust (West Midlands Region) to undertake an archaeological record and heritage assessment in respect of the disused Lea Quarries, Much Wenlock, Shropshire (centred on NGR SO 59348 98330), to inform discussions regarding the possible future use of the quarry.

Wenlock Edge forms a limestone escarpment, approximately 24km long and aligned north-east to south-west between the settlements of Much Wenlock and Craven Arms in South Shropshire. The characteristic formation has been formed by the weathering of a bed of Silurian limestone which is underlain and covered by the Wenlock and Lower Ludlow shales respectively. The bed is inclined to the south-east, with a gentle slope in this direction while the face of the scarp is formed by the limestone itself, presenting an almost natural quarry face.

Lea Quarry North, incorporating the former Coates Quarry to the north-east, is the most recent of the Wenlock Edge quarries and, although the area was subject to previous, small-scale exploitation, was only formerly established in 1943 though it went on, in terms of both size and production, to represent the largest and most successful of the Wenlock quarries. From small beginnings, the quarry expanded quickly and the core of the surviving processing plant was in place by the late 1960s or early 1970s when the workings were run by Ridge Limestone Company. Coates, to the north-east, traces its history back to the late 18th century though it again operated only on a small scale down to the early 20th century. Sold to the Ridge Limestone Company in the 1940s, production at the quarry expanded significantly and continued until 1963. After that date, the plant continued in use temporarily processing materials from Lea North but by 1970 the site had become derelict and the machinery either dismantled for re-sale or demolished.

The extant processing buildings at Lea Quarry represent an interesting though entirely standard collection of mid-late 20th-century fixed quarry structures. A bank of three lime draw-kilns represent the sole survivor of quarrying activity at the Coates Quarry, while a late 19th-century Non-Conformist Chapel within the area of Lea South was originally erected for local quarrymen working at the Westwood works. Each of the structures has been photographed, plotted and briefly described and its heritage value assessed. Further, each structure has been assigned a unique identifying number from the National Trust's Sites and Monuments register (NT SMR), and the data inputted to the NTSMR database.

While the Lea Quarry North complex has a high evidential value in demonstrating modern working of the limestone resource along Wenlock Edge it has low historical value overall. Its aesthetic and communal values are more problematic to assess. For some the complex will be rated highly for both values; for others it will have low value. The main issue in considering the future of the complex is the balance between the desire to preserve and the resources available to do so. In this respect it is worth noting that the conservation costs for this complex would be high overall and that the resulting heritage asset would be difficult to turn to alternative uses.

Lea Quarries, Much Wenlock, Shropshire

Archaeological Record and Heritage Assessment, 2009

1 INTRODUCTION

1.1 Background to the Project

1.1.1 Birmingham Archaeology was commissioned in 2009 by The National Trust (West Midlands Region) to undertake an archaeological record and heritage assessment in respect of the disused Lea Quarries, located south-west of Much Wenlock, Shropshire, centred on NGR SO 59348 98330 (see Figure 1).

1.2 Reasons for Work

1.2.1 The assessment was undertaken to inform discussions regarding the possible future use of the quarries as summarised in Section §.1 of the project brief, reproduced below as **Appendix A**.

1.3 Designations

1.3.1 Much of the surrounding Wenlock Edge is designated as a Site of Special Scientific Interest (SSSI), though this designation excludes the core quarry processing area currently under consideration.

1.4 Scope of this Report

1.4.1 The project was undertaken in accordance with a *Brief for an assessment report on the Historic Asset: Wenlock Edge Quarries* prepared by Jeremy Milln of the National Trust, dated 07.10.09, and reproduced below as **Appendix A**.

2 SITE LOCATION AND GEOLOGY

2.1 Site Location

2.1.1 Lea Quarry North is located on the north-west side of the B4371 Church Stretton – Much Wenlock Road, c.3km south-west of the town centre of Much Wenlock, Shropshire, centred on NGR SO 59348 98330 (see Figures 1 and 2). It extends along the road for a maximum distance of c.2.3km measuring c.190m wide at its widest point, and incorporates the former Coates Quarry to the north-east. Lea Quarry South is located to the south-east side of the B4371, opposite Lea Quarry North.

2.2 Geology

2.2.1 Wenlock Edge forms a limestone escarpment, approximately 24km long and aligned north-east to south-west between the settlements of Much Wenlock and Craven Arms in South Shropshire. The characteristic formation has been formed by the weathering of a bed of Silurian limestone which is underlain and covered by the Wenlock and Lower Ludlow shales respectively. Within this is incorporated a fossilised coral reef – the ‘ballstone’ – that is almost pure calcium carbonate. As such it was ideal for

exploitation in the industrial period for iron smelting since it reacted easily with the clay impurities in the local ironstone nodules to form glassy slag. The bed is inclined to the south-east, with a gentle slope in this direction while the face of the scarp is formed by the limestone itself, presenting an almost natural quarry face. The Ludlow shales are overlain by the Aymestry Group of siltstones and limestone, which outcrops as a linear watershed east of, and running parallel to, Wenlock Edge (Toghill 2006, 131-40).

3 AIMS AND OBJECTIVES

- 3.1 The aim of the current project was to generate a baseline record of the Heritage Asset, namely the surviving quarry structures related to the processing of limestone at the site, principally during the second half of the 20th-century. The associated Heritage Assessment was intended to evaluate the relative significance and historical/cultural/community value of the quarry structures so as to enable value judgements to be made regarding the merits for full and/or partial retention or for full demolition of the quarry buildings. Not under consideration in this report is the wider quarry itself.

4 METHODOLOGY

4.1 Documentary Research

- 4.1.1 A search was made of all relevant and readily available published and unpublished documentary source material, including historic maps and photographs of the study area, held by the Wenlock Museum, Local Studies Library (Shrewsbury), and at the libraries of the University of Birmingham and the Ironbridge Institute. The Shropshire Historic Environment Record / Sites and Monuments Record (HER/SMR), the principal source of archaeological data for the area, was also consulted. A map regression exercise was undertaken based upon historic Ordnance Survey mapping of the area to trace the development of the quarrying activity at the site.
- 4.1.2 It was unfortunately not possible within the time-frame of the current project to obtain oral history testimony from former employees or managers at the quarry site. Such research may prove useful in more closely defining the day to operations of the quarry business.¹

4.2 Building Recording

- 4.2.1 A site visit was made on 02.11.09 for the purposes of making a rapid record and assessment of the surviving quarry buildings. Photographic recording was by means of high resolution digital photography using a Nikon D50 digital SLR camera backed up by photography using a Canon EOS 450D SLR camera; all photographs were recorded on pro-forma recording sheets noting details of the subject, view, scales included, recorder and date. A selection of images is reproduced within the current report.

4.3 Heritage Assessment

- 4.3.1 A heritage assessment of the Lea Quarry buildings and the bank of lime kilns at Coates Quarry was carried out within the framework of the English Heritage

¹ Contact with Mr E Carter of Bardon Aggregates by e-mail was made by Robert Galloway as a part of the historical background research, though no reply had been forthcoming at the time of compilation of the present report.

Conservation Principles (2008). This suggests that heritage assessment can be carried out through understanding the core values of a site, defined as being Evidential, Historical, Aesthetic and Communal in nature. These values have not been fully explored for the site as that would take a full-scale study beyond the brief for this report but some interim conclusions can be reached on the basis of the rapid survey carried out and from experience of the wider quarry industry in Shropshire and the region.

5 HISTORICAL BACKGROUND

5.1 Limestone Quarrying on Wenlock Edge

5.1.1 The proximity of limestone to the surface in abundance at Wenlock Edge has resulted in the historical exploitation of the mineral for building, iron fluxing, aggregate, and conversion to lime for building, tanning, and agriculture (VCH 1998, 399-44). Traceable on a small scale as far back as the 14th century, the industry gradually grew and Much Wenlock was renowned for its limestone by the early 17th century, when quarries and kilns were scattered over the Edge (*ibid.*). The industry was boosted by the Industrial Revolution and, as the iron industry expanded, quarries between the Much Wenlock and the River Severn were acquired by ironmasters operating in the southern part of the coalfield as this was the sector of the Wenlock series that incorporated outcrops of patch reefs ('ballstone') (Toghill 2006, 133). During the 19th century quarrying was stimulated by the opening of the Buildwas to Much Wenlock Railway in 1862, extended to Presthoke in 1864. The decline in Shropshire's iron industry in the later 19th century saw a related fall in demand for limestone, though in the mid-20th century (especially after 1945) quarrying revived to supply the construction industry with aggregates,² while distribution was greatly enhanced by improvements in road transport (*ibid.*).

6 THE LEA QUARRIES

6.1 Lea Quarry North

6.1.1 Lea Quarry is the most recent of the Wenlock Edge quarries and, although the area was subject to previous, small-scale exploitation (see above), was only formerly established in 1943 by Messrs J. Cross and Sons Ltd for the systematic production of pulverised limestone for agricultural purposes (Williams 1990, 60). In terms of both size and production, it represents the largest and most successful of the Wenlock quarries.

6.1.2 The Ordnance Survey County Series 1st Edition 1:2500 map of 1882 (Figure 4) illustrates the area of the Lea Quarry North as essentially open fields with the tree cover of Blakeway Coppice to the slopes of the limestone escarpment to the north-west. A number of 'Old Quarries' are marked along the Church Stretton – Much Wenlock Road, one of which is located at the entranceway to the present Lea Quarry North. Thus it can be seen that small scale exploitation of the limestone deposits in the immediate vicinity of Lea Quarry dates back a considerable time. The Wenlock Rate Book of 1841 relates that one Richard Milner, then farming at Lea Farm to the south-west (now lost), had an interest in a small quarry hole on his land while other records name a successor at Lea Farm, one Tom Norris, as extracting stone in the interwar years (Williams 1990, 60). The 1st edition map also shows the isolated

² Production at Lea Quarries in the 1960s relied particularly upon developments at Dawley New Town and Droitwich (Anon 1968, 230).

Primitive Methodist Chapel on the opposite side of the road to the future quarry site. The Westwood Quarry and associated tramways are indicated to the north-east utilising the Much Wenlock and Severn Junction Railway and loading at the Westwood Sidings, adjacent to which 'Lime Kilns' are indicated.

- 6.1.3 Reference to the 1st and 2nd Revision 1:2500 maps of 1902 and 1927-8 (Figure 5 and 6 respectively) shows no new quarrying activity to the north-west side of the Stretton/Wenlock Road, though the extent of the Westwood Quarry to the east increases with each successive edition. By 1947, it was producing between 180-200 tons per week, peaking at 300 tons during spring and autumn, and employing nine full-time quarrymen (Williams 1990, 60).
- 6.1.4 The quarry was sold to Ridge Limestone Limited, a part of the Boddy Industries Group, in 1957 by which time production had expanded to 1,000 tons per week and the workforce increased to 65. New ownership saw radical developments at the quarry, with new machinery being installed between 1959 and 1961. Capacity was increased to 1,000 tons of lime and 3,000 tons of limestone per week (*ibid.*); rising to c.300,000 tons p.a. by 1968 and 600,000 tons p.a. by 1977. The product breakdown by the latter date was 80% aggregates, 10% pulverised limestone, 8% agricultural fertiliser and 2% flux. By 1988, over 100 lorries per day were serving the quarry.
- 6.1.5 A detailed view of the workings of the quarry in the late 1960s is given by an article in The Quarry Managers Journal, June 1968 (p.230-3), a photograph from this article, reproduced below as Figure 10, illustrates a number of the surviving quarry structures in place at that time.
- 6.1.6 The Ordnance Survey 1st Edition National Grid Series 1:2500 map of 1972-4 (Figure 7) shows the first cartographic illustration of Lea Quarry North, with a number of the extant buildings shown, namely the primary, secondary and tertiary crushers, grading plant, reject screen and linking conveyors together with large garage shed and office range at the quarry entrance.
- 6.1.7 The quarry was subsequently sold to Bardon Aggregates Ltd. who operated the concern until it was mothballed in 2007.

6.2 Coates Quarry

- 6.2.1 The origins of quarrying at Coates to the north-east can be traced back further. Williams (1990, 82) records that quarrying activity was taking place in the vicinity before the time of enclosure of Westwood Common in 1806-7; with a 'Lime Pit Field' being recorded on a map of 1770. This field, along with a number of lime kilns, was being rented from John Weld-Forester, Baron Forester, in 1841 by one Thomas Hotchkiss though the first mention of Coates by name is in a Railway Survey of 1852 when Thomas Jukes of Coates Farm was recorded as the quarrier (*ibid.*). The quarry continued to be run on a small scale, as is evident from a review of historic Ordnance Survey mapping (see Figure 8) though by 1910, when it was rented by one George Lloyd, five lime kilns had been built. Upon Lloyd's death in 1924, the quarry was sold as part of his estate - when he had purchased the land from Forester has not been established though much of the Forester estate in and around Much Wenlock was sold during the 20th century (VCH, *op. cit.*). By the date of its sale, only three kilns survived (presumably the surviving Coates Kilns - see §.7.3.5). Between 1944-5, the workings passed rapidly through a number of different hands, being taken over first by the Halkyne Mining Company (in 1944), then to a consortium of Messrs Peddigrew,

Jones and Horner (1945) and finally to the Ridge Limestone Company; during this period, a modern crushing and milling plant was installed. Under Ridge, production at the quarry expanded significantly and by the time they ceased operation at the site in 1963, annual production had risen to over 100,000 tons and the area of the quarry to 5 acres (*ibid.*).

- 6.2.2 The Coates plant continued to be used for a further two years, processing materials from Lea North but by 1970 the site had become derelict and the machinery either dismantled for re-sale or demolished.

7 GAZETTEER OF EXTANT QUARRY BUILDINGS

The following gazetteer presents a basic description of the extant quarry processing buildings, based upon a single site visit undertaken on 02.11.09. Building numbers relate to a system used on site and are illustrated in Figure 9. Associated National Trust SMR unique identifiers have been newly issued from a continuous series 54,200 – 54,299.

Lea Quarry North

7.1 Building 1, Garage: [NT SMR 54,200] NGR SO 59385 98325

- 7.1.1 Extensive garage range at entrance to quarry complex. High single-storey structure, with steel frame on low brick-built walls, clad externally in corrugated iron sheets. Rectangular in plan, aligned approximately NW/SE with pitched and gabled roof. Large sliding door to SE gable (Plate 1) and roller door to NW (Plate 2); other pedestrian door access. Interior not inspected. The building is shown on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7).

7.2 Building 2, Walkway: [NT SMR 54,201] NGR SO 59372 98309

- 7.2.1 Steel raised walkway aligned parallel to long elevation of Building 1 to the south-west (Plate 3), with three separate platform levels reached by straight flight stairs.

7.3 Building 3, Switch House A: [NT SMR 54,202] NGR SO 59360 98279

- 7.3.1 Single-storey, utilitarian building, brick-built of pale grey brick laid to stretcher bond with felted, flat roof and plain, wooden-framed casement windows (Plate 4). Rectangular in plan, aligned approximately NE/SW, double door entry to NE elevation. Located adjacent to access road, north-east of weighbridges [6] and [7]. Surviving signage reads 'Switch House A Ref EL 9511'. Interior not inspected. The building is shown on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7).

7.4 Building 4, Lanway 4 Crusher [NT SMR 54,203] NGR SO 59341 98278

- 7.4.1 Tall, steel-framed structure, fully clad externally in corrugated iron sheeting (Plates 5 and 6). Tertiary crusher fed from the north-west by inclined Lime Plant No.2 Conveyor [9], itself served by Lime Plant Feed Conveyor No.1 from the base of the grading plant [13]. Internal inspection revealed crushing plant and storage hoppers, supported by steel frame atop concrete block footings (Plate 7). The building is visible on a photograph of 1968 (Figure 10) and is clearly indicated on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7). Crusher [4] formerly fed sheds [5] by

means of screw conveyors, now redundant, though shown as still present in the 1968 photograph.

7.5 Building 5, Stock B Coating Plant [NT SMR 54,204] NGR SO 59323 98269

7.5.1 Double range of large storage sheds or hangars (Plate 8) located to south-west of tertiary Lanway Crusher [4], ranges aligned approximately NE/SW with pitched and gabled roofs. Sheds are steel-framed with lower walls of concrete slab construction; upper walls, roof and gables clad in corrugated iron sheeting. Principal entry to the ranges is via a wide vehicular access door to the SW elevation (Plate 9). Internally, each range is open, of five bays and each displays a redundant 6 in. screw conveyor to the ridge (see Plate 10). The south-eastern range retains a conveyor, rising from tertiary crusher [4] and piercing the cladding of the north east gable. An enclosed area to the south-west, currently forming an open storage yard, was apparently originally covered over (see Figure 7) and was of similar steel-frame/concrete slab construction to the main ranges. Buildings originally erected to store spare capacity for winter period (QMJ 1968, 233). Constructionally similar to Building [12], with which it is presumably broadly contemporary, the building is visible on a photograph of 1968 (Figure 10), which indicates the screw conveyor from tertiary crusher [4] still in use, and is clearly indicated on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7).

7.6 Building 6, Weighbridge and office: [NT SMR 54,205] NGR SO 59345 98255

7.6.1 Weighbridge (exit) flanked by associated, modern office porta-cabin (Plate 11), located to the south-east of storage sheds [5] on main egress route out of quarry site. One of two, with [7] (entry).

7.7 Building 7, Weighbridge: [NT SMR 54,206] NGR SO 59359 98257

7.7.1 Weighbridge (entry), located to the south-east of storage sheds [5] and associated weighbridge [6] on main access route into quarry site (Plate 12). One of two, with [6] (exit).

7.8 Building 8, Switch House B: [NT SMR 54,207] NGR SO 59323 98293

7.8.1 Single-storey, utilitarian building, brick-built of red brick laid to English bond with flat concrete slab roof and large, single-pane wood frame windows (Plate 13). Located immediately adjacent to Building 5 at the north-west corner. Interior not inspected though noted to house primary switchboard for quarry machinery.

7.9 Building 9, Lime Plant No.2 Conveyor [NT SMR 54,208] NGR SO 59330 98293

7.9.1 Inclined conveyor (Plate 14), fed from the main Grading Plant [13] via Lime Plant No.1 Conveyor, and rising to the south-east, across the north-eastern gable of storage sheds [5], to serve Tertiary Crusher [4]. Conveyor is visible on a photograph of 1968 (Figure 10) and is clearly indicated on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7).

7.10 Building 10, Nailsea Dust Collector [NT SMR 54,209] NGR SO59346 98285

7.10.1 Unclad, steel-framed structure raised on x 4 steel stanchions (Plate 15) located adjacent to Lanway 4 tertiary crusher [4], comprising dust collector, fan and collection hopper.

7.11 Building 11, Cement Tank: [NT SMR 54,210] NGR SO 59337 98299

7.11.1 Small, steel cement dust tank (Plate 16), raised on x10 steel stanchions with access stair to the south-east, located adjacent to Multicrete Ballast Shed [12] (Plate 17).

7.12 Building 12, Multicrete Ballast Shed: [NT SMR 54,211] NGR SO 59335 98308

7.12.1 Simple, high single-storey storage shed (Plate 17) aligned south-west/north-east to north of tertiary crusher [4]. Rectangular in plan, of six bays with pitched and gabled roof; of steel-frame construction with lower walls of concrete slabs, upper walls roof and gables being clad in corrugated iron sheeting. Wide, high doorway in north-east elevation. Constructionally similar to storage sheds [5] and presumably broadly contemporary, though not shown on the Ordnance Survey Edition of 1972-4 (Figure 7).

7.13 Building 13, Grading Plant/Storage Bins: [NT SMR 54,212] NGR SO 59307 98298

7.13.1 Tall, steel-framed structure of four bays and three distinct levels, open at ground level with steel storage bins over and an upper trommel screen, the upper section of the structure being clad externally in corrugated iron sheeting (Plate 19). Narrow and rectangular in plan, the structure is aligned approximately NE/SW. It is fed from the north-east by the inclined west screen conveyor [14] (Plate 21) which rises from the secondary crusher [30]. A series of chutes to the south-east elevation (Plate 19) feed from the storage bins to an open loading area between the plant and storage sheds [5] while, to the north-west, a series of covered belt feeders (Plate 20) feed the batching conveyor [16] (Plates 18 and 23) which extends south-westwards to a loading chute [17] and stockpile conveyor [18]. Further conveyors from the base of the bins (Lime Plant Feed Nos. 1 and 2) serve the tertiary crusher [4] to the south. Grading Plant [13] is visible on a photograph of 1968 (Figure 10) and is clearly indicated on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7), where it is erroneously annotated as a 'crusher'.

7.14 Building 14, West Screen Conveyor [NT SMR 54,213] NGR SO 59331 98317

7.14.1 Long, inclined conveyor (Plate 21) rising from Secondary Crusher [30] and Hoppers [15]/[20] to feed into the upper, trommel level of Grading Plant [13] to the south-west. Furnished with flanking walkway. Conveyor is visible on a photograph of 1968 (Figure 10) and is clearly indicated on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7).

7.15 Building 15, Sand Hopper [NT SMR 54,214] NGR SO 59324 98315

7.15.1 Steel Sand Hopper (Plate 22) set adjacent to west screen conveyor [14] and feeding associated sand conveyor [34]. Loaded from ramp to north-west, adjacent to and of similar scale and construction to Limestone Hopper [15].

7.16 Building 16, Batching Conveyor: [NT SMR 54,215] NGR SO 59289 98288

7.16.1 Long conveyor (Plates 18 and 23), fed by a series of belt feeders (see §.7.1.3), extends from the north-western flank of Grading Plant [13] rising gradually to the south-west where it serves a Loading Chute [17] and Stockpile Conveyor [18] (Plate 18). The batching conveyor, together with its associated structures, is not shown on and therefore post-dates the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7).

7.17 Building 17, Loading Chute: [NT SMR 54,216] NGR SO 59280 98279

7.17.1 Unclad, steel-framed chute located at far south-west end of batching conveyor [16] (Plate 18). Neither structure is shown on, and therefore post-date the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7).

7.18 Building 18, Stockpile Conveyor: [NT SMR 54,217] NGR SO 59272 98287

7.18.1 Short, steeply inclined conveyor rising to the north-west from the south-western end of the batching conveyor [16], emptying onto loading point on main access route through site (Plate 24).

7.19 Building 19, Long Conveyor [NT SMR 54,218] NGR SO 59299 98310

7.19.1 Steeply inclined conveyor rising from the north-east end of Grading Plant [13] to feed into Brick Dust Surge Bin [33] (Plate 25) to the north-west, adjacent to Stock A Coating Plant [21]. Conveyor is supported on a number of steel trestles set atop concrete footing blocks, and passes over a principal vehicular traffic route.

7.20 Building 20, Hopper [NT SMR 54,219] NGR SO 59315 98312

7.20.1 Steel constructed limestone hopper, set adjacent to west screen conveyor [14], located beside (and similar to) Sand Hopper [15]; loaded from a ramp to the north-west (Plate 22).

7.21 Building 21, Stock A Coating Plant: [NT SMR 54,220] NGR SO 59292 98334

7.21.1 Tall tri-partite structure comprising through vehicular access route at ground level with large circular storage bin over, topped by a somewhat incongruous corrugated-steel clad 'shed' with mono-pitch roof, the latter being fed by a vertical bucket elevator located in the north-east angle (Plate 27), adjacent to dust extractor fan and storage tank. Through vehicular access at ground level aligns with a bridge over No.2 Conveyor [31] from the Primary Crusher [22] to Secondary Crusher [30].

7.22 Building 22, Primary Crusher: [NT SMR 54,221] NGR SO 59315 98363

7.22.1 Primary Crusher [22] (Plate 28) is located to the north-west side of the core site, representing the point of entry of raw materials into the processing area. The crusher was loaded via an intake hopper to the north-west (Plate 29), furnished with a chain curtain (Plate 30) controlling movement of the stone. At the base of the primary crusher, the rejects conveyor [24] rises north-east to the Rejects Screen and Screw [25]. The Quarry Managers' Journal (June 1968, 231) records that this machinery was installed by the manufacturers West's (Manchester) Ltd. The building is visible on a photograph of 1968 (Figure 10) and is clearly indicated on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7).

7.23 Building 23, Primary Switch House: [NT SMR 54,222] NGR SO 59315 98356

7.23.1 Small, utilitarian, single-storey switch house building (Plate 31) adjacent to Primary Crusher [22]. Rectangular in plan with rendered brick walls and flat, concrete slab roof. Steel stair rises against south-west wall serving walkway leading over roof to access Primary Crusher. Interior not inspected.

7.24 Building 24, Long Rejects Conveyor [NT SMR 54,223] NGR SO 59328 98373

7.24.1 Inclined conveyor (Plate 32) feeding the Rejects Screen [25] from the base of the Primary Crusher [22] (Plate 28). The building is visible on a photograph of 1968 (Figure 10) and is clearly indicated on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7).

7.25 Building 25, Rejects Screen and Screw [NT SMR 54,224] NGR SO 59341 98385

7.25.1 The Rejects Screen [25] (Plate 33/4) is located to the north-east of the primary crusher [22] from which it is fed by the inclined rejects conveyor [24] (Plate 32). The building served to screen scalplings from the primary crusher, which were stored in two circular section bins (Plate 34) from which they were directly loaded to trucks. The building is visible on a photograph of 1968 (Figure 10) and is clearly indicated on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7).

7.26 Building 26, Oil Tank Store: [NT SMR 54,225] NGR SO 59377 98378

7.26.1 Simple, single range comprising low concrete footings supporting three-bay, steel-framed shed clad externally in corrugated, galvanised steel sheeting and housing x 2 large cylindrical oil drums on concrete supports. Rectangular in plan, aligned c. NE/SW with pitched and gabled roof (see Plate 35). The building is of no inherent architectural merit and negligible historical significance.

7.27 Building 27, Toilet/mess Room Block: [NT SMR 54,226] NGR SO 59377 98378

7.27.1 Single-storey, utilitarian block (Plate 36) housing toilets, showers and mess room facilities located to north-east of Garage [1]. Brick-built in pale grey brick laid to stretcher bond with flat roof and timber casement windows. Stylistically similar to Office Range [28] with which it is presumably broadly contemporary, though it is not marked on the Ordnance Survey National Grid Series edition of 1972-4 (Figure 7). The building relates to the most recent recent period of activity at the quarry and is of no inherent architectural merit and negligible historical significance.

7.28 Building 28, Office Range: [NT SMR 54,227] NGR SO 59450 98342

7.28.1 Single-storey, utilitarian brick-built office range located to far north-west of quarry site adjacent to main (customer) entrance to site (Plate 36). Stylistically similar to toilet / mess room range [27] (NT SMR 54,226) with which it is presumably broadly contemporary. The building is shown on the Ordnance Survey National Grid Series edition of 1972-4 (Figure 7); it relates to the most recent recent period of activity at the quarry and is of no inherent architectural merit and negligible historical significance.

7.29 Building 29, Dust Suppression Pump/Tank [NT SMR 54,228] NGR SO 59296 98255

7.29.1 Pair of small, utilitarian structures aligned against south-west wall of enclosure adjoining storage sheds [5]; interiors not inspected. To the north-west is located a tall cylindrical water tank with steel access ladder (Plate 38). Of no inherent architectural merit and negligible historical significance.

7.30 Building 30, Parker 1350 Crusher [NT SMR 54,229] NGR SO 59348 98330

7.30.1 The Parker 1350 Crusher (Plate 39) represents the secondary crusher at the plant, being fed from the Primary Crusher [22] via the No.2 Conveyor [31], in turn feeding to the Grading Plant [13] to the south-west via the West Screen Conveyor [14]. It is a bi-partite structure with a tall square section to the north-west abutted by a lower section with mono-pitch roof to the south-east. The structure is fully clad in corrugated galvanised steel sheeting (renewed) with no access to the interior. A structure of similar proportions is indicated at the same location in a photograph of 1968 (Figure 10) and clearly indicated on the Ordnance Survey 1:2500 edition of 1972-4 (Figure 7). It is unclear whether the plant within is original, though the location and function of the structure clearly remains unchanged.

7.31 Building 31, No.2 Conveyor [NT SMR 54,230] NGR SO 59330 98347

7.31.1 Inclined conveyor rising south-westwards (Plate 41) from the base of the Primary Crusher [22] (Plate 40) to feed the Secondary Crusher [30] (Plate 38).

7.32 Building 32, Switch House C [NT SMR 54,231] NGR SO 59356 98330

7.32.1 Small, single-storey utilitarian structure adjacent to Secondary Crusher [30] (Plate 39). Square in plan with rendered brick walls and flat, concrete slab roof. Interior not inspected.

7.33 Building 33, Brick Surge Bin [NT SMR 54,232] NGR SO 59285 98329

7.33.1 Tall, corrugated-iron clad structure immediately adjacent to Stock A Coating Plant [21], fed by Long Conveyor [19] from north-east of Grading Plant [13] (Plates 25/6). Neither structure is indicated on the Ordnance Survey National Grid Series 1:2500 map of 1972-4 (Figure 7).

7.34 Building 34, Sand Conveyor [NT SMR 54,233] NGR SO 59318 98310

7.34.1 Level conveyor linking Sand Hopper [15] and Grading Plant [13] (not illustrated).

Coates Quarry

7.35 Coates Lime Kilns [NT SMR 54,234] NGR SO 60210 99158

7.35.1 A battery of three lime draw-kilns is located at the main customer entrance to the premises of Lime Green Products Ltd. (Figure 3) with three others inaccessible to the current survey but noted by an earlier survey (Holmes 1987, 4Q13). Standing c.3.5m tall and extending to c.19m long, the battery is of two phases of construction and includes three draw hole recesses at ground level capped by segmental arches with

pronounced key stones (Plates 42-44; Figure 11). The south-western kiln is clearly secondary, evidenced by a straight joint within the stone rubble masonry; the earlier, north-eastern section of the structure has been strengthened by the construction of a narrow band of stone rubble buttressing along the length of the elevation. Draw holes themselves again have segmental arches, the north-eastern examples in stone, the secondary kiln to the south-west in brick. Upper loading holes are circular and lined with refractory brick by E P Cartwright of Stourbridge. The top of the kilns is extensively overgrown with ash trees, root growth severely compromising the stability of the structure in places.

Lea Quarry South

7.36 Stretton Westwood Methodist Chapel [NT SMR 54,235] NGR SO 59472 98312

7.36.1 The Methodist Chapel is located directly opposite the main quarry entrance. A simple, single cell building, rectangular in plan, with the long axis aligned approximately north-west / south-east, with pitched and gabled roof (Plate 46) with date stone to northern gable (defaced). Small pitched-roofed porch to main entrance in north gable. Brick built in polychrome brick laid to Flemish bond, much overgrown. Built in c.1878 for the use of local quarrymen employed at the nearby workings, the chapel is first indicated on the Ordnance Survey County Series 1st edition 1:2500 map of 1882 (Figure 4). The chapel closed in c.1973. (VCH 1998, 399-44).

8 HERITAGE ASSESSMENT

8.1 Evidential Value

8.1.1 Lea Quarry North has a high evidential value in that it is a complete late 20th century set of quarry buildings with its machinery and ancillary structures still intact and highly legible in presentational terms. The buildings are currently in relatively good repair and are stable. The bank of lime kilns at Coates quarry have high evidential value as late 19th century examples of this particular type of industrial building. They are in a relatively good state of repair but locally are unstable and could rapidly become dangerous structures if not managed swiftly and correctly.

8.2 Historical Value

8.2.1 The buildings at Lea Quarry North have a low historical value in that they are a group of buildings and associated structures that can easily be paralleled elsewhere in the county and region. The buildings and machinery are generic rather than specific to the limestone working industry and thus have little value in presenting the history of the limestone industry *per se*. The method of stone extraction was blasting which represents a break with historical labour-intensive methods of mining or extracting limestone. The lack of lime-burning facilities in Lea Quarry north means that there is little linkage with the existing historical presentation of the limestone working industry of Wenlock Edge at, for example, Knowle Quarry (Williams 1990, 56-8). The lime kiln bank at Coates quarry has moderate historical value as a relatively well-preserved example of the genre but does not offer any great difference from the kiln bank at Knowle Quarry.

8.3 Aesthetic Value

8.3.1 The Aesthetic value of industrial buildings is always problematic, especially in those industries that demand the conveying of raw materials between buildings along fixed routes, as in the chemical, petro-chemical, iron-smelting or quarry industry. Such complexes have grandeur, even beauty, when perceived within the setting of a quarry or estuary but close to are often dirty and confusing. A lot of the aesthetic drama of such places is immediately lost when they are disused and there is no easy way to retain a suitable atmosphere in terms of presentation. Were quarrying to be re-introduced, for example, the noise and dust would prohibit adequate presentation, even were Health and Safety issues not taken into consideration. Such sites have been successfully conserved and presented in Britain (eg Magna, Rotherham) and, especially, in Germany at the World Heritage Site of Völklingen (Mörscher 2001) but Lea Quarry does not meet the high standard of rarity that these sites present.

8.4 Communal Value

8.4.1 Communal value of industrial complexes can be limited in that these are closed communities when in operation. This means that the wider community has little chance to engage with the heritage of these buildings since they do not experience them while they are in operation. Where their communal value can emerge most strongly is in the memories of those who worked in them. The capturing of these memories, while the former workers are still available and, preferably, recorded while walking around the still-extant site, is a key means both of achieving a full archaeological record and a means of presenting the physical remains of the site. For the case of Coates Quarry it is too late to record how these kilns worked in real life but for Lea Quarry North every effort ought to be made to establish a filmed and recorded record of these buildings with some of its workers. The value of such work is amply demonstrated by the account recorded by Holmes in 1986 of the quarry worker and lorry driver George Griffiths who recalls the manual working of the quarry in the inter-war period (Holmes 1987, 4R8-17).

8.5 Conservation Issues

8.5.1 While the buildings are currently in good condition, some thought should be given to the long-term future of the complex. Conservation of industrial buildings is notoriously difficult as they are not designed to be long-lasting. The structures at Lea Quarry North are all of steel frame with metal cladding and concrete floors. The exception are the architecturally unremarkable wash-block and office buildings (§.7.27 & 7.28 above). The conveyor belts are problematic too in being of lightweight steel angle iron and rubberised fabric belts that will not survive in the long term. The conservation at Völklingen of the conveyor structures for the raw materials demonstrates that it is possible to secure the future of these in the medium term. Here, conservation was achieved by water-blasting the sand from the metalwork since it is the detritus lodging on the frames that causes the corrosion to occur rather than the steel getting wet through precipitation (N. Mendgen, *pers. comm.*). Even with these measures, however, the costs of such maintenance may be deemed to be too great to permit preservation given the generally unremarkable nature of the complex.

8.6 Discussion

8.6.1 While the Lea Quarry North complex has a high evidential value in demonstrating modern working of the limestone resource along Wenlock Edge it has low historical

value overall. Its aesthetic and communal values are more problematic to assess. For some the complex will be rated highly for both values; for others it will have low value. The main issue in considering the future of the complex is the balance between the desire to preserve and the resources available to do so. In this respect it is worth noting that the conservation costs for this complex would be high overall and that the resulting heritage asset would be difficult to turn to alternative uses. A better way of capturing the heritage value of the complex might be to record the communal experiences of those who worked there and use these resources, along with a full record of the buildings, to interpret the quarry itself rather than the quarry buildings. This is an approach recommended by TICCIH's *Nizhny Tagil Charter for the Industrial Heritage* which notes:

'Recording is a fundamental part of the study of industrial heritage. A full record of the physical features and condition of a site should be made and placed in a public archive before any interventions are made. Much information can be gained if recording is carried out before a process or site has ceased operation. Records should include descriptions, drawings, photographs and video film of moving objects, with references to supporting documentation. Peoples' memories are a unique and irreplaceable resource which should also be recorded when they are available. (TICCIH 2003, 3.iii).

9 CONCLUSIONS

- 9.1 The extant processing buildings at Lea Quarry represent an interesting though entirely standard collection of mid-late 20th-century fixed quarry structures. The recent origins of the complex should, however, be set within the longer term historical context and, in this respect, the relative completeness of the building stock and machinery at the site can be seen to provide a comprehensive overview of limestone extraction and processing representative of a closely defined operational period. As such, the heritage value of the site has the potential to increase over time.
- 9.2 The most visually striking of the structures are those forming the physical and operational core of the processing works viz. the series of three crushers [22], [30] and [4], linking conveyors ([31], [14], [9], [19], [16], [18] and [19]), associated hoppers (eg. [15]/[21]), screens and storage bins ([24]/[25]) with the visually dominant and imposing Grading Plant [13] at the centre.
- 9.2 Other buildings on the site, in particular such elements as the garage [1], shower/mess room block [27], and oil storage depot ([26]) are subsidiary to the core processes and make little or no contribution to an understanding of the functioning of the quarry. Further subsidiary elements such as the main office ([28]), while making no significant interpretive contribution to an understanding of the quarry complex, have previously served a practical use as the base for practical conservation based courses on the uses of lime run in association with the Ironbridge Institute.
- 9.3 Should it be deemed feasible, or indeed desirable, the retention of the core buildings within any proposed representation scheme at the quarry could serve to admirably illustrate both the nature and scale of the quarrying operations once pursued at the site. However, the desirability for retention will need to be measured against other conflicting factors, not least the financial implications of the conservation, ongoing maintenance and upkeep of such structures.

10 ACKNOWLEDGEMENTS

- 10.1 The project was commissioned by the National Trust (West Midlands Region); thanks are extended to Mr Jeremy Milln and to Mr Peter Carty of the NT for help and co-operation throughout the course of work. Site evaluation was carried out by Mr Ric Tyler AIfA of Birmingham Archaeology together with Dr Roger White MIfA of the Ironbridge Institute and Mr Robert S Galloway, a PhD student at the Ironbridge Institute currently undertaking research into 19th- and 20th-century limestone extraction in Shropshire.
- 10.2 Documentary research was undertaken by Robert Galloway with additional input from Ric Tyler; heritage assessment was undertaken by Dr Roger White. The current report has been compiled and illustrated by Mr Ric Tyler of Birmingham Archaeology with valuable contributions from both Dr Roger White and Mr Robert Galloway. The final text was copy edited by Mr Shane Kelleher of Birmingham Archaeology.

11 SOURCES

(a) Cartographic Sources (in chronological order)

- 1882 Ordnance Survey County Series 1st Edition 1:2500 map.
- 1902 Ordnance Survey County Series 1st Revision 1:2500 map.
- 1926-7 Ordnance Survey County Series 2nd Revision 1:2500 map.
- 1972-4 Ordnance Survey National Grid Edition 1:2500 map.

(b) Secondary Sources

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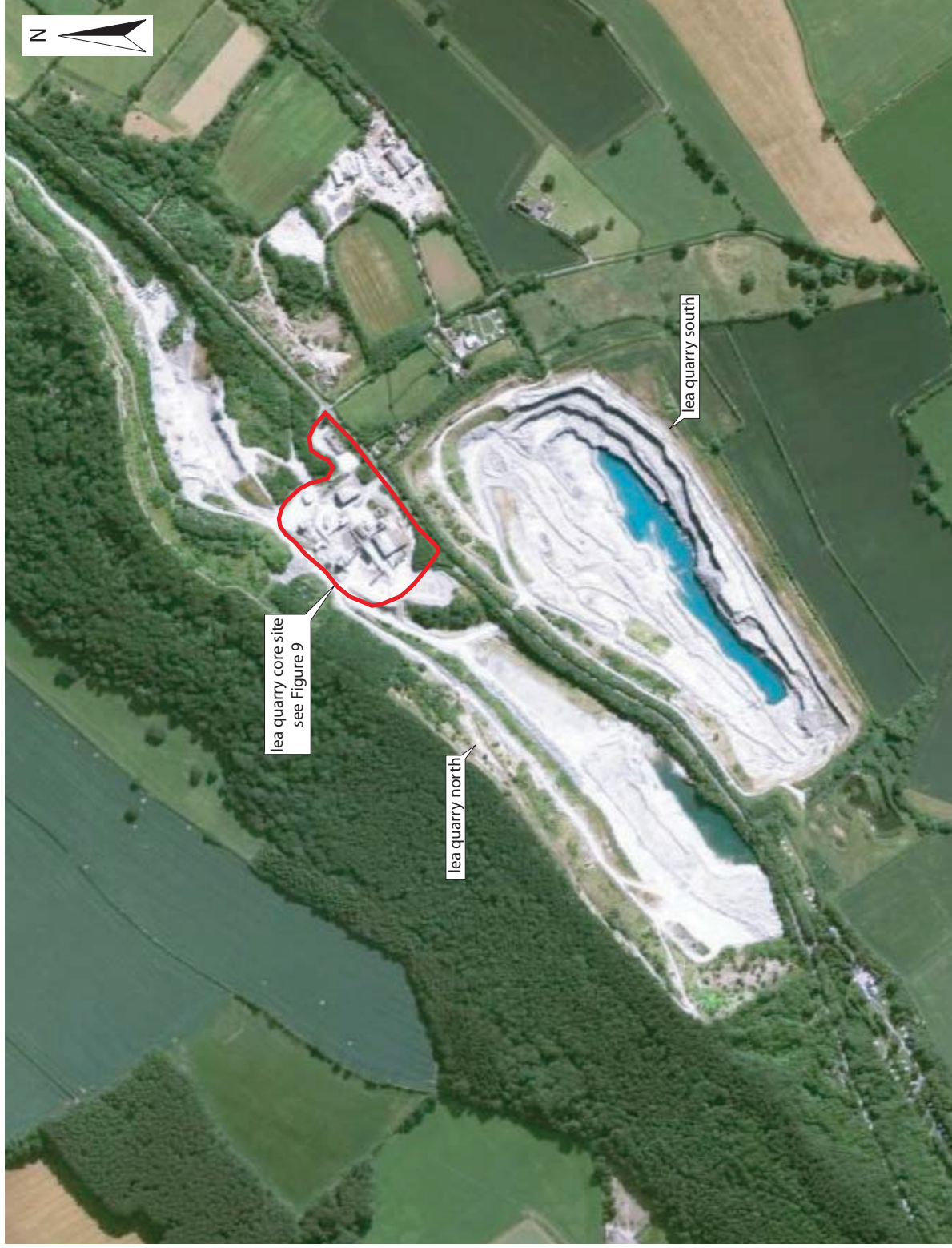
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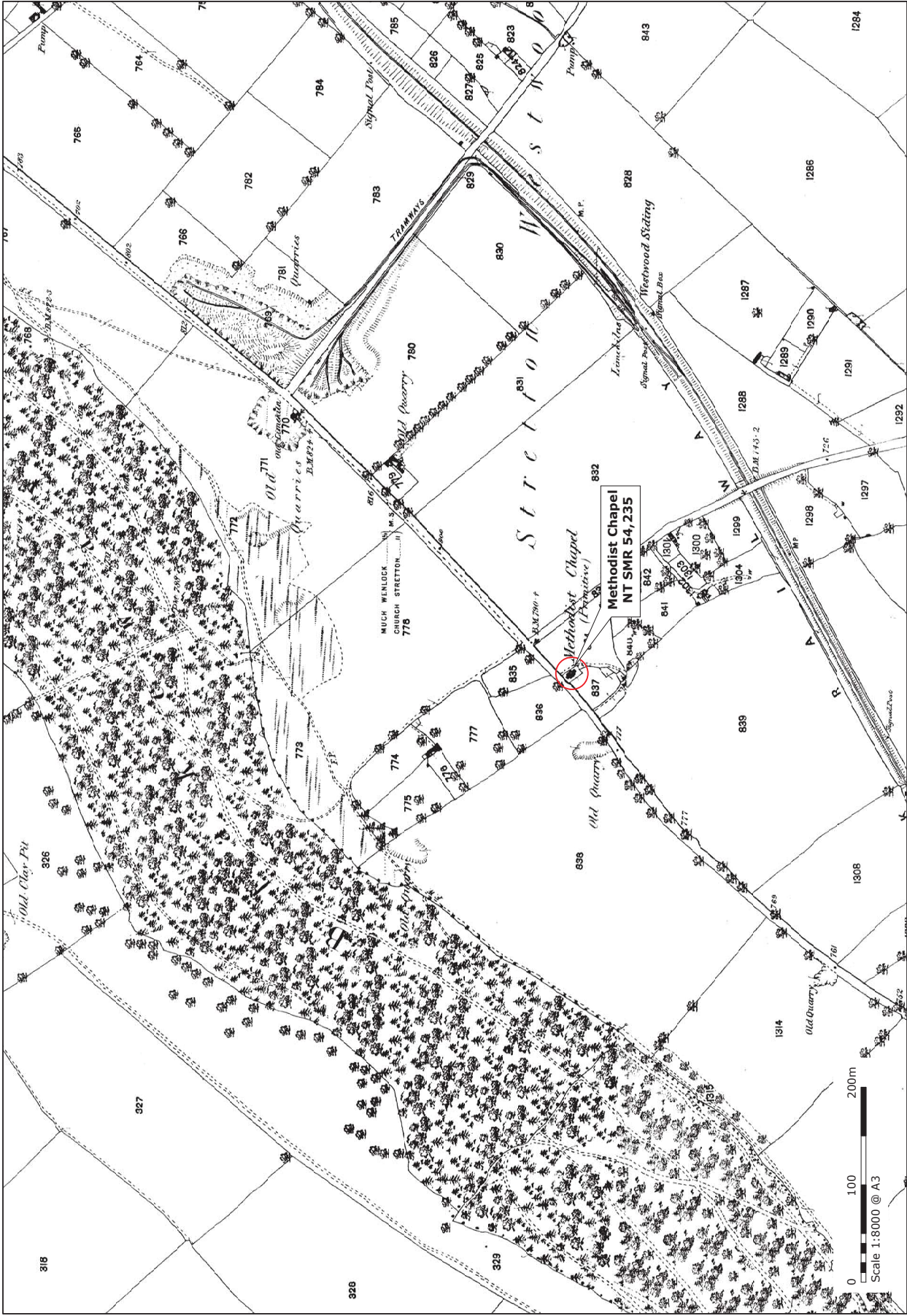
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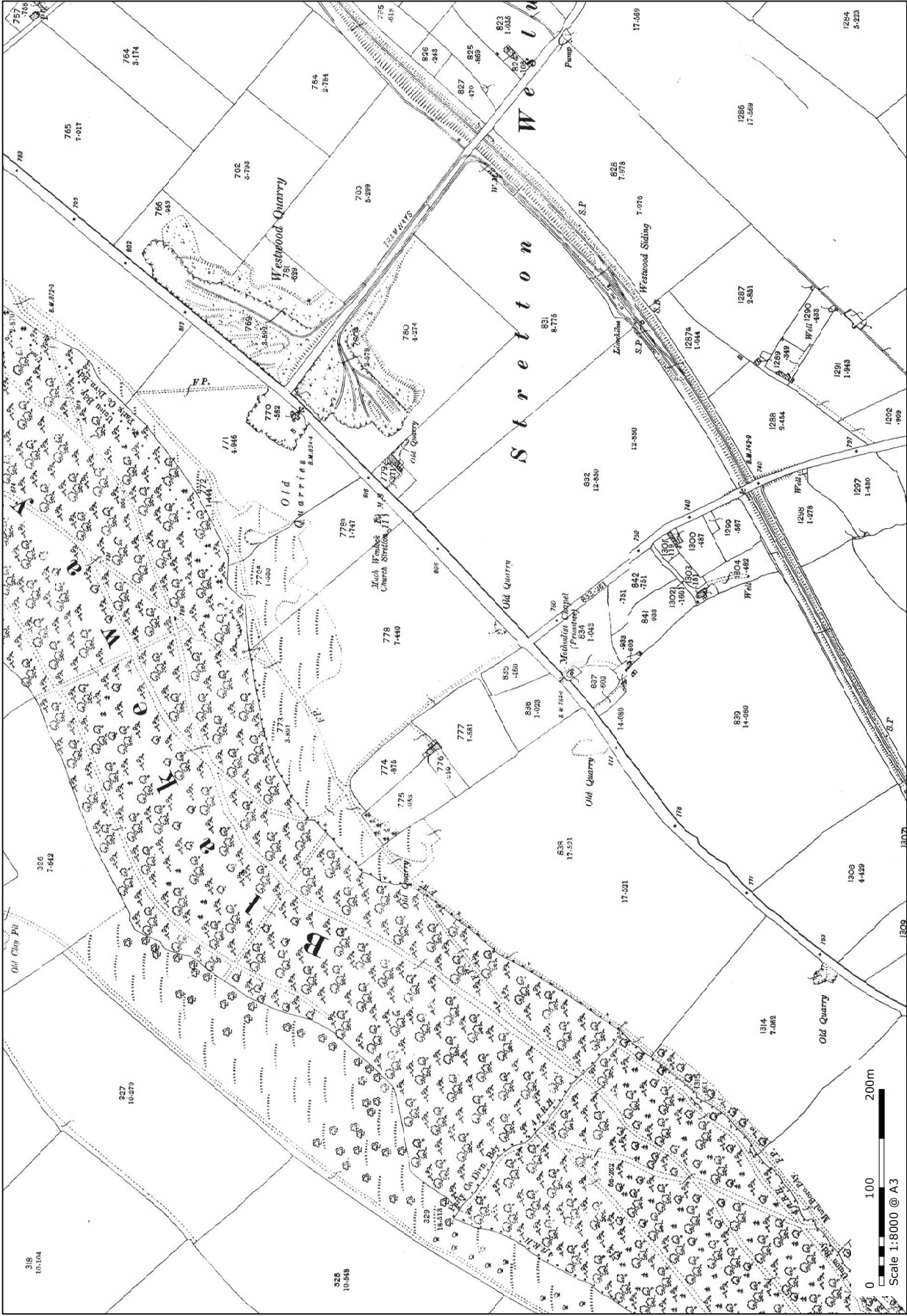
(c) On-line Resources

Victoria County History: <http://www.british-history.ac.uk>

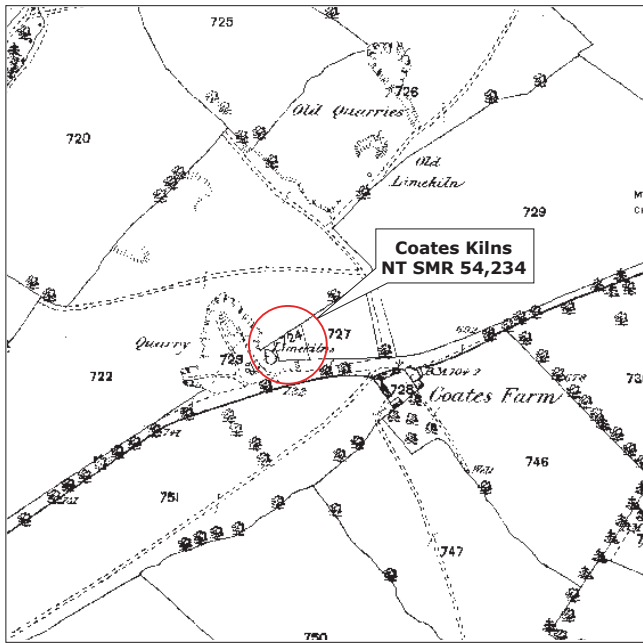




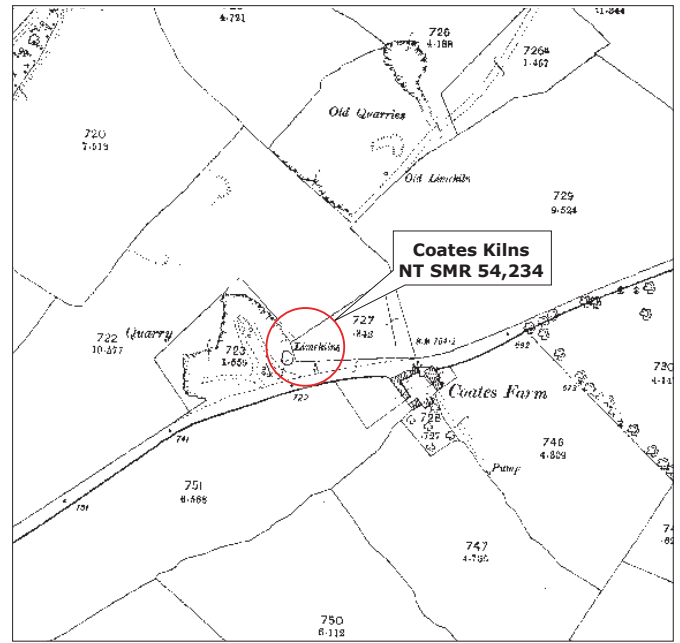




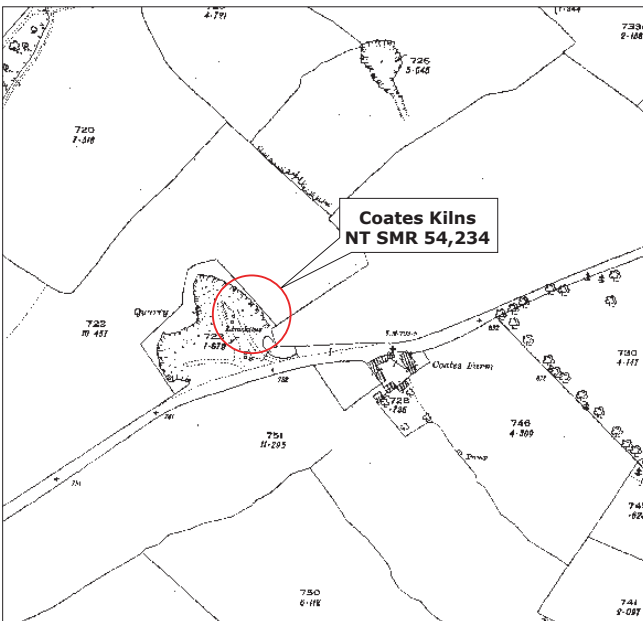
PN 2002
 Lea Quarries, Much Wenlock, Shropshire
 Figure 5 : Ordnance Survey County Series 1st Revision 1:2500 map of 1902



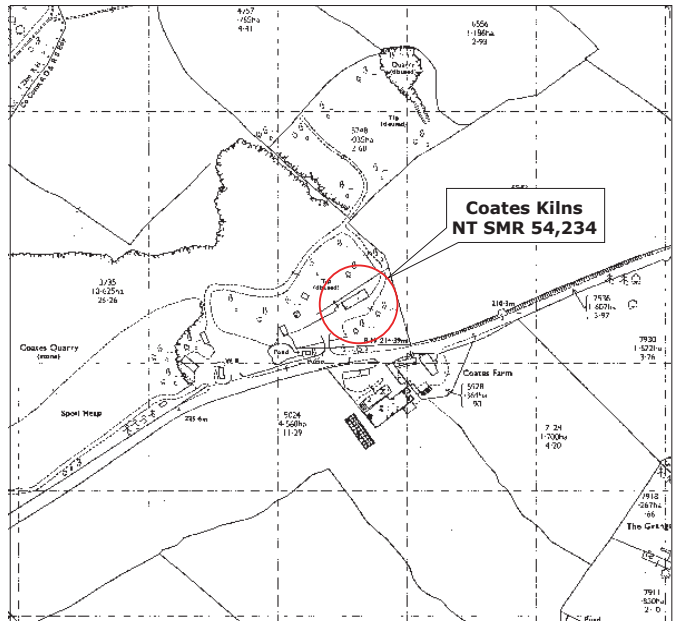
(a) Ordnance Survey County Series 1st Edition 1:2500 map of 1882.



(a) Ordnance Survey County Series 1st Revision 1:2500 map of 1902.



(c) Ordnance Survey County Series 2nd Revision 1:2500 map of 1926-7.



(d) Ordnance Survey National Grid Series 1:2500 map of 1972-4.



Buildings Key (NB: Buildings marked * are shown on Ordnance Survey map of 1972-4)

Reference	NT SMR Ref	Building Name	
1	54,200	Garage	*
2	54,201	Walkway	
3	54,202	Switch House A	*
4	54,203	Lanway 4 Crusher	*
5	54,204	Stock B Coating Plant Dust	*
6	54,205	Weighbridge (in) + office	*
7	54,206	Weighbridge (out)	*
8	54,207	Switch House B	*
9	54,208	Lime Plant Feed No. 2 Conveyor	*
10	54,209	Nailsea Dust Collector Fan (incl. Rotary Valve Dust Collector)	
11	54,210	Cement Tank	
12	54,211	Multicrete Balast Shed	
13	54,212	Grading Plant	*
14	54,213	West Screen Conveyor	*
15	54,214	Sand Hopper (+sand vibrator/sand feeder belt)	
16	54,215	Bathing Conveyor	
17	54,216	Loading Chute	
18	54,217	Stockpile Conveyor	
19	54,218	Long Conveyor to Brick Dust Surge Bin	
20	54,219	Limestone Hopper	
21	54,220	Stock A Coating Plant Dust	
22	54,221	Primary Crusher	*
23	54,222	Primary Switch House	
24	54,223	Long Rejects Conveyor	*
25	54,224	Rejects Screen and Screw	*
26	54,225	Oil Storage Tanks	
27	54,226	Toilet / Mess Room block	
28	54,227	Offices	*
29	54,228	Dust Suppression Pump and associated water tank	
30	54,229	Parker 1350 Crusher	
31	54,230	No.2 Conveyor (Yellow Belt)	*
32	54,231	Switch House C	
33	54,232	Brick Dust Surge Bin	
34	54,233	Sand Conveyor	

Crusher [4]
NT SMR 54,203

Lime Plant Feed Conveyor [9]
NT SMR 54,208

Coating Plant [5]
NT SMR 54,204

Grading Plant [13]
NT SMR 54,212

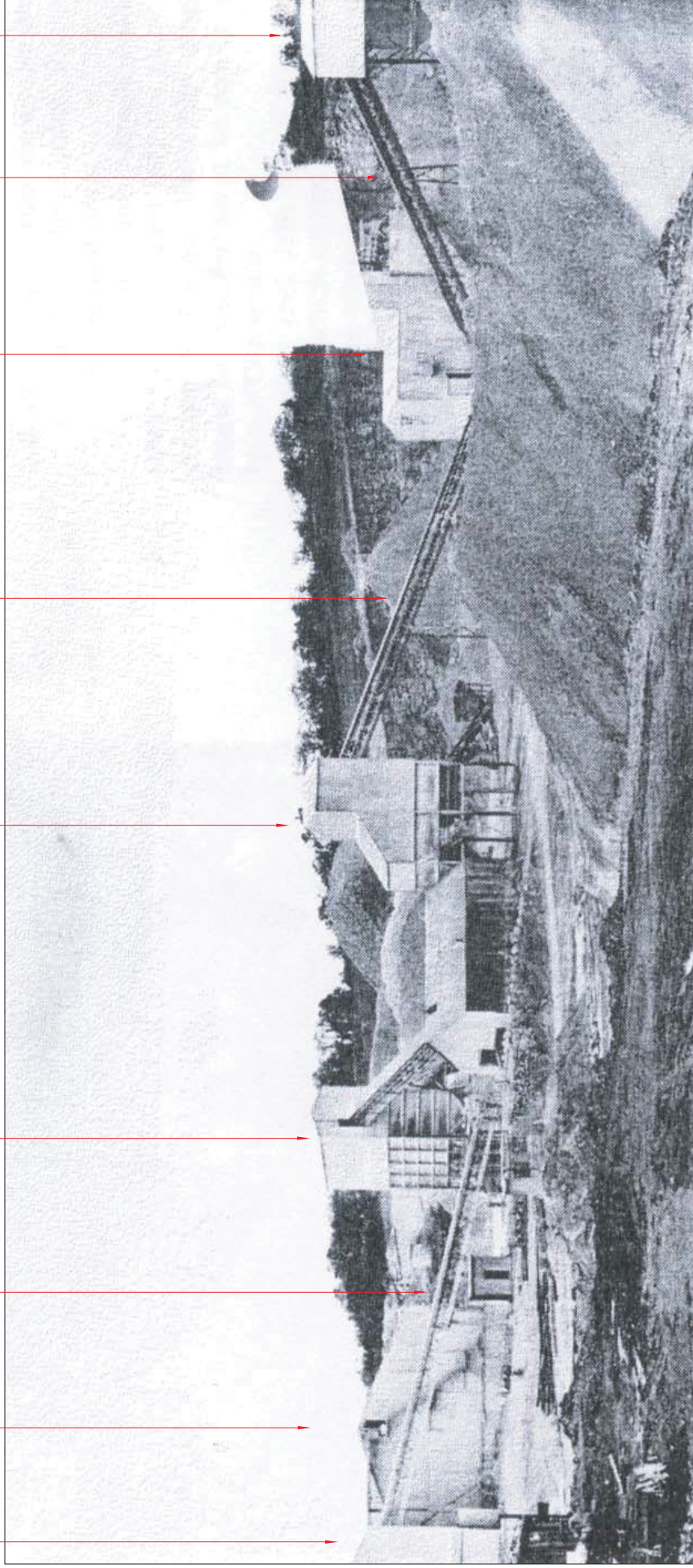
Crusher [30]
NT SMR 54,229

No.2 Conveyor [31]
NT SMR 54,230

Primary Crusher [22]
NT SMR 54,221

Long Rejects Conveyor [24]
NT SMR 54,223

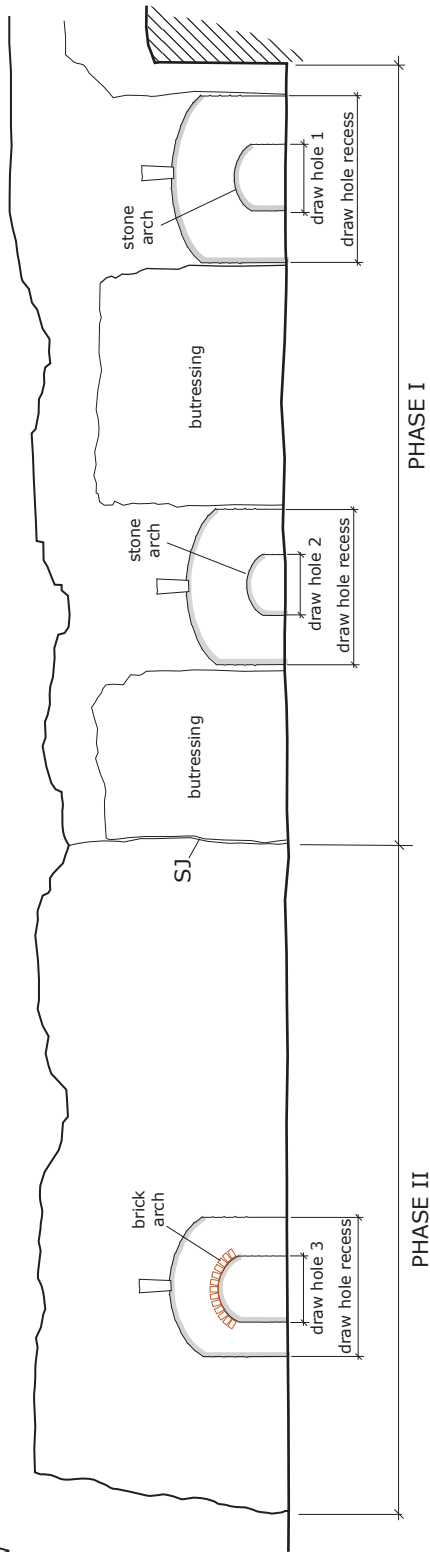
Rejects Screen [25]
NT SMR 54,224



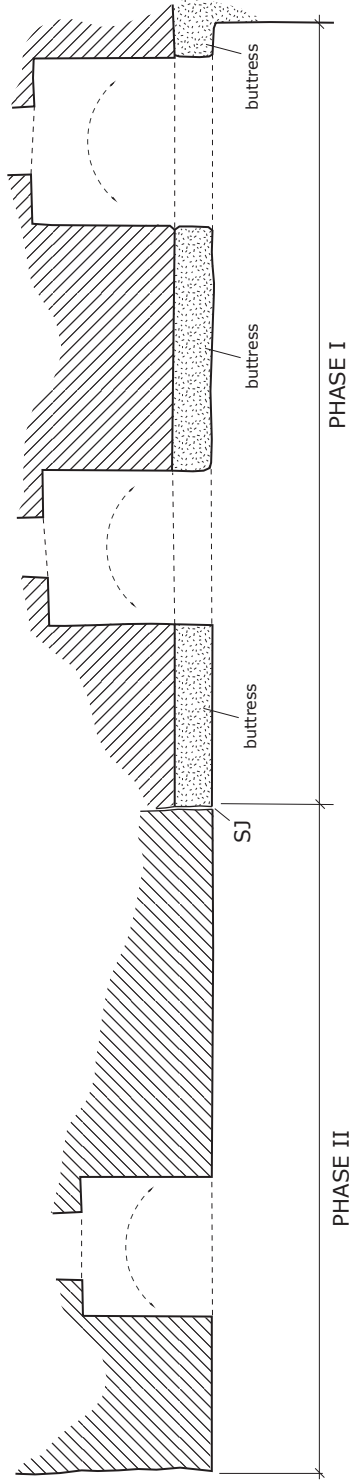
Reproduced from The Quarry Managers Journal, June 1968 (p.230)

NE

SW



(a) sketch elevation



(b) sketch plan



Plate 1: Garage [1]: **NT SMR 54,200**. View from south-west.



Plate 2: Garage [1]: **NT SMR 54,200**. View from north-west.



Plate 3: Raised walkway [2]: **NT SMR 54,201**. View from south-east



Plate 4: Building [3], 'Switch House A' : **NT SMR 54,202**. View from east.



Plate 5: Building [4], 'Lanway 4 Crusher' NT SMR 54,203. View from SE.



Plate 6: Building [4], 'Lanway 4 Crusher' NT SMR 54,203. View from NE.



Plate 7: Building [4], 'Lanway 4 Crusher'; NT SMR 54,203. Interior.



Plate 8: Building [5], 'Stock B Coating Plant': **NT SMR 54,204**. View from south-west.



Plate 9: Building [5], 'Stock B Coating Plant': **NT SMR 54,204**. View from north-west.



Plate 10: Building [5], 'Stock B Coating Plant': **NT SMR 54,204**. Interior, north range.



Plate 11: Building [6], Weighbridge and office cabin. **NT SMR 54,205**. View from north-east. Building [5] (NT 53,204) in background.



Plate 12: Building [7], Weighbridge.
NT SMR 53,206 View from north-east.



Plate 13: Building [8], 'Switch House B': **NT SMR 53,207**. View from west.



Plate 14: Building [9], 'Lime Plant Feeder No.2 Conveyor' ; **NT SMR 54, 208** (centre), feeding into Lanway 4 Crusher (left), Coating Plant B to rear. View from north-east.



Plate 15: Building [10], 'Nailsea Dust Collector Fan (adjacent to Lanway 4 Crusher). **NT SMR 53,209**. View from north-east.



Plate 16: Cement Tank [11]: **NT SMR 53,210**. View from south-east.



Plate 17: Building [12], 'Multicrete Balast Shed': **NT SMR 53,211**. View from SE.



Plate 18: Grading Plant [13] (right), Batching Conveyor [16] and Loading Chute [17] (left), view from SW.



Plate 19: Grading Plant [13].
NT SMR 54,212, view from SW.



Plate 20: Grading Plant [13], interior
Detail of belt feeders.



Plate 21: Building [14], 'West Screen Conveyor'. NT SMR 54,213. View from NE.



Plate 22: Hoppers 15 [NT SMR 54,214] (right) and 20 [NT SMR 54,219] (left). View from SE.



Plate 23: 'Batching Conveyor' [16] (NT SMR 54,215) and Loading Chute [17] (NT SMR 54,216) (left). View from east. (see also Plate 15).



Plate 24: Stockpile Conveyor [18], NT SMR 54,217. View from south-west.



Plate 25: Long Conveyor [19] (NT SMR 54,218) to Brick Surge Bin [33] (NT SMR 54, 232).



Plate 26: 'Brick Dust Surge Bin' [33], NT SMR 54,232 (left) and Stock A Coating Plant [21], NT SMR 54,220 (right). View from south.



Plate 27: 'Stock A Coating Plant' [21], **NT SMR 54,220**. View from north; note bucket elevator and dust extractor.



Plate 28: 'Primary Crusher' [22], **NT SMR 54, 221**. View from east.



Plate 29: 'Primary' Crusher [22],
NT SMR 54,221, view from NW.



Plate 30: 'Primary Crusher' [22]; detail of
chain screen.



Plate 31: 'Primary Switch House [23], NT
SMR 54,222. View from south.



Plate 32: 'Long Rejects Conveyor' [24], **NT SMR 54,223.** Rejects Screen and Screw to right.



Plate 33: 'Rejects Screen and Screw' [25],
NT SMR 54,224. View from E.



Plate 34: 'Rejects Screen' [25],
NT SMR 54,224. View from N.



Plate 35: Oil Tank Store [26], **NT SMR 54,225**. View from south-west.



Plate 36: Toilet / Mess Room Block [27], **NT SMR 54,226**. View from south.



Plate 37: Office Range [28], **NT SMR 54,227**. View from west.



Plate 38: Dust Suppression Pump and Tank [29], **NT SMR 54,228**. View from south-west.



Plate 39: 'Parker 1350 Crusher' [30], **NT SMR 54,229** and 'Switch House C' [32], **NT SMR 54,231** (left). View from north.



Plates 40 and 41: No.2 Conveyor [31], **NT SMR 54,230**, rises from Primary Crusher (left).



Plate 42: Battery of lime kilns at former Coates Quarry. NT SMR 54,234.



Plate 43: Detail of draw-hole and buttressing.



Plate 44: Detail of circular loading holes.



Plate 45: General view of former Coates quarry with storage sheds, possibly incorporating former quarry structures.



Plate 46: Stretton Westwood Primitive Methodist Chapel (**NT SMR 54,235**).



Plate 47: Section of re-used rail at Methodist Chapel.

