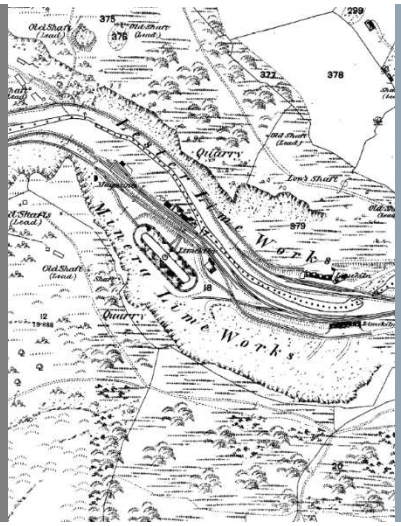


DESIGN & ACCESS STATEMENT

Proposed replacement building at Minera Quarry

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1.0 INTRODUCTION

This Design & Access Statement has been prepared to accompany a full planning application submitted to Wrexham County Borough Council.

The application seeks planning permission for the demolition of the former weighbridge building at Minera Quarry and for a replacement structure built within the footprint of the existing building to provide welfare facilities for staff and users of Minera Quarry.

2.0 SETTING OF THE SITE & HISTORY

2.1 THE SETTING

Minera Quarry (historically the 'Minera Lime Works') are located at the western end of the Maes-y-ffynnon Road, *c*.1.8km west of the village of Minera on the northern slope of the Esclusham Mountain; the wider mines site extends to a total of *c*.50ha, lying at an elevation of *c*.275m - 340mAOD. Originally mined for lead, and later quarried for valuable limestone, the quarry was active until 1994. Following negotiations with then owners Tarmac, and with support from Minera Quarry Trust, the North Wales Wildlife Trust took on Minera Quarry in 2017 and the Trust's 'Minera Quarry Nature Reserve' was officially opened on Saturday 2nd June 2018.

The wider site includes two Scheduled Ancient Monuments (SAMs), a bank of draw kilns dating to 1852 (inset below left), and the remains of a Hoffman Kiln, dating to 1868, both located on the south side of the River Clywedog (the upper river here named the 'Aber Sychnant'). Neither of these buildings, nor any others on the site, are statutorily listed, nor does the site lie within a designated Conservation Area. Two further sets of kilns dating to 1820-40 and mid-C19th (Lester Kilns) are likewise not designated, while the remains of further quarry buildings survive within the wider site.

The current project relates to works proposed in respect of one specific, non-designated structure, a former weighbridge building at the eastern end of the site, adjacent to the site entrance (denoted in figure 1 by a red dot).

The wider site lies partly within the Ruabon/Llanysilio Mountains and Minera SSSI (first notified 1955).



Fig. 1 Aerial viewing showing location of the SAM's in relation to the former weighbridge building

2.1 THE HISTORY

The carboniferous limestone deposits of north-east Wales outcrop in two main belts; the entire outcrop being dotted with innumerable small quarry workings of disparate ages; limestone deposits contain minerals such as lead, silver and zinc for which they have also historically been exploited, notably in the Minera area[1]. Early quarrying would have been small-scale, undertaken at a local level, exploiting traditional rights to remove stone from unenclosed lands (Ellis 1995). Lime burning at Minera itself is recorded from as early as 1620, when three kilns were recorded at Minera Mill (Jones and Logan 2019), at which time mineral rights for the lordship of Bromfield were in the hands of the Grosvenor family of Eaton Hall in Cheshire[2], an arrangement reinforced by the Minera Enclosure Acts of 1808-9 (Jones 2000). Before the 18th century, activity was related predominantly to the quarrying of building stone and for agricultural use, though the industrial revolution saw increased demand for lime for industrial usage, in particular as a flux for iron-making[3]. The opening of the North Wales Mineral Railway between 1844 and 1847 linked Minera to the Shrewsbury and Chester line, thereby opening up enhanced transportation opportunities and commercial markets. Census records for Minera township of 1851 record six 'limers', four quarrymen, 'labourers at limeworks' and one master quarryman, though the overwhelming majority of residents were involved in lead mining.

[1] https://nrwcmsv13-a3hwekacajb3frbw.a02.azurefd.net/644377/SSSI_0482_Citation_EN0018c18.pdf
[2] The ancestral family of the Duke of Westminster.
[3] Represented in the local area by John Wilkinson's ironworks at Bersham and Brymbo.

The earliest specific reference to a limestone quarry in the Minera area dates to 1819, when a lease was granted to Messrs. John Burton and James Kyrke for quarrying on the Eisteddfod Estate (Ellis 1995). The quarries were managed by Kyrke, operating with others, as the 'Steddfod Lime Company' and the lease was renewed for a further 21 years in 1840[4]. Kyrke and Burton are recorded in the tithe survey of 1845 as occupying large areas of land in Minera and Esclusham Below townships[5], though Kyrke, in bankruptcy, was to dispose of his third share by auction in 1849[6], announced in an advertisement in the *Liverpool Albion* on 30th July 1849 as follows:

'Lot 4. STEDDFOD LIMEWORKS. The THIRD PART or SHARE of Mr. Kyrke in the LEASE of the STEDDFOD LIME ROCKS, QUARRIES and MINES, in Minera, in the Parish of Wrexham. There are in operation Three Limekilns and Lime Quarries adjacent thereto, carried on by the Steddfod Lime Company. Also, of the PLANT, consisting of Three Kilns, Two Cranes, Barrels, Rails, and implements, specified in an inventory which will be produced at the sale. The Kilns are situated near to the Terminus of the Minera Branch of the Shrewsbury and Chester Railway, which might be made available for the carriage of Lime to all parts of the country.'[7]

The extant quarries (known locally at the time of its operations as 'Y Calch' ('*Calch*' being Welsh for lime)), originated as two separate concerns; the 'Minera Lime Works' on the south bank of the Aber Sychnant, and the 'Lester Lime Works' to the north: the companies went on to amalgamate in 1899 and were to become the largest lime workings in North Wales.

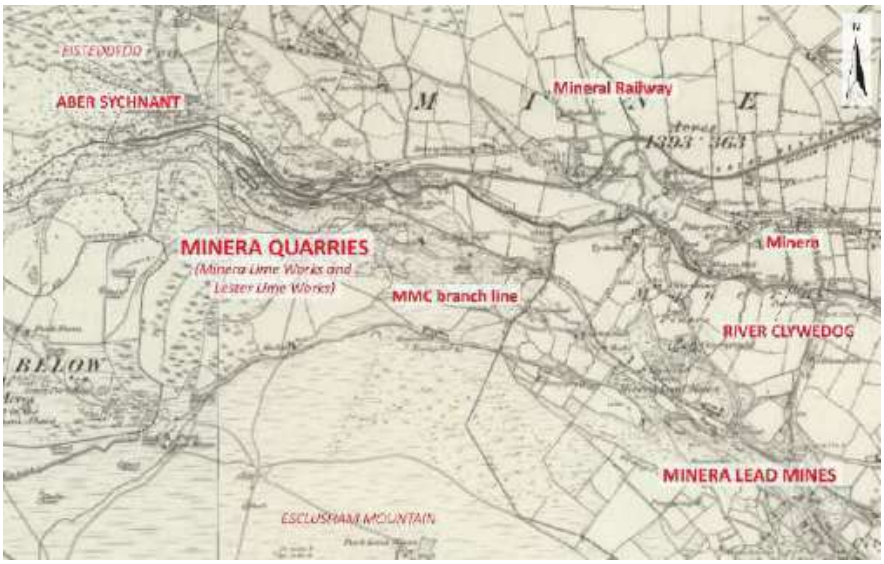


Fig. 2 Ordinance Survey 6on Map of 1872-76 showing lime workings in context

[4] NE Wales Archives re. DD/HB/893. Kyrke was also involved in the colliery and lead industries locally; he is listed as a proprietor of lead mines, residing at Glascoed, in the 1851 census returns for Brymbo. Burton is listed in the 1851 census returns for Minera as a 'landed proprietor', residing at Minera Hall.

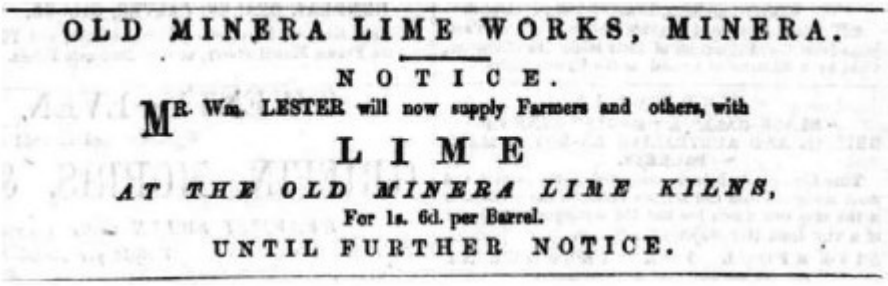
[5] Interestingly, the draft OS survey of 1835/6 indicates 'Steddfod' quarry faces to both north and south of the river (P. Appleton, *pers. comm*.).

[6] Kyrke's leasehold estates presented for sale also included the Pen-y-coed colliery, the Plasmean colliery, the Brynmally colliery, and a ¼ share in the Craigiog lead mine. The freehold of his mansion at Galscoed was also announced for sale (*Chester Courant*, 29th August 1849)

[7] correspondence re. sale of James Kyrke's estates 1849-52: North East Wales Archives ref. DD/HB/362

The Lester Lime Works

The 'Lester Lime Works', to the north side of the Aber Sychnant (Clywedog) evidently developed out of Burton's earlier 'Steddfod Works'[8], William Lester taking over the lease in 1857 (Jones and Logan 2019). The quarry specialised in the production of fluxing stone for the Staffordshire and Lancashire iron industries (ibid.), and is recorded as producing 80,000 tons of fluxing stone and lime per annum in 1858 (Ellis 1995). The quarry produced calcined lime in a bank of draw kilns located close to the quarry entrance[9]; plans for a Hoffman kiln were put forward in 1887, though not pursued.



OLD MINERA LIME WORKS, MINERA.

NOTICE.

MR. Wm. LESTER will now supply Farmers and others, with

LIME

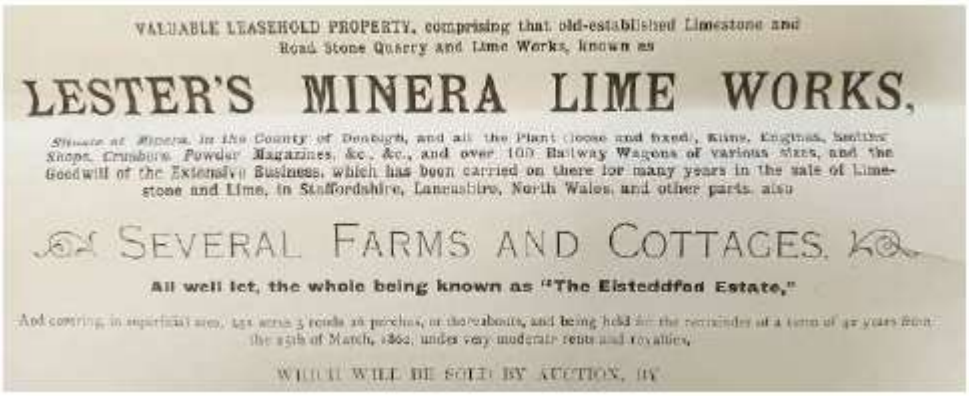
AT THE OLD MINERA LIME KILNS,

For 1s. 6d. per Barrel.

UNTIL FURTHER NOTICE.

Fig. 3 Advertisement for Wm. Lester at Old Minera Lime Works; Wrexham Advertiser, 8th March 1862

In the late 1890s, Lester's Works were put up for sale as a going concern, detailed in sales particulars for an auction on 30th July 1894 (NE Wales Archives ref. DD/DM/188/33).



VALUABLE LEASEHOLD PROPERTY, comprising that old-established Limestone and Road Stone Quarry and Lime Works, known as

LESTER'S MINERA LIME WORKS,

Situate at Minera, in the County of Denbigh, and all the Plant (loose and fixed), Kilns, Engines, Smiths' Shops, Crushers, Powder Magazines, &c., &c., and over 100 Railway Wagons of various sizes, and the Goodwill of the Extensive Business, which has been carried on there for many years in the sale of Limestone and Lime, in Staffordshire, Lancashire, North Wales, and other parts, also

SEVERAL FARMS AND COTTAGES, &c.

All well let, the whole being known as "The Eisteddfod Estate,"

And covering in superficial area, [illegible] acres 3 roods 20 perches, or thereabouts, and being held for the remainder of a term of 42 years from the 25th of March, 1862, under very moderate rents and royalties,

WHICH WILL BE SOLD BY AUCTION, BY

Fig. 4 Extract of sale particulars for auction on 30th July 1894 (NEWA ref. DD/DM/188/33; reproduced with permission of North East Wales Archives).

[8] A notice posted in the *Wrexham Advertiser* on 14th March 1863 by William Lester asserted that he was the sole lessee of 'the quarries formerly held by Mr. Burton' (*viz*. the Steddfod Works; see fn. 11).

[9] originally four, later extended to five. Illustrated on historical Ordnance Survey mapping (see §.4.3): partly surviving in poor condition.

A further announcement of sale by tender appeared in the *Liverpool Daily Post* on 1st June 1895, wherein the works are described as follows:

'*all that valuable estate known as the Eisteddfod Estate comprising in surface 151a 3r 25p or thereabouts held on lease of a term of 42 years from 26th March 1862 comprising the old-established LIMESTONE QUARRY and LIME WORKS known as LESTER'S MINERA LIME WORKS, which has for many years supplied limestone and lime in large quantities in Staffordshire, Lancashire, Cheshire and North Wales, and which will be sold as a going concern. The lime works are situate at Minera, near Wrexham, and are connected by sidings with the Great Western Railway. The quarry contains an almost inexhaustible supply of the finest lime rock in North Wales. The plant comprises two Lester's patent stone breakers and two other stone breakers, one 20hp engine, two single flue boilers, two donkey pumps, one 10hp power engine, one small engine (6in. cylinder), one double-flue boiler and a quantity of iron and steel laid railway sidings. There are three kilns and the lime produced is of excellent quality.*[10] *The goodwill of the extensive business will be included in the sale.*'

The Lester Lime Works were ultimately to be amalgamated with the Minera Lime Works, to the south of the Aber Sychnant, under the auspices of the Minera Lime Company.

The Minera Lime Works

The Minera Lime Company was established in 1852, taking over an existing quarry, reference being made to earlier operations by Messrs. Campbell & Co. (Ellis 1995): an early, three-phase bank of seven draw kilns (grouped 2/2/3; dating to *c*.1820/1841/pre-1858 respectively) survive to the south bank of the river, beneath the site of the 1868 Hoffman Kiln[11] (see fig. 6 and 7). This bank of kilns fell out of use following the construction of the (scheduled) bank of six draw kilns for the Minera Lime Company's in 1852 (although they are shown on a map of 1858); the structure was subsequently reused as the base for an engine house, stone crusher and loading chute, while a raised rail-line led from the quarry bed to service the top of the 1852 kilns.



Fig. 5 & 6 Early, three-phase bank of seven draw kilns (c.1820/ 1841/ pre-1858)

[10] An analysis report and series of letters printed in the *Wrexham Advertiser* of 8th August 1863 attest to the superior quality of Lester's product.

[11] See Jones and Logan (2019) for a detailed record of these kilns.

The Minera Lime Company became a limited company in 1865, a move which was accompanied by significant financial investment, with new crushing plant introduced and steam locomotives purchased (Ellis 1995). In particular, a 24-chamber, 2,880-ton capacity Hoffman Kiln[12] was introduced at the site in 1868, a notably early use of this form of kiln, patented just ten years earlier for brick-making by Friedrich Hoffmann (Hammond 1981; see also Johnson, 2002/3)[13].
An article in the Wrexham Advertiser of 26th March 1870, gives a detailed description of the Minera Works, as follows:

THE MINERA LIME COMPANY'S WORKS

'This company possess a very extensive quarry, where the upper portion of the mountain limestone is operated upon. This limestone is almost destitute of organic remains, and from its extraordinary purity – containing be analysis 98% of lime, a small percentage of sulphur and only a trace of phosphorous – is peculiarly adapted for smelting iron, and for the purification of gas. The lime is also extensively used for chemical works, for building, plastering and agricultural purposes. A large proportion of the produce of the quarries is calcined on the place. The company employ 150 men, and have within the last two years expended on improvements about £150,000. Abot two-thirds of this expenditure has been made in the erection of a new calcining kiln, on the principle of Hoffman and Licht's patent. The lime, as produced by the new kiln, is more thoroughly calcined than in the old system of burning in open kilns. The new kiln has also the advantage of producing lime of larger size, free from cinder and dirt, whereby an extended demand has arisen for it, with a saving of 50% in fuel as compared with the old kilns; but the labour in packing the limestone, and attendance to the burning day and night, is found to be somewhat increased.

The Hoffman kiln, built at Minera quarry, is a double one of oblong form. Though the chambers are continuous all round, yet the whole are worked as two distinct kilns. There are 24 chambers, 21ft. by 18ft. wide, 9ft high; each of these chambers communicates by two flues (furnished with a valve) with the main central flue, which is built between the arched chambers. To cause a sufficient draught through the great body of packed limestone, both in the cooling state and during calcination, a chimney 224ft. 6in. high is built from the main flue, one advantage of the system being that the heat from the fuel is so fully absorbed by the burning limestone that the gases escape at a low temperature into the main flue and chimney..... [more technical details of kiln].

The admirable principles of Hoffman's kiln have been as successfully adopted for burning bricks as for lime.... One hundred tons of lime per day can be produced from this kiln, and this large supply can always be depended on.

The Minera Lime Company have two Blake's stone crushers in operation, driven by one horizontal engine, and one crusher on a different principle, driven by a small engine. The limestone is crushed into small pieces for chemical works, or into larger for macadamising roads, and for smelting purposes. It is also ground to dust for glass works. A large mortar mill is erected, from which mortar is manufactured ready for use.'

[12] SAM ref. DE 235. Patented in 1858 by Friedrich Edouard Hoffmann, the spelling with a single 'n' adopted here reflects the spelling used in Coflein.
[13] One of a limited number surviving in Britain (some sources state three, some five); a particularly well-preserved example (including chimney), dating to 1899, is located at Llanymynech in Shropshire, *c*.30km south of Minera, a Grade II listed building. A second, smaller Hoffman kiln was introduced at Minera in 1874, north-west of the earlier kiln, though this has been historically removed.



Fig. 7 General view looking south-east, c. 1910 with 1874 Hoffman kiln (II) to centre of image; source: www.dailypost.co.uk

As noted above, the Minera Lime Company amalgamated with the Lester Lime Company in 1899, allowing for the expansion of its operations to the north-west, and going on to become the largest lime workings in North Wales. The Hoffman kilns went out of use in 1929, when two new gas-fired kilns were introduced (see insets below), though the latter did not prove satisfactory, and the Hoffmans were subsequently brought back into service (Ellis 1995). The lime works closed temporarily in 1933, re-opening in April 1934.





Figs. 8 & 9 Historical photographs of gas kilns introduced in 1929, and related buildings; source: https://coedpoethhistorysociety.weebly.com/

In 1954, the quarries were taken over by Adam Lythgoe Ltd. who, with the aim of increasing ground lime for agricultural use, introduced new crushing plant. In 1967, the works were taken over by Tarmac Roadstone Holdings Ltd., further increasing production of dry crushed products and coated stone for road construction (Ellis 1995). The quarry finally ceased production in 1994, ending 150 years of almost continuous active quarrying. Following closure of the quarry, the Minera Quarry Trust (MQT) was established and worked in partnership with Tarmac and the North Wales Wildlife Trust to secure a future for the site, with the aim of creating a 'spectacular nature reserve and community wildlife asset'[14]. As part of initial site evaluation, an assessment of a number of 20th-century quarry structures was undertaken by Gwynedd Archaeological Trust (GAT) in 2000 (Jones, 2000), prior to removal.

The site officially opened as the North Wales Wildlife Trust's 'Minera Quarry Nature Reserve' in June 2018. Parts of the quarry have regenerated naturally and host many rare and threatened habitats and species, while the reserve also celebrates its industrial heritage and an impressive system of natural limestone caves.

[14] https://wrexham.com/news/new-era-for-former-Minera-Quarry-as-it-reopens-as-spectacular-wildlife-reserve-on-Saturday-150015.html

3.0 THE EXISTING BUILDING

The weighbridge building is located at the quarry entrance to the far east end of the site, to the south side of the Maes-y-ffynnon Road from Minera and immediately north of the Aber Sychnant. The building lies at an elevation of c.275mAOD. The building is absent from the 1858 map and first edition Ordnance Survey 25in. map of 1872-76, and is first illustrated on a quarry plan of 1884 (detail inset below)[15], where it is clearly shown adjacent to a 'weighing machine' (not shown/labelled on OS coverage prior to 1963).

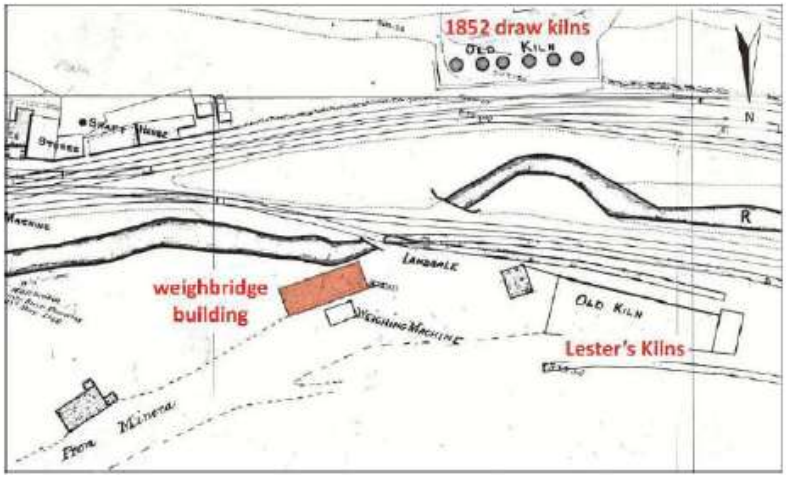


Fig. 10 Detail of 1884 survey showing weighbridge building; source: P. Appleton, Minera Quarries Trust)

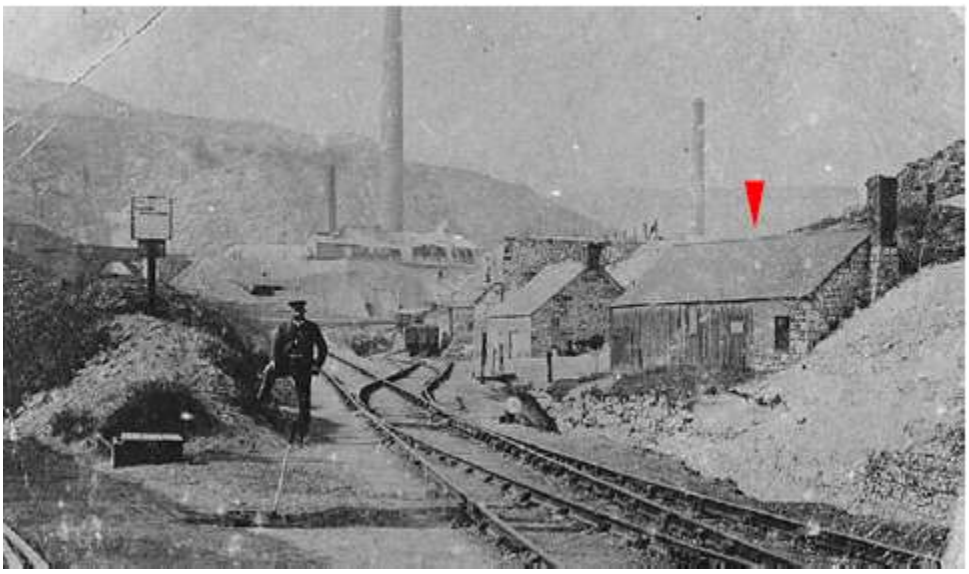


Fig. 11 Historical photograph (c. 1880's) of weighbridge building (right), looking north-west, with Hoffman Kiln (I) of 1868 in centre background

[15] Copy of map courtesy of Mr. Peter Appleton (Minera Quarries Trust).

The extant range is rectangular in plan, aligned approximately east-west. The building is of a single storey, brick-built to English garden wall bond (largely rendered) rising to a plain eaves beneath a pitched and gabled roof clad in corrugated sheeting. Simple rectangular window openings pierce the north, south and east elevations housing 'Crittall'-type metal casements. The eastern gable incorporates a short ridge stack (visible on historical photograph; fig. 11)[16], though encased within a single storey, flat-roofed extension (post-dating 1963).

The range is accessed via a doorway in the south elevation, reached via a narrow path flanking the southern side of the building on the north bank of the Aber Sychnant. The roof structure over is formed of timber king-post trusses (KP strapped at tie) with raking struts, supporting three tiers of through side-purlins and ridge-piece, the latter directly carrying the corrugated-sheet cladding.





Fig. 12 & 13 (left) Weighbridge building looking south-east, and (right) looking north east

[16] NB. The historical photograph of *c.*1880s indicates a stone-built gable end to the east, and the south wall partly clad in corrugated sheeting.

4.0 SUMMARY OF SIGNIFICANCE

4.1 SIGNIFICANCE OF THE LANDSCAPE

Together with lead and zinc mining, the quarrying and burning of limestone for calcined lime has been a central element in the economy of the Minera area for a period of over 400 years. At its peak, the Minera Limeworks were the largest lime workings in North Wales. Since the closure of the quarries, many of its constituent buildings and structures, together with their associated transport networks, have been removed; the site nonetheless retains good examples of traditional draw kilns, dating to 1852, and the remains of a Hoffman kiln dating to 1868, one of only a small number surviving in the UK (see Johnson, 2003), both constituting Scheduled Ancient Monuments. The wider quarry site can thus be seen clearly to represent an industrial heritage asset of high significance.

The origins of **Minera Quarry** site appear to date back to the early/mid 1800's. The wider site includes two Scheduled Ancient Monuments (SAMs), both located on the south side of the River Clywedog. Neither of these buildings, **nor any others on the site, are statutorily listed, nor does the site lie within a designated Conservation Area.**

4.2 SIGNIFICNACE OF THE BUILDING

The weighbridge building represents a secondary addition to the quarry arrangements, being first shown on the Quarry plan of 1884, and is of somewhat peripheral significance to the development of the wider site, especially given the historical loss of much physical/functional context by the removal of many of the other quarry buildings, structures and supporting infrastructure.

The building is not statutorily listed, nor is it included on Coflein or CPAT HER registers. It is a building of simple, utilitarian design and construction and, as such, if retention/adaptation is deemed not to be a feasible option, then demolition and removal can be seen to have a 'less than significant' impact upon the heritage integrity of the quarry site as a whole. The principal consideration would thus be that any proposed replacement structure should be in keeping with the 'industrial' nature of the site, in terms of its design, scale, massing, materials etc., and that it should not have an adverse impact upon the setting or appreciation of the surviving quarry structures, principally the nearby banks of draw kilns (the scheduled/listed kilns of 1852 on the opposite side of the river, and the 'Lester kilns' immediately to the west).

5.0 PROPOSAL

This project relates to works proposed in respect of one specific, non-designated structure, a former weighbridge building at the eastern end of the site, adjacent to the site entrance. The building is dilapidated and derelict.

It is proposed to demolish the single-storey weighbridge building and construct a new purpose-built, single-storey structure on part of the footprint of the former building.

5.1 ACCESS

Access into the building will be improved. It is proposed to raise the new floor level approx. 1.5m which will provide level access from the car park area into the building.

Internally, the building will provide a mess room and kitchenette for volunteers; and a base/ office room. The kitchenette will comply with Part M of the Building Regulations. The tool store is accessed externally.

A freestanding composting WC cubicle will be provided which will also comply with Part M of the Building Regulations.

5.2 LAYOUT

The building has been located near the entrance of the Minera Quarry site, adjacent to the car park area. The layout of the building has been designed to meet the needs and requirements of the users and volunteers of North Wales Wildlife Trust.

5.3 SCALE & APPEARANCE

The existing single-storey building is constructed of brick, which is rendered under a tiled pitched roof.

The proposed building will be a single-storey timber clad building under a flat roof, with a gabion plinth to raise the internal floor level to the same height as the car park area and neighbouring topography.

The proposed materials are intended to weather into the landscape and respond to its surroundings.

The scale of the proposed structure is similar to that of the existing building in terms of height. The proposed structure, albeit positioned at a higher level, is under a flat roof, and therefore similar in height to the existing building.

The mass of the building has been reduced, as the proposed structural sits on almost half of the footprint of the existing building.

5.4 LANDSCAPING

There are no proposals to alter the existing landscaping.