

## Part 3: The Quarries

### Walkover survey TCR (Q310)

#### 1. Titterstone West Quarry

##### Centred SO 5944 7769

The Titterstone Quarry was opened on May 1<sup>st</sup> 1881 as a partnership enterprise between William Field and John Mackay under a lease agreement with the Rouse Boughton Estate of Downton Hall to open a quarry and construct a gravity incline on the south side of Titterstone Clee Hill. The extent of the land leased to Field and Mackay in 1881 can be seen in the map extract taken from the lease deed (Ref 6683/1/22) below. The lease agreement between Sir William and Andrew Rouse Boughton and Field & Mackay Limited, survives today in Shropshire Archives (Ref 6683/1/22).



*Fig. 1: The extent of the 1881 land lease*

Within the agreement are three conditions imposed by the Downton Estate which have had significant positive impact on the survival of the hill as it is seen today, these clauses are of sufficient importance to the survival of the hill to warrant their reproduction here:

1. *“The quarry shall be opened only at the place agreed with the Leaser and marked on the plan. Such a quarry shall be worked as far as possible so that the workings shall not be visible from Downton Hall.”*
2. *“No spoil or waste soil, stone or other material shall be stacked in or near the opening of the said quarry except so far as shall be necessary for the construction of a platform for the effective working of the quarry, such a platform not to succeed a height of four feet or thereabouts. Except as aforesaid all spoil shall be taken to and deposited on the present spoil bank which is not within sight of Downton Hall.”*

3. *No buildings, machinery or the like shall be erected on or near the said new quarry.*

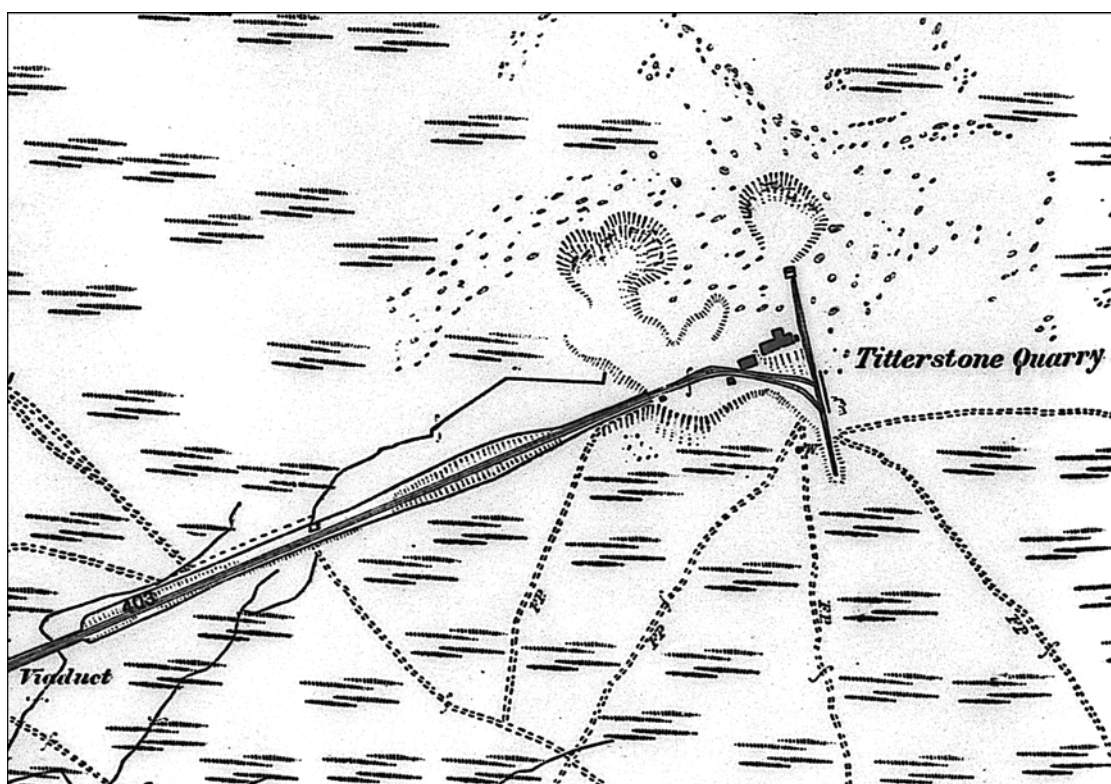
This agreement dated the 25<sup>th</sup> of March and the words “*shall not be visible from Downton Hall*” in clause 1 and “*not within sight of Downton Hall*” in clause 2, while designed to protect the eastern vista from Downton Hall, which is aligned on the summit of Titterstone Clee, has effectively protected the summit and north-western aspect of the hill from destruction by the quarry. It seems likely that we owe the survival of the summit as a prominent and significant landmark, and the sepulchral monuments upon the summit, directly to this agreement. Fig. 2 shows this area overlain onto an aerial photograph of the final extent of the quarry workings with the 1884 extent inset in blue. The western limit of the lease area can be seen to be drawn to protect the distinctive western profile of the hill, the scree slopes of the ‘giants chair’.



**Fig 2: The extent of the 1881 lease in relation to the current landscape**

The fieldwork for the 1884 published plan would have been carried out in the three years between 1881 and 1884 so that in the case of the Titterstone Quarry we are fortunate to have a contemporary record of the quarry in its earliest phase of working. This record shows that in the first years of the quarry the incline to Bitterley had been built, that two areas of extraction were open and that the quarry carried the name of Titterstone Quarry; a section of this 1884 record is reproduced below.

## 1.1 West Quarry TCR walkover survey



*Fig 3: Titterstone Quarry, 1884*

The total area occupied by the quarry floor and quarry cuttings at this time is only some 11,391 sq. m. The quarry exposures themselves consist of two small cutting, the eastern a simple oval measuring some 48m east to west by 47m north to south. That to the west being a twin lobed cutting with maximum dimensions of 65m east to west by 52m north to south, both this and the quarry to the east are open on their down-slope, south sides.

### The Western Quarry

The western quarry is shown with no built structures or rail links but with spoil extending to and south of the incline plain. This possibly suggests that this was the first working and that at the time of the survey this quarry face was not being worked. Tub lines to a quarry face were temporary structures which were moved as work demanded. In contrast the mouth of the eastern quarry is approached by a short length of rail track lying on a NNW-SSE alignment running between SO 5929 7752 in the south and SO 5927 7763 in the north. Contours generalised for the intact hill suggest that this 116m long straight trackway ran from a base height of 440m to 464m at the quarry mouth, a rise of 24m indicating that it was probably a gravity incline plane from the quarry face. A built structure shown at the north end of the track probably being a winding drum. This incline would have allowed spoil from the quarry to be disposed of at its south end by tipping down slope from the quarry.

Approximately two thirds along the length of the incline at SO 5928 7757 two rail lines link from this small incline to supply the quarried basalt to the main Bitterley incline head. Two substantial buildings are shown, up-slope from this link rail. They lie on the same SW to NE alignment of the main Bitterley incline and must be the

housing for the winding engine and head gear of the incline. The more northerly building is shown as being some 19m long by 7.5m wide that to the south as 10m long by 6m wide. A third smaller building lying on an east to west alignment 5m long by 3.5m wide is shown below these, south of the rail tracks. The remains of the two large buildings survive today as substantial stone and brick walling lying built into the hill slope, centred at SO 5925 7759. The proportions of the buildings represented by these walls being similar to those of the buildings represented on the 1884 plan.

A fourth building is shown lying some 42m to the west alongside the main incline at SO 5920 7756. It has sides of 4m by 2.5m and lies parallel to the south side of the incline. This is the position that a tally house would be expected to lie to record the stone produced at the incline head. A square concrete base with sides of 2.5m survives at this position possibly marking a later version of this building.



*Plate 1: Looking along the line of the 1884 building towards the incline head*



*Plate 2: Looking up-slope showing the substantial nature of the building remains*



*Plate 3: The south end of the building, showing exposed wall structure*



*Plate 4: The north side of the building, built into the hill slope*



*Plate 5: Plinth at top of incline, possible base of tally house*

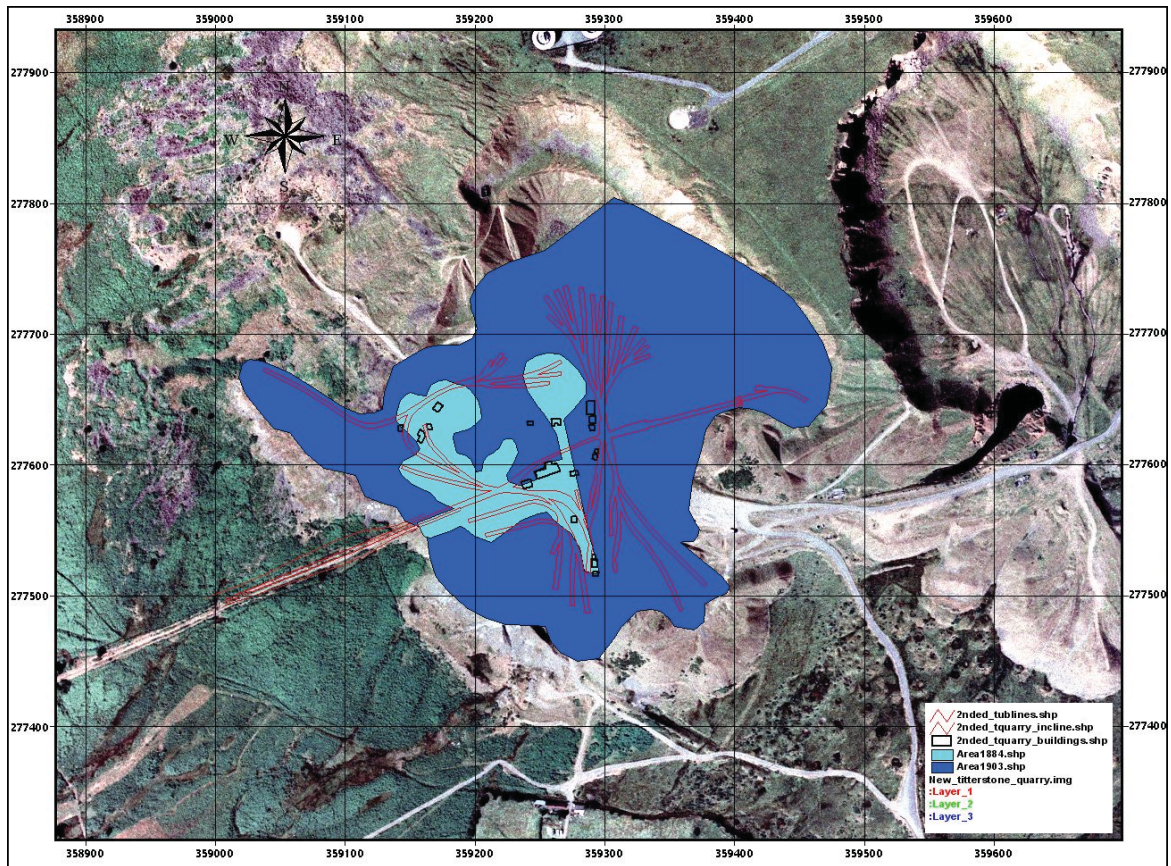
By December 31<sup>st</sup> 1881 the output of these early quarries had reached 12,224 tons. By 1899 this had risen to 73,352 tons putting considerable strain on the existing infrastructure.

Forty to sixty trains of wagons were capable of carrying a total of 600 tons of stone a day to the crushing plant at Bitterley, which was powered by turbine taking water from Benson's Brook in the valley above (Hewitt 1991, 285; Stanier, 2000, 144). In 1889 Field and Mackay invested heavily in the quarry, installing new machinery, including a second crusher in the quarry, and overhauling the incline (Stanier, 2000, 144). A 3ft-gauge tramway was laid within the quarry and sidings were constantly changed to keep pace with the changing quarry faces (Peaty 2006, 178).



*Fig.4: Extract from the 1903 OS 2<sup>nd</sup> Edition*

The 1903 2<sup>nd</sup> Edition OS 1:2500 shows the extent of this rapid expansion so that by the time of this survey the total area occupied by the quarry had expanded to 80,161 sq. m. centred at SO 5926 7763. The stone is now being extracted from a large quarry face 250m wide centred at SO 5928 7770 and from a small quarry cutting 60m long by 30m wide in the east at SO 5944 7765. This latter small quarry survives today much as depicted in the 1903 survey and is probably the Spion Kop face. Each of the quarry faces is served by tub lines which link with the main incline at a central hub located at SO 5930 7764. The line to the Spion Kop quarry is annotated on the 1903 plan as an incline, as is a branch running south from the central hub to the southern spoil mounds. A line also runs from the main quarry face to the west to allow spoil to be deposited in this direction. The figure below shows the 1903 workings superimposed onto the 1999 aerial photograph with the 1884 quarry extent inset. A comparison of the 1903 area of extraction and of spoil with the final extent of the quarry shows that by this date much of the stone had already been extracted from the site.



*Fig. 5: Showing in mid blue the 1903 extent and in light blue the 1884 extent*

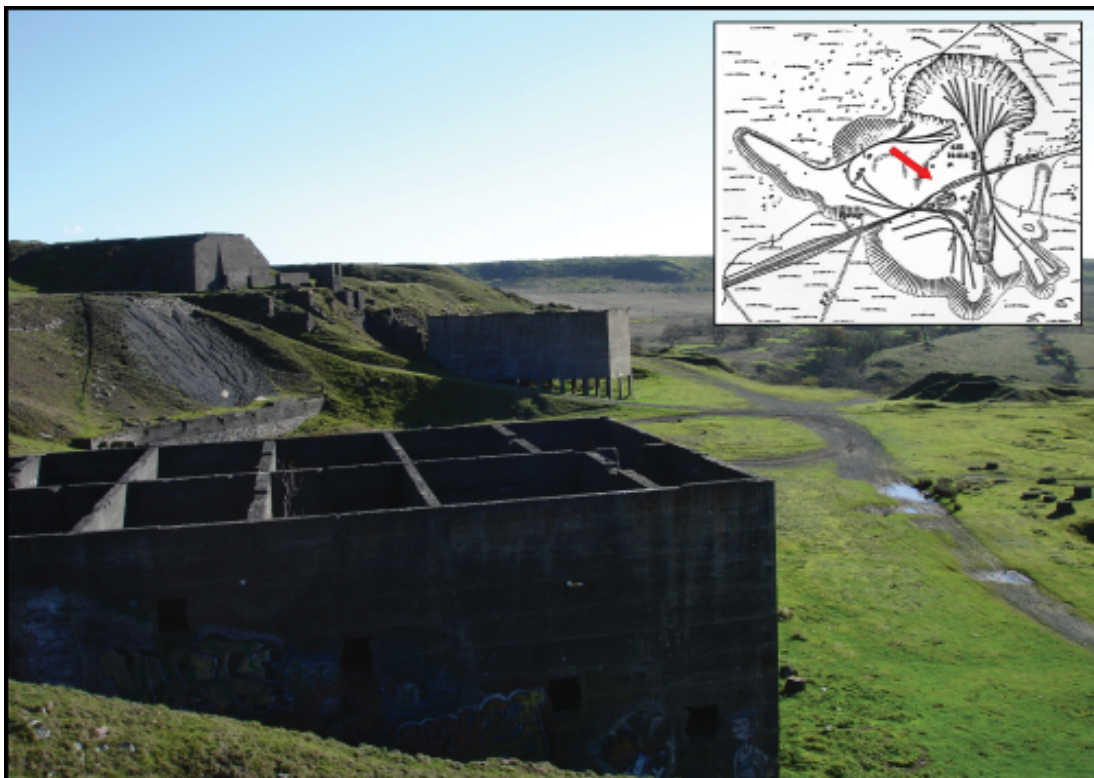


*Plate 6: This quarry face appears not to have extended beyond the point shown in the 1903 survey. It may relate to the Spion Kop quarry opened in 1902 and abandoned by 1910.*





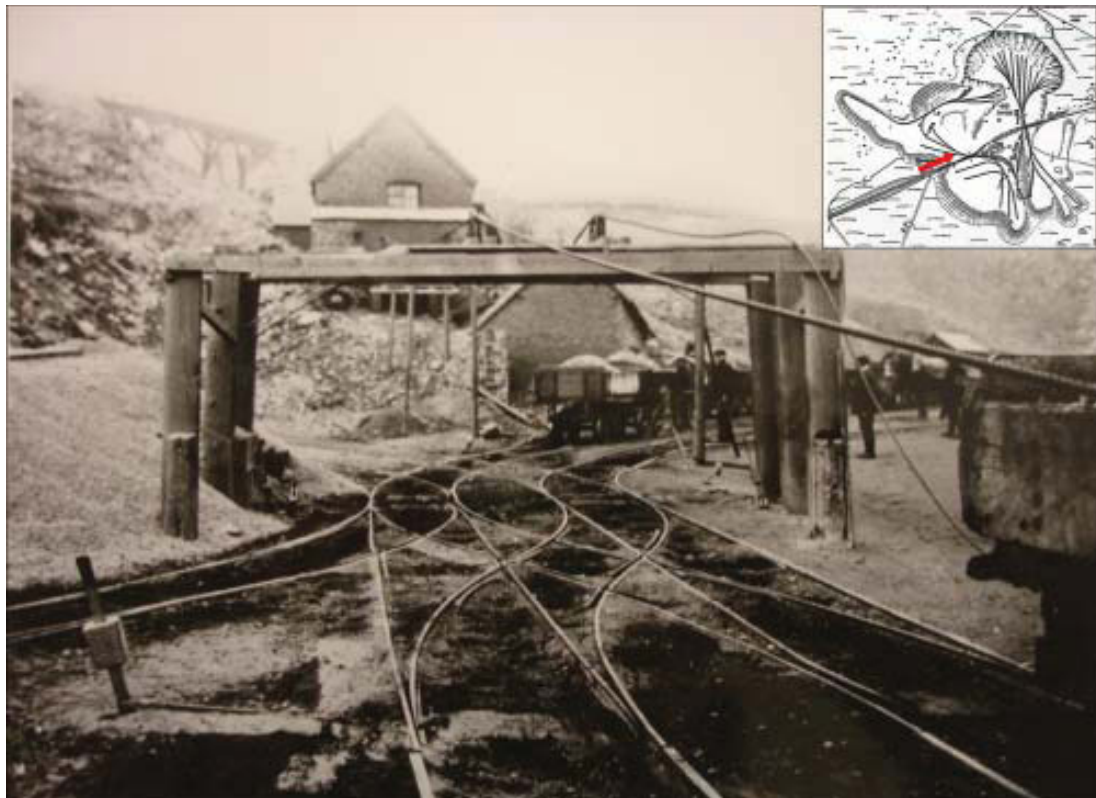
*Plate 7: Looking east across the quarry workings c. 1910, the roof of the 1881 'drum house' can be seen bottom left, (location of photograph arrowed on inset map below).*



*Plate 8: The similar view today - the revetment wall at the base of the slope can be seen in both images as can the embankment in the top left. The building in the foreground of the early image is hidden behind the later hopper in the lower image*



*Plate 9: Stone revetments at the bottom and top of slope survive today*



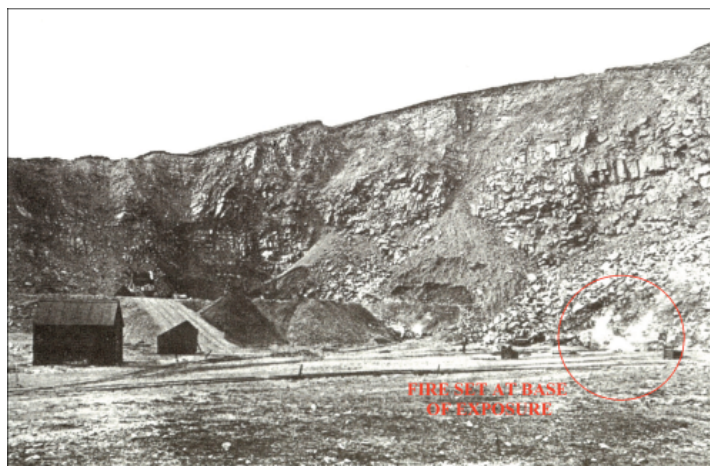
*Plate 10: The turnout at the top of the Bitterley incline. The two buildings shown on the 1884 plan, the drum house from which the wire cable ran to the incline can be seen in the background. (Location of photograph arrowed in red on the inset map)*



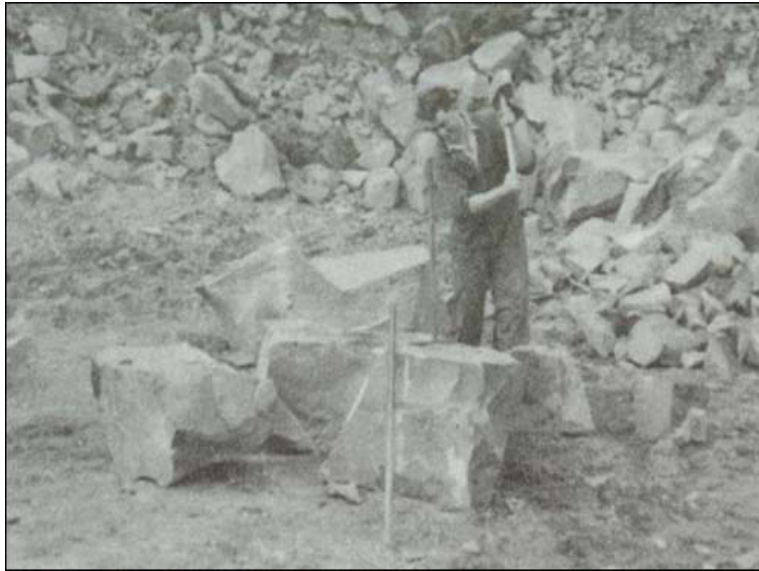
*Plate 11: Sidings at the top of the main incline c.1903, seen from the SE*

Elements contained within these historic photographs still survive today within the later quarry complex. The revetment wall at the base of the main slope is recorded in several images as is the drum house complex and the main embankment. The current image above shows the present condition of the stone revetment at the base of the slope, with earlier walling exposed by slipping at the top of the slope. These walls appear to be designed to stabilise this slope which survives much as it was in the early 1900s.

The period from 1904 onwards saw a continuing expansion of the quarry characterised by innovation and a product diversification, which included the stone setts used for cobbled road construction and crushed stone for hardcore and aggregate. The quarry face itself was still being worked by means of fire setting which exploited the characteristic of the basalt to fracture along the minute fracture planes created in the rock by the rapid cooling of the stone at its creation. The heat from the fires turned moisture within these minute fracture planes into steam and caused the stone to fracture along the planes. Stone was further broken by workmen with large sledge hammers and setts were made also by hammer.



*Plate 12: Fire set at face of Titterstone quarry 1903*



*Plate 13: Stone breaking with a 28 lb hammer*



*Plate 14: Sett making c. 1940*

The post 1904 expansions appear to owe much to the work and enthusiasm of J.C. Mackay who had taken over the management of the quarry enterprise on January 25th 1900. From this point forward a programme of investment and expansion was begun which included the erection of the quarry workers' cottages, Titterstone Cottages, (nicknamed Bedlam) near to the base of the incline. John C. Mackay was the son of the founder John Mackay, born in 1854 he trained as a civil engineer at King's College London and completed a post graduate research degree at Edinburgh University, in pre-fabricated concrete structures. In 1904 on the retirement of his father he became a partner in Field and Mackay.

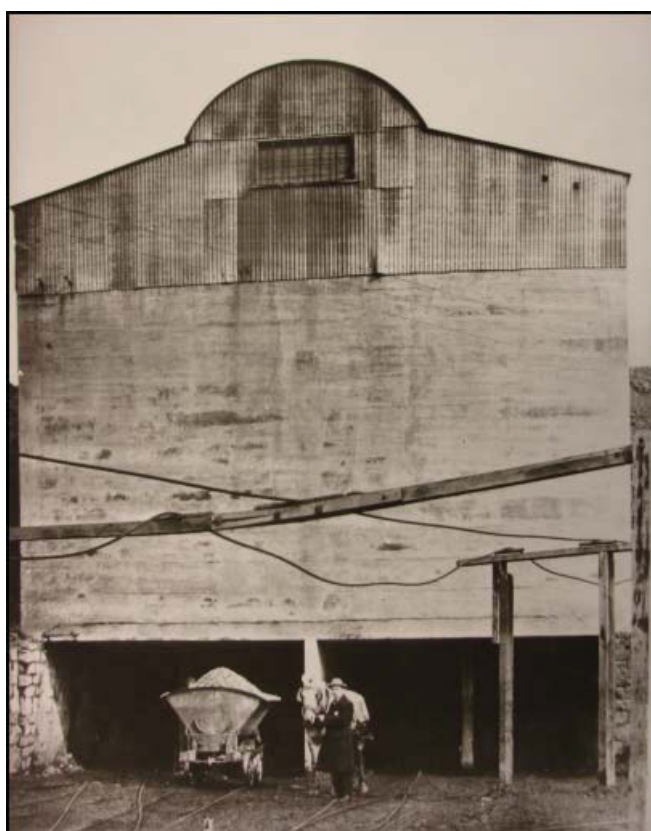
In 1905 improvements were made to the main incline to allow six wagons to be run per trip rather than the previous 5. The nature of quarry work is such that infrastructure is at best semi-permanent with rail lines constantly being moved to accommodate the advancing quarry and buildings erected only to be demolished and moved. By 1910 the eastern arm of the quarry, known as Spion Kop had been abandoned to be replaced by the main east quarry although the exposed face of the

quarry shows good stone still surviving. Why the decision was made to stop and re-start at the new location in the December of that year is uncertain. However it is fortunate that the decision was such for had this quarry continued the spur of land left between the west quarry and the later east quarry would have been removed and with it the small remaining section of the BA enclosure perimeter rampart.

In 1911 Field and Mackay were registered as a limited liability company and the company was still clearly dynamic and looking to exploit new markets. The recently developed method of road metalling known as Tar Macadem which sprayed hot tar onto a base of stone chippings was seen as a potential area for product diversification. The making of tar-macadem was commenced in the July of 1911 by hand in the Titterstone quarry but by the June of 1912 a full tar plant had been built on the Bitterley sidings site. The tar-macadem produced from 1911 to 1918 being supplied to the industry under the trade name CLEEMAC (Hewitt 1991, 164).

John C Mackay had been awarded the Miller prize for a paper on 'Concrete and its Application' while a student at Edinburgh. He used this knowledge to effect in this period of development to re-model many of the quarry buildings and to create also a further secondary business making concrete blocks, using the crushed stone as an aggregate. It is in this period of rapid expansion that many of the monumental concrete structures which characterise the Titterstone Quarry today were created.

These structures include the concrete base structures of the stone crushers and sorting hoppers, the foundations of a variety of buildings and plant, supports for above ground conveyors and the earthworks associated with the workings and rail lines.



*Plate 15 and 16: Stone crusher base in 1920s and as it survives today located SO 5923 7759*



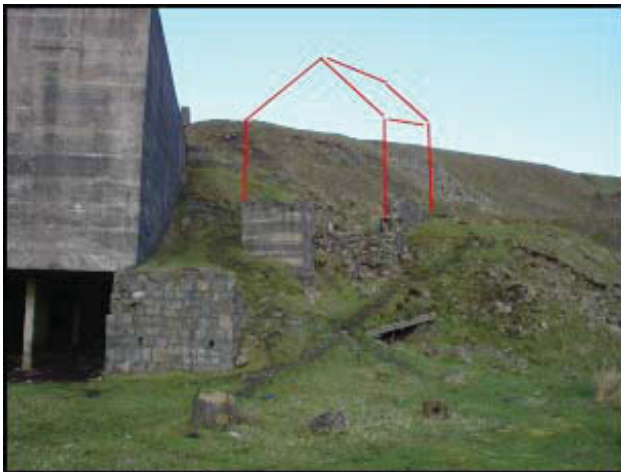
*Plates 17 and 18: Top of crusher hopper left, interior of one chamber showing fly tipping*



*Plate 19: Concrete built stone crusher and sorter SO 5928 7752. The inset bottom left shows oxidisation of steel reinforcing bars creating flaking of the concrete. The structures above supported the overhead supply track from the quarry*



*Plate 20: Early stone crusher, showing the exposed superstructure*



*Plates 21 and 22: Left 1881 'drum house' centred SO 5925 7759 on alignment with incline,  
Right stone built revetment wall running between SO 5926 7757 in the east to  
SO 5923 7757*



*Plates 23 and 24: Left: building with engine housing complex above, centred SO 5919 7761  
Right: Tank support building (apparently intentionally destroyed) centred SO 5916 7758*



*Plates 25 and 26: Left: tank complex SO 5915 7759, possibly associated with tar macadam production  
Right: semi-sunken built complex centred SO 5915 7758*



*Plates 27 and 28: Graffiti, west side of stone crusher SO 5922 7759*



*Plates 29 and 30: Left image revetment above eastern stone crusher SO 5931 7753  
Right, detail of east stone crusher SO 5927 7751*





*Plates 31 and 32: Engine house above west stone crusher SO 5924 7761*



*Plates 33 and 34: Left image, overhead track supports centred area SO 5932 7768  
Right image, building remains SO 5923 7773*



*Plates 35 and 36: Left image, dhustone building at SO 5921 7781 on terrace above quarry face  
Right image, engine supports at near to building at SO 5922 7782*



*Plates 37 and 38: Terrace running around quarry face at c. 510m AOD*



*(Plate 39, left, Plate 40, right)*



*Plates 39-41: Two buildings centred at SO 5947 7759 at the head of Dhustone Lane Quarry approach. The lower is built of brick, the higher of dressed stone*

*Plate 41*



*Plates 42 and 43: Bridging point of rail track supplying stone to east crusher SO 5936 7748*



*Plates 44-47: Left and bottom left, rail track approach to east crusher  
Right and bottom right, crusher base seen from track above*





*Plates 48-49: Tunnel running from cutting in the east at SO 5933 7741 to SO 5928 7743 in west. The concrete capped tunnel is probably designed to protect a tub line from the spoil field above*



*Plates 50-51: Left, looking down incline from SO 5921 7780  
Right, incline running from SO 5924 7774 to SO 5922 7780*



*Plates 52-53: Left, sunken tub-way SO 5927 7773 to SO 5927 7777 approaching north face of quarry  
Right, tub lines radiating out from quarry face*



*Plates 54-55: Line of concrete supports for above ground conveyor SO 5930 7769  
Right, in situ sleepers SO 5932 7760*

**Action:**

Aerial photography. OS 1884 1<sup>st</sup> Edition 1:2500, 1903 2<sup>nd</sup> Edition 1:2500 and 1953 1:10,560 registered to OS Landline and compared as map regression. Site visited to confirm condition.

**Management Statement**

The monument survives as an extensive quarry floor, exposed quarry faces and associated quarry buildings and structures currently little used though open to sheep grazing. There is some limited fly-tipping. Public access to the site is discouraged due to the danger presented by the steep quarry face exposures and to the dangers presented by the surviving quarry buildings.

**Recommendations**

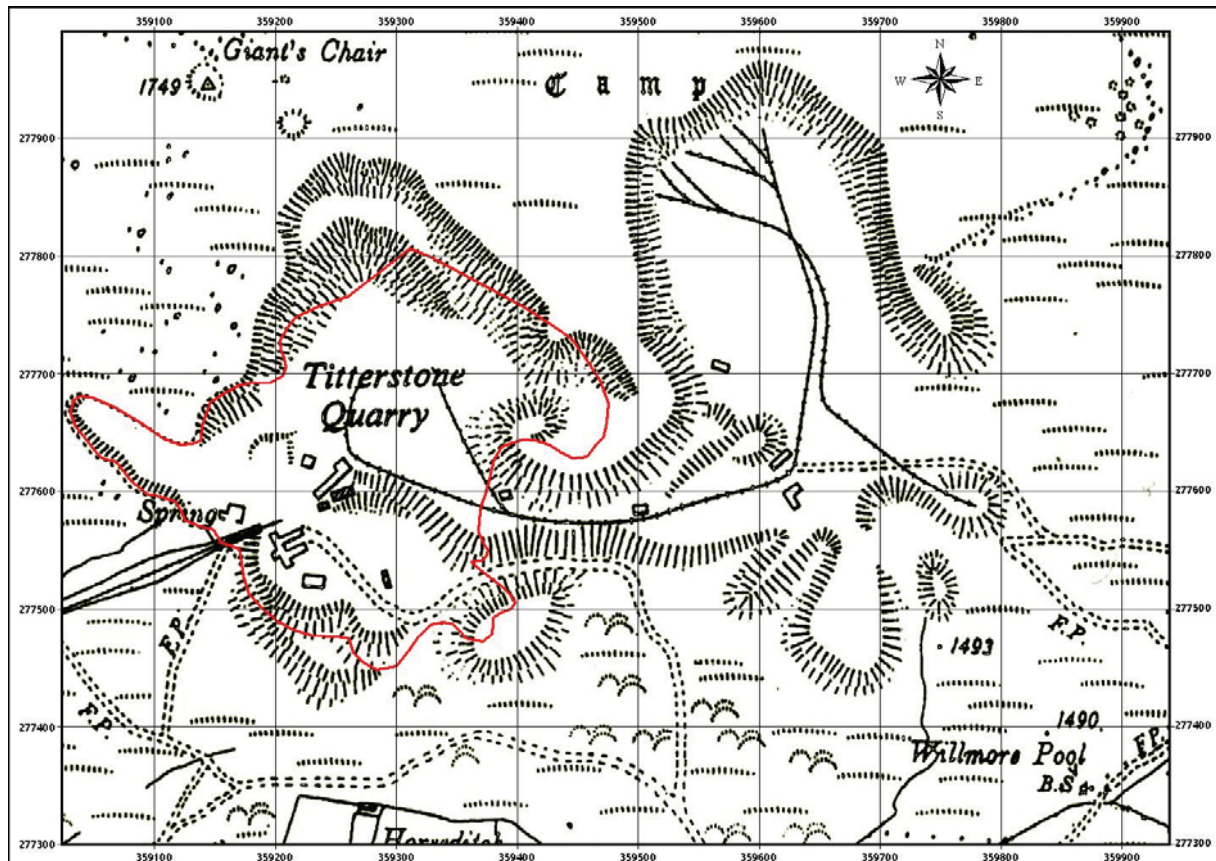
The quarry is a very prominent landscape feature, which survives largely intact. The dangers presented by the vertical faces of the quarry and buildings are problematic but the site has enormous potential for presentation and interpretation. As a precursor to any such scheme of presentation there is clear potential for recovering the detailed morphology of the quarry by a detailed survey of the surface remains. The concrete buildings require some remedial conservation to arrest the deterioration caused by oxidation of the steel reinforcing bars.

**Statement of importance**

CRITERIA	HIGH	MEDIUM	LOW
<b>SITEID: TCR (Q310)</b>			
<b>Rarity</b>		*	
<b>Documentation</b>	*		
<b>Group value</b>	*		
<b>Survival/condition</b>	*		
<b>Fragility/vulnerability</b>	*		
<b>Diversity</b>	*		
<b>Potential</b>	*		
<b>Amenity value</b>	*		

Walkover survey  
TCR (Q311)  
2. Titterstone East Quarry

Centred: SO 5961 7778



*Fig. 6: Extract from the OS 1:10,560 of 1953 showing the 1903 extent of the west quarry outlined in red*

The eastern quarry was opened in the December of 1910, the same year that the Spion Kop face of the west quarry was closed. A comparison between the extent of the western quarry shown on the 1903 OS 1:2500 and the 1953 1:10,560, as shown above, demonstrates that by 1903 the west quarry was approaching its maximum size. Work post 1903 being limited to an extension of the north face some 140m east to west by 105m deep. It seems therefore likely that by 1910 the west quarry was in its terminal stage. The moving of the main focus of quarrying to the east, creating a new quarry floor, may have been for practical reasons or may possibly have been influenced by the three clauses in the Rouse-Boughton lease agreement to protect the western aspect of the hill. From the extent of the workings it seems clear that works could not progress any further to the west or north-west without breaching the conditions of the agreement. Moving the quarry floor to a new site further east, leaving a spur between the new site and the old avoided any such problem.

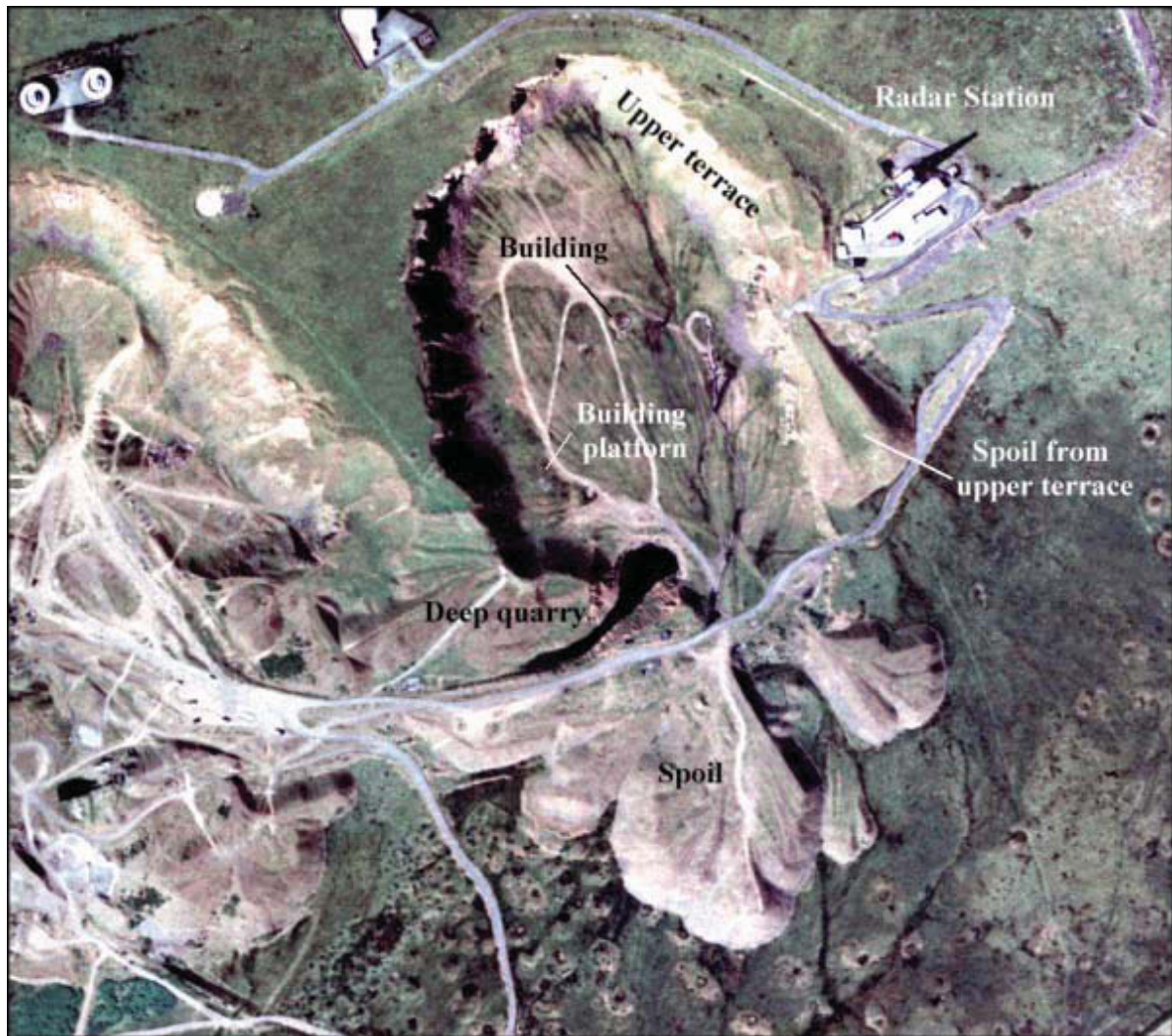
Spoil from the east quarry was deposited on the hillside immediately south of the quarry floor. The 1953 record shows rail links from the quarry face to the south-east spoil field and to the west into the western quarry. The main quarry plant continued to be located in the west quarry with a few only small subsidiary buildings in the east

quarry. Stone was crushed in the west quarry and loaded onto the incline for despatch off the hill.

The extent of the quarry today is as shown in the 1953 record with an area of some 62,566 sq. m. No work postdates this survey showing that by this date both of the Titterstone quarries had ceased production. In its final form the eastern quarry survives as a large quarry floor some 265m north to south by 216m east to west open on its south side, the spoil fields lying down-slope on this side at a height of c.460m AOD. The walls of the quarry are steep sided with in places vertical exposures of stone. At the south-eastern corner of the quarry SO 5973 7776 is a lobe of spoil which lies on the hillside towards the top of the quarry wall, the access ramp from the quarry face to the spoil at a height of 496m AOD. Post WWII photographs of the site working show the overburden being removed by an early mechanical digger working on a terrace above the stone exposures. This high spoil mound possibly relates to this removal of over-burden.



*Plate 56: Post war photograph of east quarry showing digger removing over-burden*



*Fig.7: 1999 Aerial Photo of east quarry with principal features annotated*

At the south-west corner of the quarry SO 5961 7763 is a deep, water filled, exposure cut below the quarry floor. This deep linear quarry commences at a quarry face at its north-eastern extremity SO 5962 7766, curving around to the south-west for 123m to the quarry entrance at SO 5954 7759. This narrow and deep stone cutting, with an average width of only 18m must have been working a rich lower seam of stone.

Within the quarry are a series of linear track-ways curving out from the foot of the quarry face representing the tub-lines which carried spoil to the south and stone to the west. Two buildings only can be recognised within the quarry floor one at SO 5960 7779 is a stone built rectangular building some 7m long by 4m wide with walls standing to a height of 1m. This is not shown on the 1953 survey indicating that it was ruined by this period. The second survives as a foundation pad only some 10m long by 5m wide at SO 5956 7770 and a building is shown in this area on the 1953 map.





*Plate 57: Tub lines radiating from quarry face c. 1940*



*Plate 58: Course of tub lines surviving as shallow hollow-ways*



*Plates 59 and 60: Spoil mounds to south of quarry*



*Plates 61 and 62: East quarry, general view and stone exposures*



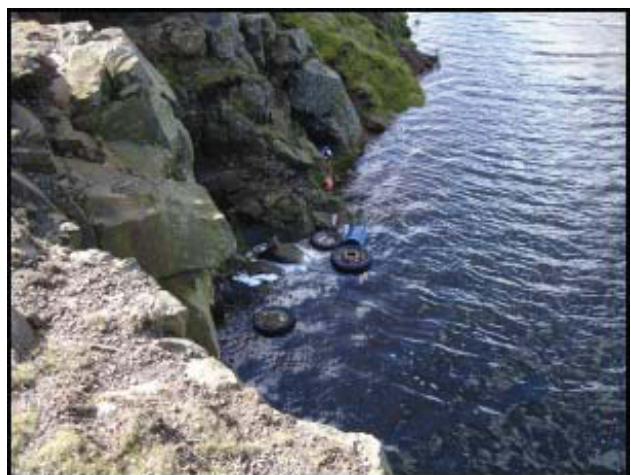
*Plates 63 and 64: Tub-lines running from quarry face, right showing in-situ wooden sleeper*



*Plates 65 and 66: Remains of building centred at SO 5960 7779*



*Plates 67 and 68: Building base centred at SO 5956 7770*



*Plates 69 and 70: Deep quarry centred SO 5961 7763, right image shows fly-tipping at northern extent of quarry*



*Plates 71 and 72: Building, possible stables located SO 5963 7761*



*Plates 73 and 74: Right, partly buried boiler tank SO 5965 7762, Left Right building at SO 5962 7758*



*Plates 75 and 76: Left, concrete tank at SO 5961 7760, Right, building remains SO 5948 7758*

**Action**

Aerial photography. OS 1884 1<sup>st</sup> Edition 1:2500, 1903 2<sup>nd</sup> Edition 1:2500 and 1953 1:10,560 registered to OS Landline and compared as map regression. Site visited to confirm condition.

**Management Statement**

The monument survives as an extensive quarry floor and exposed quarry faces currently little used though open to sheep grazing. Vegetation is generally coarse grass and wetland species. There is some limited fly-tipping. Public access to the site is discouraged due to the danger presented by the steep quarry face exposures and to the proximity of the CAA radar station buildings, though access is possible on foot.

**Recommendations**

The quarry is a very prominent landscape feature, which survives largely intact. The dangers presented by the vertical faces of the quarry make it problematic for an enhanced presentation. However there is clear potential for recovering the communication network associated with the quarry by detailed survey of the surface remains.

**Statement of importance**

<b>CRITERIA</b>	<b>HIGH</b>	<b>MEDIUM</b>	<b>LOW</b>
<b>SITEID: TCR (Q311)</b>			
<b>Rarity</b>		*	
<b>Documentation</b>	*		
<b>Group value</b>	*		
<b>Survival/condition</b>	*		
<b>Fragility/vulnerability</b>		*	
<b>Diversity</b>	*		
<b>Potential</b>		*	
<b>Amenity value</b>		*	

## TCR walkover survey TCR (Q312)

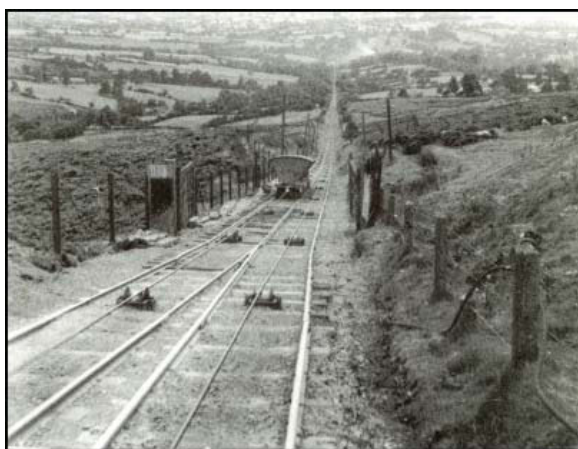
NGR: SO 5918 7756 to SO 5780 7690

This incline is shown on both the OS 1884 1<sup>st</sup> Edition and 1903 2<sup>nd</sup> Edition plans

### 3. The Titterstone to Bitterly Incline

The 1881 agreement makes provision for the construction of a narrow gauge gravity incline plane from the base of the workings at SO 5918 7756 to the rail junction at Bitterly Wharf SO 5748 7690. The construction of the incline seems to have been completed as a primary task to facilitate transport of materials. A record of the quarry workings reports that the incline was running twenty trips of four wagons per day by the end of 1881.

The incline survives today as a significant landscape feature running south-west from the south-western edge of the quarry platform at SO 5919 7757 at a height of 443m AOD down slope towards Bitterly. The top portion of the incline survives in an excellent state of preservation as a cutting 7m wide. The stumps of a series of concrete posts run along its northern side. Comparison between a 1930 photograph looking down from the top of the incline and the view today clearly show the state of preservation.



*Plates 77 and 78: The 1930 photograph on the left is taken a little below the present photograph on the right - the concrete posts seen in the 1930 image can be seen as stumps in the later image*

It can be seen from the earlier image that the incline used three rails, the central rail being common to tubs going down and up. The cable and cable support drums can be seen in the centre of each run. The rails split into two separate tracks towards the head of the incline. The incline track runs along a 3.1m wide terrace, raised above the hillside on its south side. At SO 59124 77547, at a height of 430m AOD the incline enters a cutting 3.2m wide and 2.5m deep which continues for some 98m to SO 59021 77506 at a height of 409m AOD. At this point the incline tram-way is 3.6m wide, flanked on either side by a bank 0.8m high, the whole incline having a total width of 9.6m. At SO 59018 77506 is a length of rail supporting a pulley, perhaps part of a control of signalling mechanism set upright on the east side of the track.



The track runs downhill from this point along a substantial embankment 2.5m high, above the natural land surface to SO 58999 77497 where there is a collapsed culvert 4.5m wide and 1.2m deep. At SO 58934 77472 the incline again enters a short cutting, 1.5m deep on its west side and 1.2m on its east side.

*Plate 79: SO 59018 77506 length of rail supporting pulley*



*Plates 80 and 81: Collapsed culvert at SO 58999 77497*



*Plates 82 and 83: Left looking towards top of incline, right looking down incline*

This cutting ends at SO 5890 7746 from which point the line runs along a substantial and well preserved causeway 6m wide at its top spreading to 18m at the base of the embankment and standing 3 to 4 m above the surrounding land surface. This causeway is broken at SO 5882 7743 where it is bridged to allow a well made pathway to cross the line of the incline running north-west to south-east. This pathway

appears on both the 1884 and 1903 OS 1:2500 sheets and survives today as an integral part of the 'Shropshire Way footpath. The track is carried across the cutting on a concrete pad, supported by four concrete beams. These are carried on what appear to be earlier abutments built of dressed local dolerite (dhustone), built as an integral part of the original 1881 structure of the incline. It seems likely that the original rail crossing support would have been timber, the concrete superstructure being a later replacement. The incline continues from the bridge as a raised causeway running to SO 5872 7739, where, at a height of 359m AOD, it enters a cutting which continues as a deep, tree and scrub lined corridor beyond the fenced end of the open common land at SO 5870 7738.



*Plates 84 and 85: Left the concrete crossing plinth and right the stone abutments*



*Plates 86 and 87: The Shropshire Way footpath approaching from the SE (left) and NW (right)*



*Plate 88 (right): Cutting, fenced,  
at edge of common*



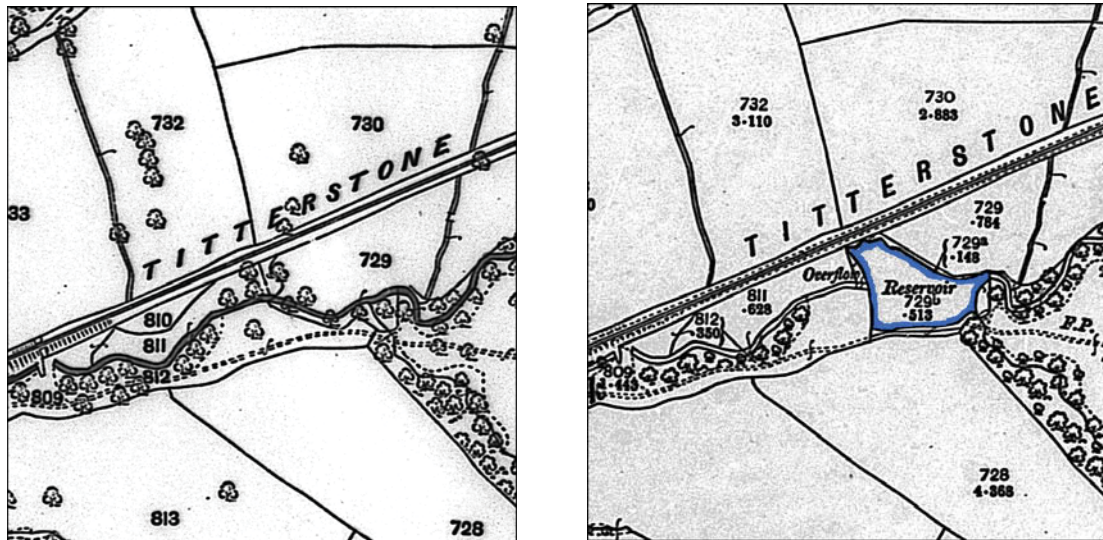
*Plate 89: Cutting beyond  
edge of common*

From this point the incline runs through enclosed farmland and has become to some extent fragmented and incorporated into a variety of holdings and uses. Passing through the garden of a cottage at SO 5851 7731 the causeway ends on the Bedlam Lane where the bridge which once crossed the lane has been removed. The supporting wall of the bridge can be seen at SO 5849 7729 on the south side of the Lane; built of concrete blocks it has a top course of brickwork with cut sections of RSJs surviving embedded in the upper course. From this point the course of the incline is difficult to access, but can be seen as a low embankment running parallel to and north of Benson's Brook.



*Plates 90 and 91: Left, bridge support SO 5849 7772, right incline causeway continuing  
alongside Benson's Brook*

At SO 5809 7709 at a height of 258m AOD, is a triangular pond 60m east to west by 50m north to south, created by damming the course of the brook. This feature is not shown on the 1884 OS plan but does appear on the 1903 edition. It seems probable that this reservoir is part of the 1889 capital investment in the quarry which included a reservoir, close to Benson's Brook which was used to drive the turbines producing electric power for the crushing and sieving machines at Bitterley Warf (Peaty 2006, 178).

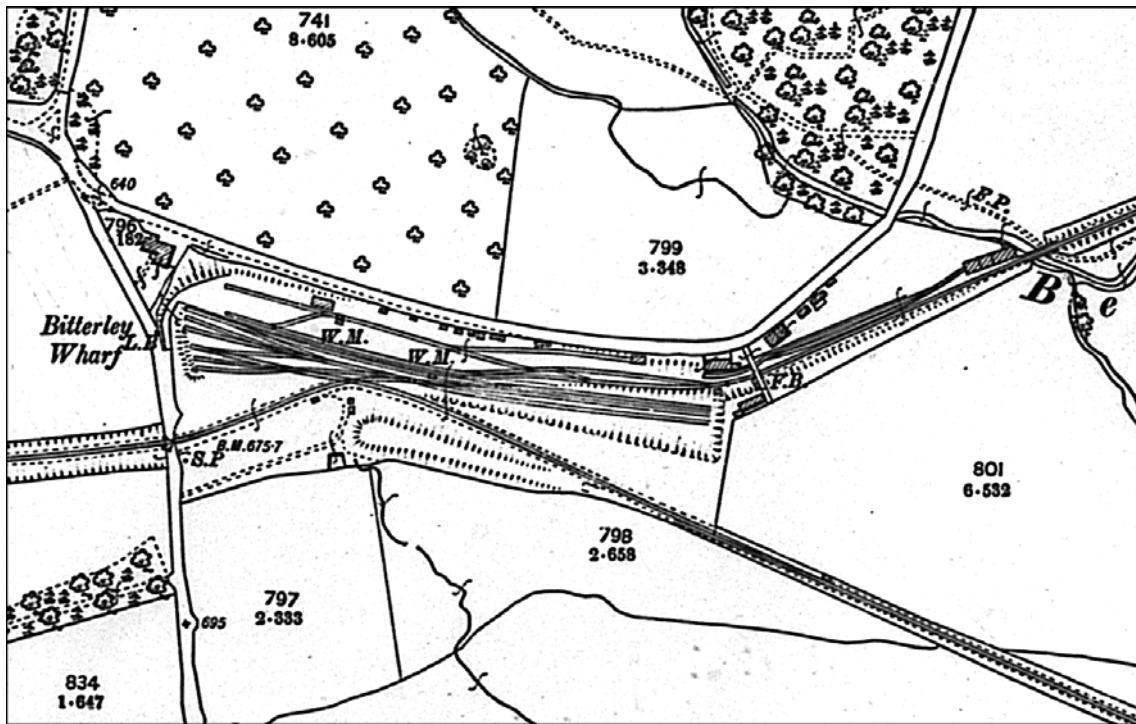


*Figs 8 and 9: Section of 1884 OS 1:2500 left and 1903, right showing reservoir*

The incline in this area is overgrown and difficult to access but a more detailed investigation is required to more fully record and interpret the water management system associated with this early use of hydro-electric power. No buildings are associated with the works in close proximity to the reservoir, but at SO 5755 7691, some 520m downstream at a height of 222m AOD is the first of the buildings which relate to the Bitterley complex. At this point, where the incline crosses over Benson's Brook at SO 5756 7691 are the substantial remains of stone walling and pipework. It is not possible to fully interpret the remains here or those of the works complex to the south-west without a more detailed investigation. From both the documentary record and the remains on the ground it seems probable that such a detailed investigation would be of considerable value to a more full understanding of this important part of the Titterstone Quarry infrastructure.



*Plates 92 and 93: Incline crossing Benson's Brook at SO 5756 7691*



*Fig.10: The complexity of Bitterley sidings shown on the 1903 2<sup>nd</sup> Edition 1:2500*



*Plate 94*



*Plate 95*



*Plate 96*



*Plate 97*



*Plate 98*



*Plate 99*

*Plates 94-99: Elements of the Bitterley sidings and tar works surviving, Plate 96 is the 'old forge', currently the subject of a planning application. This whole complex requires detailed archaeological survey*

### **Action**

Aerial photography. OS 1884 1<sup>st</sup> Edition 1:2500 and 1903 2<sup>nd</sup> Edition 1:2500 registered to OS Landline and compared as map regression. Site visited to confirm condition.

### **Management Statement**

The monument is a 2km long linear which passes through variety of land management regimes. The upper 500m runs across the open common land and survives in an excellent state of preservation. Below this the site runs through largely pastoral farmland in places in close proximity to dwellings. The site is a significant landscape feature and an important part of the industrial remains upon the hill. Its long term conservation would benefit from a more complete survey of the Bitterley complex and a more pro-active management regime.

### **Recommendations**

The top 500m is a very prominent landscape feature, which survives largely intact and which could be promoted as part of the overall complexity of archaeological remains on the hill. It is a natural approach to the Titterstone quarry complex from the Shropshire Way footpath which passes beneath the viaduct at SO 5882 7743. Steps constructed from the footpath to the top of the incline in this area would allow walkers to make a detour up the incline to the quarry platform. The excellent state of survival of this portion of the incline, high amenity value and close relationship to the western quarry make this site worthy of consideration for scheduled status.

The more southern portion of the incline to Bitterley is more problematic. It is unfortunate that areas have become destroyed or incorporated into the gardens of dwellings. If this were not the case it could have been incorporated into a walkway from a potential car parking area within the Bitterley Junction complex. However the fragmented nature of the linear would now make this difficult but not impossible. The Bitterley sidings complex itself is an area with considerable potential for further recording and for presentation.

**Statement of importance**

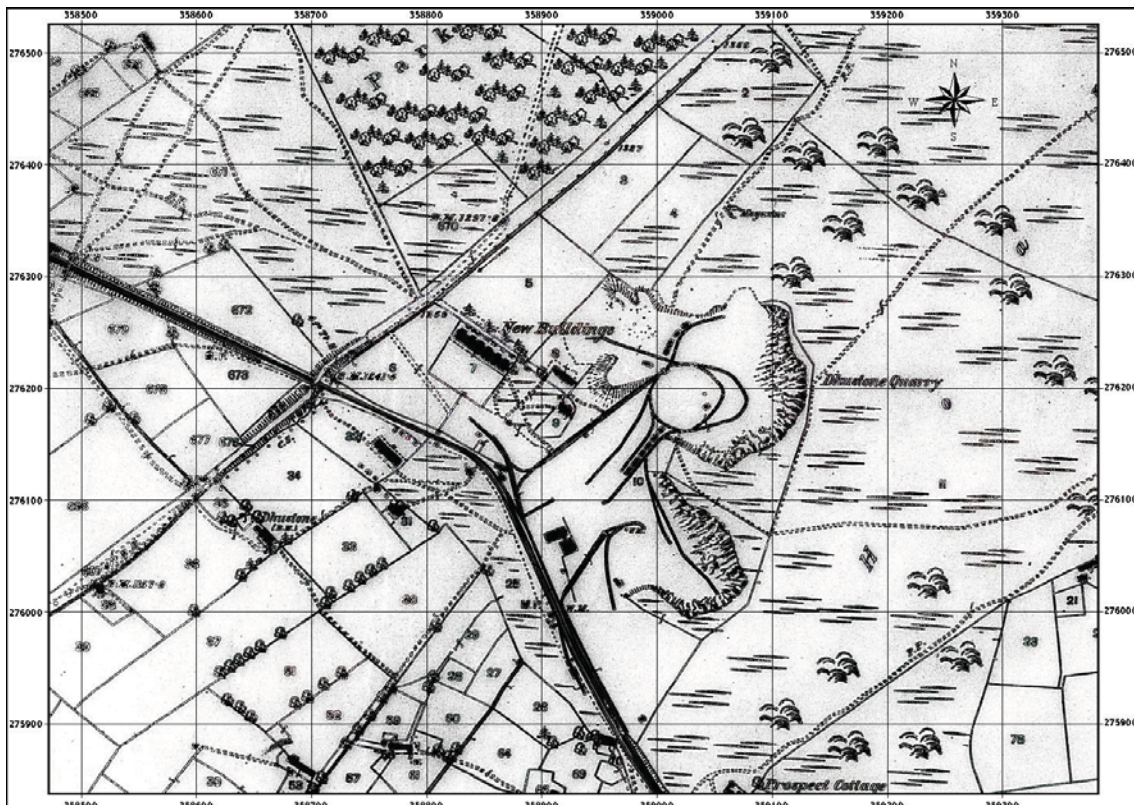
<b>CRITERIA</b>	<b>HIGH</b>	<b>MEDIUM</b>	<b>LOW</b>
<b>SITEID: TCR (Q312)</b>			
<b>Rarity</b>	*		
<b>Documentation</b>	*		
<b>Group value</b>	*		
<b>Survival/condition</b>	*		
<b>Fragility/vulnerability</b>	*		
<b>Diversity</b>	*		
<b>Potential</b>	*		
<b>Amenity value</b>	*		

## TCR (Q313)

### 4. The Dhustone Quarry

Centred: SO 5900 7616

The Clee Hill Dhustone Company was formed in 1863 as a partnership between Thomas Roberts, William Clarke and Colonel Patchett. Clarke and Roberts had worked together on the construction of a railway in India (Jenkins 83 pg. 31). Clarke had been engaged as the engineer on the construction of the Ludlow to Clee Hill railway began in the late 1850s and completed c. 1860. While so engaged he had recognised the potential of this local hard basalt, not only a building stone but as a stone whose characteristics made it suitable for use in the construction of rail and road surfaces. In 1855 he had successfully tendered for the building of Cardiff docks, stipulating in his design the use of Clee Hill dolerite, he was therefore well placed to understand and to exploit the commercial potential of the dhustone. The Dhustone company obtained a lease to quarry a site to the north of Treen Pits Colliery in 1863, the quarry to be known as The Dhustone Quarry, (Hewitt 1991, 139), to be the first truly commercial quarry to operate on Clee Hill although numerous small quarries had already existed upon the hill, these had been worked on a random basis for building stone. The company also obtained permission for and built an incline railway from the quarry to link with the recently constructed railway at Bitterley Warf a distance of some 1.84 km.



*Fig. 11: The 1884 OS 1<sup>st</sup> Edition 1:2500 depiction of Dhustone Quarry*

The 1884 OS 1<sup>st</sup> Edition 1:2500 shows the Dhustone Quarry as a named site situated on the edge of open common land at SO 5900 7615. Two crescentic quarry faces are shown lying one above the other north to south, each open on their west side. The

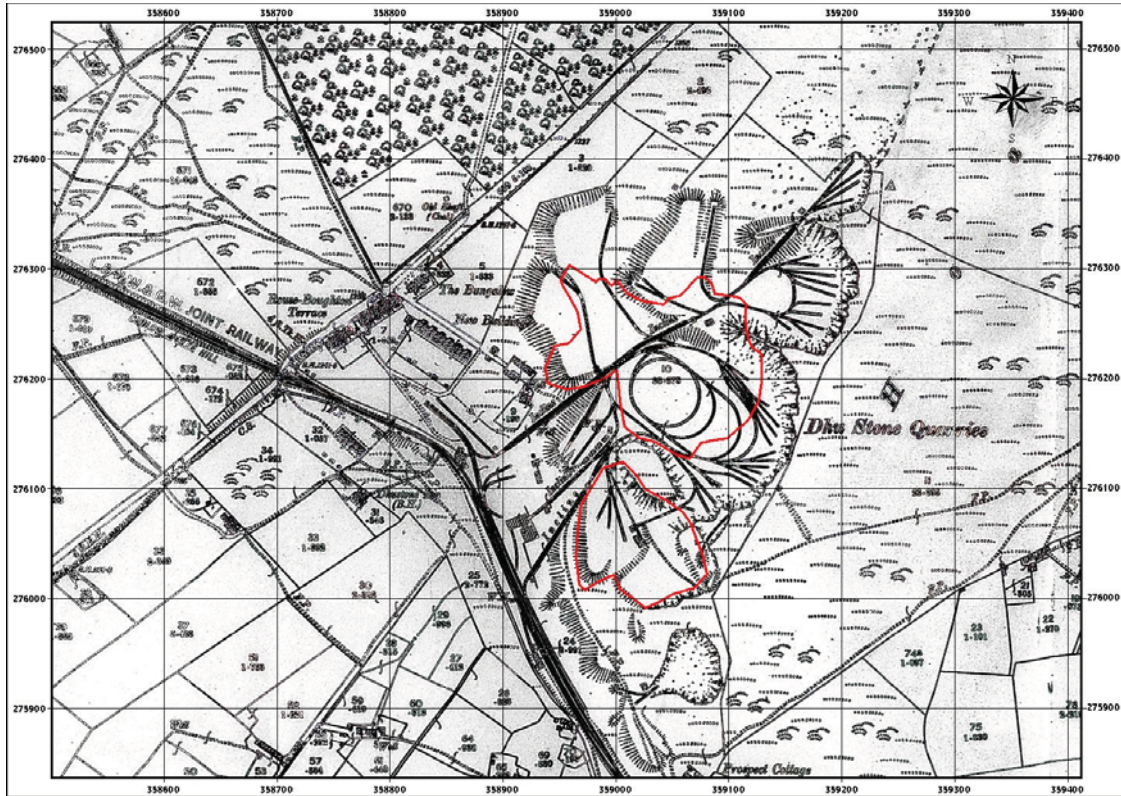
northern cutting measuring 164m north to south by 130m east to west to give an area of 21,148 sq. m., the southern 101m by 93m, 10,273.87 sq.m. A tub-line system is shown linking from the quarry faces to the incline to the south-west. This is linked now from its head at SO5883 7611 by a spur line running to the south-east to a siding behind the Victoria Inn at SO 5942 7542 to serve the Granite Quarry and Cornbrook Collieries. A terrace of cottages named as New Buildings is shown at SO5884 7624, built to accommodate the quarry workers many of whom had been brought into the area for their skill in quarry working.



*Plates 100-101: The Dhustone incline below the Dhustone Lane Bridge SO 5869 7621 in 1958 and as it is today*

By the time of the 1903 2<sup>nd</sup> series 1:2500 the quarry has expanded both in size and complexity to an area of 112,486 sq.m.. The quarries rail lines are shown as linking from the quarry faces in the east to the spoil mounds in the west to deposit the quarry waste and linking to the main line to the south to deliver the worked stone to the railhead. A series of three incline planes is shown joining from the quarry floor to the main rail sidings.

A second row of terraced cottages had been built alongside the Dhustone Lane, named as Rouse Boughton Terrace on the 1903 plan. By 1866 it had been recognised that to maximise the potential of the Ludlow to Clee Hill railway it was necessary to integrate it with the Shrewsbury to Hereford rail link, operated by the Great Western and London and North Western Joint Railway Company. This was accomplished in 1867 and the 1903 plan annotates the incline approach with the name 'L&NW&GW JOINT RAILWAY'.



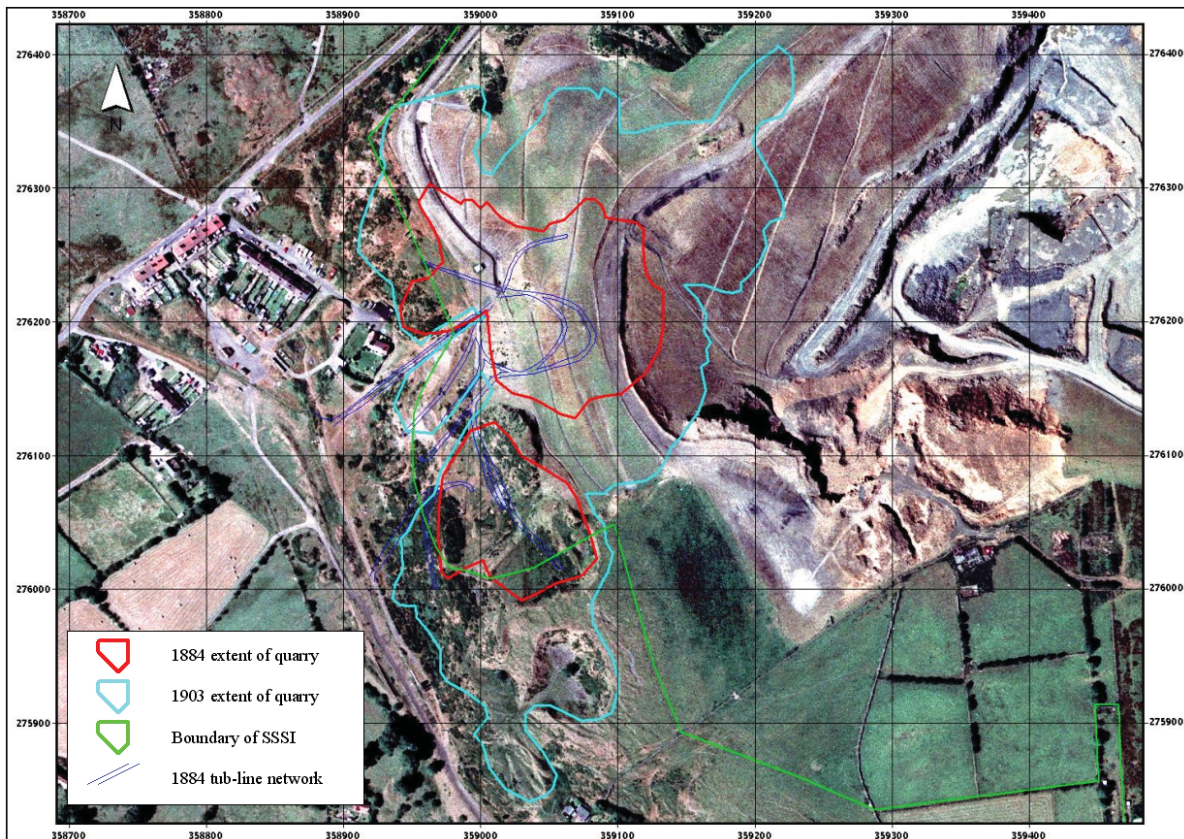
*Fig.12: The 1903 plan with the 1884 extent of quarrying outlined in red*

Much of the early production from the Dhustone quarry was in the form of stone setts used for their hard wearing properties in the construction of urban roads where they were able to withstand erosion from the solid wheels of horse drawn transport. Although more expensive to lay they were favoured as they did not need to be renewed or repaired as often as other surfaces. Both Liverpool and Manchester favoured the use of the Dhustone product. A considerable portfolio of historic photographs relating to the Dhustone Quarry exist, some in private ownership and some in Shropshire Archives at Shrewsbury, two of which are reproduced below.



*Plates 102-103: Tubs climbing the Dhustone Quarry incline; stone setts at the head of the incline*





*Fig 13: Dhustone Quarry aerial photograph*

Today what remains of the Dhustone Quarry lies to the east of Dhustone Lane, between the lane and the currently active Hanson Quarry. The north-eastern part of the early quarry, approximately half of the total area, has been completely destroyed. The impact of the modern quarry can be seen above and the extents of the quarry in 1884 and in 1903 respectively in red and light blue are shown overlying an AP of the modern quarry extent in 1999. Most of the quarry faces themselves no longer survive as surface features having either been removed by the modern quarry or buried beneath re-instated land. One small later quarry does however survive intact at SO 5906 7593. It dates from the period between the 1884 and 1903 surveys and is today exactly as shown in the 1903 record, a roughly oval quarry cut into the south-west facing hill-slope with dimensions of 76m NW to SE by 56m transversely.

The west and south parts of the quarry, alongside the rail spur from the incline head to the Victoria sidings, survives with many of the original features intact. In particular the incline planes from the quarry to the rail sidings can still be identified on the ground as steep tracks climbing from the rail floor, the main one running from SO 5899 7621 top to SO 5889 7613 bottom. Two photographs from the 1930s, (reproduced above courtesy of A. Jenkins) show one such incline climbing steeply from the quarry face to a high point before descending, presumably towards the railhead. This suggests that the later quarries were deeply incised into the hill, below the rail spur and separated from it by higher ground. A considerable part of the later phase of the rail spur infrastructure itself still survives at the foot of the quarry spoil banks.

### Action

Aerial photography. OS 1884 1<sup>st</sup> Edition 1:2500, 1903 2<sup>nd</sup> Edition 1:2500 and 1953 1:10,560 registered to OS Landline and compared as map regression. Site visited to confirm condition.

### Management Statement

Only the southern part of the site survives as an area of quarry waste mounds with associated trackways and buildings on the south-west slopes below the main focus of the quarry. The quarries themselves have been removed by recent quarrying and the land reinstated as sheep pasture. One compact and very complete quarry survives however at the south extent of the Dhustone area. If any enhancement of the scheduled protection of sites upon the hill were to be undertaken then consideration should be given to this site as a complete example of a small quarry working. The spoil slopes are vegetated in mixed grass, gorse and regenerating scrub woodland, a valuable wildlife habitat area. Vegetation is generally coarse grass and wetland species. The linear area of the rail spur is now an open area through which a track runs between the Clee Hill village and the quarry cottage complex at the north west extent of the area. The site can be accessed by foot from Clee Hill village, from the vicinity of the quarry cottages or, the upper levels from a gated trackway off Dhustone Lane.

### Recommendations

The quarry is a quite extensive but discrete landscape which does however contain a series of elements relating to the early and later quarry activity. The top of the site can be accessed on foot from a gated track-way off Dhustone Lane to the north of the site. This track leads to the signed quarry viewing platform. This is not however signed from the Lane itself. There is potential to devise and introduce a footpath system here from Clee Hill Village in the south to the Dhustone Lane in the north which could incorporate many of the surviving features. However consideration would need to be given to the dwellings which exist to the south and north of the quarry.

### Statement of importance

CRITERIA	HIGH	MEDIUM	LOW
<b>SITEID: TCR (Q313)</b>			
<b>Rarity</b>		*	
<b>Documentation</b>		*	
<b>Group value</b>	*		
<b>Survival/condition</b>		*	
<b>Fragility/vulnerability</b>		*	
<b>Diversity</b>	*		
<b>Potential</b>	*		
<b>Amenity value</b>	*		



*Plates 104-109: The upper area of Dhustone Quarry above the railhead inclines showing surviving spoil mounds and re-instated sheep pasture. A public access viewing point climbs by a series of steps from SO 58952 76357 to overlook the current quarry at SO 59186 76345 and three information points are provided along the route. The view from the viewing point is shown below (Plate 110).*



*Plate 110: Quarry from view point SO 59186 76345*



*Plate 111: Incline running from quarry plateau SO 5899 7620 to railhead SO 5889 7612*



*Plates 112-113: (left and below): Looking south across quarry spoil slopes*



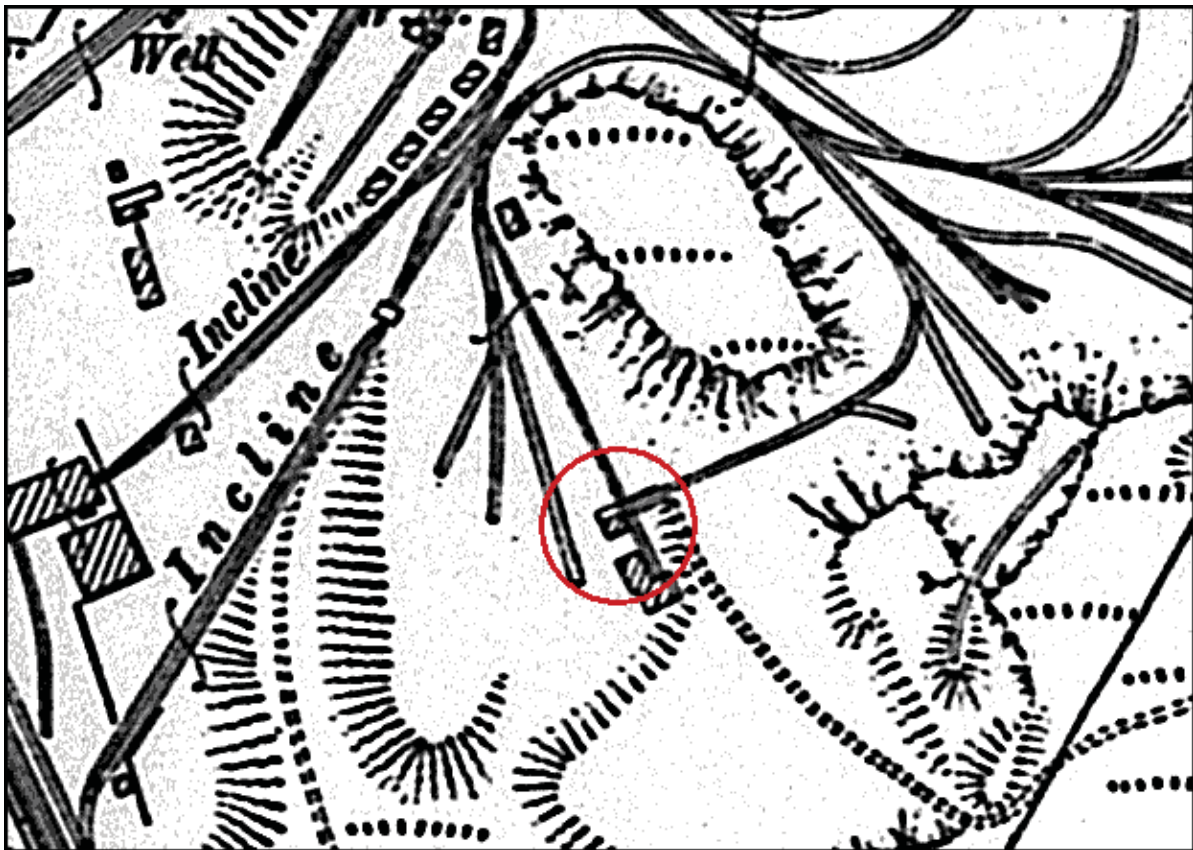
*Plates 114-115: The small flat topped concrete chamber shown on right and top right is situated above the incline at SO 5895 7621, It is believed to be the housing for a warning bell sounded to warn of blasting*



*Plates 116-117: Parallel walls situated on top of the early spoil platform at SO 5894 7626 post 1903 in date*



*Plates 118 and 119*



*Fig.14: Dhustone Quarry*

The two images above (plates 118 and 119) show the terminal of a short incline which ran between from the quarry lip to the north-east at SO 5907 7609 where it joined with an oval turn-around on the quarry floor to the terminal at SO 5902 7605. From this point the 1884 and 1903 maps show a quarry tub-line, which would have been loaded from above north at right angles to join with top of main incline, shown on the 1903 plan section reproduced above.



*Plates 120-125: This small quarry lies at SO 5906 7594 and survives intact as shown on the 1903 survey. The images show, top the quarry from below and above, middle left the narrow quarry entrance and right the spoil mound below. The bottom images show right, scree and exposure in quarry interior and blast shake on the hillside above. This is an exceptionally complete and compact example of a quarry of the period, closely dated and worthy of consideration for protecting as such.*



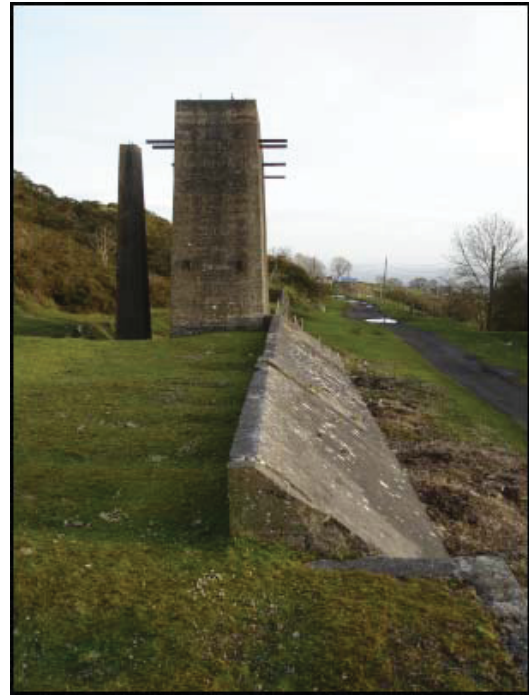
*Plates 126-131: The images above show the complexity and differing levels of the tiered series of rail lines which run in a SSE to NNW direction from SO 5897 7589 towards the incline head at SO 5884 7614 where the line turns to the NW. Top left shows a view of the line from the quarry above. The top right and the middle two images show the stone and concrete embankment of the top tier line. The middle right showing the corrugated surface left by the rail sleepers. The bottom images show a small rail embankment running along the western side of the line and the lower right image the sunken middle line, or lines.*





*Plates 132-137: Top left, building remains SO 5891 7596, top right looking from building remains towards head of incline. Middle the stone and concrete revetment wall of the higher rail line. Bottom left narrow gauge rail embankment looking towards head of incline.*

*Bottom left the rail alignments turning towards the alignment of the incline.*



*Plates 138-143: Top and middle piers on loading wharf possibly linking with overhead rail from incline above. Bottom left, brick-built room built into and beneath high level railway. Bottom right, in-situ wooden sleepers top of embankment*



*Plates 144-149: Brick chamber built beneath upper rail line at SO 5891 7605. Top right shows concrete and RSJ roof structure. Bottom shows stairs linking to open inspection chamber in top of rail embankment. Doorway now blocked with bricks.*

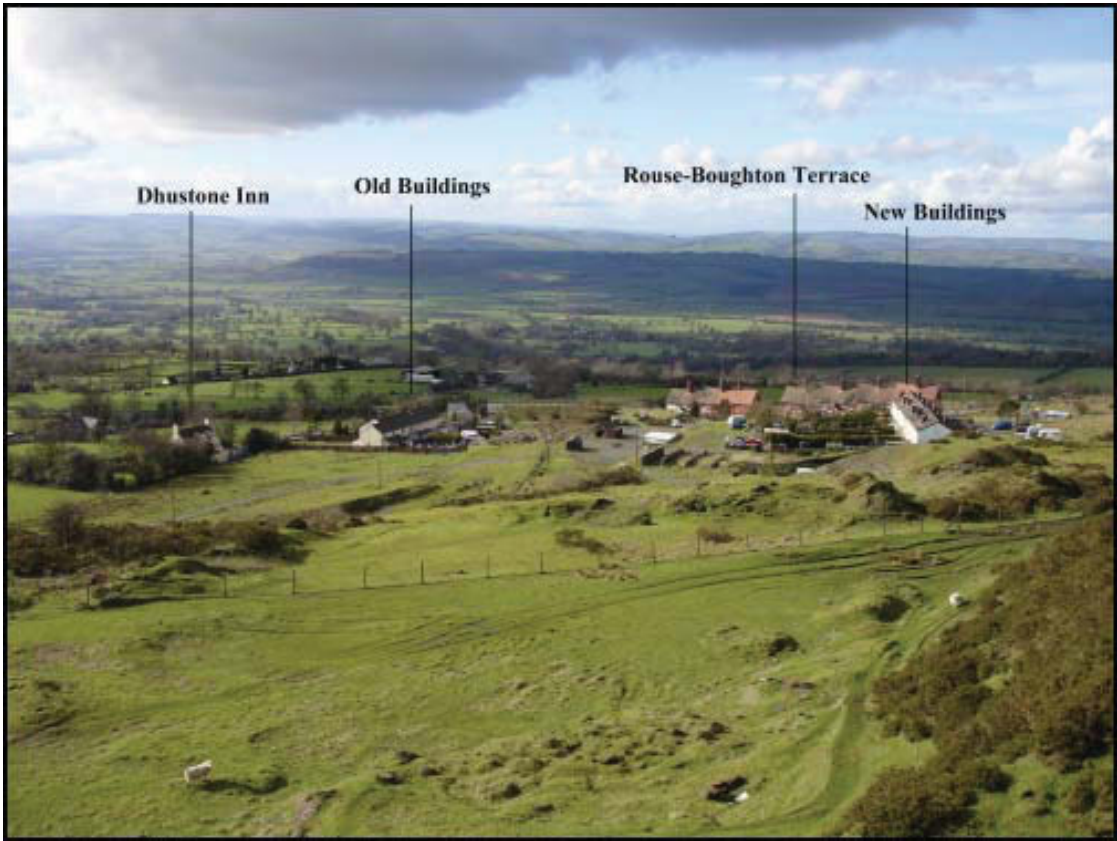




*Plates 150-153: Top left and right building remains at SO 5991 7606. Middle incline supports left at SO 5893 7612, right at SO 5893 7608. Bottom left sunken cistern SO 5895 7609, bottom right interior of cistern*



*Plate 154: Top of incline linking with rail spur, later circular conduit can be seen beneath bridge with incline continuing below bridge, quarry cottages in mid ground*



*Plate 155: Head of Incline*

Walkover survey  
TCR (Q315)  
5. The Clee Hill Granite Co. Quarries

Centred: SO 5948 7563

The Granite Quarry Company was set up in 1867 by Thomas Roberts, 'Granite' being used as a part of the quarry name to imply the hard nature of the stone. The company obtained leases for an area to the east of the Dhustone Quarry, incorporating the areas of the abandoned Chimney and Dhustone pits. The primary product of the company was in its early years the same as its neighbouring Dhustone Quarry, the dhustone sett for the expanding urban communication networks. By the end of the 19<sup>th</sup> century the Granite Company had expanded to incorporate coal mining for fuel for the quarry engines, clay pits and several quarry sites, employing over 400 men and boys. The early emphasis of working was on the western side of the hill and both the 1884 and 1903 show an expansion of quarrying centred at SO 5948 7563 to the north of Clee Hill village, east of the site of Treen Pits. Several separate work areas become over time incorporated to form a single site which is now largely consumed within the current Hanson quarry. However in 1908 the company also opened an extensive quarry on the east side of the hill known as the Catherton Quarry.

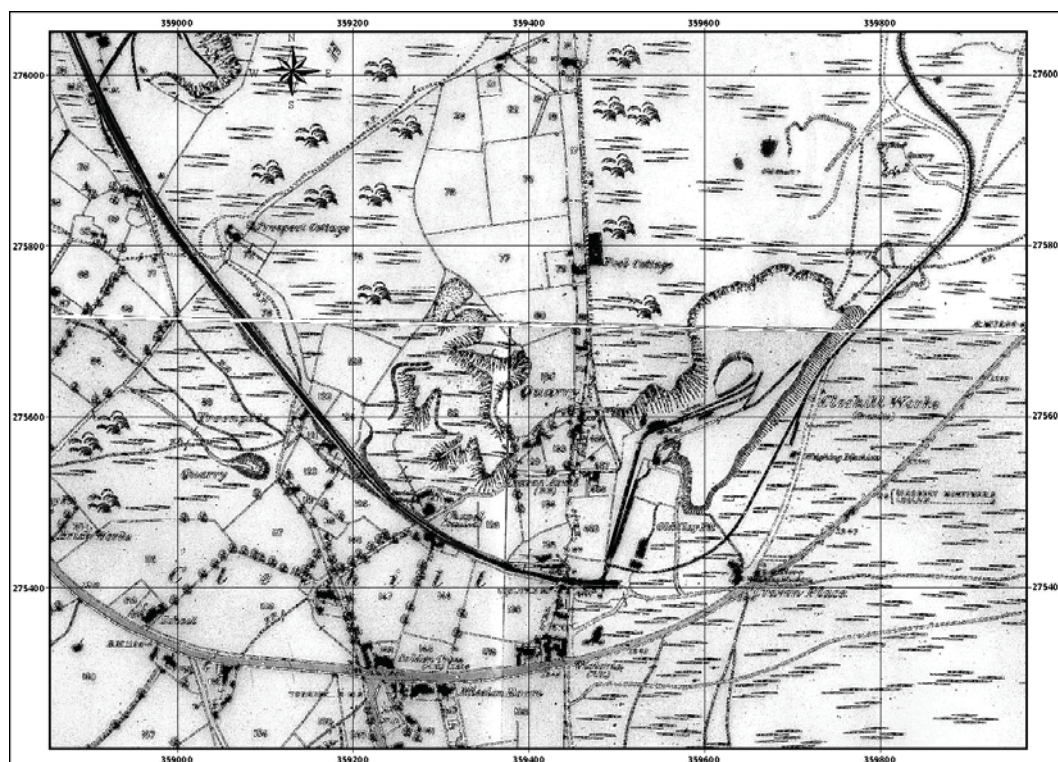
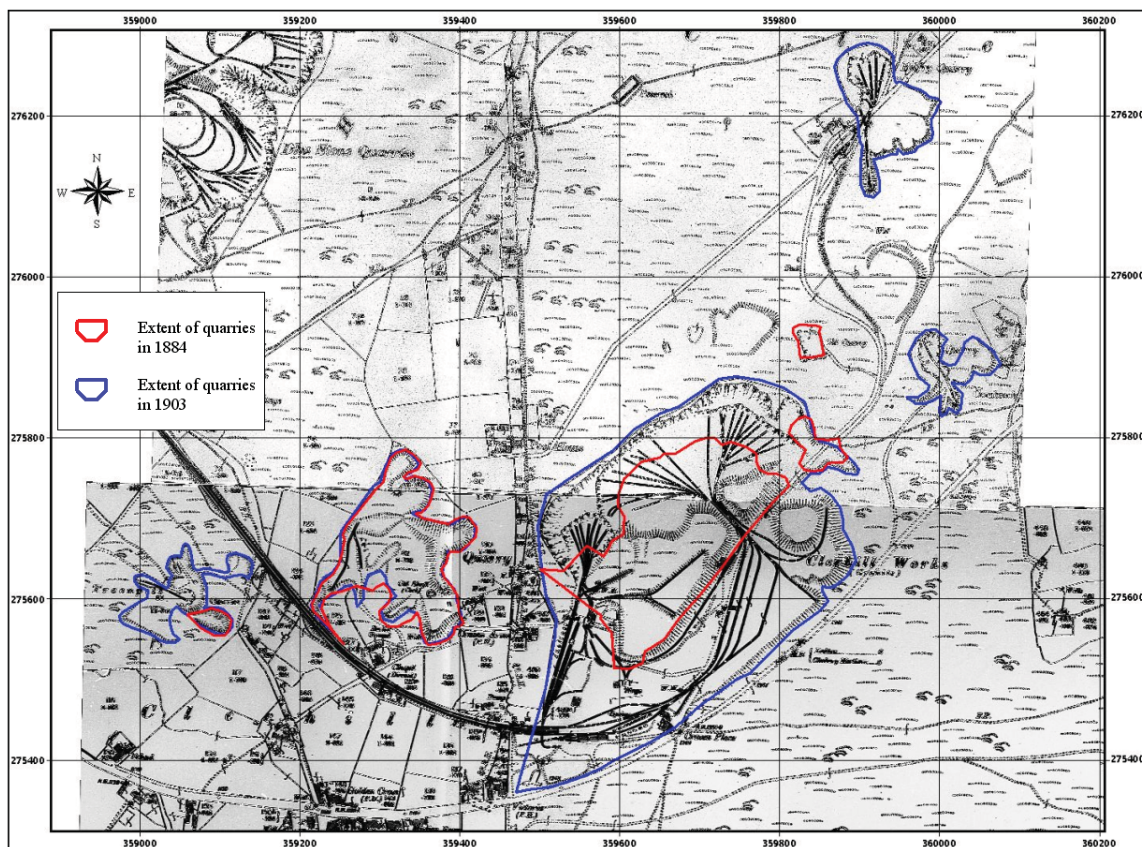


Fig. 15: Extract from the 1884 OS 1<sup>st</sup> Edition 1:2500 showing area of Granite Works

The 1884 OS 1:2500 shows the works as quite distinct from the Dhustone Quarry some 460m to the north-west but served by the same rail spur from the head of the Dhustone Incline. Five separate quarries are shown as existing at this time: The Treen quarry at SO 5908 7555 with an area of only 1,168 sq m., a quarry centred at SO 5931 7562 with an area of 23,171 sq. m., SO 5964 7568, area 40,017 sq.m. and two small quarries at SO 5981 7579, area 2,530 sq. m. and at SO 5983 7590, area 1,223 sq. m.. No infrastructure is shown in association with any of the smaller quarries or with the

western second largest quarry suggesting that these quarries are being either worked by small ad hoc enterprises or are, particularly in the case of the western quarry, already worked out. The eastern and largest quarry is shown with a rail siding linking from the quarry floor at SO 5967 7565 to the rail spur head to the south at SO 5949 7540 suggesting that this is the quarry being worked by the Granite Company in 1884.



*Fig. 16: Clee Hill Granite Company Quarry*

The 1903 2<sup>nd</sup> series 1:2500 record of the area shows that the Treen Pits quarry has expanded to 8,458 sq. m., while the western quarry remains at the same size as in 1884. The main quarry has expanded to 132,907 sq. m. consuming one of the smaller eastern quarries shown in 1884 the northern of which remains unchanged. Two further quarries have been opened, one to the east at SO 6001 7588 close to the Cornbrook valley, occupies an area of 6,086 sq. m. the second, named as Belfry Quarry lies to the north-east at SO 5993 7621 and occupies an area of 12,572 sq. m. Tub lines are shown from the face of this quarry linking to a track-way south which joins into the main rail complex of the largest quarry to the south suggesting that this quarry was active at the time of survey.

Today, the Treen Pits quarry at SO 5906 7561 and that to the east at SO 5931 7566 are in extent as depicted in the 1903 survey. They lie south and north of the rail spur respectively and survive as a collection of turf covered quarry faces and spoil heaps.

## TREEN PITS QUARRY



*Plates 156-161: The Treen Pits quarry site lies under rough sheep pasture to the NW of Clee Hill village alongside the disused rail spur. Top left image, looking SW across site, top right the main quarry pit at SO 5906 7561. The middle images show a raised trackway from the centre of site to a small lane to the west of the area. Bottom left image hollow way from lane at SO 5891 7564. Bottom right image a probable bell pit located in the north of the site at SO 5902 7568.*



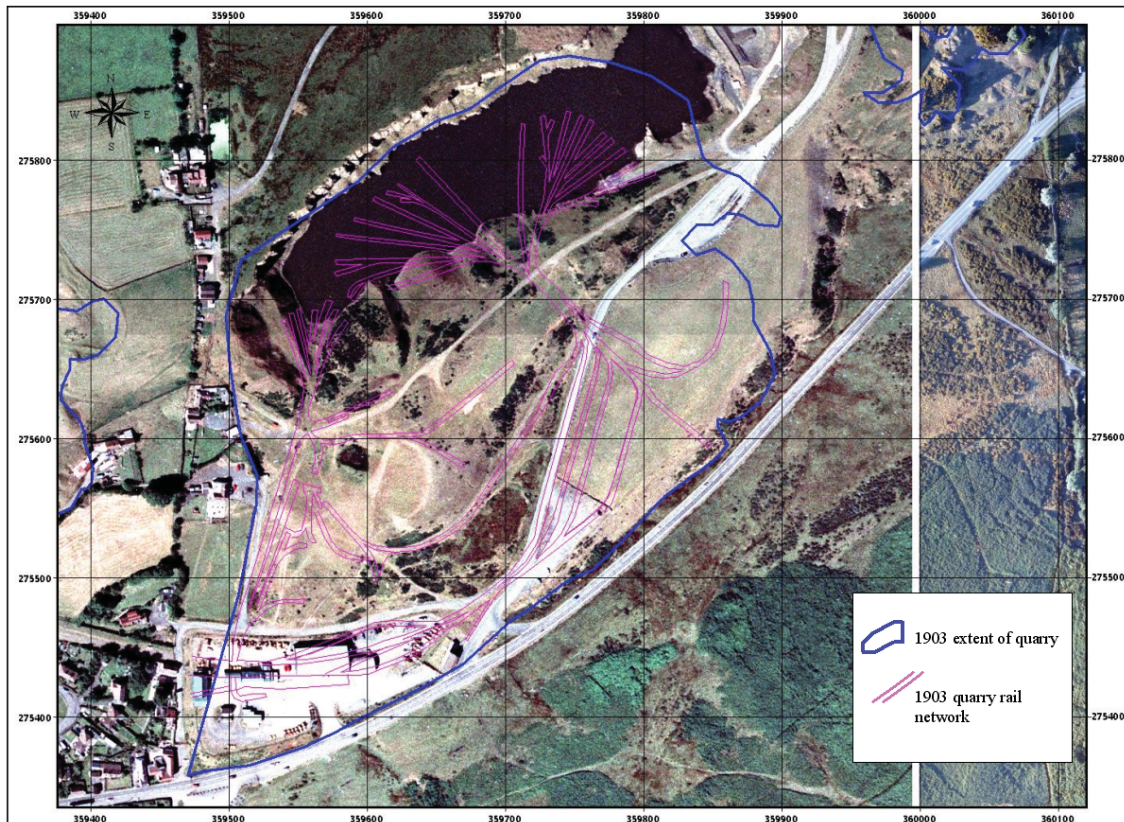
## OLD QUARRY NORTH OF RAIL SPUR



*Plates 162-167: The quarry to the north of the rail spur at SO 5932 7566 appears to be unchanged from its 1884 depiction. It lies within sheep pasture with several exposed scree slopes. The top right image is looking east along the rail spur embankment, a small 1950s council housing development in the distance. The top right image shows the remains of a disused chapel close to the quarry entrance and middle left the quarry entrance itself. Middle right shows an interior view of the quarry with the bottom left showing old workings to the west of the quarry. The bottom right image shows an example of the small dry stone walled field system which survives in this area.*

The main focus of quarry activity post 1903 appears to be the southern quarry which is named on both the 1884 and 1903 maps as ‘Cleehill Works (Granite)’. This quarry

complex is centred at SO 5968 7565, an area referred to today as the ‘Incline Quarry’ named from the two substantial incline planes which are shown on the 1903 plan. Today the quarry floor is flooded to create a small, deep lake lying on a NE to SW alignment, 367m long by 102m wide. The north side of the lake is bounded by a precipitous cliff face, the south side by steep sided spoil mounds, which rise to a plateau between the quarry and the A4117 to the south. A collection of historic photographs relating to this quarry survives in museum and private collections, examples are reproduced below.

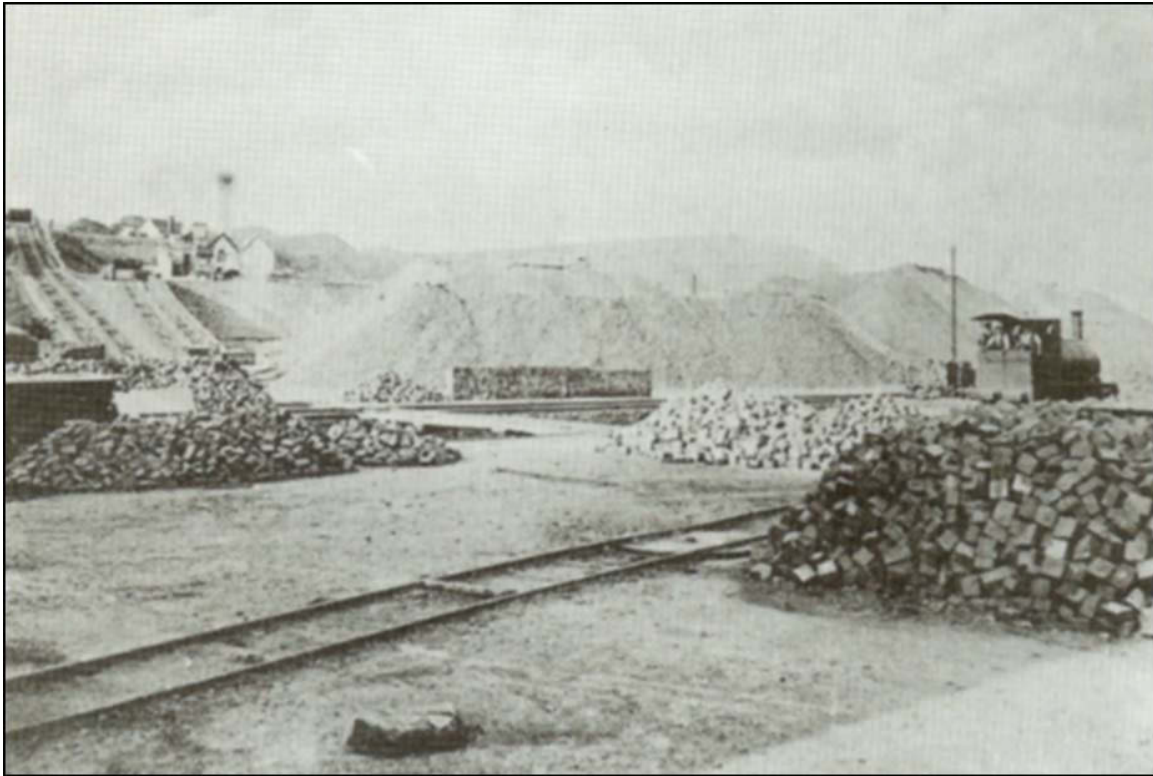


**Fig. 17: The extent of the 1903 quarry and rail network overlain onto recent aerial photography**

The western incline ran from the quarry face at SO 5956 7570 at a height of 414m AOD directly to the rail head at SO 5950 7543, 383m AOD. Although the tub line fan adjacent to the quarry face has been removed by later quarry activity, lower elements of this incline do survive. The rising cutting from the quarry can be recognised climbing from the now flooded quarry to a point at SO 5955 7562 and the concrete plinths of several buildings also lie in this area at the top of the incline. In the area to the east of the Kremlin public house car park is a substantial section of stone revetment wall and above it running between SO 5955 7559 and SO 5954 7555 a well preserved length of concrete reinforced embankment, the head of the down-slope incline. A similar embankment head survives lower down slope at SO 5954 7551 and rail lines are shown at both of these positions on the 1903 plan. The more eastern incline runs from the quarry floor at SO 5971 7572, 402m AOD to terminate on spoil mounds at SO 5985 7559, 378m AOD. Branches join this incline along its course carrying spoil to be deposited on the hillside to the east and south and to carry stone to the rail head to the west. These lines have been removed by later quarry activity.



*Plates 168-169: Top the north face of the quarry in 1903 and today 2007 (1903 photo courtesy of A Jenkins)*



*Plate 170: Granite Quarry 1903 showing piles of made setts awaiting loading in rail sidings  
(Photo courtesy of A Jenkins)*



*Plate 171: Granite Quarry sidings near to the present Kremlin public house (photo courtesy of A Jenkins)*



*Plate 172: Stone built revetment wall below incline head located at SO 5953 7556*



*Plate 173: Looking along incline head at SO 5955 7558*



*Plates 174 and 175: Viewing platform at head of quarry*



*Plates 176 and 177: Left, north face of quarry, right, concrete plinth head of incline  
SO 5954 7561*



*Plates 178 and 179: Left, concrete plinth SO 5954 7561, right, head of lower incline  
SO 5954 7551*

### **Action**

Aerial photography. OS 1884 1<sup>st</sup> Edition 1:2500, 1903 2<sup>nd</sup> Edition 1:2500 and 1953 1:10,560 registered to OS Landline and compared as map regression. Site visited to confirm condition.

### **Management Statement**

The western Granite Quarry is a complex of several separate quarries under a variety of management regimes. The Treen Pits site lies under sheep pasture in close proximity to several cottages. A small haulage company operates from the farm to the immediate south-west of the site. It can be approached along a lane from the village which commences west of the Golden Cross Inn. A signed footpath exits the site by a stile onto the old rail spur line to the north and crossing this, enters fields to the north of the rail line. Though it is unclear in which direction the path then goes. If further signs and stiles were installed this path could run on into the early quarry north of the rail spur. This quarry to the north of the rail spur is unchanged since 1884 and it lies largely again under sheep pasture with some exposed scree slopes. Its proximity to the centre of the village has led to the site being used for some, though quite limited fly-tipping. The quarry spoil mounds close to the quarry entrance from the rail spur have been used as for off road motorcycle and quad riding with some resultant erosion, though again this is quite limited in extent.

The main quarry further east lies between the village and the present quarry. Much of it is contained within the current quarry grounds and is open to the hillside. Spoil mounds and grassed areas are grazed as open sheep pasture. The main quarry is flooded with steep sides making it in places hazardous. There is a viewing platform at its western end. Access to this is by gated track and path from the vicinity of the Kremlin public house. There is little if any signage to guide visitors to the platform. The south side of the site lies under landscaped spoil mounds and there is a public access car park at its north-east extent alongside the Hanson Quarry access road. The southern tip of the site now lies beneath the yard and buildings of the Clee Hill Plant heavy plant hire company.

### **Recommendations**

The quarry is an extensive landscape which contains a series of elements relating to the early and later quarry activity. There is easy access to much of the site with some signed footpaths, a viewing area, one of the few public houses to survive upon the hill, The Kremlin, the highest PH in Shropshire. The Craven café and tea-rooms lie at the south of the main quarry site. The proximity of the main A4117 and extensive brown-field waste spoil areas in this vicinity make this a potential site for a visitors centre. The considerable range of features surviving in the area could form the focus of interest for visitors to the site with little impact upon the village itself. The old rail spur which runs from this area to the Rouse-Boughton quarry terraces to the north-west provides a potential access way through the early quarry complex

**Statement of importance**

<b>CRITERIA</b>	<b>HIGH</b>	<b>MEDIUM</b>	<b>LOW</b>
<b>SITEID: TCR (Q315)</b>			
<b>Rarity</b>		*	
<b>Documentation</b>	*		
<b>Group value</b>	*		
<b>Survival/condition</b>		*	
<b>Fragility/vulnerability</b>		*	
<b>Diversity</b>	*		
<b>Potential</b>	*		
<b>Amenity value</b>	*		

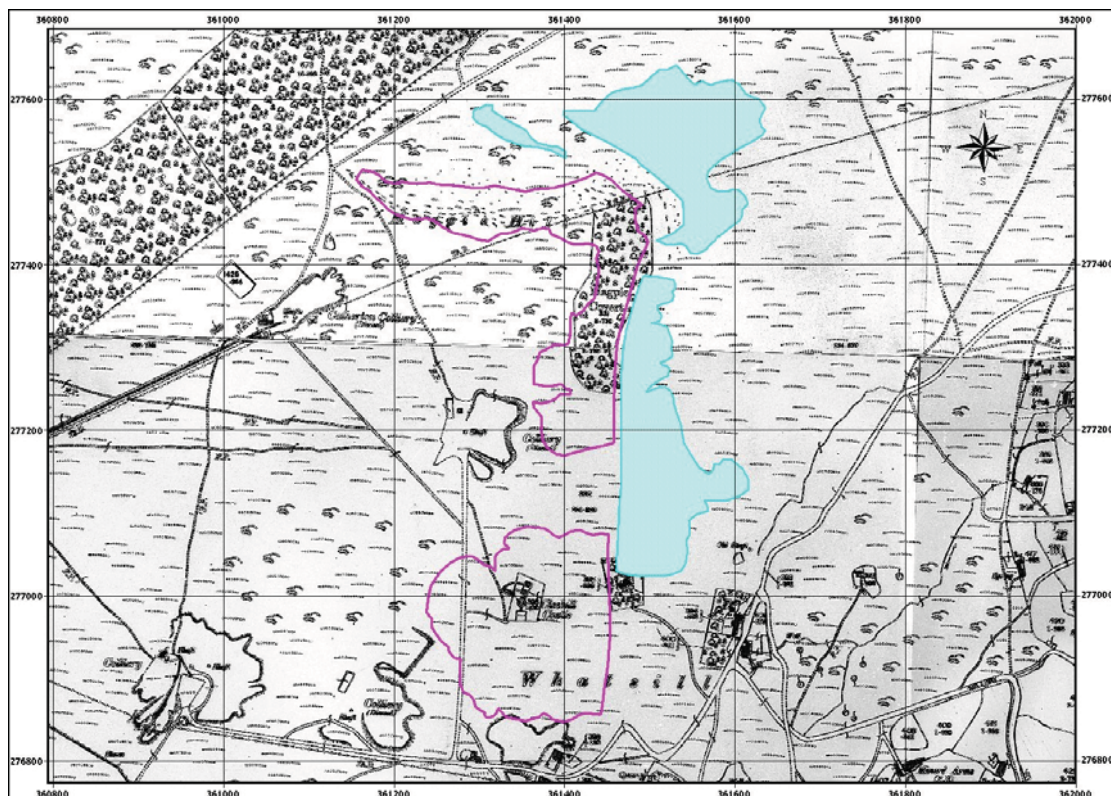


## Walkover survey

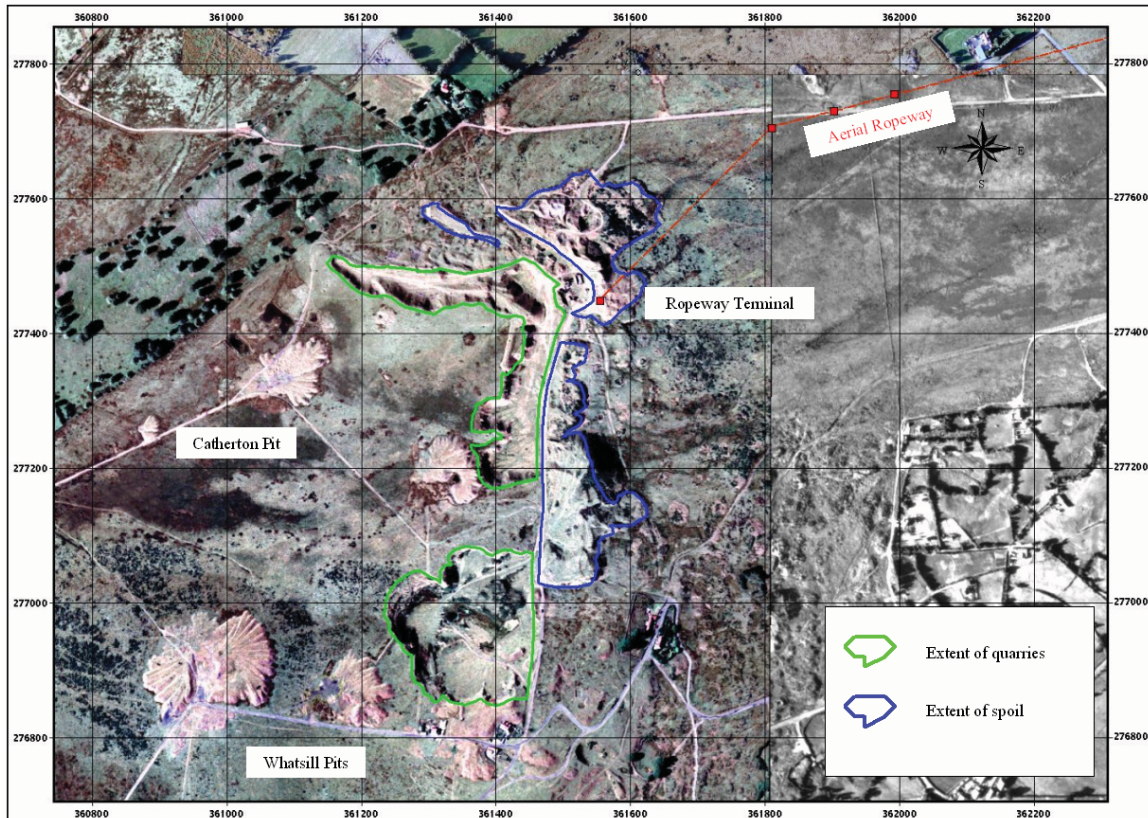
### TCR (Q316)

#### 6. The Clee Hill Granite Co. Catherton Quarry

The Catherton Quarries were opened in 1908 by the Clee Hill Granite Company who obtained a lease to extract stone on the eastern side of the Clee Hill Plateau in the area between Whatsill in the south and Magpie Hill in the north, centred SO 6142 7739. The company was encouraged in this enterprise to open a quarry site some 2.5 kilometres to the north-west of their existing site and with no established communication system by the construction of the Cleobury Mortimer and Ditton Priors Light Railway. This branch line of the Great Western Railway was built from a terminus at Ditton Priors near to the Brown Clee quarries at Abdon Clee to a junction at Cleobury Mortimer and opened in 1909. However this line was some 3.5 miles to the east of the eastern quarry site and to access the railhead a means was required to cross a landscape of wet open common land, cultivated farmland, woodland, road and river. Several schemes were proposed but the final innovative solution to the problem was to build an aerial ropeway which would carry stone from the crushers on the hill top to the rail junction at Detton in a continuous loop with suspended buckets, each carrying half a ton of stone. The ropeway was completed shortly after the completion of the rail line in 1909.



*Fig. 18: The final extent of the Catherton Quarries outlined in magenta, spoil shaded in blue*

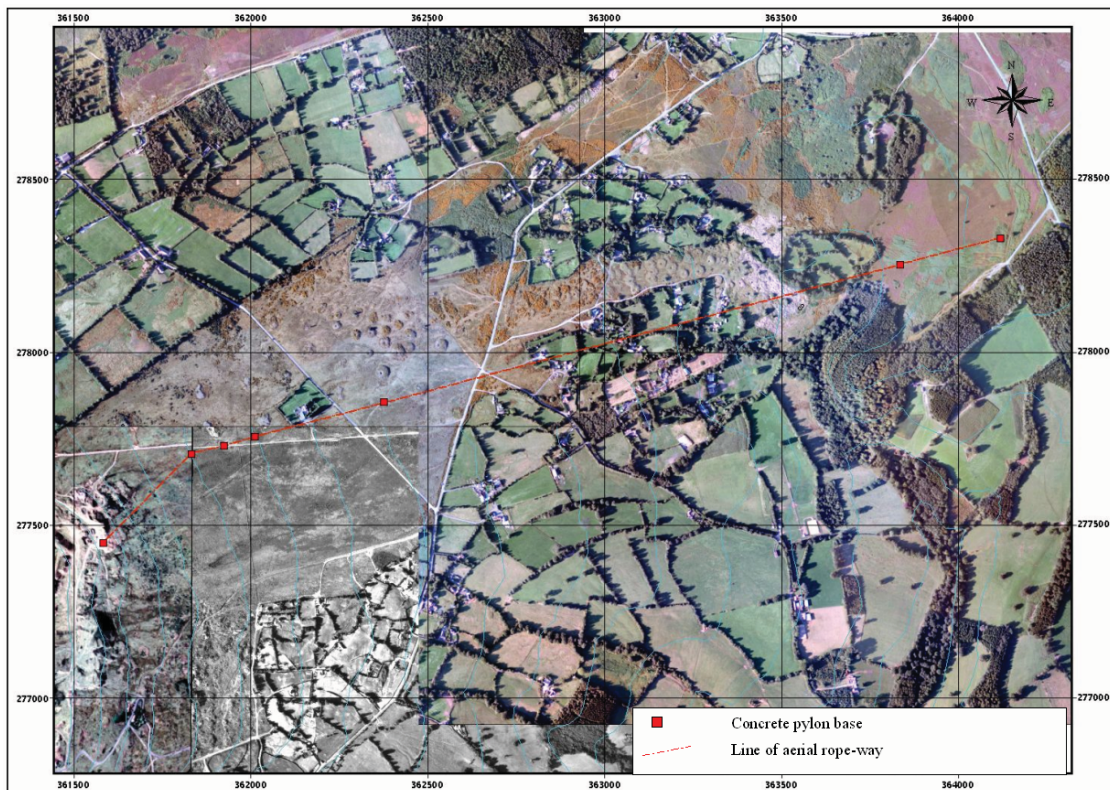


**Fig. 19: Location and extent of the Catherton (Magpie) Quarries**

The quarries work the eastern outcrop of basalt between 402m and 426m AOD in two quarry faces. The southern and probably earlier quarry floor lies centred at SO 6136 7696 cut into the face of the hill from the east to give a roughly crescentic exposure with dimensions of 226m north to south by 220m east to west, open to the east with the steep quarry face wrapping around the west. Quarry rail tracks would have run around the north and south flanks of the quarry to join with the main north south track to the crusher and ropeway terminal some 500m to the north. This quarry removed the building known as Clee Hill Castle which is shown as being roughly central to this area on the 1884 and 1903 OS 1:2500s.

The second quarry commences approximately 110m to the north at SO 6145 7717 and runs as a narrow linear quarry with an average width of some 62m following around the line of the hill as a rough right angle to end close to the old Catherton Pit incline at SO 6115 7751. This quarry can be seen to have removed a small area of woodland shown on the 1884 and 1903 maps as Magpie Covert. Spoil from both quarries was deposited down-slope to the east and north east overlying the belt of earlier coal bell-pits which run around the hill at between around 370 and 412m AOD.

The terminal of the aerial ropeway lay at SO 6155 7745 with the crushers further to the north at SO 6148 7752. A short secondary ropeway some 220m long linked from the quarry to the ropeway terminal. Jenkins provides a detailed description of the ropeway in *Titterstone Clee Hills, Everyday Life, Industrial History and Dialect*, paraphrased below.



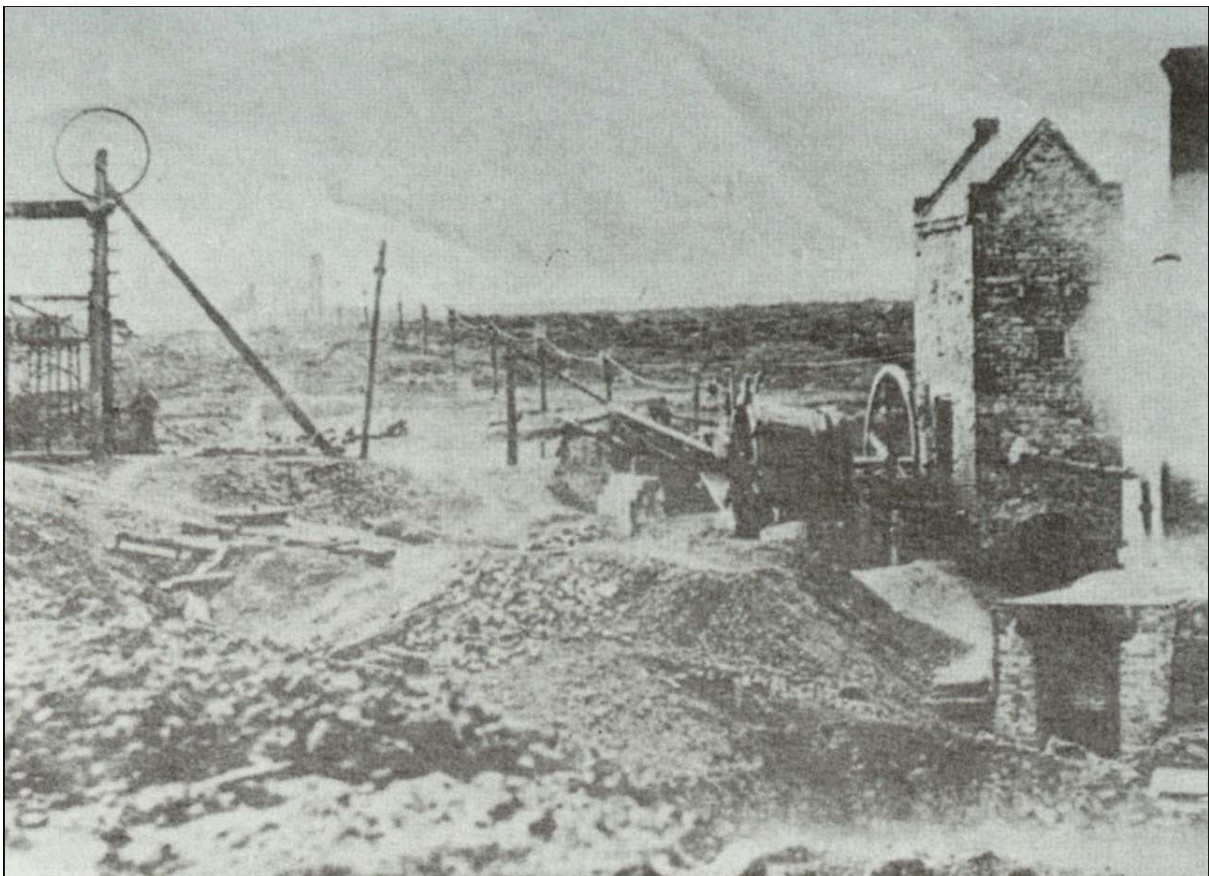
**Fig. 20: The top 1.2 mile section of the Aerial Ropeway**

The line ran for three and a half miles and was one of the longest in the country. The cable itself was 3.5 inches in circumference and 7 miles long, made by Edge and sons of Shifnal, it weighed 35 tons and was supplied in four sections which were then spliced together on site, each splice being 50 feet in length. The driving station was at the highest point on the ropeway [386m AOD]. The driving wheel was mounted on a vertical shaft 17feet six inches above the ground and was between 10 and 12 feet in diameter. Power was provided by a 30 horse-power vertical engine supplied by J. M. Henderson and Company. The rope was carried on 55 pylons, the concrete bases of which survive, the average distance between each pylon being some 100m. They varied in height between 58 feet and 30 feet depending upon the topography to give a minimum height of 145 feet at any one point. The stone was carried in 256 iron buckets, 128 on each side with 14 spare for loading, each bucket having a capacity of 10 hundredweight, each bucket was spaced at around 50m apart. An angle station lay 3 miles from the top of the ropeway to divert the line from its primary direction to a final line leading to the Detton rail-head terminal.

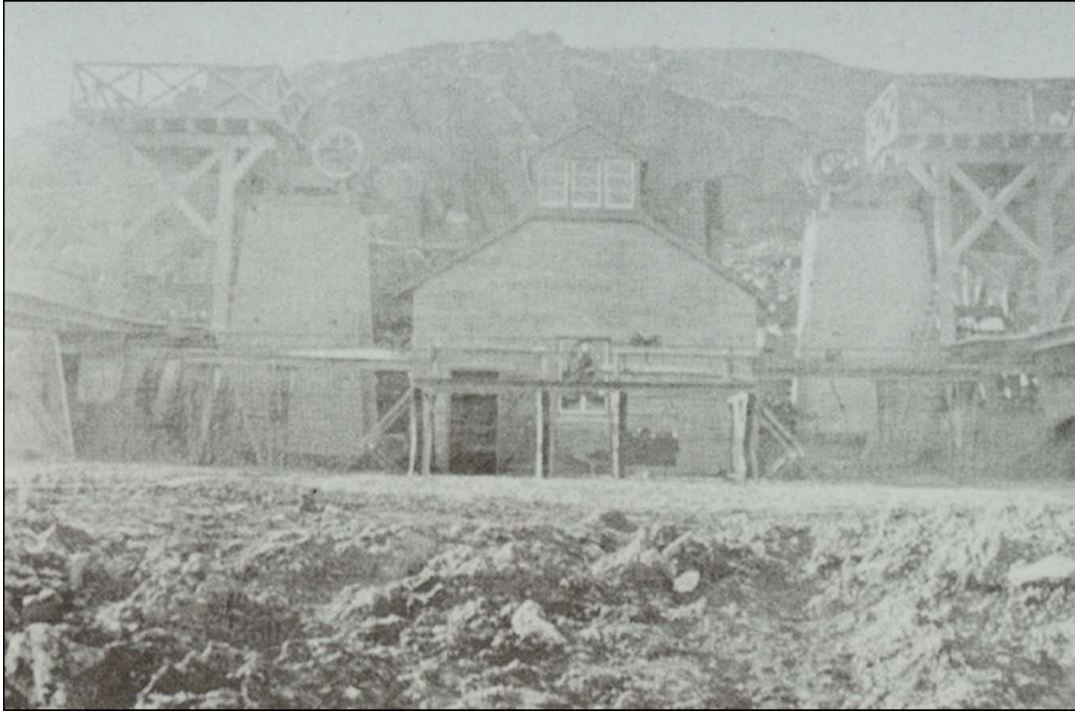
Each load took about three quarters of an hour from the incline top to the bottom, with an average speed of around five miles per hour. The lower terminal was at a height of around 40 feet with steel bins capable of holding 1,500 tons of stone graded into different sizes of stone in separate hoppers. Each individual bin was 60 feet long, 30 feet high and 30 feet wide and capable of holding 250 tons (Jenkins, 1983). A considerable archive of historic photographs survives relating to the ropeway, examples of which are reproduced below.



*Plate 180: Aerial ropeway in operation running across Catherton Common, Magpie Hill in the distance  
(Photo courtesy of A Jenkins)*



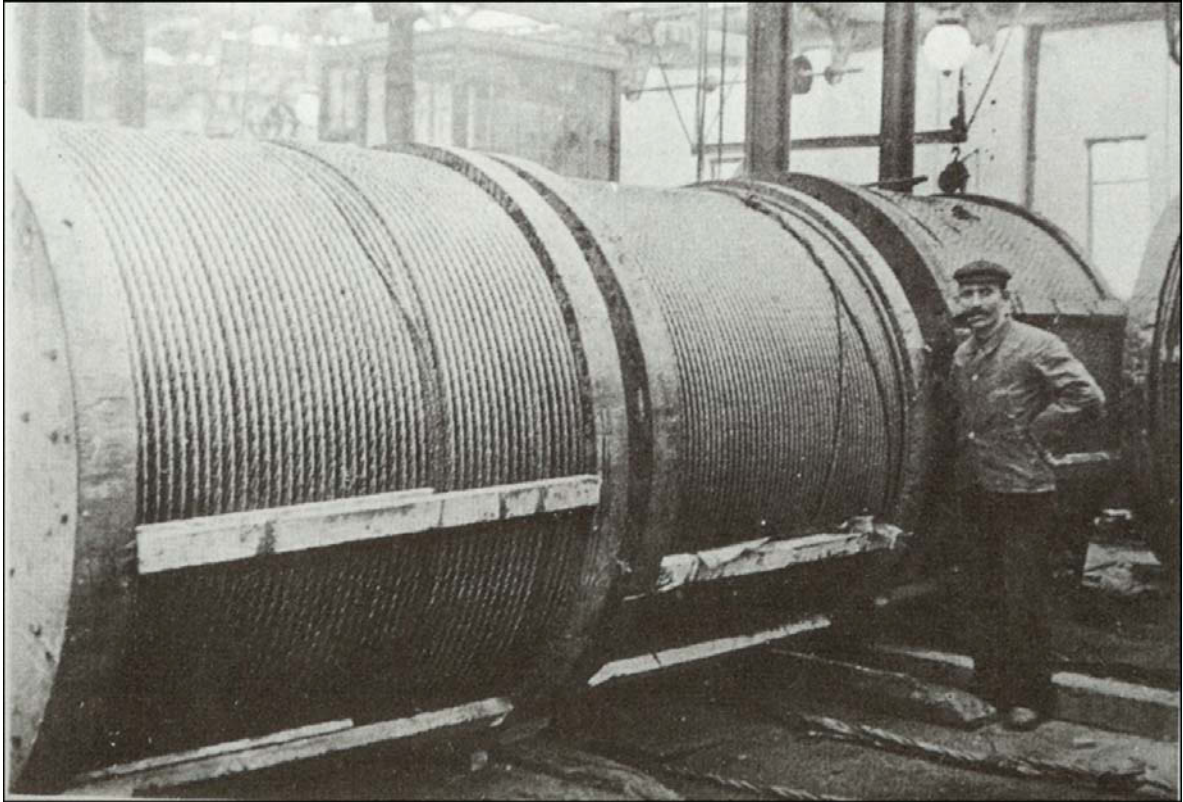
*Plate 181: Early engine house Magpie quarry (Photo courtesy of A Jenkins)*



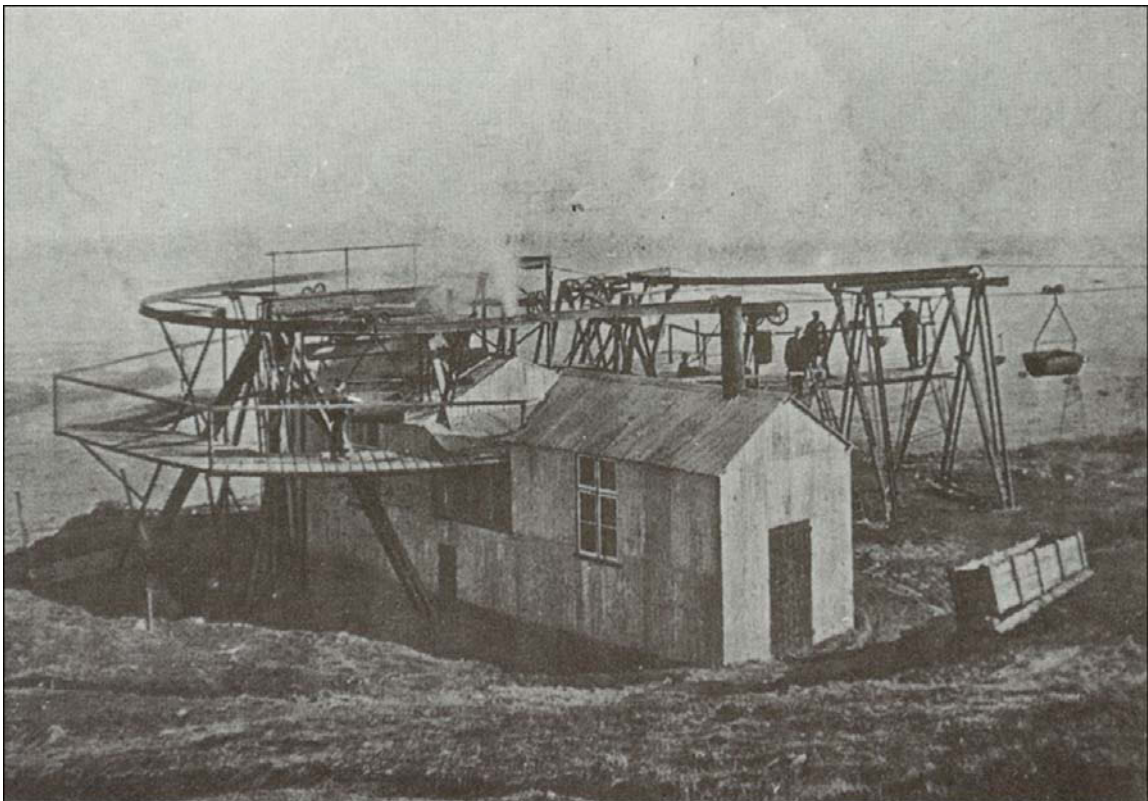
*Plate 182: Crusher and machinery at head of ropeway (Photo courtesy of A Jenkins)*



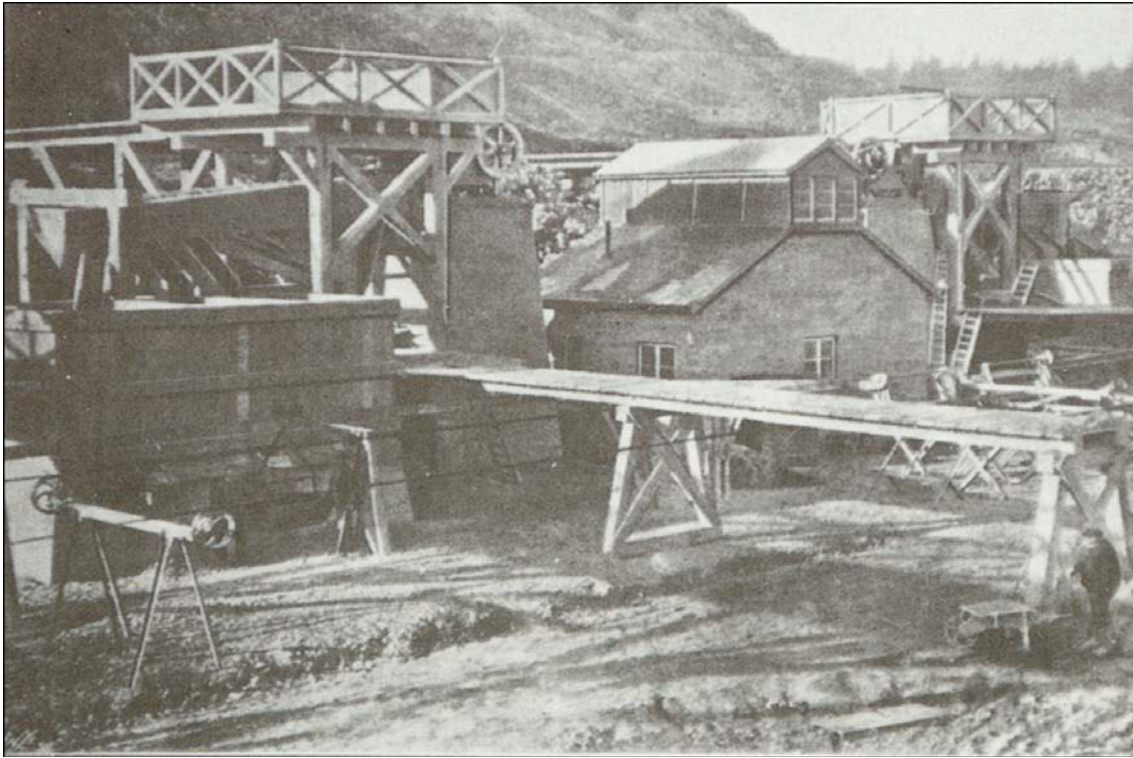
*Plate 183: The site today, the two pylons survive intact, the central building is a foundation only  
Located at SO 6146 7752*



*Plate 184: The ropeway as delivered to the site before installation (Photo courtesy of A Jenkins)*



*Plate 185: Ropeway driving station at the ropeway head (Photo courtesy of A Jenkins)*



*Plate 186: The secondary ropeway which carried stone from the quarry to the ropeway head  
head  
(Photo courtesy of A Jenkins)*



*Plate 187: The secondary ropeway complex as it survives today*



*Plates 188-193: Top four photographs are of the interior of the southern quarry centred at SO 6136 7696. A small brick built pump house can be seen at the centre of the middle left image. This lies at the lower level quarry floor with a higher terrace above to the west. The middle right image shows the pump house with the causeway of a quarry rail track curving to the south-east. The bottom two images show the interior of the pump house, an electric power point on the rear wall suggests that it was in use post war. The lower right image shows a water filled inspection chamber immediately west of the pump house entrance. A similar chamber lies to the rear of the building.*





*Plates 194-199: Top left the causeway of the northern quarry rail track looking west into the quarry as it skirts around the base of the north face of the quarry. Left, the same track from the quarry interior. Middle images, left, the main north to south rail track looking south towards Whatsill. The branch right into the quarry can be seen towards centre of the image. The right shows the main track running north towards the crushers and ropeway head. The bottom images show the remains of a small stone built cottage which lies below the quarry close to the edge of the quarry spoil. A cottage and enclosure is shown at this position SO 6148 7702 on both the 1884 and 1903 OS 1:2500 plans.*



*Plates 200-205: Top two images show the north and south views of the brick and concrete remains of a rectangular building lying on a NW to SE axis 14m long by 6m wide situated on top of the spoil at SO 6148 7704. The middle images show the concrete bases for a small steel pylon at SO 6148 7707 probably associated with the building. These features appear to be c. 1940s and are possibly WWII in origin. The bottom images show the natural slope of the hill which is undisturbed between SO 6145 7708 and SO 6146 7707. The spoil mound of Cutley Colliery can be seen on the hill top immediately above the south quarry face in the lower right image.*



*Plates 206-211: The top right image shows the east facing quarry face running to the point at which it turns from a south to north orientation to east-west. The narrow quarry floor can be seen between the face and the gorse covered spoil mound. The top right image shows the ropeway terminal buildings on the quarry floor, central to the image. The middle left image shows the comparatively small size of the east quarry face. Middle right shows the rail tracks bifurcating, the left heading towards the incline plane linking with the higher level north quarry face. The bottom left image shows the incline plane climbing towards the higher quarry. The bottom right looking down the incline from the top quarry towards the stone crusher site.*



*Plates 212-217: The top image is looking west into the upper quarry from the head of the incline, right approximately half way along the narrow linear quarry which has an average width of only some 50m. The middle two images are at the western terminal of the quarry immediately below the old Magpie coal incline. The area has been used as an over-winter feeding station for sheep. Tractor access and the sheep concentration has resulted in considerable poaching of the quarry floor in this area. The bottom right image shows the head of the incline at SO 6130 7748, the left track runs to the incline the right climbs to a small face at a higher level. The corrugations left by the rail sleepers can be seen in the surface of the track.*



*Plates 218-223: The building complex at the ropeway terminal. The substantial stone and concrete pylons in the top images were the supports for the crushing plant. Other structures relate to the secondary ropeway which carried stone from the quarry to the main ropeway loading head. The purpose of the brick building in the middle images is uncertain. It is at present being used as a winter feeding station for sheep with some resultant poaching of the areas around the buildings.*



*Plates 224-228: The top image shows the approximate line of the ropeway from its terminal on Magpie hill running out across Catherton Common. The middle left image shows the very substantial base of a terminal pylon at SO 6155 7745. The other images show examples of the concrete pylon bases that survive along the course of the ropeway.*

### **Action**

Aerial photography. OS 1884 1<sup>st</sup> Edition 1:2500, 1903 2<sup>nd</sup> Edition 1:2500 and 1953 1:10,560 registered to OS Landline and compared as map regression. Site visited to confirm condition.

### **Management Statement**

The quarry lies in open common land on the western flank of the hill with easy access by foot from the south from the Whatsill area and from the east along a track-way from the Doddington to Clee St Mary road. The old quarry rail tracks provide a ready made footpath system around the site. The management regime is open common sheep pasture which up until very recently has worked to the advantage of the site. However the concentrations of sheep created by the winter use of feeding stations located within the quarry have caused some stock poaching. However the damage caused by the sheep themselves is small in comparison to the deep rutting which has been created, particularly in the north incline by the use of tractors to replenish the feed. If this is to continue it will create problems for the survival of areas of the quarry track-ways and floor.

### **Recommendations**

The quarry is a quite extensive but discrete landscape which has good access and contains a series of elements relating to this episode of quarry activity. The area is of particular interest in the relationship of the quarrying to the preceding coal industry which survives as a very complete series of monuments from the early bell-pits, drift mines through to the later deep mines. This is particularly so in the case of the northern quarry which is closely integrated with the Magpie Hill bell-pit, drift mine, incline complex below Catherton Pit. This eastern side of the hill is less well known than that to the east and offers considerable potential for enhanced presentation.

### **Statement of Importance**

<b>CRITERIA</b>	<b>HIGH</b>	<b>MEDIUM</b>	<b>LOW</b>
<b>SITEID: TCR (Q316)</b>			
<b>Rarity</b>		*	
<b>Documentation</b>		*	
<b>Group value</b>	*		
<b>Survival/condition</b>		*	
<b>Fragility/vulnerability</b>		*	
<b>Diversity</b>	*		
<b>Potential</b>	*		
<b>Amenity value</b>	*		